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Breaking the Continuity and Uniformity of Cancer In The Worst Case of Full Connections With Extreme Failed SuperHyperClique In Cancer's Recognition Applied in (Neutrosophic) SuperHyperGraphs

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Breaking the Continuity and Uniformity of Cancer in the Worst Case of Full Connections with Extreme Failed SuperHyperClique in Cancer's Recognition Applied in (Neutrosophic) SuperHyperGraphs

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Abstract: In this research, assume a SuperHyperGraph. Then a "Failed SuperHyperClique" $\mathcal{C}(NSHG)$ for a neutrosophic SuperHyperGraph $NSHG : (V, E)$ is the maximum cardinality of a SuperHyperSet S of SuperHyperVertices such that there's a SuperHyperVertex to have a SuperHyperEdge in common. Assume a SuperHyperGraph. Then an "$\delta-$Failed SuperHyperClique" is a maximal Failed SuperHyperClique of SuperHyperVertices with maximum cardinality such that either of the following expressions hold for the (neutrosophic) cardinalities of SuperHyperNeighbors of $s \in S$: $|S \cap N(s)| > |S \cap (V \setminus N(s))| + \delta$, $|S \cap N(s)| < |S \cap (V \setminus N(s))| + \delta$. The first Expression, holds if S is an "$\delta-$SuperHyperOffensive". And the second Expression, holds if S is an "$\delta-$SuperHyperDefensive"; a"neutrosophic $\delta-$Failed SuperHyperClique" is a maximal neutrosophic Failed SuperHyperClique of SuperHyperVertices with maximum neutrosophic cardinality such that either of the following expressions hold for the neutrosophic cardinalities of SuperHyperNeighbors of $s \in S$: $|S \cap N(s)|_{neutrosophic} > |S \cap (V \setminus N(s))|_{neutrosophic} + \delta$, $|S \cap N(s)|_{neutrosophic} < |S \cap (V \setminus N(s))|_{neutrosophic} + \delta$. The first Expression, holds if S is a "neutrosophic $\delta-$SuperHyperOffensive". And the second Expression, holds if S is a "neutrosophic $\delta-$SuperHyperDefensive". A basic familiarity with Extreme Failed SuperHyperClique theory, Extreme SuperHyperGraphs theory, and Neutrosophic SuperHyperGraphs theory are proposed.

Keywords: (Neutrosophic) SuperHyperGraph; Extreme Failed SuperHyperClique; Cancer's Extreme Recognition

AMS Subject Classification: 05C17, 05C22, 05E45

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1. Background

Fuzzy set in Ref. [56] by Zadeh (1965), intuitionistic fuzzy sets in Ref. [43] by Atanassov (1986), a first step to a theory of the intuitionistic fuzzy graphs in Ref. [53] by Shannon and Atanassov (1994), a unifying field in logics neutrosophy: neutrosophic probability, set and logic, rehoboth in Ref. [54] by Smarandache (1998), single-valued neutrosophic sets in Ref. [55] by Wang et al. (2010), single-valued neutrosophic graphs in Ref. [47] by Broumi et al. (2016), operations on single-valued neutrosophic graphs in Ref. [39] by Akram and Shahzadi (2017), neutrosophic soft graphs in Ref. [52] by Shah and Hussain (2016), bounds on the average and minimum attendance in preference-based activity scheduling in Ref. [41] by Aronshtam and Ilani (2022), investigating the recoverable robust single machine scheduling problem under interval uncertainty in Ref. [46] by Bold and Goerigk (2022), polyhedra associated with locating-dominating, open locating-dominating and locating total-dominating sets in graphs in Ref. [40] by G. Argiroffo et al. (2022), a Vizing-type result for semi-total domination in Ref. [42] by J. Asplund et al. (2020), total domination cover rubbling in Ref. [44] by R.A. Beeler et al. (2020), on the global total k-domination number of graphs in Ref. [45] by S. Bermudo et al. (2019), maker–breaker total domination game in Ref. [48] by V. Gledel et al. (2020), a new upper bound on the total domination number in graphs with minimum degree six in Ref. [49] by M.A. Henning, and A. Yeo (2021), effect of predomination and vertex removal on the

game total domination number of a graph in Ref. [50] by V. Irsic (2019), hardness results of global total k-domination problem in graphs in Ref. [51] by B.S. Panda, and P. Goyal (2021), are studied.
Look at [34–38] for further researches on this topic. See the seminal researches [1–3]. The formalization of the notions on the framework of Extreme Failed SuperHyperClique theory, Neutrosophic Failed SuperHyperClique theory, and (Neutrosophic) SuperHyperGraphs theory at [4–31]. Two popular research books in Scribd in the terms of high readers, 2638 and 3363 respectively, on neutrosophic science is on [32,33].

Definition 1. *((neutrosophic) Failed SuperHyperClique).*
Assume a SuperHyperGraph. Then

(i) *an **extreme Failed SuperHyperClique** $\mathcal{C}(NSHG)$ for an extreme SuperHyperGraph $NSHG : (V, E)$ is an extreme type-SuperHyperSet of the extreme SuperHyperVertices with **the maximum extreme cardinality** of an extreme SuperHyperSet S of the extreme SuperHyperVertices such that there's an amount of extreme SuperHyperEdges amid an amount of extreme SuperHyperVertices given by that extreme SuperHyperSet of the extreme SuperHyperVertices; it's also called an extreme $(z, -)-$Failed SuperHyperClique **extreme Failed SuperHyperClique** $\mathcal{C}(NSHG)$ for an extreme SuperHyperGraph $NSHG : (V, E)$ if it's an extreme type-SuperHyperSet of the extreme SuperHyperVertices with **the maximum extreme cardinality** of an extreme SuperHyperSet S of the extreme SuperHyperVertices such that there's z extreme SuperHyperEdge amid an amount of extreme SuperHyperVertices given by that extreme SuperHyperSet of the extreme SuperHyperVertices; it's also called an extreme $(-, x)-$Failed SuperHyperClique **extreme Failed SuperHyperClique** $\mathcal{C}(NSHG)$ for an extreme SuperHyperGraph $NSHG : (V, E)$ if it's an extreme type-SuperHyperSet of the extreme SuperHyperVertices with **the maximum extreme cardinality** of an extreme SuperHyperSet S of the extreme SuperHyperVertices such that there's an amount of extreme SuperHyperEdges amid x extreme SuperHyperVertices given by that extreme SuperHyperSet of the extreme SuperHyperVertices; it's also called an extreme $(z, x)-$Failed SuperHyperClique **extreme Failed SuperHyperClique** $\mathcal{C}(NSHG)$ for an extreme SuperHyperGraph $NSHG : (V, E)$ if it's an extreme type-SuperHyperSet of the extreme SuperHyperVertices with **the maximum extreme cardinality** of an extreme SuperHyperSet S of the extreme SuperHyperVertices such that there's z extreme SuperHyperEdges amid x extreme SuperHyperVertices given by that extreme SuperHyperSet of the extreme SuperHyperVertices; it's also the extreme extension of the extreme notion of the extreme clique in the extreme graphs to the extreme SuperHyperNotion of the extreme Failed SuperHyperClique in the extreme SuperHyperGraphs where in the extreme setting of the graphs, there's an extreme $(1, 2)-$Failed SuperHyperClique since an extreme graph is an extreme SuperHyperGraph;*

(ii) *an **neutrosophic Failed SuperHyperClique** $\mathcal{C}(NSHG)$ for an neutrosophic SuperHyperGraph $NSHG : (V, E)$ is an neutrosophic type-SuperHyperSet of the neutrosophic SuperHyperVertices with **the maximum neutrosophic cardinality** of an neutrosophic SuperHyperSet S of the neutrosophic SuperHyperVertices such that there's an amount of neutrosophic SuperHyperEdges amid an amount of neutrosophic SuperHyperVertices given by that neutrosophic SuperHyperSet of the neutrosophic SuperHyperVertices; it's also called an neutrosophic $(z, -)-$Failed SuperHyperClique **neutrosophic Failed SuperHyperClique** $\mathcal{C}(NSHG)$ for an neutrosophic SuperHyperGraph $NSHG : (V, E)$ if it's an neutrosophic type-SuperHyperSet of the neutrosophic SuperHyperVertices with **the maximum neutrosophic cardinality** of an neutrosophic SuperHyperSet S of the neutrosophic SuperHyperVertices such that there's z neutrosophic SuperHyperEdge amid an amount of neutrosophic SuperHyperVertices given by that neutrosophic SuperHyperSet of the neutrosophic SuperHyperVertices; it's also called an neutrosophic $(-, x)-$Failed SuperHyperClique **neutrosophic Failed SuperHyperClique** $\mathcal{C}(NSHG)$ for an neutrosophic SuperHyperGraph $NSHG : (V, E)$ if it's an neutrosophic type-SuperHyperSet of the neutrosophic SuperHyperVertices with **the maximum neutrosophic cardinality** of an neutrosophic SuperHyperSet S of the neutrosophic SuperHyperVertices such that there's an amount of neutrosophic SuperHyperEdges amid x*

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neutrosophic SuperHyperVertices given by that neutrosophic SuperHyperSet of the neutrosophic SuperHyperVertices; it's also called an neutrosophic $(z, x)-$*Failed SuperHyperClique* ***neutrosophic Failed SuperHyperClique*** $\mathcal{C}(NSHG)$ *for an neutrosophic SuperHyperGraph* $NSHG : (V, E)$ *if it's an neutrosophic type-SuperHyperSet of the neutrosophic SuperHyperVertices with* ***the maximum neutrosophic cardinality*** *of an neutrosophic SuperHyperSet* S *of the neutrosophic SuperHyperVertices such that there's* z *neutrosophic SuperHyperEdges amid* x *neutrosophic SuperHyperVertices given by that neutrosophic SuperHyperSet of the neutrosophic SuperHyperVertices; it's also the neutrosophic extension of the neutrosophic notion of the neutrosophic clique in the neutrosophic graphs to the neutrosophic SuperHyperNotion of the neutrosophic Failed SuperHyperClique in the neutrosophic SuperHyperGraphs where in the neutrosophic setting of the graphs, there's an neutrosophic* $(1, 2)-$*Failed SuperHyperClique since an neutrosophic graph is an extreme SuperHyperGraph;*

Proposition 1. *An extreme clique in an extreme graph is an extreme* $(1, 2)-$*Failed SuperHyperClique in that extreme SuperHyperGraph. And reverse of that statement doesn't hold.*

Proposition 2. *A neutrosophic clique in a neutrosophic graph is a neutrosophic* $(1, 2)-$*Failed SuperHyperClique in that neutrosophic SuperHyperGraph. And reverse of that statement doesn't hold.*

Proposition 3. *Assume an extreme* $(x, z)-$*Failed SuperHyperClique in an extreme SuperHyperGraph. For all* $z_i \leq z, x_i \leq x$*, it's an extreme* $(x_i, z_i)-$*Failed SuperHyperClique in that extreme SuperHyperGraph.*

Proposition 4. *Assume a neutrosophic* $(x, z)-$*Failed SuperHyperClique in a neutrosophic SuperHyperGraph. For all* $z_i \leq z, x_i \leq x$*, it's a neutrosophic* $(x_i, z_i)-$*Failed SuperHyperClique in that neutrosophic SuperHyperGraph.*

Definition 2. *((neutrosophic)*$\delta-$*Failed SuperHyperClique).*
Assume a SuperHyperGraph. Then

(i) *an* $\delta-$***Failed SuperHyperClique*** *is a* maximal *of SuperHyperVertices with a* maximum *cardinality such that either of the following expressions hold for the (neutrosophic) cardinalities of SuperHyperNeighbors of* $s \in S$ *:*

$$|S \cap N(s)| > |S \cap (V \setminus N(s))| + \delta; \tag{1}$$
$$|S \cap N(s)| < |S \cap (V \setminus N(s))| + \delta. \tag{2}$$

The Expression (1), holds if S *is an* $\delta-$***SuperHyperOffensive****. And the Expression (2), holds if* S *is an* $\delta-$***SuperHyperDefensive****;*

(ii) *a* ***neutrosophic*** $\delta-$***Failed SuperHyperClique*** *is a* maximal *neutrosophic of SuperHyperVertices with* maximum *neutrosophic cardinality such that either of the following expressions hold for the neutrosophic cardinalities of SuperHyperNeighbors of* $s \in S$ *:*

$$|S \cap N(s)|_{neutrosophic} > |S \cap (V \setminus N(s))|_{neutrosophic} + \delta; \tag{3}$$
$$|S \cap N(s)|_{neutrosophic} < |S \cap (V \setminus N(s))|_{neutrosophic} + \delta. \tag{4}$$

The Expression (3), holds if S *is a* ***neutrosophic*** $\delta-$***SuperHyperOffensive****. And the Expression (4), holds if* S *is a* ***neutrosophic*** $\delta-$***SuperHyperDefensive****.*

2. Extreme Failed SuperHyperClique

The SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. S The extreme SuperHyperSet of extreme SuperHyperVertices, S is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, S is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices, $S\{z\}$. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices, S doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices, S **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, S is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s** **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet, S Thus the non-obvious extreme Failed SuperHyperClique, S is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not: S is the extreme SuperHyperSet, not: S does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only S in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are S. In a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ as Linearly-over-packed SuperHyperModel is featured On the Figures.

Example 1. *Assume the SuperHyperGraphs in the Figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20.*

- *On the Figure 1, the extreme SuperHyperNotion, namely, extreme Failed SuperHyperClique, is up. E_1 and E_3 are some empty extreme SuperHyperEdges but E_2 is a loop extreme SuperHyperEdge and E_4 is an extreme SuperHyperEdge. Thus in the terms of extreme SuperHyperNeighbor, there's only one extreme SuperHyperEdge, namely, E_4. The extreme SuperHyperVertex, V_3 is extreme isolated means that there's no extreme SuperHyperEdge has it as an extreme endpoint. Thus the extreme SuperHyperVertex, V_3, **is** contained in every given extreme Failed SuperHyperClique. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. $V = \{V_1, V_2, V_3, V_4\}$. The extreme SuperHyperSet of extreme*

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*SuperHyperVertices, $V = \{V_1, V_2, V_3, V_4\}$, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, $V = \{V_1, V_2, V_3, V_4\}$, is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_1, V_2, V_4\}$. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices, $V = \{V_1, V_2, V_3, V_4\}$, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices, $V = \{V_1, V_2, V_3, V_4\}$, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, $V = \{V_1, V_2, V_3, V_4\}$, is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet, $V = \{V_1, V_2, V_3, V_4\}$. Thus the non-obvious extreme Failed SuperHyperClique, $V = \{V_1, V_2, V_3, V_4\}$, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not: $V = \{V_1, V_2, V_3, V_4\}$, is the extreme SuperHyperSet, not: $V = \{V_1, V_2, V_3, V_4\}$, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

***extreme Failed SuperHyperClique**,*

is only and only

$$V = \{V_1, V_2, V_3, V_4\}.$$

- *On the Figure 2, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. E_1 and E_3 Failed SuperHyperClique are some empty SuperHyperEdges but E_2 is a loop SuperHyperEdge and E_4 is a SuperHyperEdge. Thus in the terms of SuperHyperNeighbor, there's only one SuperHyperEdge, namely, E_4. The SuperHyperVertex, V_3 is isolated means that there's no SuperHyperEdge has it as an endpoint. Thus the extreme SuperHyperVertex, V_3, **is** contained in every given extreme Failed SuperHyperClique. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. $V = \{V_1, V_2, V_3, V_4\}$. The extreme SuperHyperSet of extreme SuperHyperVertices, $V = \{V_1, V_2, V_3, V_4\}$, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, $V = \{V_1, V_2, V_3, V_4\}$, is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given*

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*by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_1, V_2, V_4\}$*. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,* $V = \{V_1, V_2, V_3, V_4\}$*, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,* $V = \{V_1, V_2, V_3, V_4\}$*, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,* $V = \{V_1, V_2, V_3, V_4\}$*, is an extreme Failed SuperHyperClique* $\mathcal{C}(ESHG)$ *for an extreme SuperHyperGraph* $ESHG : (V, E)$ *is the extreme SuperHyperSet* S *of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet* S *of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,* $V = \{V_1, V_2, V_3, V_4\}$*. Thus the non-obvious extreme Failed SuperHyperClique,* $V = \{V_1, V_2, V_3, V_4\}$*, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:* $V = \{V_1, V_2, V_3, V_4\}$*, is the extreme SuperHyperSet, not:* $V = \{V_1, V_2, V_3, V_4\}$*, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph* $ESHG : (V, E)$*. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

***extreme Failed SuperHyperClique**,*

is only and only

$$V = \{V_1, V_2, V_3, V_4\}.$$

- *On the Figure 3, the SuperHyperNotion, namely, Failed SuperHyperClique, is up.* E_1, E_2 *and* E_3 *are some empty SuperHyperEdges but* E_4 *is a SuperHyperEdge. Thus in the terms of SuperHyperNeighbor, there's only one SuperHyperEdge, namely,* E_4*. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.* $\{\}$*. The extreme SuperHyperSet of extreme SuperHyperVertices,* $\{\}$*, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{\}$*, is an **extreme Failed SuperHyperClique*** $\mathcal{C}(ESHG)$ *for an extreme SuperHyperGraph* $ESHG : (V, E)$ *is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet* S *of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_1, V_2, V_3, V_4\}$*. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,* $\{\}$*, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,* $\{\}$*, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed*

SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, {}, is an extreme Failed SuperHyperClique $C(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique ***and*** *it's an extreme* ***Failed SuperHyperClique****. Since it****'s the maximum extreme cardinality*** *of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices* ***inside*** *the intended extreme SuperHyperSet, {}. Thus the non-obvious extreme Failed SuperHyperClique, {}, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not: {}, is the extreme SuperHyperSet, not: {}, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

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amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique*,*

is only and only

$$\{\}.$$

- *On the Figure 4, the SuperHyperNotion, namely, a Failed SuperHyperClique, is up. There's no empty SuperHyperEdge but E_3 are a loop SuperHyperEdge on $\{F\}$, and there are some SuperHyperEdges, namely, E_1 on $\{H, V_1, V_3\}$, alongside E_2 on $\{O, H, V_4, V_3\}$ and E_4, E_5 on $\{N, V_1, V_2, V_3, F\}$. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. $\{V_1, V_2, V_3, N, F, V_4\}$. The extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_1, V_2, V_3, N, F, V_4\}$, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_1, V_2, V_3, N, F, V_4\}$, is an* ***extreme Failed SuperHyperClique*** *$C(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with* ***the maximum extreme cardinality*** *of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by* ***extreme SuperHyperClique*** *is the extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_1, V_2, V_3, N, F\}$. There's* <u>*not*</u> *only* ***three*** *extreme SuperHyperVertex* ***inside*** *the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet* ***includes*** *only* ***three*** *extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_1, V_2, V_3, N, F, V_4\}$, doesn't have less than four SuperHyperVertices* ***inside*** *the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique* ***is*** *up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_1, V_2, V_3, N, F, V_4\}$,* ***is*** *the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_1, V_2, V_3, N, F, V_4\}$, is an extreme Failed SuperHyperClique $C(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique* ***and*** *it's an extreme* ***Failed SuperHyperClique****. Since it****'s the maximum extreme cardinality*** *of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than*

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*four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,* $\{V_1, V_2, V_3, N, F, V_4\}$. *Thus the non-obvious extreme Failed SuperHyperClique,* $\{V_1, V_2, V_3, N, F, V_4\}$*, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:* $\{V_1, V_2, V_3, N, F, V_4\}$*, is the extreme SuperHyperSet, not:* $\{V_1, V_2, V_3, N, F, V_4\}$*, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph* $ESHG : (V, E)$*. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

***extreme Failed SuperHyperClique**,*

is only and only

$$\{V_1, V_2, V_3, N, F, V_4\}.$$

- *On the Figure 5, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.* $\{V_1, V_2, V_3, V_4, V_5, V_{13}\}$*. The extreme SuperHyperSet of extreme SuperHyperVertices,* $\{V_1, V_2, V_3, V_4, V_5, V_{13}\}$*, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_1, V_2, V_3, V_4, V_5, V_{13}\}$*, is an **extreme Failed SuperHyperClique*** $\mathcal{C}(ESHG)$ *for an extreme SuperHyperGraph* $ESHG : (V, E)$ *is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_1, V_2, V_3, V_4, V_5\}$*. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,* $\{V_1, V_2, V_3, V_4, V_5, V_{13}\}$*, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,* $\{V_1, V_2, V_3, V_4, V_5, V_{13}\}$*, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_1, V_2, V_3, V_4, V_5, V_{13}\}$*, is an extreme Failed SuperHyperClique* $\mathcal{C}(ESHG)$ *for an extreme SuperHyperGraph* $ESHG : (V, E)$ *is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s** **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,* $\{V_1, V_2, V_3, V_4, V_5, V_{13}\}$*. Thus the non-obvious extreme Failed SuperHyperClique,* $\{V_1, V_2, V_3, V_4, V_5, V_{13}\}$*, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:* $\{V_1, V_2, V_3, V_4, V_5, V_{13}\}$*, is the extreme SuperHyperSet, not:* $\{V_1, V_2, V_3, V_4, V_5, V_{13}\}$*, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph* $ESHG : (V, E)$*. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

  "neutrosophic Failed SuperHyperClique"

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amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

***extreme Failed SuperHyperClique**,*

is only and only

$$\{V_1, V_2, V_3, V_4, V_5, V_{13}\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ *is mentioned as the SuperHyperModel* $ESHG : (V, E)$ *in the Figure 5.*

- *On the Figure 6, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.* $\{V_5, V_6, V_{15}\}$*. The extreme SuperHyperSet of extreme SuperHyperVertices,* $\{V_5, V_6, V_{15}\}$*, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_5, V_6, V_{15}\}$*, is an **extreme Failed SuperHyperClique*** $\mathcal{C}(ESHG)$ *for an extreme SuperHyperGraph* $ESHG : (V, E)$ *is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_5, V_6\}$*. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,* $\{V_5, V_6, V_{15}\}$*, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,* $\{V_5, V_6, V_{15}\}$*, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_5, V_6, V_{15}\}$*, is an extreme Failed SuperHyperClique* $\mathcal{C}(ESHG)$ *for an extreme SuperHyperGraph* $ESHG : (V, E)$ *is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,* $\{V_5, V_6, V_{15}\}$*. Thus the non-obvious extreme Failed SuperHyperClique,* $\{V_5, V_6, V_{15}\}$*, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:* $\{V_5, V_6, V_{15}\}$*, is the extreme SuperHyperSet, not:* $\{V_5, V_6, V_{15}\}$*, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph* $ESHG : (V, E)$*. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

  "neutrosophic Failed SuperHyperClique"

  amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

  ***extreme Failed SuperHyperClique**,*

  is only and only $\{V_5, V_6, V_{15}\}$ *in a connected neutrosophic SuperHyperGraph* $ESHG : (V, E)$ *with an illustrated SuperHyperModeling of the Figure 6. It's also, an extreme free-triangle SuperHyperModel. But all only obvious[non-obvious] simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious[non-obvious] simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are* $\{V_5, V_6, V_{15}\}$*.*

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- *On the Figure 7, the SuperHyperNotion, namely, extreme Failed SuperHyperClique $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$ is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$. The extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, is an* ***extreme Failed SuperHyperClique*** *$\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with* ***the maximum extreme cardinality*** *of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by* ***extreme SuperHyperClique*** *is the extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_8, V_9, V_{10}, V_{11}, V_{14}\}$. There's not only* ***three*** *extreme SuperHyperVertex* ***inside*** *the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet* ***includes*** *only* ***three*** *extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, doesn't have less than four SuperHyperVertices* ***inside*** *the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique* ***is*** *up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$,* ***is*** *the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique* ***and*** *it's an extreme* ***Failed SuperHyperClique****. Since it****'s*** ***the maximum extreme cardinality*** *of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices* ***inside*** *the intended extreme SuperHyperSet, $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$. Thus the non-obvious extreme Failed SuperHyperClique, $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not: $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, is the extreme SuperHyperSet, not: $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

  "neutrosophic Failed SuperHyperClique"

  amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

  extreme Failed SuperHyperClique*,*

  is only and only

  $$\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$$

  in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ of depicted SuperHyperModel as the Figure 7. But

  $$\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$$

  are the only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme SuperHyperVertices.
- *On the Figure 8, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet*

of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$. *The extreme SuperHyperSet of extreme SuperHyperVertices,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, *is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, *is an* ***extreme Failed SuperHyperClique*** $\mathcal{C}(ESHG)$ *for an extreme SuperHyperGraph* $ESHG : (V, E)$ *is an extreme type-SuperHyperSet with* ***the maximum extreme cardinality*** *of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by* ***extreme SuperHyperClique*** *is the extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}\}$. *There's* *not* *only* ***three*** *extreme SuperHyperVertex* ***inside*** *the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet* ***includes*** *only* ***three*** *extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, *doesn't have less than four SuperHyperVertices* ***inside*** *the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique* ***is*** *up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, ***is*** *the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, *is an extreme Failed SuperHyperClique* $\mathcal{C}(ESHG)$ *for an extreme SuperHyperGraph* $ESHG : (V, E)$ *is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique* ***and*** *it's an extreme* ***Failed SuperHyperClique****. Since it****'s*** ***the maximum extreme cardinality*** *of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices* ***inside*** *the intended extreme SuperHyperSet,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$. *Thus the non-obvious extreme Failed SuperHyperClique,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, *is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, *is the extreme SuperHyperSet, not:* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, *does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph* $ESHG : (V, E)$. *It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique*,*

is only and only

$$\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ *of depicted SuperHyperModel as the Figure 8. But*

$$\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$$

are the only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme SuperHyperVertices. In a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ *of dense SuperHyperModel as the Figure 8.*

- *On the Figure 9, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.*

*$\{V_5, V_6, V_{15}\}$. The extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_5, V_6, V_{15}\}$, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_5, V_6, V_{15}\}$, is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_5, V_6\}$. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_5, V_6, V_{15}\}$, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_5, V_6, V_{15}\}$, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_5, V_6, V_{15}\}$, is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet, $\{V_5, V_6, V_{15}\}$. Thus the non-obvious extreme Failed SuperHyperClique, $\{V_5, V_6, V_{15}\}$, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not: $\{V_5, V_6, V_{15}\}$, is the extreme SuperHyperSet, not: $\{V_5, V_6, V_{15}\}$, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

***extreme Failed SuperHyperClique**,*

is only and only $\{V_5, V_6, V_{15}\}$ in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling of the Figure 9. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are $\{V_5, V_6, V_{15}\}$. In a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ of highly-embedding-connected SuperHyperModel as the Figure 9.

- *On the Figure 10, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$. The extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices* *such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by* ***extreme SuperHyperClique*** *is the extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}\}$. *There's not only* ***three*** *extreme SuperHyperVertex* ***inside*** *the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet* ***includes*** *only* ***three*** *extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, *doesn't have less than four SuperHyperVertices* ***inside*** *the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique* ***is*** *up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, ***is*** *the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, *is an extreme Failed SuperHyperClique* $\mathcal{C}(ESHG)$ *for an extreme SuperHyperGraph* $ESHG : (V, E)$ *is the extreme SuperHyperSet* S *of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique* ***and*** *it's an extreme* ***Failed SuperHyperClique***. *Since it****'s*** ***the maximum extreme cardinality*** *of an extreme SuperHyperSet* S *of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices* ***inside*** *the intended extreme SuperHyperSet,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$. *Thus the non-obvious extreme Failed SuperHyperClique,* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, *is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, *is the extreme SuperHyperSet, not:* $\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$, *does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph* $ESHG : (V, E)$. *It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique*,*

is only and only

$$\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ *of depicted SuperHyperModel as the Figure 10. But*

$$\{V_8, V_9, V_{10}, V_{11}, V_{14}, V_6\}$$

are the only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme SuperHyperVertices. In a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ *of dense SuperHyperModel as the Figure 10.*

- *On the Figure 11, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.* $\{V_1, V_4, V_5, V_6\}$. *The extreme SuperHyperSet of extreme SuperHyperVertices,* $\{V_1, V_4, V_5, V_6\}$, *is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,* $\{V_1, V_4, V_5, V_6\}$, *is an* ***extreme Failed SuperHyperClique*** $\mathcal{C}(ESHG)$ *for an extreme SuperHyperGraph* $ESHG : (V, E)$ *is an extreme type-SuperHyperSet with* ***the maximum extreme cardinality*** *of an extreme SuperHyperSet* S *of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by* ***extreme SuperHyperClique*** *is the extreme SuperHyperSet of the extreme SuperHyperVertices,*

*$\{V_4, V_5, V_6\}$. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_1, V_4, V_5, V_6\}$, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_1, V_4, V_5, V_6\}$, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_1, V_4, V_5, V_6\}$, is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it's **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet, $\{V_1, V_4, V_5, V_6\}$. Thus the non-obvious extreme Failed SuperHyperClique, $\{V_1, V_4, V_5, V_6\}$, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not: $\{V_1, V_4, V_5, V_6\}$, is the extreme SuperHyperSet, not: $\{V_1, V_4, V_5, V_6\}$, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

***extreme Failed SuperHyperClique**,*

is only and only $\{V_1, V_4, V_5, V_6\}$ in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling of the Figure 11. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are $\{V_1, V_4, V_5, V_6\}$. In a connected extreme SuperHyperGraph $ESHG : (V, E)$.

- *On the Figure 12, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. $\{V_1, V_2, V_3, V_7, V_8, V_9\}$. The extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_1, V_2, V_3, V_7, V_8, V_9\}$, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_1, V_2, V_3, V_7, V_8, V_9\}$, is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_1, V_2, V_3, V_7, V_8\}$. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_1, V_2, V_3, V_7, V_8, V_9\}$, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed*

*SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_1, V_2, V_3, V_7, V_8, V_9\}$, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_1, V_2, V_3, V_7, V_8, V_9\}$, is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it'**s** **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet, $\{V_1, V_2, V_3, V_7, V_8, V_9\}$. Thus the non-obvious extreme Failed SuperHyperClique, $\{V_1, V_2, V_3, V_7, V_8, V_9\}$, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not: $\{V_1, V_2, V_3, V_7, V_8, V_9\}$, is the extreme SuperHyperSet, not: $\{V_1, V_2, V_3, V_7, V_8, V_9\}$, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

***extreme Failed SuperHyperClique**,*

is only and only $\{V_1, V_2, V_3, V_7, V_8, V_9\}$ in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling of the Figure 11. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are $\{V_1, V_2, V_3, V_7, V_8, V_9\}$. In a connected extreme SuperHyperGraph $ESHG : (V, E)$.

- *On the Figure 13, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. $\{V_1, V_4, V_5, V_6\}$. The extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_1, V_4, V_5, V_6\}$, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_1, V_4, V_5, V_6\}$, is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_4, V_5, V_6\}$. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_1, V_4, V_5, V_6\}$, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices, $\{V_1, V_4, V_5, V_6\}$, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, $\{V_1, V_4, V_5, V_6\}$, is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an* *extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,* $\{V_1, V_4, V_5, V_6\}$*. Thus the non-obvious extreme Failed SuperHyperClique,* $\{V_1, V_4, V_5, V_6\}$*, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:* $\{V_1, V_4, V_5, V_6\}$*, is the extreme SuperHyperSet, not:* $\{V_1, V_4, V_5, V_6\}$*, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph* $ESHG : (V, E)$*. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

***extreme Failed SuperHyperClique**,*

is only and only $\{V_1, V_4, V_5, V_6\}$ *in a connected neutrosophic SuperHyperGraph* $ESHG : (V, E)$ *with a illustrated SuperHyperModeling of the Figure 11. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are* $\{V_1, V_4, V_5, V_6\}$*. In a connected extreme SuperHyperGraph* $ESHG : (V, E)$*.*

- *On the Figure 14, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.* $V = \{V_1, V_2, V_3\}$*. The extreme SuperHyperSet of extreme SuperHyperVertices,* $V = \{V_1, V_2, V_3\}$*, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,* $V = \{V_1, V_2, V_3\}$*, is an **extreme Failed SuperHyperClique*** $\mathcal{C}(ESHG)$ *for an extreme SuperHyperGraph* $ESHG : (V, E)$ *is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,* $V = \{V_1, V_2\}$*. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,* $V = \{V_1, V_2, V_3\}$*, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,* $V = \{V_1, V_2, V_3\}$*, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,* $V = \{V_1, V_2, V_3\}$*, is an extreme Failed SuperHyperClique* $\mathcal{C}(ESHG)$ *for an extreme SuperHyperGraph* $ESHG : (V, E)$ *is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,* $V = \{V_1, V_2, V_3\}$*. Thus the non-obvious extreme Failed SuperHyperClique,* $V = \{V_1, V_2, V_3\}$*, is up. The obvious simple*

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extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not: $V = \{V_1, V_2, V_3\}$, is the extreme SuperHyperSet, not: $V = \{V_1, V_2, V_3\}$, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

***extreme Failed SuperHyperClique**,*

is only and only $V = \{V_1, V_2, V_3\}$ in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling of the Figure 14. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are $V = \{V_1, V_2, V_3\}$. In a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's noted that this extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme graph $G : (V, E)$ thus the notions in both settings are coincided.

- *On the Figure 15, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. $V = \{V_1, V_2, V_3\}$. The extreme SuperHyperSet of extreme SuperHyperVertices, $V = \{V_1, V_2, V_3\}$, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, $V = \{V_1, V_2, V_3\}$, is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices, $V = \{V_1, V_2\}$. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices, $V = \{V_1, V_2, V_3\}$, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices, $V = \{V_1, V_2, V_3\}$, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, $V = \{V_1, V_2, V_3\}$, is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s** **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet, $V = \{V_1, V_2, V_3\}$. Thus the non-obvious extreme Failed SuperHyperClique, $V = \{V_1, V_2, V_3\}$, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not: $V = \{V_1, V_2, V_3\}$, is the extreme SuperHyperSet, not: $V = \{V_1, V_2, V_3\}$, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

  "neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

***extreme Failed SuperHyperClique**,*

is only and only $V = \{V_1, V_2, V_3\}$ in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling of the Figure 15. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are $V = \{V_1, V_2, V_3\}$. In a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's noted that this extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme graph $G : (V, E)$ thus the notions in both settings are coincided. In a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ as Linearly-Connected SuperHyperModel On the Figure 15.

- *On the Figure 16, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. $E_4 \cup \{V_{21}\}$. The extreme SuperHyperSet of extreme SuperHyperVertices, $E_4 \cup \{V_{21}\}$, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, $E_4 \cup \{V_{21}\}$, is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices, E_4. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices, $E_4 \cup \{V_{21}\}$, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices, $E_4 \cup \{V_{21}\}$, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, $E_4 \cup \{V_{21}\}$, is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet, $E_4 \cup \{V_{21}\}$. Thus the non-obvious extreme Failed SuperHyperClique, $E_4 \cup \{V_{21}\}$, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not: $E_4 \cup \{V_{21}\}$, is the extreme SuperHyperSet, not: $E_4 \cup \{V_{21}\}$, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

  "neutrosophic Failed SuperHyperClique"

  amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

  ***extreme Failed SuperHyperClique**,*

is only and only $E_4 \cup \{V_{21}\}$ in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling of the Figure 16. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are $E_4 \cup \{V_{21}\}$. In a connected extreme SuperHyperGraph $ESHG : (V, E)$.

- *On the Figure 17, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. $E_4 \cup \{V_{25}\}$. The extreme SuperHyperSet of extreme SuperHyperVertices, $E_4 \cup \{V_{25}\}$, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, $E_4 \cup \{V_{25}\}$, is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices, E_4. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices, $E_4 \cup \{V_{25}\}$, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices, $E_4 \cup \{V_{25}\}$, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, $E_4 \cup \{V_{25}\}$, is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet, $E_4 \cup \{V_{25}\}$. Thus the non-obvious extreme Failed SuperHyperClique, $E_4 \cup \{V_{25}\}$, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not: $E_4 \cup \{V_{25}\}$, is the extreme SuperHyperSet, not: $E_4 \cup \{V_{25}\}$, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

  "neutrosophic Failed SuperHyperClique"

  amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

  ***extreme Failed SuperHyperClique**,*

  is only and only $E_4 \cup \{V_{25}\}$ in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling of the Figure 16. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are $E_4 \cup \{V_{25}\}$. In a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ as Linearly-over-packed SuperHyperModel is featured On the Figure 17.
- *On the Figure 18, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme*

*SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. $E_4 \cup \{V_{25}\}$. The extreme SuperHyperSet of extreme SuperHyperVertices, $E_4 \cup \{V_{25}\}$, is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices, $E_4 \cup \{V_{25}\}$, is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices, E_4. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices, $E_4 \cup \{V_{25}\}$, doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices, $E_4 \cup \{V_{25}\}$, **is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices, $E_4 \cup \{V_{25}\}$, is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet, $E_4 \cup \{V_{25}\}$. Thus the non-obvious extreme Failed SuperHyperClique, $E_4 \cup \{V_{25}\}$, is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not: $E_4 \cup \{V_{25}\}$, is the extreme SuperHyperSet, not: $E_4 \cup \{V_{25}\}$, does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the*

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

***extreme Failed SuperHyperClique**,*

is only and only $E_4 \cup \{V_{25}\}$ in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling of the Figure 16. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are $E_4 \cup \{V_{25}\}$. In a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$.

- *On the Figure 19, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. There's neither empty SuperHyperEdge nor loop SuperHyperEdge. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.*

$$E_8 \cup \{O_7, L_7, P_7, K_7, J_7, H_7, U_7\},$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$E_8 \cup \{O_7, L_7, P_7, K_7, J_7, H_7, U_7\},$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$E_8 \cup \{O_7, L_7, P_7, K_7, J_7, H_7, U_7\},$$

is an ***extreme Failed SuperHyperClique*** *$\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with* ***the maximum extreme cardinality*** *of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by* ***extreme SuperHyperClique*** *is the extreme SuperHyperSet of the extreme SuperHyperVertices, E_8. There's not only* ***three*** *extreme SuperHyperVertex* ***inside*** *the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet* ***includes*** *only* ***three*** *extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,*

$$E_8 \cup \{O_7, L_7, P_7, K_7, J_7, H_7, U_7\},$$

doesn't have less than four SuperHyperVertices ***inside*** *the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique* ***is*** *up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,*

$$E_8 \cup \{O_7, L_7, P_7, K_7, J_7, H_7, U_7\},$$

is *the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,*

$$E_8 \cup \{O_7, L_7, P_7, K_7, J_7, H_7, U_7\},$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique ***and*** *it's an extreme* ***Failed SuperHyperClique****. Since it****'s the maximum extreme cardinality*** *of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices* ***inside*** *the intended extreme SuperHyperSet,*

$$E_8 \cup \{O_7, L_7, P_7, K_7, J_7, H_7, U_7\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$E_8 \cup \{O_7, L_7, P_7, K_7, J_7, H_7, U_7\},$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$E_8 \cup \{O_7, L_7, P_7, K_7, J_7, H_7, U_7\},$$

is the extreme SuperHyperSet, not:

$$E_8 \cup \{O_7, L_7, P_7, K_7, J_7, H_7, U_7\},$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

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"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

***extreme Failed SuperHyperClique**,*

is only and only

$$E_8 \cup \{O_7, L_7, P_7, K_7, J_7, H_7, U_7\},$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling of the Figure 16. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$E_8 \cup \{O_7, L_7, P_7, K_7, J_7, H_7, U_7\}.$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.

- *On the Figure 20, the SuperHyperNotion, namely, Failed SuperHyperClique, is up. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.*

$$E_6 \cup \{W_6, Z_6, C_7, D_7, P_6, H_7, E_7, W_7\},$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$E_6 \cup \{W_6, Z_6, C_7, D_7, P_6, H_7, E_7, W_7\},$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$E_6 \cup \{W_6, Z_6, C_7, D_7, P_6, H_7, E_7, W_7\},$$

*is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices, E_6. There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,*

$$E_6 \cup \{W_6, Z_6, C_7, D_7, P_6, H_7, E_7, W_7\},$$

*doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,*

$$E_6 \cup \{W_6, Z_6, C_7, D_7, P_6, H_7, E_7, W_7\},$$

***is** the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,*

$$E_6 \cup \{W_6, Z_6, C_7, D_7, P_6, H_7, E_7, W_7\},$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique ***and*** *it's an extreme* ***Failed SuperHyperClique****. Since it****'s the maximum extreme cardinality*** *of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices* ***inside*** *the intended extreme SuperHyperSet,*

$$E_6 \cup \{W_6, Z_6, C_7, D_7, P_6, H_7, E_7, W_7\},$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$E_6 \cup \{W_6, Z_6, C_7, D_7, P_6, H_7, E_7, W_7\},$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$E_6 \cup \{W_6, Z_6, C_7, D_7, P_6, H_7, E_7, W_7\},$$

is the extreme SuperHyperSet, not:

$$E_6 \cup \{W_6, Z_6, C_7, D_7, P_6, H_7, E_7, W_7\},$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique*,*

is only and only

$$E_6 \cup \{W_6, Z_6, C_7, D_7, P_6, H_7, E_7, W_7\},$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling of the Figure 16. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$E_6 \cup \{W_6, Z_6, C_7, D_7, P_6, H_7, E_7, W_7\}.$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.

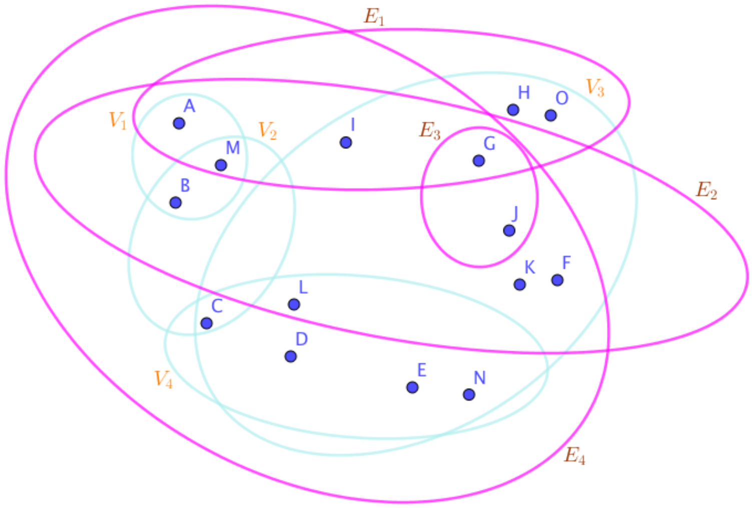

Figure 1. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

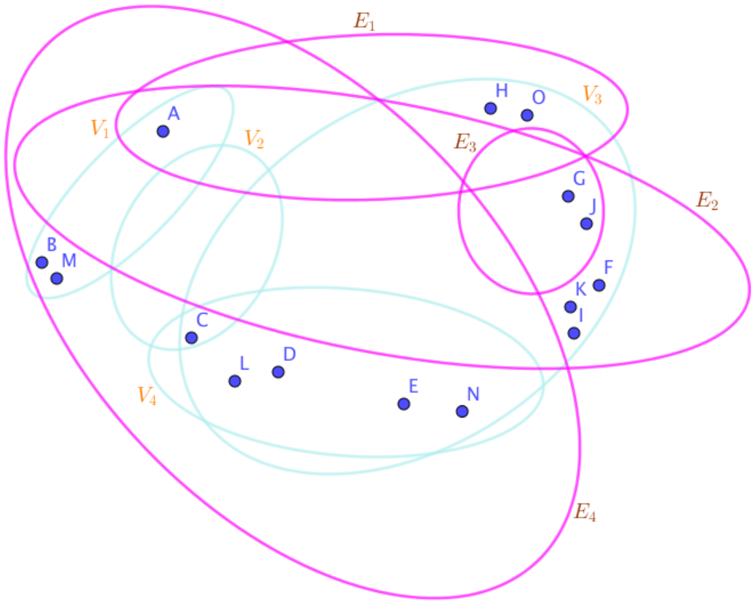

Figure 2. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

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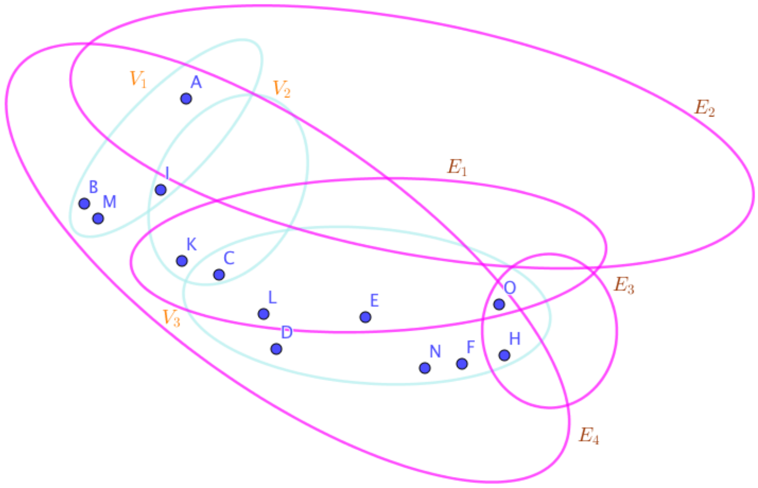

Figure 3. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

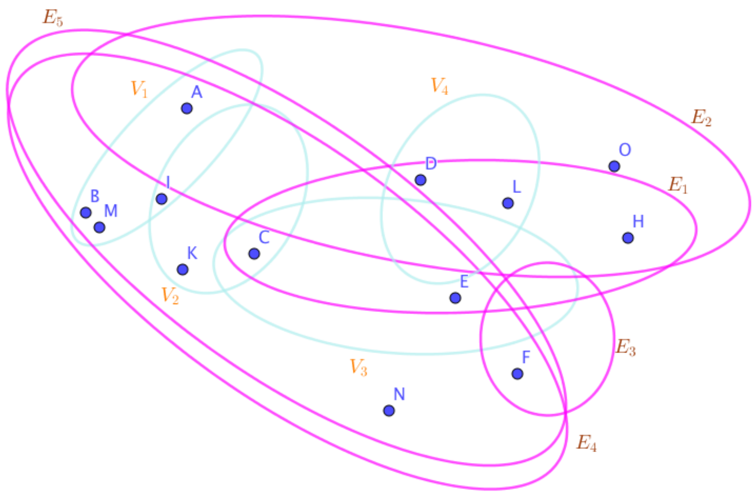

Figure 4. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

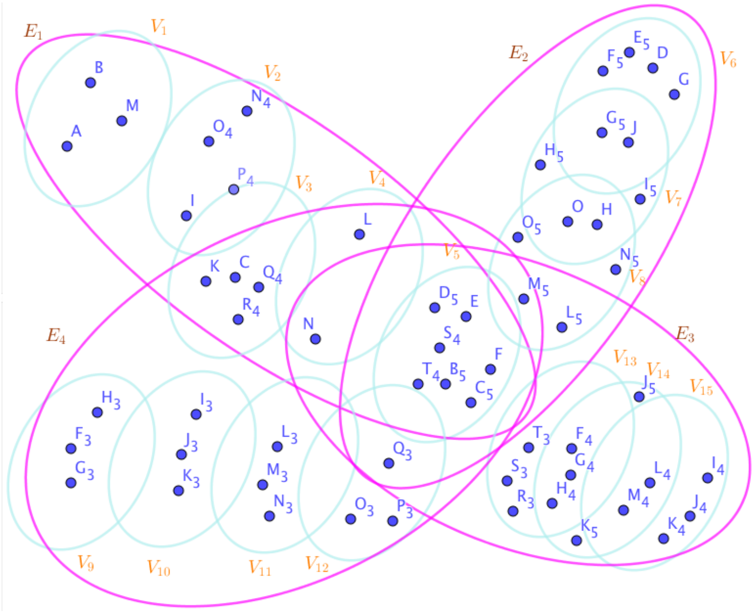

Figure 5. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

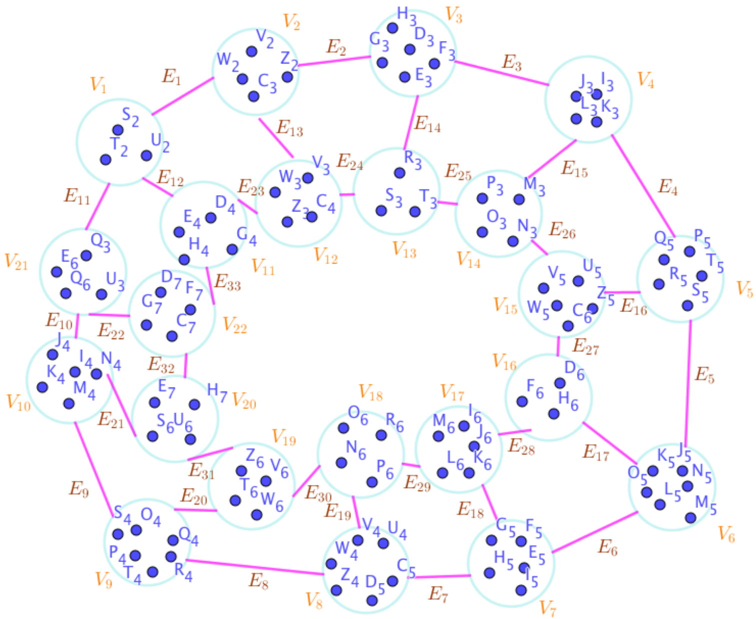

Figure 6. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

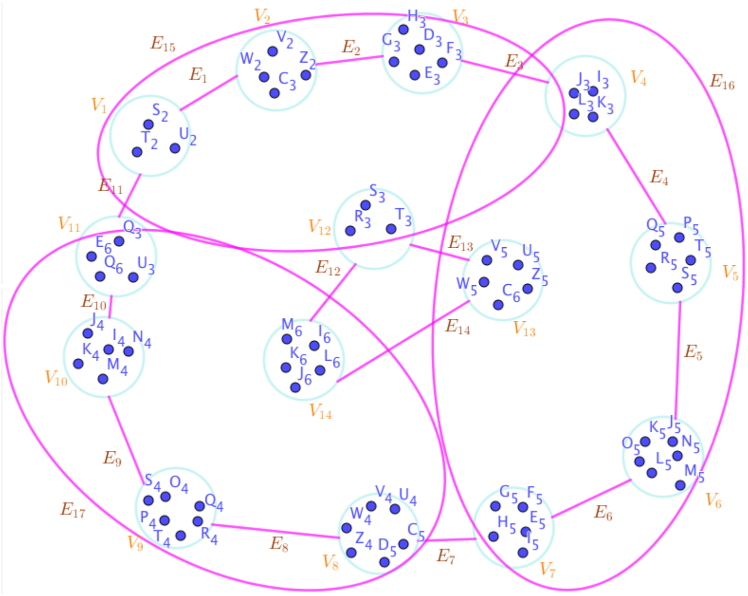

Figure 7. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

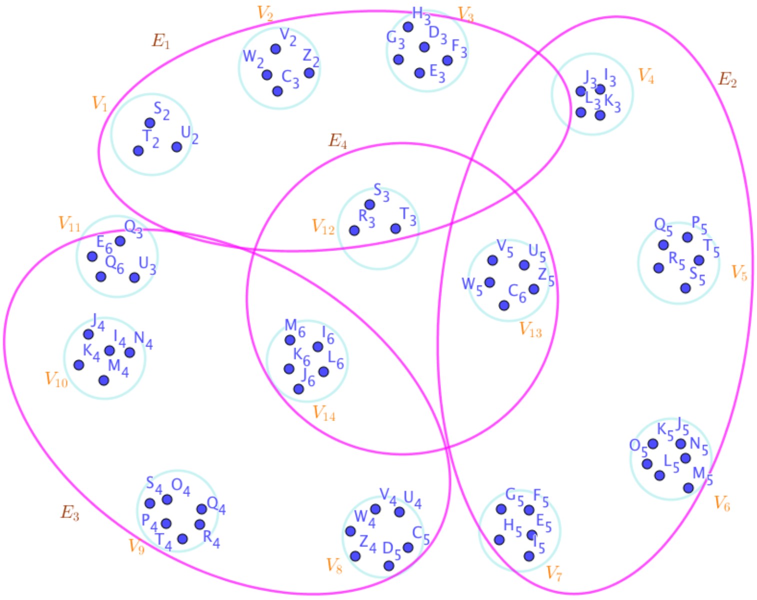

Figure 8. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

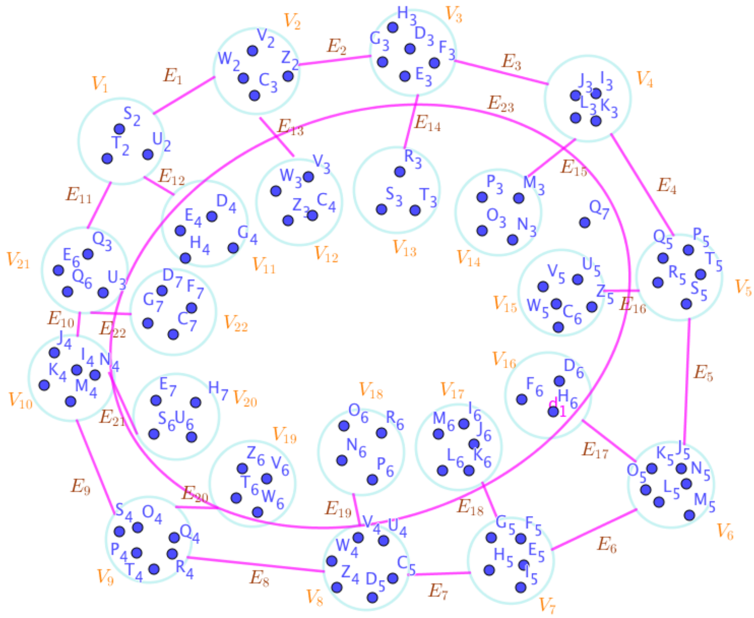

Figure 9. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

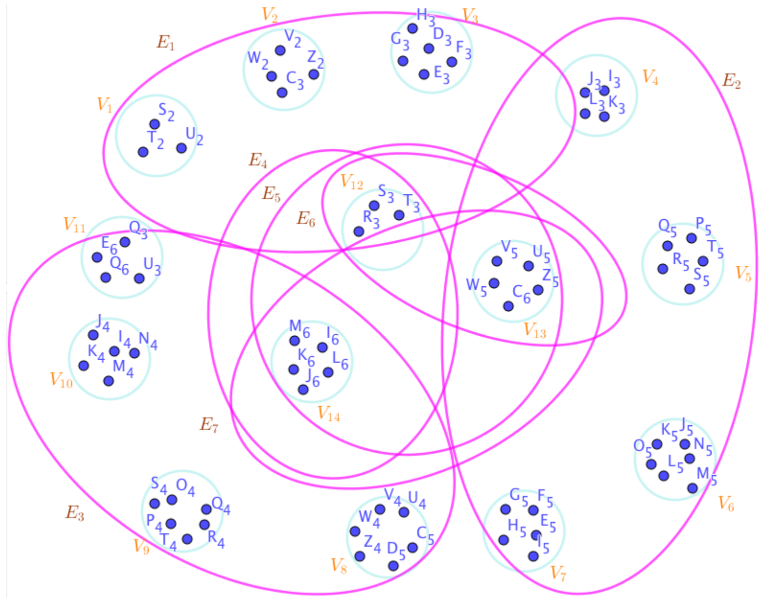

Figure 10. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

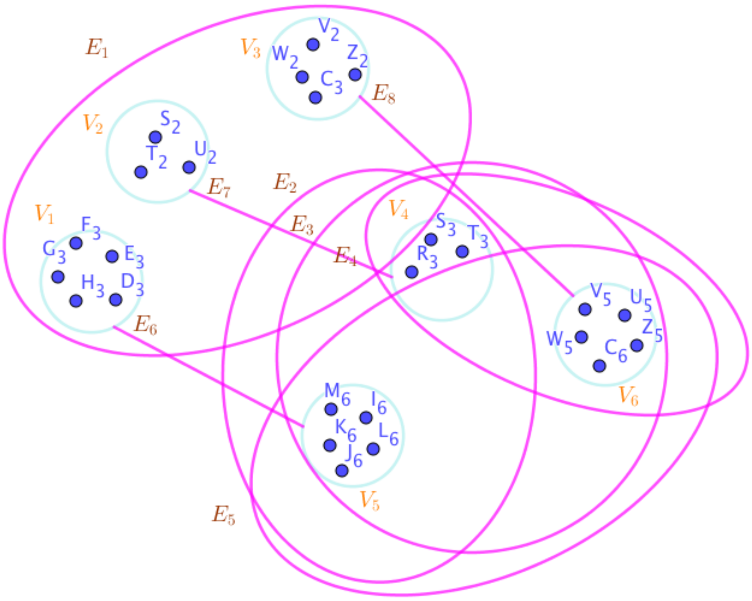

Figure 11. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

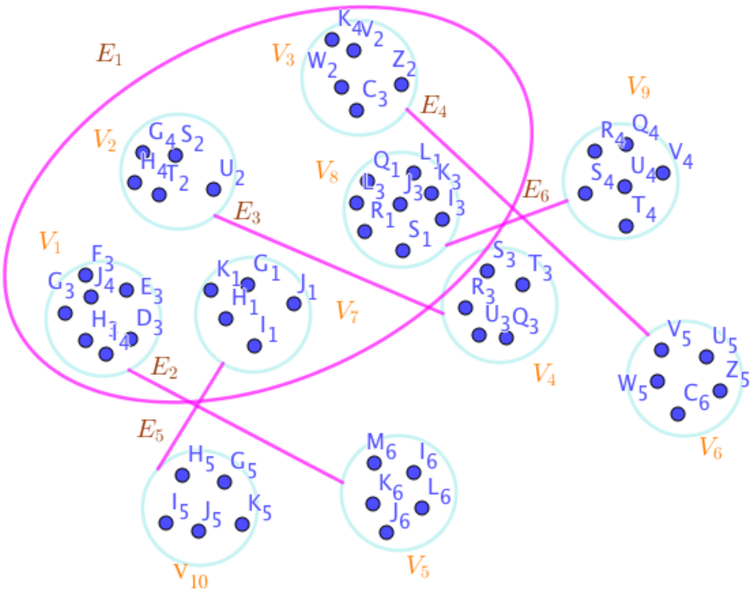

Figure 12. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

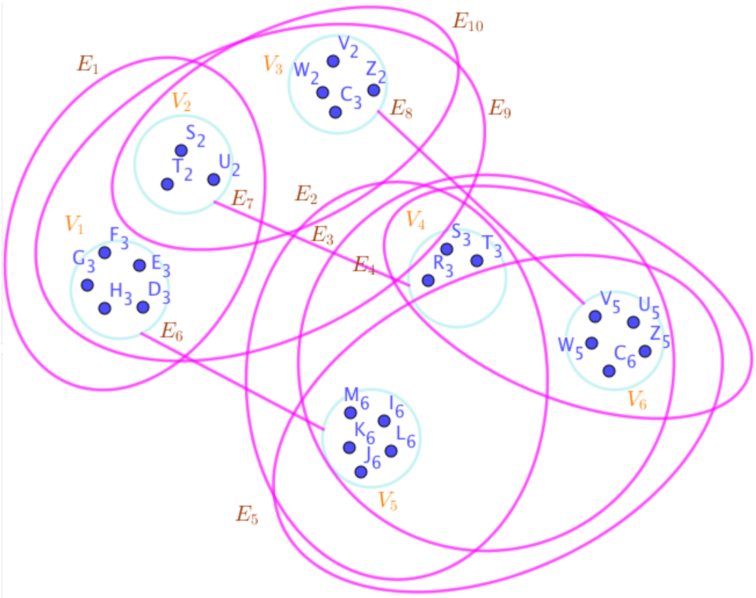

Figure 13. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

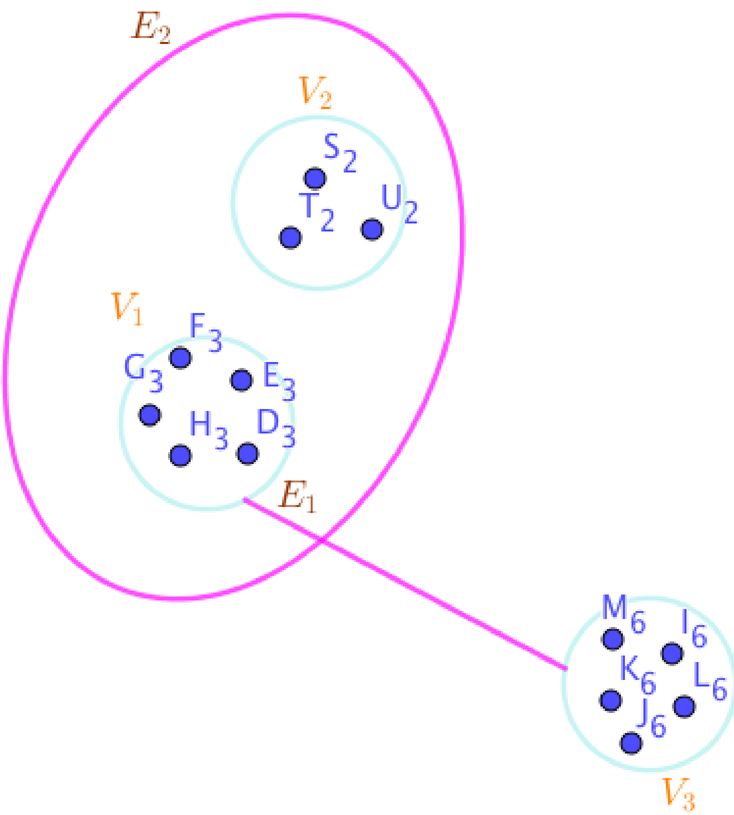

Figure 14. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

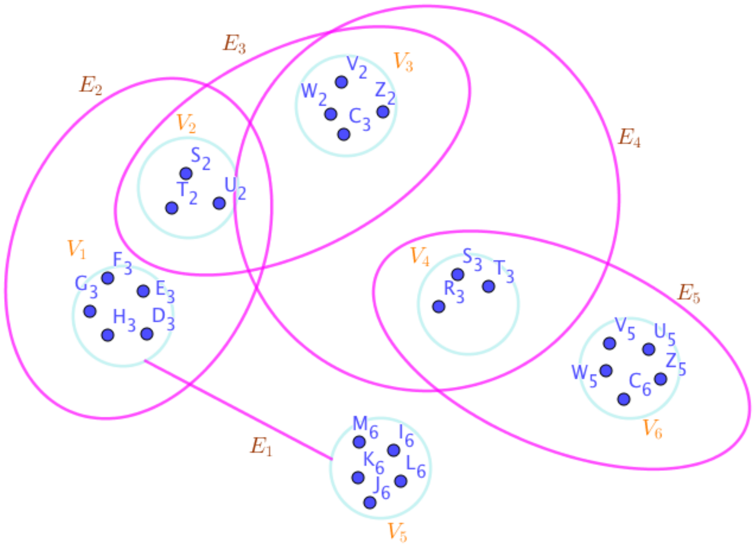

Figure 15. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

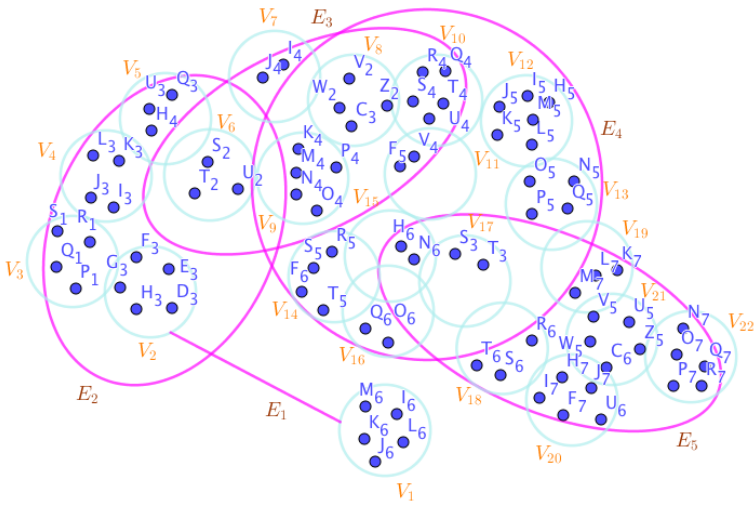

Figure 16. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

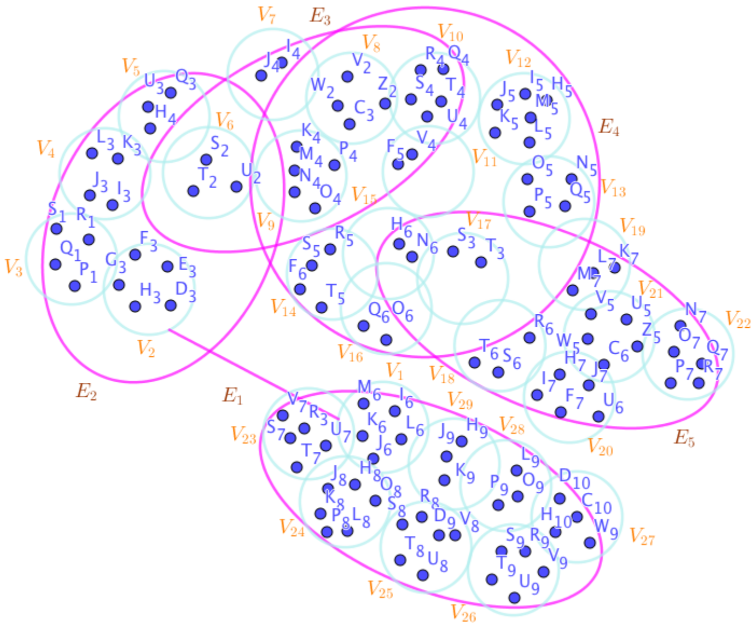

Figure 17. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

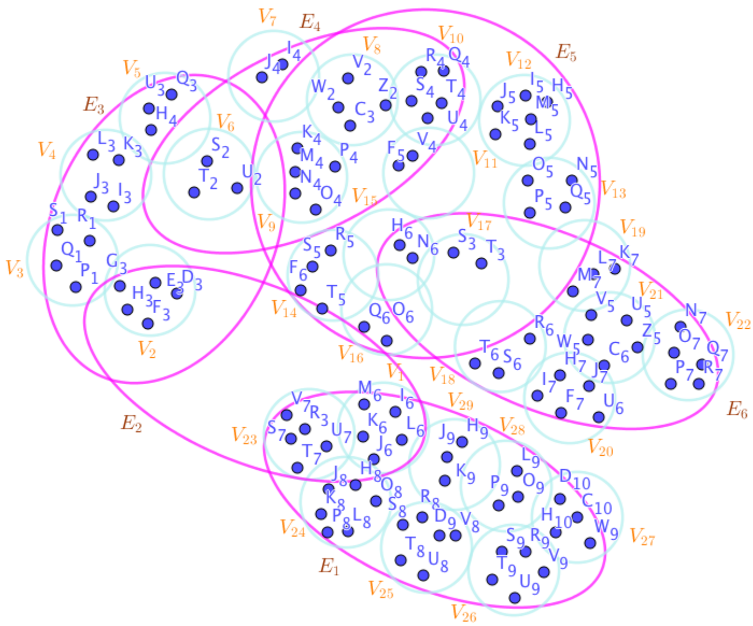

Figure 18. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

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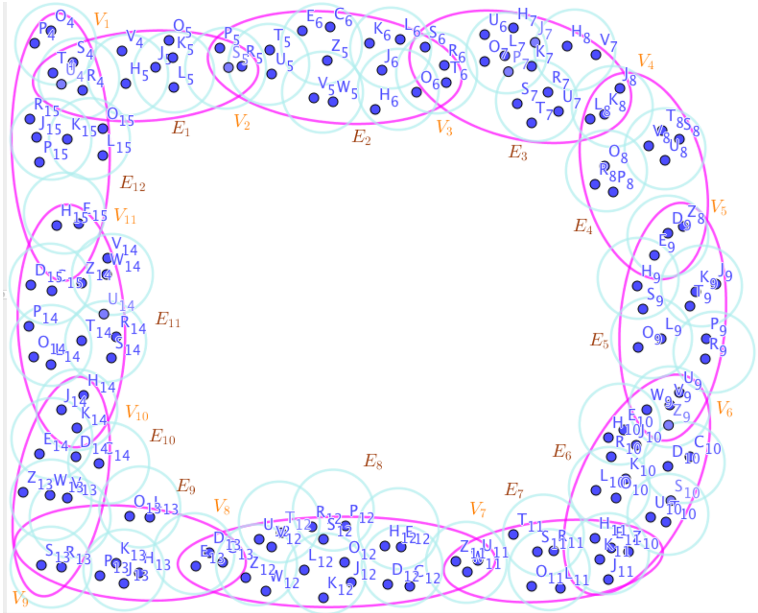

Figure 19. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

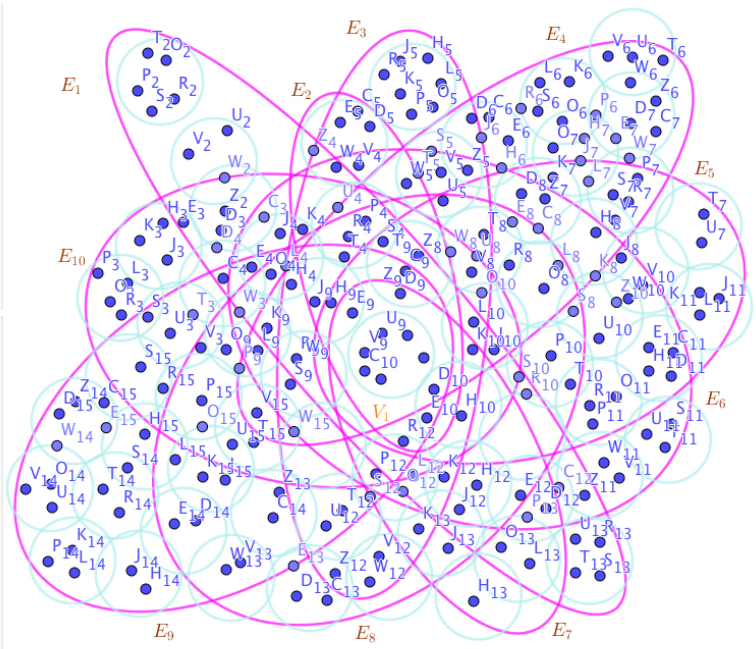

Figure 20. The SuperHyperGraphs Associated to the Notions of Failed SuperHyperClique in the Example (1).

Proposition 5. *Assume a connected loopless neutrosophic SuperHyperGraph $ESHG : (V, E)$. Then in the worst case, literally,*

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is a Failed SuperHyperClique. In other words, the least cardinality, the lower sharp bound for the cardinality, of a Failed SuperHyperClique is the cardinality of $V \setminus V \setminus \{x, z\}$.

Proof. Assume a connected loopless neutrosophic SuperHyperGraph $ESHG : (V, E)$. The SuperHyperSet of the SuperHyperVertices $V \setminus V \setminus \{z\}$ isn't a Failed SuperHyperClique since neither amount of extreme SuperHyperEdges nor amount of SuperHyperVertices where amount refers to the extreme number of SuperHyperVertices(-/SuperHyperEdges) more than one. Let us consider the extreme SuperHyperSet $V \setminus V \setminus \{x, y, z\}$. This extreme SuperHyperSet of the extreme SuperHyperVertices has the eligibilities to propose some amount of extreme SuperHyperEdges for some amount of the extreme SuperHyperVertices taken from the mentioned extreme SuperHyperSet and it has the maximum extreme cardinality amid those extreme type-SuperHyperSets but the minimum case of the maximum extreme cardinality indicates that these extreme type-SuperHyperSets couldn't give us the extreme lower bound in the term of extreme sharpness. In other words, the extreme SuperHyperSet $V \setminus V \setminus \{x, y, z\}$ of the extreme SuperHyperVertices implies at least on-triangle style is up but sometimes the extreme SuperHyperSet $V \setminus V \setminus \{x, y, z\}$ of the extreme SuperHyperVertices is free-triangle and it doesn't make a contradiction to the supposition on the connected loopless neutrosophic SuperHyperGraph $ESHG : (V, E)$. Thus the minimum case never happens in the generality of the connected loopless neutrosophic SuperHyperGraphs. Thus if we assume in the worst case, literally, $V \setminus V \setminus \{x, y, z\}$, is a Failed SuperHyperClique. In other words, the least cardinality, the lower sharp bound for the cardinality, of a Failed SuperHyperClique is the cardinality of $V \setminus V \setminus \{x, y, z\}$. Then we've lost some connected loopless neutrosophic SuperHyperClasses of the connected loopless neutrosophic SuperHyperGraphs titled free-triangle. It's the contradiction to that fact on the generality. There are some counterexamples to deny this statement. One of them comes from the setting of the graph titled path and cycle are well-known classes in that setting and they could be considered as the examples for the tight bound of $V \setminus V \setminus \{x, z\}$. Let $V \setminus V \setminus \{z\}$ in mind. There's no necessity on the SuperHyperEdge since we need at least two SuperHyperVertices to form a SuperHyperEdge. It doesn't withdraw the principles of the main definition since there's no condition to be satisfied but the condition is on the existence of the SuperHyperEdge instead of acting on the SuperHyperVertices. In other words, if there's a SuperHyperEdge, then the extreme SuperHyperSet has the necessary condition for the intended definition to be applied. Thus the $V \setminus V \setminus \{z\}$ is withdrawn not by the conditions of the main definition but by the necessity of the pre-condition on the usage of the main definition.
To make sense with precise words in the terms of "Failed", the follow-up illustrations are coming up. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

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is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V,E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}).$$

There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V,E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the extreme SuperHyperSet, not:

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.
To sum them up, assume a connected loopless neutrosophic SuperHyperGraph $ESHG : (V, E)$. Then in the worst case, literally,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is a Failed SuperHyperClique. In other words, the least cardinality, the lower sharp bound for the cardinality, of a Failed SuperHyperClique is the cardinality of $V \setminus V \setminus \{x, z\}$. □

Proposition 6. *Assume a simple neutrosophic SuperHyperGraph $ESHG : (V, E)$. Then the extreme number of Failed SuperHyperClique has, the least cardinality, the lower sharp bound for cardinality, is the extreme cardinality of*

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

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or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

if there's a Failed SuperHyperClique with the least cardinality, the lower sharp bound for cardinality.

Proof. The extreme structure of the extreme Failed SuperHyperClique decorates the extreme SuperHyperVertices have received complete extreme connections so as this extreme style implies different versions of extreme SuperHyperEdges with the maximum extreme cardinality in the terms of extreme SuperHyperVertices are spotlight. The lower extreme bound is to have the minimum extreme groups of extreme SuperHyperVertices have perfect extreme connections inside and the outside of this extreme SuperHyperSet doesn't matter but regarding the connectedness of the used extreme SuperHyperGraph arising from its extreme properties taken from the fact that it's simple. If there's no extreme SuperHyperVertex in the targeted extreme SuperHyperSet, then there's no extreme connection. Furthermore, the extreme existence of one extreme SuperHyperVertex has no extreme effect to talk about the extreme Failed SuperHyperClique. Since at least two extreme SuperHyperVertices involve to make a title in the extreme background of the extreme SuperHyperGraph. The extreme SuperHyperGraph is obvious if it has no extreme SuperHyperEdge but at least two extreme SuperHyperVertices make the extreme version of extreme SuperHyperEdge. Thus in the extreme setting of non-obvious extreme SuperHyperGraph, there are at least one extreme SuperHyperEdge. It's necessary to mention that the word "Simple" is used as extreme adjective for the initial extreme SuperHyperGraph, induces there's no extreme appearance of the loop extreme version of the extreme SuperHyperEdge and this extreme SuperHyperGraph is said to be loopless. The extreme adjective "loop" on the basic extreme framework engages one extreme SuperHyperVertex but it never happens in this extreme setting. With these extreme bases, on an extreme SuperHyperGraph, there's at least one extreme SuperHyperEdge thus there's at least an extreme Failed SuperHyperClique has the extreme cardinality two. Thus, an extreme Failed SuperHyperClique has the extreme cardinality at least two. Assume an extreme SuperHyperSet $V \setminus V \setminus \{z\}$. This extreme SuperHyperSet isn't an extreme Failed SuperHyperClique since either the extreme SuperHyperGraph is an obvious extreme SuperHyperModel thus it never happens since there's no extreme usage of this extreme framework and even more there's no extreme connection inside or the extreme SuperHyperGraph isn't obvious and as its consequences, there's an extreme contradiction with the term "extreme Failed SuperHyperClique" since the maximum extreme cardinality never happens for this extreme style of the extreme SuperHyperSet and beyond that there's no extreme connection inside as mentioned in first extreme case in the forms of drawback for this selected extreme SuperHyperSet. Let $V \setminus V \setminus \{x, y, z\}$ comes up. This extreme case implies having the extreme style of on-triangle extreme style on the every extreme elements of this extreme SuperHyperSet. Precisely, the extreme Failed SuperHyperClique is the extreme SuperHyperSet of the extreme SuperHyperVertices such that any extreme amount of the extreme SuperHyperVertices are on-triangle extreme style. The extreme cardinality of the v SuperHypeSet $V \setminus V \setminus \{x, y, z\}$ is the maximum in comparison to the extreme SuperHyperSet $V \setminus V \setminus \{z, x\}$ but the lower extreme bound is up. Thus the minimum extreme cardinality of the maximum extreme cardinality ends up the extreme discussion. The first extreme term refers to the extreme setting of the extreme SuperHyperGraph but this key point is enough since there's an extreme SuperHyperClass of an extreme SuperHyperGraph has no on-triangle extreme style amid any amount of its extreme SuperHyperVertices. This extreme setting of the extreme SuperHyperModel proposes an extreme SuperHyperSet has only two extreme SuperHyperVertices such that there's extreme amount of extreme SuperHyperEdges involving these two extreme SuperHyperVertices. The extreme cardinality of this extreme SuperHyperSet is the maximum and the extreme case is occurred in the minimum extreme situation. To sum them up, the extreme SuperHyperSet $V \setminus V \setminus \{z, x\}$ has the maximum extreme cardinality such that $V \setminus V \setminus \{z, x\}$ contains some extreme SuperHyperVertices such that there's amount extreme SuperHyperEdges for amount of extreme SuperHyperVertices taken from the extreme SuperHyperSet $V \setminus V \setminus \{z, x\}$. It means that the extreme SuperHyperSet

of the extreme SuperHyperVertices $V \setminus V \setminus \{z, x\}$. is an extreme Failed SuperHyperClique for the extreme SuperHyperGraph as used extreme background in the extreme terms of worst extreme case and the lower extreme bound occurred in the specific extreme SuperHyperClasses of the extreme SuperHyperGraphs which are extreme free-triangle.
To make sense with precise words in the terms of "Failed", the follow-up illustrations are coming up. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}).$$

There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

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is the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the extreme SuperHyperSet, not:

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.
To sum them up, assume a simple neutrosophic SuperHyperGraph $ESHG : (V, E)$. Then the extreme number of Failed SuperHyperClique has, the least cardinality, the lower sharp bound for cardinality, is the extreme cardinality of

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

if there's a Failed SuperHyperClique with the least cardinality, the lower sharp bound for cardinality. □

Proposition 7. *Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. If an extreme SuperHyperEdge has z extreme SuperHyperVertices, then the extreme cardinality of the extreme Failed SuperHyperClique is at least*

$$z \cup \{zx\}$$

It's straightforward that the extreme cardinality of the extreme Failed SuperHyperClique is at least the maximum extreme number of extreme SuperHyperVertices of the extreme SuperHyperEdges. In other words, the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices are renamed to extreme Failed SuperHyperClique in some cases but the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices, has the extreme SuperHyperVertices are contained in an extreme Failed SuperHyperClique.

Proof. Assume an extreme SuperHyperEdge has z extreme number of the extreme SuperHyperVertices. Then every extreme SuperHyperVertex has at least one extreme SuperHyperEdge with others in common. Thus those extreme SuperHyperVertices have the eligibles to be contained in an extreme Failed SuperHyperClique. Those extreme SuperHyperVertices are potentially included in an extreme style-Failed SuperHyperClique. Formally, consider

$$\{Z_1, Z_2, \ldots, Z_z\}$$

are the extreme SuperHyperVertices of an extreme SuperHyperEdge. Thus

$$Z_i \sim Z_j,\ i \neq j,\ i,j = 1,2,\ldots,z.$$

where the $\sim$ isn't an equivalence relation but only the symmetric relation on the extreme SuperHyperVertices of the extreme SuperHyperGraph. The formal definition is as follows.

$$Z_i \sim Z_j,\ i \neq j,\ i,j = 1,2,\ldots,z$$

if and only if Z_i and Z_j are the extreme SuperHyperVertices and there's an extreme SuperHyperEdge between the extreme SuperHyperVertices Z_i and Z_j. The other definition for the extreme SuperHyperEdge in the terms of extreme Failed SuperHyperClique is

$$\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j, \; i \neq j, \; i, j = 1, 2, \ldots, z\}.$$

This definition coincides with the definition of the extreme Failed SuperHyperClique but with slightly differences in the maximum extreme cardinality amid those extreme type-SuperHyperSets of the extreme SuperHyperVertices. Thus the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$\max_z |\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j, \; i \neq j, \; i, j = 1, 2, \ldots, z\}|_{\text{extreme cardinality}},$$

is formalized with mathematical literatures on the extreme Failed SuperHyperClique. Let $Z_i \overset{E}{\sim} Z_j$, be defined as Z_i and Z_j are the extreme SuperHyperVertices belong to the extreme SuperHyperEdge E. Thus,

$$E = \{Z_1, Z_2, \ldots, Z_z \mid Z_i \overset{E}{\sim} Z_j, \; i \neq j, \; i, j = 1, 2, \ldots, z\}.$$

But with the slightly differences,

$$\text{extreme Failed SuperHyperClique} = \{Z_1, Z_2, \ldots, Z_z \mid \forall i \neq j, \; i, j = 1, 2, \ldots, z, \; \exists E_x, \; Z_i \overset{E_x}{\sim} Z_j, \}.$$

Thus E is an extreme quasi-Failed SuperHyperClique where E is fixed that means $E_x = E$. for all extreme intended SuperHyperVertices but in an extreme Failed SuperHyperClique, E_x could be different and it's not unique. To sum them up, in a connected extreme SuperHyperGraph $ESHG : (V, E)$. If an extreme SuperHyperEdge has z extreme SuperHyperVertices, then the extreme cardinality of the extreme Failed SuperHyperClique is at least z. It's straightforward that the extreme cardinality of the extreme Failed SuperHyperClique is at least the maximum extreme number of extreme SuperHyperVertices of the extreme SuperHyperEdges. In other words, the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices are renamed to extreme Failed SuperHyperClique in some cases but the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices, has the extreme SuperHyperVertices are contained in an extreme Failed SuperHyperClique.
To make sense with precise words in the terms of "Failed", the follow-up illustrations are coming up. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}).$$

There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the extreme SuperHyperSet, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V,E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V,E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

In a connected extreme SuperHyperGraph $ESHG : (V,E)$.
To sum them up, assume a connected extreme SuperHyperGraph $ESHG : (V,E)$. If an extreme SuperHyperEdge has z extreme SuperHyperVertices, then the extreme cardinality of the extreme Failed SuperHyperClique is at least

$$z \cup \{zx\}$$

It's straightforward that the extreme cardinality of the extreme Failed SuperHyperClique is at least the maximum extreme number of extreme SuperHyperVertices of the extreme SuperHyperEdges. In other words, the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices are renamed to extreme Failed SuperHyperClique in some cases but the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices, has the extreme SuperHyperVertices are contained in an extreme Failed SuperHyperClique. □

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Proposition 8. *Assume a connected non-obvious extreme SuperHyperGraph $ESHG : (V, E)$. There's only one extreme SuperHyperEdge has only less than three distinct interior extreme SuperHyperVertices inside of any given extreme quasi-Failed SuperHyperClique plus one extreme SuperHypeNeighbor to one of them. In other words, there's only an unique extreme SuperHyperEdge has only two distinct extreme SuperHyperVertices in an extreme quasi-Failed SuperHyperClique, plus one extreme SuperHypeNeighbor to one of them.*

Proof. The obvious SuperHyperGraph has no SuperHyperEdges. But the non-obvious extreme SuperHyperModel is up. The quasi-SuperHyperModel addresses some issues about the extreme optimal SuperHyperObject. It specially delivers some remarks on the extreme SuperHyperSet of the extreme SuperHyperVertices such that there's amount of extreme SuperHyperEdges for amount of extreme SuperHyperVertices taken from that extreme SuperHyperSet of the extreme SuperHyperVertices but this extreme SuperHyperSet of the extreme SuperHyperVertices is either has the maximum extreme SuperHyperCardinality or it doesn't have maximum extreme SuperHyperCardinality. In a non-obvious SuperHyperModel, there's at least one extreme SuperHyperEdge containing at least two extreme SuperHyperVertices. Thus it forms an extreme quasi-Failed SuperHyperClique where the extreme completion of the extreme incidence is up in that. Thus it's, literarily, an extreme embedded Failed SuperHyperClique. The SuperHyperNotions of embedded SuperHyperSet and quasi-SuperHyperSet coincide. In the original setting, these types of SuperHyperSets only don't satisfy on the maximum SuperHyperCardinality. Thus the embedded setting is elected such that those SuperHyperSets have the maximum extreme SuperHyperCardinality and they're extreme SuperHyperOptimal. The less than three extreme SuperHyperVertices are included in the minimum extreme style of the embedded extreme Failed SuperHyperClique. The interior types of the extreme SuperHyperVertices are deciders. Since the extreme number of SuperHyperNeighbors are only affected by the interior extreme SuperHyperVertices. The common connections, more precise and more formal, the perfect connections inside the extreme SuperHyperSet pose the extreme Failed SuperHyperClique. Thus extreme exterior SuperHyperVertices could be used only in one extreme SuperHyperEdge and in extreme SuperHyperRelation with the interior extreme SuperHyperVertices in that extreme SuperHyperEdge. In the embedded extreme Failed SuperHyperClique, there's the usage of exterior extreme SuperHyperVertices since they've more connections inside more than outside. Thus the title "exterior" is more relevant than the title "interior". One extreme SuperHyperVertex has no connection, inside. Thus, the extreme SuperHyperSet of the extreme SuperHyperVertices with one SuperHyperElement has been ignored in the exploring to lead on the optimal case implying the extreme Failed SuperHyperClique. The extreme Failed SuperHyperClique with the exclusion of the exclusion of two extreme SuperHyperVertices and with other terms, the extreme Failed SuperHyperClique with the inclusion of two extreme SuperHyperVertices is an extreme quasi-Failed SuperHyperClique. To sum them up, in a connected non-obvious extreme SuperHyperGraph $ESHG : (V, E)$, there's only one extreme SuperHyperEdge has only less than three distinct interior extreme SuperHyperVertices inside of any given extreme quasi-Failed SuperHyperClique. In other words, there's only an unique extreme SuperHyperEdge has only two distinct extreme SuperHyperVertices in an extreme quasi-Failed SuperHyperClique.
To make sense with precise words in the terms of "Failed", the follow-up illustrations are coming up. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V,E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}).$$

There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V,E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the extreme SuperHyperSet, not:

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.
To sum them up, assume a connected non-obvious extreme SuperHyperGraph $ESHG : (V, E)$.

There's only one extreme SuperHyperEdge has only less than three distinct interior extreme SuperHyperVertices inside of any given extreme quasi-Failed SuperHyperClique plus one extreme SuperHypeNeighbor to one of them. In other words, there's only an unique extreme SuperHyperEdge has only two distinct extreme SuperHyperVertices in an extreme quasi-Failed SuperHyperClique, plus one extreme SuperHypeNeighbor to one of them. □

Proposition 9. *Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. The all interior extreme SuperHyperVertices belong to any extreme quasi-Failed SuperHyperClique if for any of them, and any of other corresponded extreme SuperHyperVertex, the two interior extreme SuperHyperVertices are mutually extreme SuperHyperNeighbors with no extreme exception at all plus one extreme SuperHypeNeighbor to one of them.*

Proof. The main definition of the extreme Failed SuperHyperClique has two titles. An extreme quasi-Failed SuperHyperClique and its corresponded quasi-maximum extreme SuperHyperCardinality are two titles in the terms of quasi-styles. For any extreme number, there's an extreme quasi-Failed SuperHyperClique with that quasi-maximum extreme SuperHyperCardinality in the terms of the embedded extreme SuperHyperGraph. If there's an embedded extreme SuperHyperGraph, then the extreme quasi-SuperHyperNotions lead us to take the collection of all the extreme quasi-Failed SuperHyperCliques for all extreme numbers less than its extreme corresponded maximum number. The essence of the extreme Failed SuperHyperClique ends up but this essence starts up in the terms of the extreme quasi-Failed SuperHyperClique, again and more in the operations of collecting all the extreme quasi-Failed SuperHyperCliques acted on the all possible used formations of the extreme SuperHyperGraph to achieve one extreme number. This extreme number is considered as the equivalence class for all corresponded quasi-Failed SuperHyperCliques. Let $z_{\text{Extreme Number}}$, $S_{\text{Extreme SuperHyperSet}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme number, an extreme SuperHyperSet and an extreme Failed SuperHyperClique. Then

$$[z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}}\}.$$

As its consequences, the formal definition of the extreme Failed SuperHyperClique is re-formalized and redefined as follows.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}}\}.$$

To get more precise perceptions, the follow-up expressions propose another formal technical definition for the extreme Failed SuperHyperClique.

$$\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.
\end{aligned}$$

In more concise and more convenient ways, the modified definition for the extreme Failed SuperHyperClique poses the upcoming expressions.

$$\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.
\end{aligned}$$

To translate the statement to this mathematical literature, the formulae will be revised.

$$\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.
\end{aligned}$$

And then,

$$\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.
\end{aligned}$$

To get more visions in the closer look-up, there's an overall overlook.

$$\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= 2\}.
\end{aligned}$$

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= 2\}.
\end{aligned}
$$

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.
\end{aligned}
$$

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.
\end{aligned}
$$

Now, the extension of these types of approaches is up. Since the new term, "extreme SuperHyperNeighborhood", could be redefined as the collection of the extreme SuperHyperVertices such that any amount of its extreme SuperHyperVertices are incident to an extreme SuperHyperEdge. It's, literarily, another name for "extreme Quasi-Failed SuperHyperClique" but, precisely, it's the generalization of "extreme Quasi-Failed SuperHyperClique" since "extreme Quasi-Failed SuperHyperClique" happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and background but "extreme SuperHyperNeighborhood" may not happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and preliminarily background since there are some ambiguities about the extreme SuperHyperCardinality arise from it. To get orderly keywords, the terms, "extreme SuperHyperNeighborhood", "extreme Quasi-Failed SuperHyperClique", and "extreme Failed SuperHyperClique" are up.
Thus, let $z_{\text{Extreme Number}}$, $N_{\text{Extreme SuperHyperNeighborhood}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme number, an extreme SuperHyperNeighborhood and an extreme Failed SuperHyperClique and the new terms are up.

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid \\
&|N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\
&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.
\end{aligned}
$$

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$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid \\
&|N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}} \mid \\
&|N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\
&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.
\end{aligned}
$$

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\
&|N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\
&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.
\end{aligned}
$$

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\
&|N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.
\end{aligned}
$$

And with go back to initial structure,

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid \\
&|N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\
&= 2\}.
\end{aligned}
$$

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid \\
&|N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}} \mid \\
&|N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\
&= 2\}.
\end{aligned}
$$

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\
&|N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} \\
&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.
\end{aligned}
$$

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\
&|N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.
\end{aligned}
$$

Thus, in a connected extreme SuperHyperGraph $ESHG : (V, E)$, the all interior extreme SuperHyperVertices belong to any extreme quasi-Failed SuperHyperClique if for any of them, and any of other corresponded extreme SuperHyperVertex, the two interior extreme SuperHyperVertices are mutually extreme SuperHyperNeighbors with no extreme exception at all.
To make sense with precise words in the terms of "Failed", the follow-up illustrations are coming up. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}).$$

There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

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is the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the extreme SuperHyperSet, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.
To sum them up, aAssume a connected extreme SuperHyperGraph $ESHG : (V, E)$. The all interior extreme SuperHyperVertices belong to any extreme quasi-Failed SuperHyperClique if for any of them, and any of other corresponded extreme SuperHyperVertex, the two interior extreme SuperHyperVertices are mutually extreme SuperHyperNeighbors with no extreme exception at all plus one extreme SuperHypeNeighbor to one of them. □

Proposition 10. *Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. The any extreme Failed SuperHyperClique only contains all interior extreme SuperHyperVertices and all exterior extreme SuperHyperVertices from the unique extreme SuperHyperEdge where there's any of them has all possible extreme SuperHyperNeighbors in and there's all extreme SuperHyperNeighborhoods in with no exception plus one extreme SuperHypeNeighbor to one of them but everything is possible about extreme SuperHyperNeighborhoods and extreme SuperHyperNeighbors out plus one extreme SuperHypeNeighbor to one of them.*

Proof. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. Let an extreme SuperHyperEdge $ESHE$ has some extreme SuperHyperVertices r. Consider all extreme numbers of those extreme SuperHyperVertices from that extreme SuperHyperEdge excluding excluding more than r distinct extreme SuperHyperVertices, exclude to any given extreme SuperHyperSet of the extreme SuperHyperVertices. Consider there's an extreme Failed SuperHyperClique with the least cardinality, the lower sharp extreme bound for extreme cardinality. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \setminus \{z\}$ is an extreme SuperHyperSet S of the extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common but it isn't an extreme Failed SuperHyperClique. Since it doesn't have **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have a some SuperHyperVertices in common. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \cup \{z\}$ is the maximum extreme cardinality of an extreme SuperHyperSet S of extreme SuperHyperVertices but it isn't an extreme Failed SuperHyperClique. Since it **doesn't do** the extreme procedure such that such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common [there are at least one extreme SuperHyperVertex outside implying there's, sometimes in the connected extreme SuperHyperGraph $ESHG : (V, E)$, an extreme SuperHyperVertex, titled its extreme SuperHyperNeighbor, to that extreme SuperHyperVertex in the extreme SuperHyperSet S so as S doesn't do "the extreme procedure".]. There's only **one** extreme SuperHyperVertex **outside** the intended extreme SuperHyperSet, $V_{ESHE} \cup \{z\}$, in the terms of extreme SuperHyperNeighborhood. Thus the obvious extreme Failed SuperHyperClique, V_{ESHE} is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, V_{ESHE}, **is** an extreme SuperHyperSet, V_{ESHE}, **includes** only **all** extreme SuperHyperVertices does forms any kind of extreme pairs are titled extreme SuperHyperNeighbors in a connected extreme SuperHyperGraph $ESHG : (V, E)$. Since the extreme SuperHyperSet of the

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extreme SuperHyperVertices V_{ESHE}, is the **maximum extreme SuperHyperCardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices **such that** there's an extreme SuperHyperEdge to have an extreme SuperHyperVertex in common. Thus, a connected extreme SuperHyperGraph $ESHG : (V,E)$. The any extreme Failed SuperHyperClique only contains all interior extreme SuperHyperVertices and all exterior extreme SuperHyperVertices from the unique extreme SuperHyperEdge where there's any of them has all possible extreme SuperHyperNeighbors in and there's all extreme SuperHyperNeighborhoods in with no exception but everything is possible about extreme SuperHyperNeighborhoods and extreme SuperHyperNeighbors out.
To make sense with precise words in the terms of "Failed", the follow-up illustrations are coming up. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}.$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V,E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}).$$

There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the extreme SuperHyperSet, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

“neutrosophic Failed SuperHyperClique”

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.
To sum them up, assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. The any extreme Failed SuperHyperClique only contains all interior extreme SuperHyperVertices and all exterior extreme SuperHyperVertices from the unique extreme SuperHyperEdge where there's any of them has all possible extreme SuperHyperNeighbors in and there's all extreme SuperHyperNeighborhoods in with no exception plus one extreme SuperHypeNeighbor to one of them but everything is possible about extreme SuperHyperNeighborhoods and extreme SuperHyperNeighbors out plus one extreme SuperHypeNeighbor to one of them.
□

Remark 1. *The words “ extreme Failed SuperHyperClique” and “extreme SuperHyperDominating” both refer to the maximum extreme type-style. In other words, they either refer to the maximum extreme SuperHyperNumber or to the minimum extreme SuperHyperNumber and the extreme SuperHyperSet either with the maximum extreme SuperHyperCardinality or with the minimum extreme SuperHyperCardinality.*

Proposition 11. *Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. Consider an extreme SuperHyperDominating. Then an extreme Failed SuperHyperClique has only one extreme representative minus one extreme SuperHypeNeighbor to one of them in.*

Proof. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. Consider an extreme SuperHyperDominating. By applying the Proposition (10), the extreme results are up. Thus on a connected extreme SuperHyperGraph $ESHG : (V, E)$, and in an extreme SuperHyperDominating, an extreme Failed SuperHyperClique has only one extreme representative minus one extreme SuperHypeNeighbor to one of them in. □

3. Results on Extreme SuperHyperClasses

The previous extreme approaches apply on the upcoming extreme results on extreme SuperHyperClasses.

Proposition 12. *Assume a connected extreme SuperHyperPath $ESHP : (V, E)$. Then an extreme Failed SuperHyperClique-style with the maximum extreme SuperHyperCardinality is an extreme SuperHyperSet of the interior extreme SuperHyperVertices plus one extreme SuperHypeNeighbor to one.*

Proposition 13. *Assume a connected extreme SuperHyperPath $ESHP : (V, E)$. Then an extreme Failed SuperHyperClique is an extreme SuperHyperSet of the interior extreme SuperHyperVertices with only no extreme exceptions in the form of interior extreme SuperHyperVertices from the unique extreme SuperHyperEdges not excluding only any interior extreme SuperHyperVertices from the extreme unique SuperHyperEdges plus one extreme SuperHypeNeighbor to one. An extreme Failed SuperHyperClique has the extreme number of all the interior extreme SuperHyperVertices without any minus on SuperHyperNeighborhoods plus one extreme SuperHypeNeighbor to one.*

Proof. Assume a connected SuperHyperPath $ESHP : (V, E)$. Assume an extreme SuperHyperEdge has z extreme number of the extreme SuperHyperVertices. Then every extreme SuperHyperVertex has at least one extreme SuperHyperEdge with others in common. Thus those extreme SuperHyperVertices have the eligibles to be contained in an extreme Failed SuperHyperClique. Those extreme SuperHyperVertices are potentially included in an extreme style-Failed SuperHyperClique. Formally, consider

$$\{Z_1, Z_2, \ldots, Z_z\}$$

are the extreme SuperHyperVertices of an extreme SuperHyperEdge. Thus

$$Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z.$$

where the $\sim$ isn't an equivalence relation but only the symmetric relation on the extreme SuperHyperVertices of the extreme SuperHyperGraph. The formal definition is as follows.

$$Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z$$

if and only if Z_i and Z_j are the extreme SuperHyperVertices and there's an extreme SuperHyperEdge between the extreme SuperHyperVertices Z_i and Z_j. The other definition for the extreme SuperHyperEdge in the terms of extreme Failed SuperHyperClique is

$$\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z\}.$$

This definition coincides with the definition of the extreme Failed SuperHyperClique but with slightly differences in the maximum extreme cardinality amid those extreme type-SuperHyperSets of the extreme SuperHyperVertices. Thus the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$\max_z |\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z\}|_{\text{extreme cardinality}},$$

is formalized with mathematical literatures on the extreme Failed SuperHyperClique. Let $Z_i \stackrel{E}{\sim} Z_j$, be defined as Z_i and Z_j are the extreme SuperHyperVertices belong to the extreme SuperHyperEdge E. Thus,

$$E = \{Z_1, Z_2, \ldots, Z_z \mid Z_i \stackrel{E}{\sim} Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z\}.$$

But with the slightly differences,

$$\text{extreme Failed SuperHyperClique} =$$
$$\{Z_1, Z_2, \ldots, Z_z \mid \forall i \neq j,\ i, j = 1, 2, \ldots, z,\ \exists E_x,\ Z_i \stackrel{E_x}{\sim} Z_j,\}.$$

Thus E is an extreme quasi-Failed SuperHyperClique where E is fixed that means $E_x = E$. for all extreme intended SuperHyperVertices but in an extreme Failed SuperHyperClique, E_x could be different and it's not unique. To sum them up, in a connected extreme SuperHyperGraph $ESHG : (V, E)$. If an extreme SuperHyperEdge has z extreme SuperHyperVertices, then the extreme cardinality of the extreme Failed SuperHyperClique is at least z. It's straightforward that the extreme cardinality of the extreme Failed SuperHyperClique is at least the maximum extreme number of extreme SuperHyperVertices of the extreme SuperHyperEdges. In other words, the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices are renamed to extreme Failed SuperHyperClique in some cases but the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices, has the extreme SuperHyperVertices are contained in an extreme Failed SuperHyperClique. The main definition of the extreme Failed SuperHyperClique has two titles. An extreme quasi-Failed SuperHyperClique and its corresponded quasi-maximum extreme SuperHyperCardinality are two titles in the terms of quasi-styles. For any extreme number, there's an extreme quasi-Failed SuperHyperClique with that quasi-maximum extreme SuperHyperCardinality in the terms of the embedded extreme SuperHyperGraph. If there's an embedded extreme SuperHyperGraph, then the extreme quasi-SuperHyperNotions lead us to take the collection of all the extreme quasi-Failed SuperHyperCliques for all extreme numbers less than its extreme corresponded maximum number. The essence of the extreme Failed SuperHyperClique ends up but this essence starts up in the terms of the extreme quasi-Failed SuperHyperClique, again and more in the operations of collecting all the extreme quasi-Failed SuperHyperCliques acted on the all possible used formations of the extreme SuperHyperGraph to achieve one extreme number. This extreme number is considered as the equivalence class for all corresponded quasi-Failed SuperHyperCliques. Let $z_{\text{Extreme Number}}, S_{\text{Extreme SuperHyperSet}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme number, an extreme SuperHyperSet and an extreme Failed SuperHyperClique. Then

$$
\begin{aligned}
&[z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}}\}.
\end{aligned}
$$

As its consequences, the formal definition of the extreme Failed SuperHyperClique is re-formalized and redefined as follows.

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}}[z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}}\{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}}\}.
\end{aligned}
$$

To get more precise perceptions, the follow-up expressions propose another formal technical definition for the extreme Failed SuperHyperClique.

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}}[z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}}\{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.
\end{aligned}
$$

In more concise and more convenient ways, the modified definition for the extreme Failed SuperHyperClique poses the upcoming expressions.

$$\begin{aligned}&G_{\text{Extreme Failed SuperHyperClique}} =\\&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}\\&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.\end{aligned}$$

To translate the statement to this mathematical literature, the formulae will be revised.

$$\begin{aligned}&G_{\text{Extreme Failed SuperHyperClique}} =\\&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}\\&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.\end{aligned}$$

And then,

$$\begin{aligned}&G_{\text{Extreme Failed SuperHyperClique}} =\\&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.\end{aligned}$$

To get more visions in the closer look-up, there's an overall overlook.

$$\begin{aligned}&G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} =\\&\cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid\\&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}},\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}\\&= 2\}.\end{aligned}$$

$$\begin{aligned}&G_{\text{Extreme Failed SuperHyperClique}} =\\&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} =\\&\cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid\\&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}},\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}\\&= z_{\text{Extreme Number}} \mid\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}\\&= 2\}.\end{aligned}$$

$$\begin{aligned}&G_{\text{Extreme Failed SuperHyperClique}} =\\&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}\\&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.\end{aligned}$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

Now, the extension of these types of approaches is up. Since the new term, "extreme SuperHyperNeighborhood", could be redefined as the collection of the extreme SuperHyperVertices such that any amount of its extreme SuperHyperVertices are incident to an extreme SuperHyperEdge. It's, literarily, another name for "extreme Quasi-Failed SuperHyperClique" but, precisely, it's the generalization of "extreme Quasi-Failed SuperHyperClique" since "extreme Quasi-Failed SuperHyperClique" happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and background but "extreme SuperHyperNeighborhood" may not happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and preliminarily background since there are some ambiguities about the extreme SuperHyperCardinality arise from it. To get orderly keywords, the terms, "extreme SuperHyperNeighborhood", "extreme Quasi-Failed SuperHyperClique", and "extreme Failed SuperHyperClique" are up.
Thus, let $z_{\text{Extreme Number}}$, $N_{\text{Extreme SuperHyperNeighborhood}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme number, an extreme SuperHyperNeighborhood and an extreme Failed SuperHyperClique and the new terms are up.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

And with go back to initial structure,

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

Thus, in a connected extreme SuperHyperGraph $ESHG : (V, E)$, the all interior extreme SuperHyperVertices belong to any extreme quasi-Failed SuperHyperClique if for any of them, and any of other corresponded extreme SuperHyperVertex, the two interior extreme SuperHyperVertices are mutually extreme SuperHyperNeighbors with no extreme exception at all. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. Let an extreme SuperHyperEdge $ESHE$ has some extreme SuperHyperVertices r. Consider all extreme numbers of those extreme SuperHyperVertices from that extreme SuperHyperEdge excluding excluding more than r distinct extreme SuperHyperVertices, exclude to any given extreme SuperHyperSet of the extreme SuperHyperVertices. Consider there's an extreme Failed SuperHyperClique with the least cardinality, the lower sharp extreme bound for extreme cardinality. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \setminus \{z\}$ is an extreme SuperHyperSet S of the extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common but it isn't an extreme Failed SuperHyperClique. Since it doesn't have **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have a some SuperHyperVertices in common. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \cup \{z\}$ is the maximum extreme cardinality of an extreme SuperHyperSet S of extreme SuperHyperVertices but it isn't an extreme Failed SuperHyperClique. Since it **doesn't do** the extreme procedure such that such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common [there are at least one extreme SuperHyperVertex outside implying there's, sometimes in the connected extreme SuperHyperGraph $ESHG : (V, E)$, an extreme SuperHyperVertex, titled its extreme SuperHyperNeighbor, to that extreme

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SuperHyperVertex in the extreme SuperHyperSet S so as S doesn't do "the extreme procedure".]. There's only **one** extreme SuperHyperVertex **outside** the intended extreme SuperHyperSet, $V_{ESHE} \cup \{z\}$, in the terms of extreme SuperHyperNeighborhood. Thus the obvious extreme Failed SuperHyperClique, V_{ESHE} is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, V_{ESHE}, **is** an extreme SuperHyperSet, V_{ESHE}, **includes** only **all** extreme SuperHyperVertices does forms any kind of extreme pairs are titled extreme SuperHyperNeighbors in a connected extreme SuperHyperGraph $ESHG : (V, E)$. Since the extreme SuperHyperSet of the extreme SuperHyperVertices V_{ESHE}, is the **maximum extreme SuperHyperCardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices **such that** there's an extreme SuperHyperEdge to have an extreme SuperHyperVertex in common. Thus, a connected extreme SuperHyperGraph $ESHG : (V, E)$. The any extreme Failed SuperHyperClique only contains all interior extreme SuperHyperVertices and all exterior extreme SuperHyperVertices from the unique extreme SuperHyperEdge where there's any of them has all possible extreme SuperHyperNeighbors in and there's all extreme SuperHyperNeighborhoods in with no exception but everything is possible about extreme SuperHyperNeighborhoods and extreme SuperHyperNeighbors out.
To make sense with precise words in the terms of "Failed", the follow-up illustrations are coming up. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}).$$

There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

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or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it'**s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the extreme SuperHyperSet, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.
To sum them up, assume a connected extreme SuperHyperPath $ESHP : (V, E)$. Then an extreme Failed SuperHyperClique is an extreme SuperHyperSet of the interior extreme SuperHyperVertices with only no extreme exceptions in the form of interior extreme SuperHyperVertices from the unique extreme SuperHyperEdges not excluding only any interior extreme SuperHyperVertices from the extreme unique SuperHyperEdges plus one extreme SuperHypeNeighbor to one. An extreme Failed SuperHyperClique has the extreme number of all the interior extreme SuperHyperVertices without any minus on SuperHyperNeighborhoods plus one extreme SuperHypeNeighbor to one. □

Example 2. *In the Figure 21, the connected extreme SuperHyperPath $ESHP : (V, E)$, is highlighted and featured. The extreme SuperHyperSet, corresponded to E_5, $V_{E_5} \cup \{V_{25}$, of the extreme SuperHyperVertices of the connected extreme SuperHyperPath $ESHP : (V, E)$, in the extreme SuperHyperModel (21), is the Failed SuperHyperClique.*

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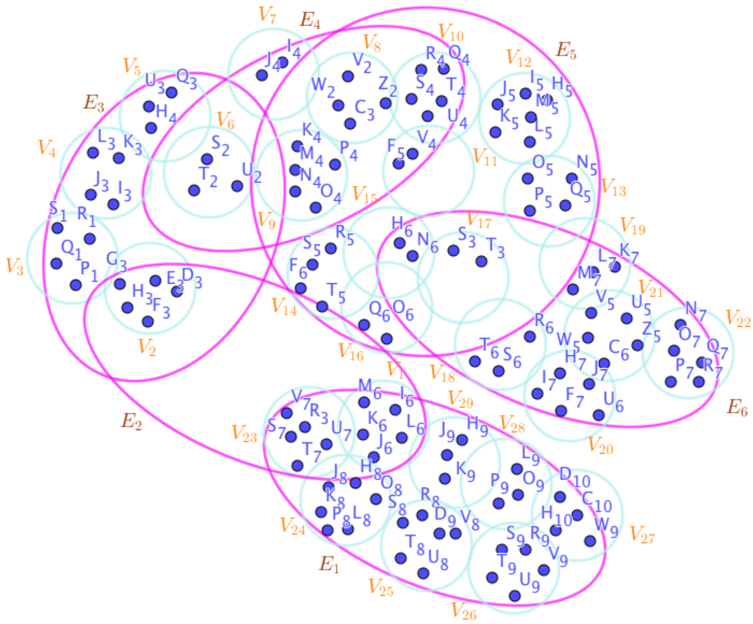

Figure 21. An extreme SuperHyperPath Associated to the Notions of extreme Failed SuperHyperClique in the Example (2).

Proposition 14. *Assume a connected extreme SuperHyperCycle* $ESHC : (V, E)$*. Then an extreme Failed SuperHyperClique is an extreme SuperHyperSet of the interior extreme SuperHyperVertices with only no extreme exceptions on the form of interior extreme SuperHyperVertices from the same extreme SuperHyperNeighborhoods not excluding any extreme SuperHyperVertex plus one extreme SuperHypeNeighbor to one. An extreme Failed SuperHyperClique has the extreme number of all the extreme SuperHyperEdges in the terms of the maximum extreme cardinality plus one extreme SuperHypeNeighbor to one.*

Proof. Assume a connected SuperHyperCycle $ESHC : (V, E)$. Assume an extreme SuperHyperEdge has z extreme number of the extreme SuperHyperVertices. Then every extreme SuperHyperVertex has at least one extreme SuperHyperEdge with others in common. Thus those extreme SuperHyperVertices have the eligibles to be contained in an extreme Failed SuperHyperClique. Those extreme SuperHyperVertices are potentially included in an extreme style-Failed SuperHyperClique. Formally, consider

$$\{Z_1, Z_2, \ldots, Z_z\}$$

are the extreme SuperHyperVertices of an extreme SuperHyperEdge. Thus

$$Z_i \sim Z_j, \ i \neq j, \ i, j = 1, 2, \ldots, z.$$

where the $\sim$ isn't an equivalence relation but only the symmetric relation on the extreme SuperHyperVertices of the extreme SuperHyperGraph. The formal definition is as follows.

$$Z_i \sim Z_j, \ i \neq j, \ i, j = 1, 2, \ldots, z$$

if and only if Z_i and Z_j are the extreme SuperHyperVertices and there's an extreme SuperHyperEdge between the extreme SuperHyperVertices Z_i and Z_j. The other definition for the extreme SuperHyperEdge in the terms of extreme Failed SuperHyperClique is

$$\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j, \ i \neq j, \ i, j = 1, 2, \ldots, z\}.$$

This definition coincides with the definition of the extreme Failed SuperHyperClique but with slightly differences in the maximum extreme cardinality amid those extreme type-SuperHyperSets of the extreme SuperHyperVertices. Thus the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$\max_{z} |\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j,\ i \neq j,\ i,j = 1,2,\ldots,z\}|_{\text{extreme cardinality}},$$

is formalized with mathematical literatures on the extreme Failed SuperHyperClique. Let $Z_i \overset{E}{\sim} Z_j$, be defined as Z_i and Z_j are the extreme SuperHyperVertices belong to the extreme SuperHyperEdge E. Thus,

$$E = \{Z_1, Z_2, \ldots, Z_z \mid Z_i \overset{E}{\sim} Z_j,\ i \neq j,\ i,j = 1,2,\ldots,z\}.$$

But with the slightly differences,

$$\text{extreme Failed SuperHyperClique} = \{Z_1, Z_2, \ldots, Z_z \mid \forall i \neq j,\ i,j = 1,2,\ldots,z,\ \exists E_x,\ Z_i \overset{E_x}{\sim} Z_j, \}.$$

Thus E is an extreme quasi-Failed SuperHyperClique where E is fixed that means $E_x = E$. for all extreme intended SuperHyperVertices but in an extreme Failed SuperHyperClique, E_x could be different and it's not unique. To sum them up, in a connected extreme SuperHyperGraph $ESHG : (V, E)$. If an extreme SuperHyperEdge has z extreme SuperHyperVertices, then the extreme cardinality of the extreme Failed SuperHyperClique is at least z. It's straightforward that the extreme cardinality of the extreme Failed SuperHyperClique is at least the maximum extreme number of extreme SuperHyperVertices of the extreme SuperHyperEdges. In other words, the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices are renamed to extreme Failed SuperHyperClique in some cases but the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices, has the extreme SuperHyperVertices are contained in an extreme Failed SuperHyperClique. The main definition of the extreme Failed SuperHyperClique has two titles. An extreme quasi-Failed SuperHyperClique and its corresponded quasi-maximum extreme SuperHyperCardinality are two titles in the terms of quasi-styles. For any extreme number, there's an extreme quasi-Failed SuperHyperClique with that quasi-maximum extreme SuperHyperCardinality in the terms of the embedded extreme SuperHyperGraph. If there's an embedded extreme SuperHyperGraph, then the extreme quasi-SuperHyperNotions lead us to take the collection of all the extreme quasi-Failed SuperHyperCliques for all extreme numbers less than its extreme corresponded maximum number. The essence of the extreme Failed SuperHyperClique ends up but this essence starts up in the terms of the extreme quasi-Failed SuperHyperClique, again and more in the operations of collecting all the extreme quasi-Failed SuperHyperCliques acted on the all possible used formations of the extreme SuperHyperGraph to achieve one extreme number. This extreme number is considered as the equivalence class for all corresponded quasi-Failed SuperHyperCliques. Let $z_{\text{Extreme Number}}$, $S_{\text{Extreme SuperHyperSet}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme number, an extreme SuperHyperSet and an extreme Failed SuperHyperClique. Then

$$[z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}}\}.$$

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As its consequences, the formal definition of the extreme Failed SuperHyperClique is re-formalized and redefined as follows.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}}\}.$$

To get more precise perceptions, the follow-up expressions propose another formal technical definition for the extreme Failed SuperHyperClique.

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

In more concise and more convenient ways, the modified definition for the extreme Failed SuperHyperClique poses the upcoming expressions.

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

To translate the statement to this mathematical literature, the formulae will be revised.

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

And then,

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

To get more visions in the closer look-up, there's an overall overlook.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

Now, the extension of these types of approaches is up. Since the new term, "extreme SuperHyperNeighborhood", could be redefined as the collection of the extreme SuperHyperVertices such that any amount of its extreme SuperHyperVertices are incident to an extreme SuperHyperEdge. It's, literarily, another name for "extreme Quasi-Failed SuperHyperClique" but, precisely, it's the generalization of "extreme Quasi-Failed SuperHyperClique" since "extreme Quasi-Failed SuperHyperClique" happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and background but "extreme SuperHyperNeighborhood" may not happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and preliminarily background since there are some ambiguities about the extreme SuperHyperCardinality arise from it. To get orderly keywords, the terms, "extreme SuperHyperNeighborhood", "extreme Quasi-Failed SuperHyperClique", and "extreme Failed SuperHyperClique" are up.
Thus, let $z_{\text{Extreme Number}}$, $N_{\text{Extreme SuperHyperNeighborhood}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme

number, an extreme SuperHyperNeighborhood and an extreme Failed SuperHyperClique and the new terms are up.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

And with go back to initial structure,

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} =$$
$$\{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid$$
$$|N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}}$$
$$= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} =$$
$$\{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid$$
$$|N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

Thus, in a connected extreme SuperHyperGraph $ESHG : (V, E)$, the all interior extreme SuperHyperVertices belong to any extreme quasi-Failed SuperHyperClique if for any of them, and any of other corresponded extreme SuperHyperVertex, the two interior extreme SuperHyperVertices are mutually extreme SuperHyperNeighbors with no extreme exception at all. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. Let an extreme SuperHyperEdge $ESHE$ has some extreme SuperHyperVertices r. Consider all extreme numbers of those extreme SuperHyperVertices from that extreme SuperHyperEdge excluding excluding more than r distinct extreme SuperHyperVertices, exclude to any given extreme SuperHyperSet of the extreme SuperHyperVertices. Consider there's an extreme Failed SuperHyperClique with the least cardinality, the lower sharp extreme bound for extreme cardinality. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \setminus \{z\}$ is an extreme SuperHyperSet S of the extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common but it isn't an extreme Failed SuperHyperClique. Since it doesn't have **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have a some SuperHyperVertices in common. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \cup \{z\}$ is the maximum extreme cardinality of an extreme SuperHyperSet S of extreme SuperHyperVertices but it isn't an extreme Failed SuperHyperClique. Since it **doesn't do** the extreme procedure such that such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common [there are at least one extreme SuperHyperVertex outside implying there's, sometimes in the connected extreme SuperHyperGraph $ESHG : (V, E)$, an extreme SuperHyperVertex, titled its extreme SuperHyperNeighbor, to that extreme SuperHyperVertex in the extreme SuperHyperSet S so as S doesn't do "the extreme procedure".]. There's only **one** extreme SuperHyperVertex **outside** the intended extreme SuperHyperSet, $V_{ESHE} \cup \{z\}$, in the terms of extreme SuperHyperNeighborhood. Thus the obvious extreme Failed SuperHyperClique, V_{ESHE} is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, V_{ESHE}, **is** an extreme SuperHyperSet, V_{ESHE}, **includes** only **all** extreme SuperHyperVertices does forms any kind of extreme pairs are titled extreme SuperHyperNeighbors in a connected extreme SuperHyperGraph $ESHG : (V, E)$. Since the extreme SuperHyperSet of the extreme SuperHyperVertices V_{ESHE}, is the **maximum extreme SuperHyperCardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices **such that** there's an extreme SuperHyperEdge to have an extreme SuperHyperVertex in common. Thus, a connected extreme SuperHyperGraph $ESHG : (V, E)$. The any extreme Failed SuperHyperClique only contains all interior extreme SuperHyperVertices and all exterior extreme SuperHyperVertices from the unique extreme SuperHyperEdge where there's any of them has all possible extreme SuperHyperNeighbors in and there's all extreme SuperHyperNeighborhoods in with no exception but everything is possible about extreme SuperHyperNeighborhoods and extreme SuperHyperNeighbors out.
To make sense with precise words in the terms of "Failed", the follow-up illustrations are coming up.

The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}).$$

There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the extreme SuperHyperSet, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.
To sum them up, assume a connected extreme SuperHyperCycle $ESHC : (V, E)$. Then an extreme Failed SuperHyperClique is an extreme SuperHyperSet of the interior extreme SuperHyperVertices with only no extreme exceptions on the form of interior extreme SuperHyperVertices from the same extreme SuperHyperNeighborhoods not excluding any extreme SuperHyperVertex plus one extreme SuperHypeNeighbor to one. An extreme Failed SuperHyperClique has the extreme number of all the extreme SuperHyperEdges in the terms of the maximum extreme cardinality plus one extreme SuperHypeNeighbor to one. □

Example 3. *In the Figure 22, the connected extreme SuperHyperCycle $NSHC : (V, E)$, is highlighted and featured. The obtained extreme SuperHyperSet, , corresponded to E_8, V_{E_8}, by the Algorithm in previous result, of the extreme SuperHyperVertices of the connected extreme SuperHyperCycle $NSHC : (V, E)$, in the extreme SuperHyperModel (22), corresponded to E_8,*

$$V_{E_8} \cup \{H_7, J_7, K_7, P_7, L_7, U_6, O_7\},$$

is the extreme Failed SuperHyperClique.

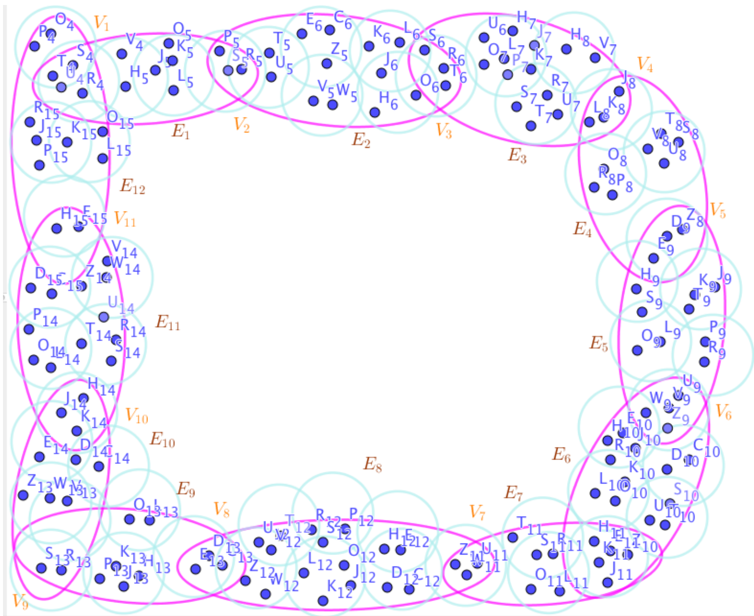

Figure 22. An extreme SuperHyperCycle Associated to the extreme Notions of extreme Failed SuperHyperClique in the extreme Example (3).

Proposition 15. *Assume a connected extreme SuperHyperStar $ESHS : (V, E)$. Then an extreme Failed SuperHyperClique is an extreme SuperHyperSet of the interior extreme SuperHyperVertices, not extreme excluding the extreme SuperHyperCenter, with only all extreme exceptions in the extreme form of interior extreme SuperHyperVertices from common extreme SuperHyperEdge, extreme including only one extreme SuperHyperEdge plus one extreme SuperHypeNeighbor to one. An extreme Failed SuperHyperClique* *has the extreme number of the extreme cardinality of the one extreme SuperHyperEdge plus one extreme SuperHypeNeighbor to one.*

Proof. Assume a connected SuperHyperStar $ESHS : (V, E)$. Assume an extreme SuperHyperEdge has z extreme number of the extreme SuperHyperVertices. Then every extreme SuperHyperVertex has at least one extreme SuperHyperEdge with others in common. Thus those extreme SuperHyperVertices have the eligibles to be contained in an extreme Failed SuperHyperClique. Those extreme SuperHyperVertices are potentially included in an extreme style-Failed SuperHyperClique. Formally, consider

$$\{Z_1, Z_2, \ldots, Z_z\}$$

are the extreme SuperHyperVertices of an extreme SuperHyperEdge. Thus

$$Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z.$$

where the $\sim$ isn't an equivalence relation but only the symmetric relation on the extreme SuperHyperVertices of the extreme SuperHyperGraph. The formal definition is as follows.

$$Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z$$

if and only if Z_i and Z_j are the extreme SuperHyperVertices and there's an extreme SuperHyperEdge between the extreme SuperHyperVertices Z_i and Z_j. The other definition for the extreme SuperHyperEdge in the terms of extreme Failed SuperHyperClique is

$$\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z\}.$$

This definition coincides with the definition of the extreme Failed SuperHyperClique but with slightly differences in the maximum extreme cardinality amid those extreme type-SuperHyperSets of the extreme SuperHyperVertices. Thus the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$\max_z |\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z\}|_{\text{extreme cardinality}},$$

is formalized with mathematical literatures on the extreme Failed SuperHyperClique. Let $Z_i \overset{E}{\sim} Z_j$, be defined as Z_i and Z_j are the extreme SuperHyperVertices belong to the extreme SuperHyperEdge E. Thus,

$$E = \{Z_1, Z_2, \ldots, Z_z \mid Z_i \overset{E}{\sim} Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z\}.$$

But with the slightly differences,

$$\text{extreme Failed SuperHyperClique} =$$
$$\{Z_1, Z_2, \ldots, Z_z \mid \forall i \neq j,\ i, j = 1, 2, \ldots, z,\ \exists E_x,\ Z_i \overset{E_x}{\sim} Z_j, \}.$$

Thus E is an extreme quasi-Failed SuperHyperClique where E is fixed that means $E_x = E$. for all extreme intended SuperHyperVertices but in an extreme Failed SuperHyperClique, E_x could be different and it's not unique. To sum them up, in a connected extreme SuperHyperGraph $ESHG : (V, E)$. If an extreme SuperHyperEdge has z extreme SuperHyperVertices, then the extreme cardinality of the extreme Failed SuperHyperClique is at least z. It's straightforward that the extreme cardinality of the extreme Failed SuperHyperClique is at least the maximum extreme number of extreme SuperHyperVertices of the extreme SuperHyperEdges. In other words, the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices are renamed to extreme Failed SuperHyperClique in some cases but the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices, has the extreme SuperHyperVertices

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are contained in an extreme Failed SuperHyperClique. The main definition of the extreme Failed SuperHyperClique has two titles. An extreme quasi-Failed SuperHyperClique and its corresponded quasi-maximum extreme SuperHyperCardinality are two titles in the terms of quasi-styles. For any extreme number, there's an extreme quasi-Failed SuperHyperClique with that quasi-maximum extreme SuperHyperCardinality in the terms of the embedded extreme SuperHyperGraph. If there's an embedded extreme SuperHyperGraph, then the extreme quasi-SuperHyperNotions lead us to take the collection of all the extreme quasi-Failed SuperHyperCliques for all extreme numbers less than its extreme corresponded maximum number. The essence of the extreme Failed SuperHyperClique ends up but this essence starts up in the terms of the extreme quasi-Failed SuperHyperClique, again and more in the operations of collecting all the extreme quasi-Failed SuperHyperCliques acted on the all possible used formations of the extreme SuperHyperGraph to achieve one extreme number. This extreme number is considered as the equivalence class for all corresponded quasi-Failed SuperHyperCliques. Let $z_{\text{Extreme Number}}$, $S_{\text{Extreme SuperHyperSet}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme number, an extreme SuperHyperSet and an extreme Failed SuperHyperClique. Then

$$
\begin{aligned}
&[z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}}\}.
\end{aligned}
$$

As its consequences, the formal definition of the extreme Failed SuperHyperClique is re-formalized and redefined as follows.

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}}[z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}}\{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}}\}.
\end{aligned}
$$

To get more precise perceptions, the follow-up expressions propose another formal technical definition for the extreme Failed SuperHyperClique.

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}}[z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}}\{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.
\end{aligned}
$$

In more concise and more convenient ways, the modified definition for the extreme Failed SuperHyperClique poses the upcoming expressions.

$$\begin{aligned}&G_{\text{Extreme Failed SuperHyperClique}} =\\&\{S \in \cup_{z_{\text{Extreme Number}}}[z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}\\&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.\end{aligned}$$

To translate the statement to this mathematical literature, the formulae will be revised.

$$\begin{aligned}&G_{\text{Extreme Failed SuperHyperClique}} =\\&\{S \in \cup_{z_{\text{Extreme Number}}}[z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}\\&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.\end{aligned}$$

And then,

$$\begin{aligned}&G_{\text{Extreme Failed SuperHyperClique}} =\\&\{S \in \cup_{z_{\text{Extreme Number}}}[z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.\end{aligned}$$

To get more visions in the closer look-up, there's an overall overlook.

$$\begin{aligned}&G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}}[z_{\text{Extreme Number}}]_{\text{Extreme Class}} =\\&\cup_{z_{\text{Extreme Number}}}\{S_{\text{Extreme SuperHyperSet}} \mid\\&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}},\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}\\&= 2\}.\end{aligned}$$

$$\begin{aligned}&G_{\text{Extreme Failed SuperHyperClique}} =\\&\{S \in \cup_{z_{\text{Extreme Number}}}[z_{\text{Extreme Number}}]_{\text{Extreme Class}} =\\&\cup_{z_{\text{Extreme Number}}}\{S_{\text{Extreme SuperHyperSet}} \mid\\&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}},\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}\\&= z_{\text{Extreme Number}} \mid\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}\\&= 2\}.\end{aligned}$$

$$\begin{aligned}&G_{\text{Extreme Failed SuperHyperClique}} =\\&\{S \in \cup_{z_{\text{Extreme Number}}}[z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid\\&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}\\&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.\end{aligned}$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

Now, the extension of these types of approaches is up. Since the new term, "extreme SuperHyperNeighborhood", could be redefined as the collection of the extreme SuperHyperVertices such that any amount of its extreme SuperHyperVertices are incident to an extreme SuperHyperEdge. It's, literarily, another name for "extreme Quasi-Failed SuperHyperClique" but, precisely, it's the generalization of "extreme Quasi-Failed SuperHyperClique" since "extreme Quasi-Failed SuperHyperClique" happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and background but "extreme SuperHyperNeighborhood" may not happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and preliminarily background since there are some ambiguities about the extreme SuperHyperCardinality arise from it. To get orderly keywords, the terms, "extreme SuperHyperNeighborhood", "extreme Quasi-Failed SuperHyperClique", and "extreme Failed SuperHyperClique" are up.
Thus, let $z_{\text{Extreme Number}}$, $N_{\text{Extreme SuperHyperNeighborhood}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme number, an extreme SuperHyperNeighborhood and an extreme Failed SuperHyperClique and the new terms are up.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

And with go back to initial structure,

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

Thus, in a connected extreme SuperHyperGraph $ESHG : (V, E)$, the all interior extreme SuperHyperVertices belong to any extreme quasi-Failed SuperHyperClique if for any of them, and any of other corresponded extreme SuperHyperVertex, the two interior extreme SuperHyperVertices are mutually extreme SuperHyperNeighbors with no extreme exception at all. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. Let an extreme SuperHyperEdge $ESHE$ has some extreme SuperHyperVertices r. Consider all extreme numbers of those extreme SuperHyperVertices from that extreme SuperHyperEdge excluding excluding more than r distinct extreme SuperHyperVertices, exclude to any given extreme SuperHyperSet of the extreme SuperHyperVertices. Consider there's an extreme Failed SuperHyperClique with the least cardinality, the lower sharp extreme bound for extreme cardinality. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \setminus \{z\}$ is an extreme SuperHyperSet S of the extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common but it isn't an extreme Failed SuperHyperClique. Since it doesn't have **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have a some SuperHyperVertices in common. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \cup \{z\}$ is the maximum extreme cardinality of an extreme SuperHyperSet S of extreme SuperHyperVertices but it isn't an extreme Failed SuperHyperClique. Since it **doesn't do** the extreme procedure such that such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common [there are at least one extreme SuperHyperVertex outside implying there's, sometimes in the connected extreme SuperHyperGraph $ESHG : (V, E)$, an extreme SuperHyperVertex, titled its extreme SuperHyperNeighbor, to that extreme

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SuperHyperVertex in the extreme SuperHyperSet S so as S doesn't do "the extreme procedure".]. There's only **one** extreme SuperHyperVertex **outside** the intended extreme SuperHyperSet, $V_{ESHE} \cup \{z\}$, in the terms of extreme SuperHyperNeighborhood. Thus the obvious extreme Failed SuperHyperClique, V_{ESHE} is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, V_{ESHE}, **is** an extreme SuperHyperSet, V_{ESHE}, **includes** only **all** extreme SuperHyperVertices does forms any kind of extreme pairs are titled extreme SuperHyperNeighbors in a connected extreme SuperHyperGraph $ESHG : (V, E)$. Since the extreme SuperHyperSet of the extreme SuperHyperVertices V_{ESHE}, is the **maximum extreme SuperHyperCardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices **such that** there's an extreme SuperHyperEdge to have an extreme SuperHyperVertex in common. Thus, a connected extreme SuperHyperGraph $ESHG : (V, E)$. The any extreme Failed SuperHyperClique only contains all interior extreme SuperHyperVertices and all exterior extreme SuperHyperVertices from the unique extreme SuperHyperEdge where there's any of them has all possible extreme SuperHyperNeighbors in and there's all extreme SuperHyperNeighborhoods in with no exception but everything is possible about extreme SuperHyperNeighborhoods and extreme SuperHyperNeighbors out.
To make sense with precise words in the terms of "Failed", the follow-up illustrations are coming up. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}).$$

There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

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or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it'**s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the extreme SuperHyperSet, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

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does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.
To sum them up, assume a connected extreme SuperHyperStar $ESHS : (V, E)$. Then an extreme Failed SuperHyperClique is an extreme SuperHyperSet of the interior extreme SuperHyperVertices, not extreme excluding the extreme SuperHyperCenter, with only all extreme exceptions in the extreme form of interior extreme SuperHyperVertices from common extreme SuperHyperEdge, extreme including only one extreme SuperHyperEdge plus one extreme SuperHypeNeighbor to one. An extreme Failed SuperHyperClique has the extreme number of the extreme cardinality of the one extreme SuperHyperEdge plus one extreme SuperHypeNeighbor to one.
□

Example 4. *In the Figure 23, the connected extreme SuperHyperStar $ESHS : (V, E)$, is highlighted and featured. The obtained extreme SuperHyperSet, by the Algorithm in previous extreme result, of the extreme SuperHyperVertices of the connected extreme SuperHyperStar $ESHS : (V, E)$, in the extreme SuperHyperModel (23), , corresponded to E_6,*

$$V_{E_6} \cup \{W_6 Z_6 C_7 D_7 P_6 E_7 W_7\},$$

is the extreme Failed SuperHyperClique.

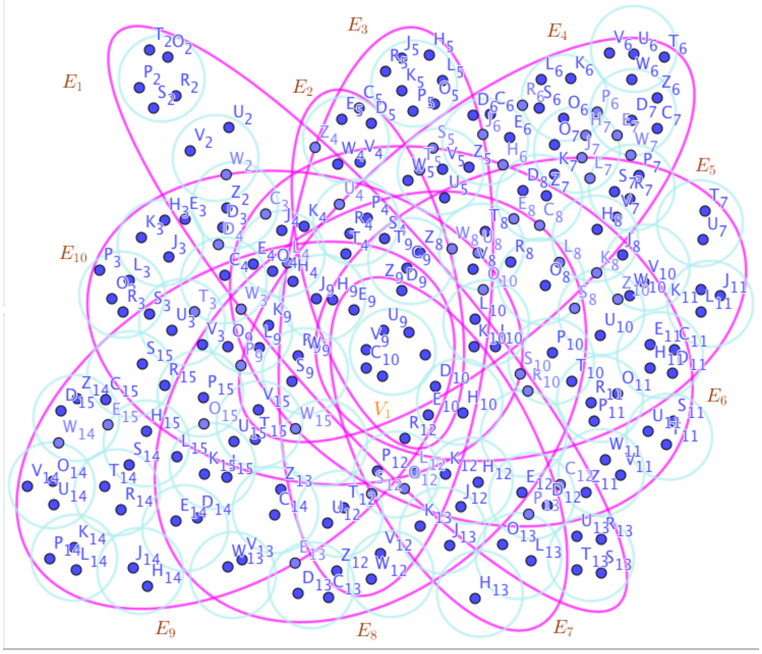

Figure 23. An extreme SuperHyperStar Associated to the extreme Notions of extreme Failed SuperHyperClique in the extreme Example (4)

Proposition 16. *Assume a connected extreme SuperHyperBipartite $ESHB : (V, E)$. Then an extreme Failed SuperHyperClique is an extreme SuperHyperSet of the interior extreme SuperHyperVertices with no any extreme exceptions in the form of interior extreme SuperHyperVertices titled extreme SuperHyperNeighbors with only no exception plus one extreme SuperHypeNeighbor to one. An extreme Failed SuperHyperClique has the extreme maximum number of on extreme cardinality of the first SuperHyperPart plus extreme SuperHyperNeighbors plus one extreme SuperHypeNeighbor to one.*

Proof. Assume a connected extreme SuperHyperBipartite $ESHB : (V, E)$. Assume an extreme SuperHyperEdge has z extreme number of the extreme SuperHyperVertices. Then every extreme SuperHyperVertex has at least one extreme SuperHyperEdge with others in common. Thus those extreme SuperHyperVertices have the eligibles to be contained in an extreme Failed SuperHyperClique. Those extreme SuperHyperVertices are potentially included in an extreme style-Failed SuperHyperClique. Formally, consider

$$\{Z_1, Z_2, \ldots, Z_z\}$$

are the extreme SuperHyperVertices of an extreme SuperHyperEdge. Thus

$$Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z.$$

where the $\sim$ isn't an equivalence relation but only the symmetric relation on the extreme SuperHyperVertices of the extreme SuperHyperGraph. The formal definition is as follows.

$$Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z$$

if and only if Z_i and Z_j are the extreme SuperHyperVertices and there's an extreme SuperHyperEdge between the extreme SuperHyperVertices Z_i and Z_j. The other definition for the extreme SuperHyperEdge in the terms of extreme Failed SuperHyperClique is

$$\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z\}.$$

This definition coincides with the definition of the extreme Failed SuperHyperClique but with slightly differences in the maximum extreme cardinality amid those extreme type-SuperHyperSets of the extreme SuperHyperVertices. Thus the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$\max_z |\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j,\ i \neq j,\ i,j = 1,2,\ldots,z\}|_{\text{extreme cardinality}},$$

is formalized with mathematical literatures on the extreme Failed SuperHyperClique. Let $Z_i \overset{E}{\sim} Z_j$, be defined as Z_i and Z_j are the extreme SuperHyperVertices belong to the extreme SuperHyperEdge E. Thus,

$$E = \{Z_1, Z_2, \ldots, Z_z \mid Z_i \overset{E}{\sim} Z_j,\ i \neq j,\ i,j = 1,2,\ldots,z\}.$$

But with the slightly differences,

$$\text{extreme Failed SuperHyperClique} = \{Z_1, Z_2, \ldots, Z_z \mid \forall i \neq j,\ i,j = 1,2,\ldots,z,\ \exists E_x,\ Z_i \overset{E_x}{\sim} Z_j,\}.$$

Thus E is an extreme quasi-Failed SuperHyperClique where E is fixed that means $E_x = E$. for all extreme intended SuperHyperVertices but in an extreme Failed SuperHyperClique, E_x could be different and it's not unique. To sum them up, in a connected extreme SuperHyperGraph $ESHG : (V, E)$. If an extreme SuperHyperEdge has z extreme SuperHyperVertices, then the extreme cardinality of the extreme Failed SuperHyperClique is at least z. It's straightforward that the extreme cardinality of the extreme Failed SuperHyperClique is at least the maximum extreme number of extreme SuperHyperVertices of the extreme SuperHyperEdges. In other words, the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices are renamed to extreme Failed SuperHyperClique in some cases but the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices, has the extreme SuperHyperVertices are contained in an extreme Failed SuperHyperClique. The main definition of the extreme Failed SuperHyperClique has two titles. An extreme quasi-Failed SuperHyperClique and its corresponded quasi-maximum extreme SuperHyperCardinality are two titles in the terms of quasi-styles. For any extreme number, there's an extreme quasi-Failed SuperHyperClique with that quasi-maximum extreme SuperHyperCardinality in the terms of the embedded extreme SuperHyperGraph. If there's an embedded extreme SuperHyperGraph, then the extreme quasi-SuperHyperNotions lead us to take the collection of all the extreme quasi-Failed SuperHyperCliques for all extreme numbers less than its extreme corresponded maximum number. The essence of the extreme Failed SuperHyperClique ends up but this essence starts up in the terms of the extreme quasi-Failed SuperHyperClique, again and more in the operations of collecting all the extreme quasi-Failed SuperHyperCliques acted on the all possible used formations of the extreme SuperHyperGraph to achieve one extreme number. This extreme number is considered as the equivalence class for all corresponded quasi-Failed SuperHyperCliques. Let $z_{\text{Extreme Number}}$, $S_{\text{Extreme SuperHyperSet}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme number, an extreme SuperHyperSet and an extreme Failed SuperHyperClique. Then

$$[z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}}\}.$$

As its consequences, the formal definition of the extreme Failed SuperHyperClique is re-formalized and redefined as follows.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}}\}.$$

To get more precise perceptions, the follow-up expressions propose another formal technical definition for the extreme Failed SuperHyperClique.

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

In more concise and more convenient ways, the modified definition for the extreme Failed SuperHyperClique poses the upcoming expressions.

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

To translate the statement to this mathematical literature, the formulae will be revised.

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

And then,

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

To get more visions in the closer look-up, there's an overall overlook.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

Now, the extension of these types of approaches is up. Since the new term, "extreme SuperHyperNeighborhood", could be redefined as the collection of the extreme SuperHyperVertices such that any amount of its extreme SuperHyperVertices are incident to an extreme SuperHyperEdge. It's, literarily, another name for "extreme Quasi-Failed SuperHyperClique" but, precisely, it's the generalization of "extreme Quasi-Failed SuperHyperClique" since "extreme Quasi-Failed SuperHyperClique" happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and background but "extreme SuperHyperNeighborhood" may not happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and preliminarily background since there are some ambiguities about the extreme SuperHyperCardinality arise from it. To get orderly keywords, the terms, "extreme SuperHyperNeighborhood", "extreme Quasi-Failed SuperHyperClique", and "extreme Failed SuperHyperClique" are up.
Thus, let $z_{\text{Extreme Number}}$, $N_{\text{Extreme SuperHyperNeighborhood}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme

number, an extreme SuperHyperNeighborhood and an extreme Failed SuperHyperClique and the new terms are up.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

And with go back to initial structure,

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = 2\}.$$

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$$G_{\text{Extreme Failed SuperHyperClique}} =$$
$$\{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid$$
$$|N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}}$$
$$= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} =$$
$$\{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid$$
$$|N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

Thus, in a connected extreme SuperHyperGraph $ESHG : (V, E)$, the all interior extreme SuperHyperVertices belong to any extreme quasi-Failed SuperHyperClique if for any of them, and any of other corresponded extreme SuperHyperVertex, the two interior extreme SuperHyperVertices are mutually extreme SuperHyperNeighbors with no extreme exception at all. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. Let an extreme SuperHyperEdge $ESHE$ has some extreme SuperHyperVertices r. Consider all extreme numbers of those extreme SuperHyperVertices from that extreme SuperHyperEdge excluding excluding more than r distinct extreme SuperHyperVertices, exclude to any given extreme SuperHyperSet of the extreme SuperHyperVertices. Consider there's an extreme Failed SuperHyperClique with the least cardinality, the lower sharp extreme bound for extreme cardinality. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \setminus \{z\}$ is an extreme SuperHyperSet S of the extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common but it isn't an extreme Failed SuperHyperClique. Since it doesn't have **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have a some SuperHyperVertices in common. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \cup \{z\}$ is the maximum extreme cardinality of an extreme SuperHyperSet S of extreme SuperHyperVertices but it isn't an extreme Failed SuperHyperClique. Since it **doesn't do** the extreme procedure such that such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common [there are at least one extreme SuperHyperVertex outside implying there's, sometimes in the connected extreme SuperHyperGraph $ESHG : (V, E)$, an extreme SuperHyperVertex, titled its extreme SuperHyperNeighbor, to that extreme SuperHyperVertex in the extreme SuperHyperSet S so as S doesn't do "the extreme procedure".]. There's only **one** extreme SuperHyperVertex **outside** the intended extreme SuperHyperSet, $V_{ESHE} \cup \{z\}$, in the terms of extreme SuperHyperNeighborhood. Thus the obvious extreme Failed SuperHyperClique, V_{ESHE} is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, V_{ESHE}, **is** an extreme SuperHyperSet, V_{ESHE}, **includes** only **all** extreme SuperHyperVertices does forms any kind of extreme pairs are titled extreme SuperHyperNeighbors in a connected extreme SuperHyperGraph $ESHG : (V, E)$. Since the extreme SuperHyperSet of the extreme SuperHyperVertices V_{ESHE}, is the **maximum extreme SuperHyperCardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices **such that** there's an extreme SuperHyperEdge to have an extreme SuperHyperVertex in common. Thus, a connected extreme SuperHyperGraph $ESHG : (V, E)$. The any extreme Failed SuperHyperClique only contains all interior extreme SuperHyperVertices and all exterior extreme SuperHyperVertices from the unique extreme SuperHyperEdge where there's any of them has all possible extreme SuperHyperNeighbors in and there's all extreme SuperHyperNeighborhoods in with no exception but everything is possible about extreme SuperHyperNeighborhoods and extreme SuperHyperNeighbors out.
To make sense with precise words in the terms of "Failed", the follow-up illustrations are coming up.

The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}).$$

There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V,E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the extreme SuperHyperSet, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V,E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V,E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme

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type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.
To sum them up, assume a connected extreme SuperHyperBipartite $ESHB : (V, E)$. Then an extreme Failed SuperHyperClique is an extreme SuperHyperSet of the interior extreme SuperHyperVertices with no any extreme exceptions in the form of interior extreme SuperHyperVertices titled extreme SuperHyperNeighbors with only no exception plus one extreme SuperHypeNeighbor to one. An extreme Failed SuperHyperClique has the extreme maximum number of on extreme cardinality of the first SuperHyperPart plus extreme SuperHyperNeighbors plus one extreme SuperHypeNeighbor to one.

□

Example 5. *In the extreme Figure 24, the connected extreme SuperHyperBipartite $ESHB : (V, E)$, is extreme highlighted and extreme featured. The obtained extreme SuperHyperSet, by the extreme Algorithm in previous extreme result, of the extreme SuperHyperVertices of the connected extreme SuperHyperBipartite $ESHB : (V, E)$, in the extreme SuperHyperModel (24), , corresponded to E_6,*

$$V_{E_6} \cup \{P_2 O_2 T_2 R_2 U_2 S_2 V_2\},$$

is the extreme Failed SuperHyperClique.

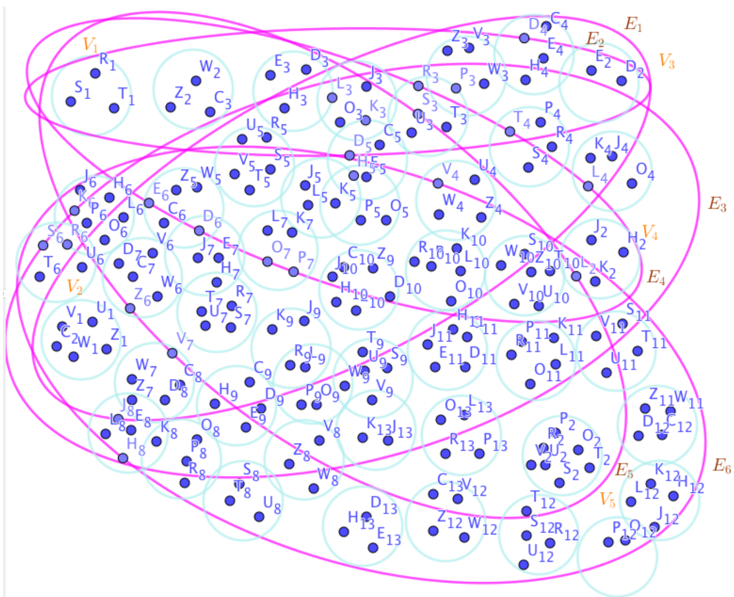

Figure 24. An extreme SuperHyperBipartite extreme Associated to the extreme Notions of extreme Failed SuperHyperClique in the Example (5).

Proposition 17. *Assume a connected extreme SuperHyperMultipartite $ESHM : (V, E)$. Then an extreme Failed SuperHyperClique is an extreme SuperHyperSet of the interior extreme SuperHyperVertices with only no extreme exception in the extreme form of interior extreme SuperHyperVertices from an extreme SuperHyperPart and only no exception in the form of interior SuperHyperVertices from another SuperHyperPart titled "SuperHyperNeighbors" with neglecting and ignoring more than one of them plus one extreme*

SuperHypeNeighbor to one. An extreme Failed SuperHyperClique has the extreme maximum number on all the extreme summation on the extreme cardinality of the all extreme SuperHyperParts form one SuperHyperEdges not plus any plus one extreme SuperHypeNeighbor to one.

Proof. Assume a connected extreme SuperHyperMultipartite $NSHM : (V, E)$. Assume an extreme SuperHyperEdge has z extreme number of the extreme SuperHyperVertices. Then every extreme SuperHyperVertex has at least one extreme SuperHyperEdge with others in common. Thus those extreme SuperHyperVertices have the eligibles to be contained in an extreme Failed SuperHyperClique. Those extreme SuperHyperVertices are potentially included in an extreme style-Failed SuperHyperClique. Formally, consider

$$\{Z_1, Z_2, \ldots, Z_z\}$$

are the extreme SuperHyperVertices of an extreme SuperHyperEdge. Thus

$$Z_i \sim Z_j, \; i \neq j, \; i, j = 1, 2, \ldots, z.$$

where the $\sim$ isn't an equivalence relation but only the symmetric relation on the extreme SuperHyperVertices of the extreme SuperHyperGraph. The formal definition is as follows.

$$Z_i \sim Z_j, \; i \neq j, \; i, j = 1, 2, \ldots, z$$

if and only if Z_i and Z_j are the extreme SuperHyperVertices and there's an extreme SuperHyperEdge between the extreme SuperHyperVertices Z_i and Z_j. The other definition for the extreme SuperHyperEdge in the terms of extreme Failed SuperHyperClique is

$$\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j, \; i \neq j, \; i, j = 1, 2, \ldots, z\}.$$

This definition coincides with the definition of the extreme Failed SuperHyperClique but with slightly differences in the maximum extreme cardinality amid those extreme type-SuperHyperSets of the extreme SuperHyperVertices. Thus the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$\max_z |\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j, \; i \neq j, \; i, j = 1, 2, \ldots, z\}|_{\text{extreme cardinality}},$$

is formalized with mathematical literatures on the extreme Failed SuperHyperClique. Let $Z_i \overset{E}{\sim} Z_j$, be defined as Z_i and Z_j are the extreme SuperHyperVertices belong to the extreme SuperHyperEdge E. Thus,

$$E = \{Z_1, Z_2, \ldots, Z_z \mid Z_i \overset{E}{\sim} Z_j, \; i \neq j, \; i, j = 1, 2, \ldots, z\}.$$

But with the slightly differences,

$$\text{extreme Failed SuperHyperClique} =$$
$$\{Z_1, Z_2, \ldots, Z_z \mid \forall i \neq j, \; i, j = 1, 2, \ldots, z, \; \exists E_x, \; Z_i \overset{E_x}{\sim} Z_j, \}.$$

Thus E is an extreme quasi-Failed SuperHyperClique where E is fixed that means $E_x = E$. for all extreme intended SuperHyperVertices but in an extreme Failed SuperHyperClique, E_x could be different and it's not unique. To sum them up, in a connected extreme SuperHyperGraph $ESHG : (V, E)$. If an extreme SuperHyperEdge has z extreme SuperHyperVertices, then the extreme cardinality of the extreme Failed SuperHyperClique is at least z. It's straightforward that the extreme cardinality of the extreme Failed SuperHyperClique is at least the maximum extreme number of extreme SuperHyperVertices of the extreme SuperHyperEdges. In other words, the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices are renamed to extreme Failed SuperHyperClique in some cases but the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices, has the extreme SuperHyperVertices are contained in an extreme Failed SuperHyperClique. The main definition of the extreme Failed SuperHyperClique has two titles. An extreme quasi-Failed SuperHyperClique and its corresponded quasi-maximum extreme SuperHyperCardinality are two titles in the terms of quasi-styles. For any extreme number, there's an extreme quasi-Failed SuperHyperClique with that quasi-maximum extreme SuperHyperCardinality in the terms of the embedded extreme SuperHyperGraph. If there's an embedded extreme SuperHyperGraph, then the extreme quasi-SuperHyperNotions lead us to take the collection of all the extreme quasi-Failed SuperHyperCliques for all extreme numbers less than its extreme corresponded maximum number. The essence of the extreme Failed SuperHyperClique ends up but this essence starts up in the terms of the extreme quasi-Failed SuperHyperClique, again and more in the operations of collecting all the extreme quasi-Failed SuperHyperCliques acted on the all possible used formations of the extreme SuperHyperGraph to achieve one extreme number. This extreme number is considered as the equivalence class for all corresponded quasi-Failed SuperHyperCliques. Let $z_{\text{Extreme Number}}$, $S_{\text{Extreme SuperHyperSet}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme number, an extreme SuperHyperSet and an extreme Failed SuperHyperClique. Then

$$
\begin{aligned}
&[z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}}\}.
\end{aligned}
$$

As its consequences, the formal definition of the extreme Failed SuperHyperClique is re-formalized and redefined as follows.

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}}\}.
\end{aligned}
$$

To get more precise perceptions, the follow-up expressions propose another formal technical definition for the extreme Failed SuperHyperClique.

$$
\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.
\end{aligned}
$$

In more concise and more convenient ways, the modified definition for the extreme Failed SuperHyperClique poses the upcoming expressions.

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

To translate the statement to this mathematical literature, the formulae will be revised.

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

And then,

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

To get more visions in the closer look-up, there's an overall overlook.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

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$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

Now, the extension of these types of approaches is up. Since the new term, "extreme SuperHyperNeighborhood", could be redefined as the collection of the extreme SuperHyperVertices such that any amount of its extreme SuperHyperVertices are incident to an extreme SuperHyperEdge. It's, literarily, another name for "extreme Quasi-Failed SuperHyperClique" but, precisely, it's the generalization of "extreme Quasi-Failed SuperHyperClique" since "extreme Quasi-Failed SuperHyperClique" happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and background but "extreme SuperHyperNeighborhood" may not happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and preliminarily background since there are some ambiguities about the extreme SuperHyperCardinality arise from it. To get orderly keywords, the terms, "extreme SuperHyperNeighborhood", "extreme Quasi-Failed SuperHyperClique", and "extreme Failed SuperHyperClique" are up.
Thus, let $z_{\text{Extreme Number}}$, $N_{\text{Extreme SuperHyperNeighborhood}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme number, an extreme SuperHyperNeighborhood and an extreme Failed SuperHyperClique and the new terms are up.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

And with go back to initial structure,

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

Thus, in a connected extreme SuperHyperGraph $ESHG : (V, E)$, the all interior extreme SuperHyperVertices belong to any extreme quasi-Failed SuperHyperClique if for any of them, and any of other corresponded extreme SuperHyperVertex, the two interior extreme SuperHyperVertices are mutually extreme SuperHyperNeighbors with no extreme exception at all. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. Let an extreme SuperHyperEdge $ESHE$ has some extreme SuperHyperVertices r. Consider all extreme numbers of those extreme SuperHyperVertices from that extreme SuperHyperEdge excluding excluding more than r distinct extreme SuperHyperVertices, exclude to any given extreme SuperHyperSet of the extreme SuperHyperVertices. Consider there's an extreme Failed SuperHyperClique with the least cardinality, the lower sharp extreme bound for extreme cardinality. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \setminus \{z\}$ is an extreme SuperHyperSet S of the extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common but it isn't an extreme Failed SuperHyperClique. Since it doesn't have **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have a some SuperHyperVertices in common. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \cup \{z\}$ is the maximum extreme cardinality of an extreme SuperHyperSet S of extreme SuperHyperVertices but it isn't an extreme Failed SuperHyperClique. Since it **doesn't do** the extreme procedure such that such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common [there are at least one extreme SuperHyperVertex outside implying there's, sometimes in the connected extreme SuperHyperGraph $ESHG : (V, E)$, an extreme SuperHyperVertex, titled its extreme SuperHyperNeighbor, to that extreme

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SuperHyperVertex in the extreme SuperHyperSet S so as S doesn't do "the extreme procedure".]. There's only **one** extreme SuperHyperVertex **outside** the intended extreme SuperHyperSet, $V_{ESHE} \cup \{z\}$, in the terms of extreme SuperHyperNeighborhood. Thus the obvious extreme Failed SuperHyperClique, V_{ESHE} is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, V_{ESHE}, **is** an extreme SuperHyperSet, V_{ESHE}, **includes** only **all** extreme SuperHyperVertices does forms any kind of extreme pairs are titled extreme SuperHyperNeighbors in a connected extreme SuperHyperGraph $ESHG : (V, E)$. Since the extreme SuperHyperSet of the extreme SuperHyperVertices V_{ESHE}, is the **maximum extreme SuperHyperCardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices **such that** there's an extreme SuperHyperEdge to have an extreme SuperHyperVertex in common. Thus, a connected extreme SuperHyperGraph $ESHG : (V, E)$. The any extreme Failed SuperHyperClique only contains all interior extreme SuperHyperVertices and all exterior extreme SuperHyperVertices from the unique extreme SuperHyperEdge where there's any of them has all possible extreme SuperHyperNeighbors in and there's all extreme SuperHyperNeighborhoods in with no exception but everything is possible about extreme SuperHyperNeighborhoods and extreme SuperHyperNeighbors out.
To make sense with precise words in the terms of "Failed", the follow-up illustrations are coming up. The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}.$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}).$$

There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

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or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it'**s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the extreme SuperHyperSet, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.
To sum them up, assume a connected extreme SuperHyperMultipartite $ESHM : (V, E)$. Then an extreme Failed SuperHyperClique is an extreme SuperHyperSet of the interior extreme SuperHyperVertices with only no extreme exception in the extreme form of interior extreme SuperHyperVertices from an extreme SuperHyperPart and only no exception in the form of interior SuperHyperVertices from another SuperHyperPart titled "SuperHyperNeighbors" with neglecting and ignoring more than one of them plus one extreme SuperHypeNeighbor to one. An extreme Failed SuperHyperClique has the extreme maximum number on all the extreme summation on the extreme cardinality of the all extreme SuperHyperParts form one SuperHyperEdges not plus any plus one extreme SuperHypeNeighbor to one. □

Example 6. *In the Figure 25, the connected extreme SuperHyperMultipartite $ESHM : (V, E)$, is highlighted and extreme featured. The obtained extreme SuperHyperSet, by the Algorithm in previous extreme result, of the extreme SuperHyperVertices of the connected extreme SuperHyperMultipartite $ESHM : (V, E)$, , corresponded to E_3, $V_{E_3} \cup V_4$, in the extreme SuperHyperModel (25), is the extreme Failed SuperHyperClique.*

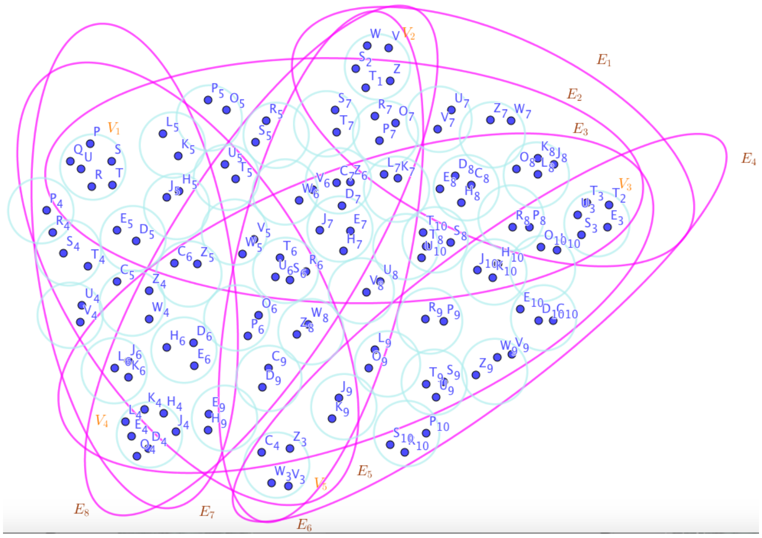

Figure 25. An extreme SuperHyperMultipartite Associated to the Notions of extreme Failed SuperHyperClique in the Example (6).

Proposition 18. *Assume a connected extreme SuperHyperWheel $ESHW : (V, E)$. Then an extreme Failed SuperHyperClique is an extreme SuperHyperSet of the interior extreme SuperHyperVertices, not excluding the extreme SuperHyperCenter, with only no exception in the form of interior extreme SuperHyperVertices from same extreme SuperHyperEdge with not the exclusion plus any plus one extreme SuperHypeNeighbor to one. An extreme Failed SuperHyperClique has the extreme maximum number on all the extreme number of all the extreme SuperHyperEdges have common extreme SuperHyperNeighbors inside for an extreme SuperHyperVertex with the not exclusion plus any plus one extreme SuperHypeNeighbor to one.*

Proof. Assume a connected extreme SuperHyperWheel $ESHW : (V, E)$. Assume an extreme SuperHyperEdge has z extreme number of the extreme SuperHyperVertices. Then every extreme SuperHyperVertex has at least one extreme SuperHyperEdge with others in common. Thus those extreme SuperHyperVertices have the eligibles to be contained in an extreme Failed SuperHyperClique. Those extreme SuperHyperVertices are potentially included in an extreme style-Failed SuperHyperClique. Formally, consider

$$\{Z_1, Z_2, \ldots, Z_z\}$$

are the extreme SuperHyperVertices of an extreme SuperHyperEdge. Thus

$$Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z.$$

where the $\sim$ isn't an equivalence relation but only the symmetric relation on the extreme SuperHyperVertices of the extreme SuperHyperGraph. The formal definition is as follows.

$$Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z$$

if and only if Z_i and Z_j are the extreme SuperHyperVertices and there's an extreme SuperHyperEdge between the extreme SuperHyperVertices Z_i and Z_j. The other definition for the extreme SuperHyperEdge in the terms of extreme Failed SuperHyperClique is

$$\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j,\ i \neq j,\ i, j = 1, 2, \ldots, z\}.$$

This definition coincides with the definition of the extreme Failed SuperHyperClique but with slightly differences in the maximum extreme cardinality amid those extreme type-SuperHyperSets of the extreme SuperHyperVertices. Thus the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$\max_{z} |\{Z_1, Z_2, \ldots, Z_z \mid Z_i \sim Z_j,\ i \neq j,\ i,j = 1,2,\ldots,z\}|_{\text{extreme cardinality}},$$

is formalized with mathematical literatures on the extreme Failed SuperHyperClique. Let $Z_i \overset{E}{\sim} Z_j$, be defined as Z_i and Z_j are the extreme SuperHyperVertices belong to the extreme SuperHyperEdge E. Thus,

$$E = \{Z_1, Z_2, \ldots, Z_z \mid Z_i \overset{E}{\sim} Z_j,\ i \neq j,\ i,j = 1,2,\ldots,z\}.$$

But with the slightly differences,

$$\text{extreme Failed SuperHyperClique} =$$
$$\{Z_1, Z_2, \ldots, Z_z \mid \forall i \neq j,\ i,j = 1,2,\ldots,z,\ \exists E_x,\ Z_i \overset{E_x}{\sim} Z_j,\}.$$

Thus E is an extreme quasi-Failed SuperHyperClique where E is fixed that means $E_x = E$. for all extreme intended SuperHyperVertices but in an extreme Failed SuperHyperClique, E_x could be different and it's not unique. To sum them up, in a connected extreme SuperHyperGraph $ESHG : (V, E)$. If an extreme SuperHyperEdge has z extreme SuperHyperVertices, then the extreme cardinality of the extreme Failed SuperHyperClique is at least z. It's straightforward that the extreme cardinality of the extreme Failed SuperHyperClique is at least the maximum extreme number of extreme SuperHyperVertices of the extreme SuperHyperEdges. In other words, the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices are renamed to extreme Failed SuperHyperClique in some cases but the extreme SuperHyperEdge with the maximum extreme number of extreme SuperHyperVertices, has the extreme SuperHyperVertices are contained in an extreme Failed SuperHyperClique. The main definition of the extreme Failed SuperHyperClique has two titles. An extreme quasi-Failed SuperHyperClique and its corresponded quasi-maximum extreme SuperHyperCardinality are two titles in the terms of quasi-styles. For any extreme number, there's an extreme quasi-Failed SuperHyperClique with that quasi-maximum extreme SuperHyperCardinality in the terms of the embedded extreme SuperHyperGraph. If there's an embedded extreme SuperHyperGraph, then the extreme quasi-SuperHyperNotions lead us to take the collection of all the extreme quasi-Failed SuperHyperCliques for all extreme numbers less than its extreme corresponded maximum number. The essence of the extreme Failed SuperHyperClique ends up but this essence starts up in the terms of the extreme quasi-Failed SuperHyperClique, again and more in the operations of collecting all the extreme quasi-Failed SuperHyperCliques acted on the all possible used formations of the extreme SuperHyperGraph to achieve one extreme number. This extreme number is considered as the equivalence class for all corresponded quasi-Failed SuperHyperCliques. Let $z_{\text{Extreme Number}}$, $S_{\text{Extreme SuperHyperSet}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme number, an extreme SuperHyperSet and an extreme Failed SuperHyperClique. Then

$$[z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \{S_{\text{Extreme SuperHyperSet}} \mid$$
$$S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}},$$
$$|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}}$$
$$= z_{\text{Extreme Number}}\}.$$

As its consequences, the formal definition of the extreme Failed SuperHyperClique is re-formalized and redefined as follows.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}}\}.$$

To get more precise perceptions, the follow-up expressions propose another formal technical definition for the extreme Failed SuperHyperClique.

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

In more concise and more convenient ways, the modified definition for the extreme Failed SuperHyperClique poses the upcoming expressions.

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

To translate the statement to this mathematical literature, the formulae will be revised.

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

And then,

$$G_{\text{Extreme Failed SuperHyperClique}} = \{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

To get more visions in the closer look-up, there's an overall overlook.

$$\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= 2\}.
\end{aligned}$$

$$\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \\
&\cup_{z_{\text{Extreme Number}}} \{S_{\text{Extreme SuperHyperSet}} \mid \\
&S_{\text{Extreme SuperHyperSet}} = G_{\text{Extreme Failed SuperHyperClique}}, \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= z_{\text{Extreme Number}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= 2\}.
\end{aligned}$$

$$\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} \\
&= \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.
\end{aligned}$$

$$\begin{aligned}
&G_{\text{Extreme Failed SuperHyperClique}} = \\
&\{S \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid \\
&|S_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.
\end{aligned}$$

Now, the extension of these types of approaches is up. Since the new term, "extreme SuperHyperNeighborhood", could be redefined as the collection of the extreme SuperHyperVertices such that any amount of its extreme SuperHyperVertices are incident to an extreme SuperHyperEdge. It's, literarily, another name for "extreme Quasi-Failed SuperHyperClique" but, precisely, it's the generalization of "extreme Quasi-Failed SuperHyperClique" since "extreme Quasi-Failed SuperHyperClique" happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and background but "extreme SuperHyperNeighborhood" may not happens "extreme Failed SuperHyperClique" in an extreme SuperHyperGraph as initial framework and preliminarily background since there are some ambiguities about the extreme SuperHyperCardinality arise from it. To get orderly keywords, the terms, "extreme SuperHyperNeighborhood", "extreme Quasi-Failed SuperHyperClique", and "extreme Failed SuperHyperClique" are up.
Thus, let $z_{\text{Extreme Number}}, N_{\text{Extreme SuperHyperNeighborhood}}$ and $G_{\text{Extreme Failed SuperHyperClique}}$ be an extreme

number, an extreme SuperHyperNeighborhood and an extreme Failed SuperHyperClique and the new terms are up.

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}}\}.$$

And with go back to initial structure,

$$G_{\text{Extreme Failed SuperHyperClique}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} = \cup_{z_{\text{Extreme Number}}} \{N_{\text{Extreme SuperHyperNeighborhood}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = z_{\text{Extreme Number}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperNeighborhood}}|_{\text{Extreme Cardinality}} = \max_{[z_{\text{Extreme Number}}]_{\text{Extreme Class}}} z_{\text{Extreme Number}} = 2\}.$$

$$G_{\text{Extreme Failed SuperHyperClique}} = \{N_{\text{Extreme SuperHyperNeighborhood}} \in \cup_{z_{\text{Extreme Number}}} [z_{\text{Extreme Number}}]_{\text{Extreme Class}} \mid |N_{\text{Extreme SuperHyperSet}}|_{\text{Extreme Cardinality}} = 2\}.$$

Thus, in a connected extreme SuperHyperGraph $ESHG : (V, E)$, the all interior extreme SuperHyperVertices belong to any extreme quasi-Failed SuperHyperClique if for any of them, and any of other corresponded extreme SuperHyperVertex, the two interior extreme SuperHyperVertices are mutually extreme SuperHyperNeighbors with no extreme exception at all. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. Let an extreme SuperHyperEdge $ESHE$ has some extreme SuperHyperVertices r. Consider all extreme numbers of those extreme SuperHyperVertices from that extreme SuperHyperEdge excluding excluding more than r distinct extreme SuperHyperVertices, exclude to any given extreme SuperHyperSet of the extreme SuperHyperVertices. Consider there's an extreme Failed SuperHyperClique with the least cardinality, the lower sharp extreme bound for extreme cardinality. Assume a connected extreme SuperHyperGraph $ESHG : (V, E)$. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \setminus \{z\}$ is an extreme SuperHyperSet S of the extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common but it isn't an extreme Failed SuperHyperClique. Since it doesn't have **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's an extreme SuperHyperEdge to have a some SuperHyperVertices in common. The extreme SuperHyperSet of the extreme SuperHyperVertices $V_{ESHE} \cup \{z\}$ is the maximum extreme cardinality of an extreme SuperHyperSet S of extreme SuperHyperVertices but it isn't an extreme Failed SuperHyperClique. Since it **doesn't do** the extreme procedure such that such that there's an extreme SuperHyperEdge to have some extreme SuperHyperVertices in common [there are at least one extreme SuperHyperVertex outside implying there's, sometimes in the connected extreme SuperHyperGraph $ESHG : (V, E)$, an extreme SuperHyperVertex, titled its extreme SuperHyperNeighbor, to that extreme SuperHyperVertex in the extreme SuperHyperSet S so as S doesn't do "the extreme procedure".]. There's only **one** extreme SuperHyperVertex **outside** the intended extreme SuperHyperSet, $V_{ESHE} \cup \{z\}$, in the terms of extreme SuperHyperNeighborhood. Thus the obvious extreme Failed SuperHyperClique, V_{ESHE} is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, V_{ESHE}, **is** an extreme SuperHyperSet, V_{ESHE}, **includes** only **all** extreme SuperHyperVertices does forms any kind of extreme pairs are titled extreme SuperHyperNeighbors in a connected extreme SuperHyperGraph $ESHG : (V, E)$. Since the extreme SuperHyperSet of the extreme SuperHyperVertices V_{ESHE}, is the **maximum extreme SuperHyperCardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices **such that** there's an extreme SuperHyperEdge to have an extreme SuperHyperVertex in common. Thus, a connected extreme SuperHyperGraph $ESHG : (V, E)$. The any extreme Failed SuperHyperClique only contains all interior extreme SuperHyperVertices and all exterior extreme SuperHyperVertices from the unique extreme SuperHyperEdge where there's any of them has all possible extreme SuperHyperNeighbors in and there's all extreme SuperHyperNeighborhoods in with no exception but everything is possible about extreme SuperHyperNeighborhoods and extreme SuperHyperNeighbors out.

To make sense with precise words in the terms of "Failed", the follow-up illustrations are coming up.

The following extreme SuperHyperSet of extreme SuperHyperVertices is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique.

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}.$$

The extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. The extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an **extreme Failed SuperHyperClique** $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is an extreme type-SuperHyperSet with **the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge amid some extreme SuperHyperVertices given by **extreme SuperHyperClique** is the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}).$$

There's not only **three** extreme SuperHyperVertex **inside** the intended extreme SuperHyperSet. Thus the non-obvious extreme Failed SuperHyperClique is up. The obvious simple extreme type-SuperHyperSet called the extreme Failed SuperHyperClique is an extreme SuperHyperSet **includes** only **three** extreme SuperHyperVertices. But the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

doesn't have less than four SuperHyperVertices **inside** the intended extreme SuperHyperSet. Thus the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique **is** up. To sum them up, the extreme SuperHyperSet of extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the non-obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique. Since the extreme SuperHyperSet of the extreme SuperHyperVertices,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

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or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is an extreme Failed SuperHyperClique $\mathcal{C}(ESHG)$ for an extreme SuperHyperGraph $ESHG : (V, E)$ is the extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique **and** it's an extreme **Failed SuperHyperClique**. Since it**'s the maximum extreme cardinality** of an extreme SuperHyperSet S of extreme SuperHyperVertices such that there's no an extreme SuperHyperEdge for some amount extreme SuperHyperVertices given by that extreme type-SuperHyperSet called the extreme Failed SuperHyperClique. There isn't only less than four extreme SuperHyperVertices **inside** the intended extreme SuperHyperSet,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}.$$

Thus the non-obvious extreme Failed SuperHyperClique,

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is up. The obvious simple extreme type-SuperHyperSet of the extreme Failed SuperHyperClique, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

is the extreme SuperHyperSet, not:

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

does includes only less than four SuperHyperVertices in a connected extreme SuperHyperGraph $ESHG : (V, E)$. It's interesting to mention that the only non-obvious simple neutrosophic type-SuperHyperSet called the

"neutrosophic Failed SuperHyperClique"

amid those obvious[non-obvious] simple extreme type-SuperHyperSets called the

extreme Failed SuperHyperClique,

is only and only

$$(V \setminus V \setminus \{x,z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x,z\}) \cup \{zy\}$$

in a connected neutrosophic SuperHyperGraph $ESHG : (V, E)$ with a illustrated SuperHyperModeling. It's also, an extreme free-triangle SuperHyperModel. But all only obvious simple extreme

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type-SuperHyperSets of the extreme Failed SuperHyperClique amid those obvious simple extreme type-SuperHyperSets of the extreme Failed SuperHyperClique, are

$$(V \setminus V \setminus \{x, z\}) \cup \{xy\}$$

or

$$(V \setminus V \setminus \{x, z\}) \cup \{zy\}$$

In a connected extreme SuperHyperGraph $ESHG : (V, E)$.
To sum them up, assume a connected extreme SuperHyperWheel $ESHW : (V, E)$. Then an extreme Failed SuperHyperClique is an extreme SuperHyperSet of the interior extreme SuperHyperVertices, not excluding the extreme SuperHyperCenter, with only no exception in the form of interior extreme SuperHyperVertices from same extreme SuperHyperEdge with not the exclusion plus any plus one extreme SuperHypeNeighbor to one. An extreme Failed SuperHyperClique has the extreme maximum number on all the extreme number of all the extreme SuperHyperEdges have common extreme SuperHyperNeighbors inside for an extreme SuperHyperVertex with the not exclusion plus any plus one extreme SuperHypeNeighbor to one.
□

Example 7. *In the extreme Figure* **??**, *the connected extreme SuperHyperWheel $NSHW : (V, E)$, is extreme highlighted and featured. The obtained extreme SuperHyperSet, by the Algorithm in previous result, of the extreme SuperHyperVertices of the connected extreme SuperHyperWheel $ESHW : (V, E)$, , corresponded to E_5, V_{E_6}, in the extreme SuperHyperModel* (**??**), *is the extreme Failed SuperHyperClique.*

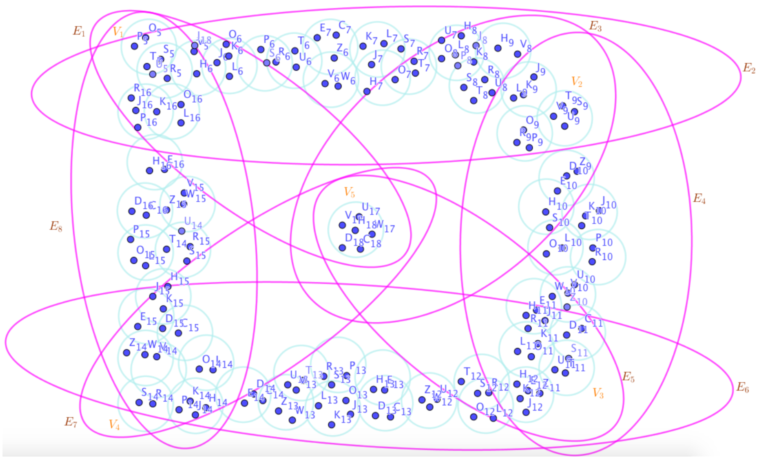

Figure 26. An extreme SuperHyperWheel extreme Associated to the extreme Notions of extreme Failed SuperHyperClique in the extreme Example (7).

4. General Extreme Results

For the Failed SuperHyperClique, extreme Failed SuperHyperClique, and the neutrosophic Failed SuperHyperClique, some general results are introduced.

Remark 2. *Let remind that the neutrosophic Failed SuperHyperClique is "redefined" on the positions of the alphabets.*

Corollary 1. *Assume extreme Failed SuperHyperClique. Then*

$$Neutrosophic\ FailedSuperHyperClique =$$
$$\{theFailedSuperHyperCliqueoftheSuperHyperVertices \mid$$
$$\max |SuperHyperOffensiveSuperHyper$$
$$Clique|_{neutrosophiccardinalityamidthoseFailedSuperHyperClique.}\}$$

plus one extreme SuperHypeNeighbor to one. Where σ_i is the unary operation on the SuperHyperVertices of the SuperHyperGraph to assign the determinacy, the indeterminacy and the neutrality, for $i = 1, 2, 3$, respectively.

Corollary 2. *Assume a neutrosophic SuperHyperGraph on the same identical letter of the alphabet. Then the notion of neutrosophic Failed SuperHyperClique and Failed SuperHyperClique coincide.*

Corollary 3. *Assume a neutrosophic SuperHyperGraph on the same identical letter of the alphabet. Then a consecutive sequence of the SuperHyperVertices is a neutrosophic Failed SuperHyperClique if and only if it's a Failed SuperHyperClique.*

Corollary 4. *Assume a neutrosophic SuperHyperGraph on the same identical letter of the alphabet. Then a consecutive sequence of the SuperHyperVertices is a strongest SuperHyperCycle if and only if it's a longest SuperHyperCycle.*

Corollary 5. *Assume SuperHyperClasses of a neutrosophic SuperHyperGraph on the same identical letter of the alphabet. Then its neutrosophic Failed SuperHyperClique is its Failed SuperHyperClique and reversely.*

Corollary 6. *Assume a neutrosophic SuperHyperPath(-/SuperHyperCycle, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel) on the same identical letter of the alphabet. Then its neutrosophic Failed SuperHyperClique is its Failed SuperHyperClique and reversely.*

Corollary 7. *Assume a neutrosophic SuperHyperGraph. Then its neutrosophic Failed SuperHyperClique isn't well-defined if and only if its Failed SuperHyperClique isn't well-defined.*

Corollary 8. *Assume SuperHyperClasses of a neutrosophic SuperHyperGraph. Then its neutrosophic Failed SuperHyperClique isn't well-defined if and only if its Failed SuperHyperClique isn't well-defined.*

Corollary 9. *Assume a neutrosophic SuperHyperPath(-/SuperHyperCycle, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). Then its neutrosophic Failed SuperHyperClique isn't well-defined if and only if its Failed SuperHyperClique isn't well-defined.*

Corollary 10. *Assume a neutrosophic SuperHyperGraph. Then its neutrosophic Failed SuperHyperClique is well-defined if and only if its Failed SuperHyperClique is well-defined.*

Corollary 11. *Assume SuperHyperClasses of a neutrosophic SuperHyperGraph. Then its neutrosophic Failed SuperHyperClique is well-defined if and only if its Failed SuperHyperClique is well-defined.*

Corollary 12. *Assume a neutrosophic SuperHyperPath(-/SuperHyperCycle, SuperHyperStar, SuperHyperBipartite, SuperHyperMultipartite, SuperHyperWheel). Then its neutrosophic Failed SuperHyperClique is well-defined if and only if its Failed SuperHyperClique is well-defined.*

Proposition 19. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperGraph. Then V is*

(i) : *the dual SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *the strong dual SuperHyperDefensive Failed SuperHyperClique;*

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(iii) : *the connected dual SuperHyperDefensive Failed SuperHyperClique;*
(iv) : *the δ-dual SuperHyperDefensive Failed SuperHyperClique;*
(v) : *the strong δ-dual SuperHyperDefensive Failed SuperHyperClique;*
(vi) : *the connected δ-dual SuperHyperDefensive Failed SuperHyperClique.*

Proposition 20. *Let $NTG : (V, E, \sigma, \mu)$ be a neutrosophic SuperHyperGraph. Then $\emptyset$ is*

(i) : *the SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *the strong SuperHyperDefensive Failed SuperHyperClique;*
(iii) : *the connected defensive SuperHyperDefensive Failed SuperHyperClique;*
(iv) : *the δ-SuperHyperDefensive Failed SuperHyperClique;*
(v) : *the strong δ-SuperHyperDefensive Failed SuperHyperClique;*
(vi) : *the connected δ-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 21. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperGraph. Then an independent SuperHyperSet is*

(i) : *the SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *the strong SuperHyperDefensive Failed SuperHyperClique;*
(iii) : *the connected SuperHyperDefensive Failed SuperHyperClique;*
(iv) : *the δ-SuperHyperDefensive Failed SuperHyperClique;*
(v) : *the strong δ-SuperHyperDefensive Failed SuperHyperClique;*
(vi) : *the connected δ-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 22. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperUniform SuperHyperGraph which is a SuperHyperCycle/SuperHyperPath. Then V is a maximal*

(i) : *SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *strong SuperHyperDefensive Failed SuperHyperClique;*
(iii) : *connected SuperHyperDefensive Failed SuperHyperClique;*
(iv) : *$\mathcal{O}(ESHG)$-SuperHyperDefensive Failed SuperHyperClique;*
(v) : *strong $\mathcal{O}(ESHG)$-SuperHyperDefensive Failed SuperHyperClique;*
(vi) : *connected $\mathcal{O}(ESHG)$-SuperHyperDefensive Failed SuperHyperClique;*

Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide.

Proposition 23. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperGraph which is a SuperHyperUniform SuperHyperWheel. Then V is a maximal*

(i) : *dual SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *strong dual SuperHyperDefensive Failed SuperHyperClique;*
(iii) : *connected dual SuperHyperDefensive Failed SuperHyperClique;*
(iv) : *$\mathcal{O}(ESHG)$-dual SuperHyperDefensive Failed SuperHyperClique;*
(v) : *strong $\mathcal{O}(ESHG)$-dual SuperHyperDefensive Failed SuperHyperClique;*
(vi) : *connected $\mathcal{O}(ESHG)$-dual SuperHyperDefensive Failed SuperHyperClique;*

Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide.

Proposition 24. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperUniform SuperHyperGraph which is a SuperHyperCycle/SuperHyperPath. Then the number of*

(i) : *the Failed SuperHyperClique;*
(ii) : *the Failed SuperHyperClique;*
(iii) : *the connected Failed SuperHyperClique;*
(iv) : *the $\mathcal{O}(ESHG)$-Failed SuperHyperClique;*
(v) : *the strong $\mathcal{O}(ESHG)$-Failed SuperHyperClique;*

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(vi) : *the connected $\mathcal{O}(ESHG)$-Failed SuperHyperClique.*

is one and it's only V. Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide.

Proposition 25. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperUniform SuperHyperGraph which is a SuperHyperWheel. Then the number of*

(i) : *the dual Failed SuperHyperClique;*
(ii) : *the dual Failed SuperHyperClique;*
(iii) : *the dual connected Failed SuperHyperClique;*
(iv) : *the dual $\mathcal{O}(ESHG)$-Failed SuperHyperClique;*
(v) : *the strong dual $\mathcal{O}(ESHG)$-Failed SuperHyperClique;*
(vi) : *the connected dual $\mathcal{O}(ESHG)$-Failed SuperHyperClique.*

is one and it's only V. Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide.

Proposition 26. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperUniform SuperHyperGraph which is a SuperHyperStar/SuperHyperComplete SuperHyperBipartite/SuperHyperComplete SuperHyperMultipartite. Then a SuperHyperSet contains [the SuperHyperCenter and] the half of multiplying r with the number of all the SuperHyperEdges plus one of all the SuperHyperVertices is a*

(i) : *dual SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *strong dual SuperHyperDefensive Failed SuperHyperClique;*
(iii) : *connected dual SuperHyperDefensive Failed SuperHyperClique;*
(iv) : $\frac{\mathcal{O}(ESHG)}{2} + 1$*-dual SuperHyperDefensive Failed SuperHyperClique;*
(v) : *strong* $\frac{\mathcal{O}(ESHG)}{2} + 1$*-dual SuperHyperDefensive Failed SuperHyperClique;*
(vi) : *connected* $\frac{\mathcal{O}(ESHG)}{2} + 1$*-dual SuperHyperDefensive Failed SuperHyperClique.*

Proposition 27. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperUniform SuperHyperGraph which is a SuperHyperStar/SuperHyperComplete SuperHyperBipartite/SuperHyperComplete SuperHyperMultipartite. Then a SuperHyperSet contains the half of multiplying r with the number of all the SuperHyperEdges plus one of all the SuperHyperVertices in the biggest SuperHyperPart is a*

(i) : *SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *strong SuperHyperDefensive Failed SuperHyperClique;*
(iii) : *connected SuperHyperDefensive Failed SuperHyperClique;*
(iv) : *δ-SuperHyperDefensive Failed SuperHyperClique;*
(v) : *strong δ-SuperHyperDefensive Failed SuperHyperClique;*
(vi) : *connected δ-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 28. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperUniform SuperHyperGraph which is a SuperHyperStar/SuperHyperComplete SuperHyperBipartite/SuperHyperComplete SuperHyperMultipartite. Then Then the number of*

(i) : *dual SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *strong dual SuperHyperDefensive Failed SuperHyperClique;*
(iii) : *connected dual SuperHyperDefensive Failed SuperHyperClique;*
(iv) : $\frac{\mathcal{O}(ESHG)}{2} + 1$*-dual SuperHyperDefensive Failed SuperHyperClique;*
(v) : *strong* $\frac{\mathcal{O}(ESHG)}{2} + 1$*-dual SuperHyperDefensive Failed SuperHyperClique;*
(vi) : *connected* $\frac{\mathcal{O}(ESHG)}{2} + 1$*-dual SuperHyperDefensive Failed SuperHyperClique.*

is one and it's only S, a SuperHyperSet contains [the SuperHyperCenter and] the half of multiplying r with the number of all the SuperHyperEdges plus one of all the SuperHyperVertices. Where the exterior SuperHyperVertices and the interior SuperHyperVertices coincide.

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Proposition 29. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperGraph. The number of connected component is $|V - S|$ if there's a SuperHyperSet which is a dual*

(i) : *SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *strong SuperHyperDefensive Failed SuperHyperClique;*
(iii) : *connected SuperHyperDefensive Failed SuperHyperClique;*
(iv) : *Failed SuperHyperClique;*
(v) : *strong 1-SuperHyperDefensive Failed SuperHyperClique;*
(vi) : *connected 1-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 30. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperGraph. Then the number is at most $\mathcal{O}(ESHG)$ and the neutrosophic number is at most $\mathcal{O}_n(ESHG)$.*

Proposition 31. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperGraph which is SuperHyperComplete. The number is $\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1$ and the neutrosophic number is $\min \Sigma_{v \in \{v_1, v_2, \cdots, v_t\}_{t > \frac{\mathcal{O}(ESHG:(V,E))}{2}} \subseteq V} \sigma(v)$, in the setting of dual*

(i) : *SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *strong SuperHyperDefensive Failed SuperHyperClique;*
(iii) : *connected SuperHyperDefensive Failed SuperHyperClique;*
(iv) : $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$*-SuperHyperDefensive Failed SuperHyperClique;*
(v) : *strong* $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$*-SuperHyperDefensive Failed SuperHyperClique;*
(vi) : *connected* $(\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1)$*-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 32. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperGraph which is $\emptyset$. The number is 0 and the neutrosophic number is 0, for an independent SuperHyperSet in the setting of dual*

(i) : *SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *strong SuperHyperDefensive Failed SuperHyperClique;*
(iii) : *connected SuperHyperDefensive Failed SuperHyperClique;*
(iv) : 0*-SuperHyperDefensive Failed SuperHyperClique;*
(v) : *strong* 0*-SuperHyperDefensive Failed SuperHyperClique;*
(vi) : *connected* 0*-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 33. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperGraph which is SuperHyperComplete. Then there's no independent SuperHyperSet.*

Proposition 34. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperGraph which is SuperHyperCycle/SuperHyperPath/SuperHyperWheel. The number is $\mathcal{O}(ESHG : (V, E))$ and the neutrosophic number is $\mathcal{O}_n(ESHG : (V, E))$, in the setting of a dual*

(i) : *SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *strong SuperHyperDefensive Failed SuperHyperClique;*
(iii) : *connected SuperHyperDefensive Failed SuperHyperClique;*
(iv) : $\mathcal{O}(ESHG : (V, E))$*-SuperHyperDefensive Failed SuperHyperClique;*
(v) : *strong* $\mathcal{O}(ESHG : (V, E))$*-SuperHyperDefensive Failed SuperHyperClique;*
(vi) : *connected* $\mathcal{O}(ESHG : (V, E))$*-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 35. *Let $ESHG : (V, E)$ be a neutrosophic SuperHyperGraph which is SuperHyperStar/complete SuperHyperBipartite/complete SuperHyperMultiPartite. The number is $\frac{\mathcal{O}(ESHG:(V,E))}{2} + 1$ and the neutrosophic number is $\min \Sigma_{v \in \{v_1, v_2, \cdots, v_t\}_{t > \frac{\mathcal{O}(ESHG:(V,E))}{2}} \subseteq V} \sigma(v)$, in the setting of a dual*

(i) : *SuperHyperDefensive Failed SuperHyperClique;*
(ii) : *strong SuperHyperDefensive Failed SuperHyperClique;*

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$(iii):$ *connected SuperHyperDefensive Failed SuperHyperClique;*
$(iv):$ $(\frac{\mathcal{O}(ESHG:(V,E))}{2}+1)$*-SuperHyperDefensive Failed SuperHyperClique;*
$(v):$ *strong* $(\frac{\mathcal{O}(ESHG:(V,E))}{2}+1)$*-SuperHyperDefensive Failed SuperHyperClique;*
$(vi):$ *connected* $(\frac{\mathcal{O}(ESHG:(V,E))}{2}+1)$*-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 36. *Let $\mathcal{NSHF}:(V,E)$ be a SuperHyperFamily of the ESHGs $:(V,E)$ neutrosophic SuperHyperGraphs which are from one-type SuperHyperClass which the result is obtained for the individuals. Then the results also hold for the SuperHyperFamily $\mathcal{NSHF}:(V,E)$ of these specific SuperHyperClasses of the neutrosophic SuperHyperGraphs.*

Proposition 37. *Let $ESHG:(V,E)$ be a strong neutrosophic SuperHyperGraph. If S is a dual SuperHyperDefensive Failed SuperHyperClique, then $\forall v\in V\setminus S,\ \exists x\in S$ such that*

(i) $v\in N_s(x)$;
(ii) $vx\in E$.

Proposition 38. *Let $ESHG:(V,E)$ be a strong neutrosophic SuperHyperGraph. If S is a dual SuperHyperDefensive Failed SuperHyperClique, then*

(i) *S is SuperHyperDominating set;*
(ii) *there's $S\subseteq S'$ such that $|S'|$ is SuperHyperChromatic number.*

Proposition 39. *Let $ESHG:(V,E)$ be a strong neutrosophic SuperHyperGraph. Then*

(i) $\Gamma\leq\mathcal{O}$;
(ii) $\Gamma_s\leq\mathcal{O}_n$.

Proposition 40. *Let $ESHG:(V,E)$ be a strong neutrosophic SuperHyperGraph which is connected. Then*

(i) $\Gamma\leq\mathcal{O}-1$;
(ii) $\Gamma_s\leq\mathcal{O}_n-\Sigma_{i=1}^3\sigma_i(x)$.

Proposition 41. *Let $ESHG:(V,E)$ be an odd SuperHyperPath. Then*

(i) *the SuperHyperSet $S=\{v_2,v_4,\cdots,v_{n-1}\}$ is a dual SuperHyperDefensive Failed SuperHyperClique;*
(ii) *$\Gamma=\lfloor\frac{n}{2}\rfloor+1$ and corresponded SuperHyperSet is $S=\{v_2,v_4,\cdots,v_{n-1}\}$;*
(iii) $\Gamma_s=\min\{\Sigma_{s\in S=\{v_2,v_4,\cdots,v_{n-1}\}}\Sigma_{i=1}^3\sigma_i(s),\Sigma_{s\in S=\{v_1,v_3,\cdots,v_{n-1}\}}\Sigma_{i=1}^3\sigma_i(s)\}$;
(iv) *the SuperHyperSets $S_1=\{v_2,v_4,\cdots,v_{n-1}\}$ and $S_2=\{v_1,v_3,\cdots,v_{n-1}\}$ are only a dual Failed SuperHyperClique.*

Proposition 42. *Let $ESHG:(V,E)$ be an even SuperHyperPath. Then*

(i) *the set $S=\{v_2,v_4,\cdots.v_n\}$ is a dual SuperHyperDefensive Failed SuperHyperClique;*
(ii) *$\Gamma=\lfloor\frac{n}{2}\rfloor$ and corresponded SuperHyperSets are $\{v_2,v_4,\cdots.v_n\}$ and $\{v_1,v_3,\cdots.v_{n-1}\}$;*
(iii) $\Gamma_s=\min\{\Sigma_{s\in S=\{v_2,v_4,\cdots,v_n\}}\Sigma_{i=1}^3\sigma_i(s),\Sigma_{s\in S=\{v_1,v_3,\cdots.v_{n-1}\}}\Sigma_{i=1}^3\sigma_i(s)\}$;
(iv) *the SuperHyperSets $S_1=\{v_2,v_4,\cdots.v_n\}$ and $S_2=\{v_1,v_3,\cdots.v_{n-1}\}$ are only dual Failed SuperHyperClique.*

Proposition 43. *Let $ESHG:(V,E)$ be an even SuperHyperCycle. Then*

(i) *the SuperHyperSet $S=\{v_2,v_4,\cdots,v_n\}$ is a dual SuperHyperDefensive Failed SuperHyperClique;*
(ii) *$\Gamma=\lfloor\frac{n}{2}\rfloor$ and corresponded SuperHyperSets are $\{v_2,v_4,\cdots,v_n\}$ and $\{v_1,v_3,\cdots,v_{n-1}\}$;*
(iii) $\Gamma_s=\min\{\Sigma_{s\in S=\{v_2,v_4,\cdots,v_n\}}\sigma(s),\Sigma_{s\in S=\{v_1,v_3,\cdots,v_{n-1}\}}\sigma(s)\}$;
(iv) *the SuperHyperSets $S_1=\{v_2,v_4,\cdots,v_n\}$ and $S_2=\{v_1,v_3,\cdots,v_{n-1}\}$ are only dual Failed SuperHyperClique.*

Proposition 44. *Let $ESHG : (V, E)$ be an odd SuperHyperCycle. Then*

(i) *the SuperHyperSet $S = \{v_2, v_4, \cdots, v_{n-1}\}$ is a dual SuperHyperDefensive Failed SuperHyperClique;*
(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$ *and corresponded SuperHyperSet is $S = \{v_2, v_4, \cdots, v_{n-1}\}$;*
(iii) $\Gamma_s = \min\{\Sigma_{s \in S = \{v_2, v_4, \cdots .v_{n-1}\}} \Sigma_{i=1}^{3} \sigma_i(s), \Sigma_{s \in S = \{v_1, v_3, \cdots .v_{n-1}\}} \Sigma_{i=1}^{3} \sigma_i(s)\}$;
(iv) *the SuperHyperSets $S_1 = \{v_2, v_4, \cdots .v_{n-1}\}$ and $S_2 = \{v_1, v_3, \cdots .v_{n-1}\}$ are only dual Failed SuperHyperClique.*

Proposition 45. *Let $ESHG : (V, E)$ be SuperHyperStar. Then*

(i) *the SuperHyperSet $S = \{c\}$ is a dual maximal Failed SuperHyperClique;*
(ii) $\Gamma = 1$;
(iii) $\Gamma_s = \Sigma_{i=1}^{3} \sigma_i(c)$;
(iv) *the SuperHyperSets $S = \{c\}$ and $S \subset S'$ are only dual Failed SuperHyperClique.*

Proposition 46. *Let $ESHG : (V, E)$ be SuperHyperWheel. Then*

(i) *the SuperHyperSet $S = \{v_1, v_3\} \cup \{v_6, v_9 \cdots, v_{i+6}, \cdots, v_n\}_{i=1}^{6+3(i-1) \leq n}$ is a dual maximal SuperHyperDefensive Failed SuperHyperClique;*
(ii) $\Gamma = |\{v_1, v_3\} \cup \{v_6, v_9 \cdots, v_{i+6}, \cdots, v_n\}_{i=1}^{6+3(i-1) \leq n}|$;
(iii) $\Gamma_s = \Sigma_{\{v_1, v_3\} \cup \{v_6, v_9 \cdots, v_{i+6}, \cdots, v_n\}_{i=1}^{6+3(i-1) \leq n}} \Sigma_{i=1}^{3} \sigma_i(s)$;
(iv) *the SuperHyperSet $\{v_1, v_3\} \cup \{v_6, v_9 \cdots, v_{i+6}, \cdots, v_n\}_{i=1}^{6+3(i-1) \leq n}$ is only a dual maximal SuperHyperDefensive Failed SuperHyperClique.*

Proposition 47. *Let $ESHG : (V, E)$ be an odd SuperHyperComplete. Then*

(i) *the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ is a dual SuperHyperDefensive Failed SuperHyperClique;*
(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$;
(iii) $\Gamma_s = \min\{\Sigma_{s \in S} \Sigma_{i=1}^{3} \sigma_i(s)\}_{S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}}$;
(iv) *the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ is only a dual SuperHyperDefensive Failed SuperHyperClique.*

Proposition 48. *Let $ESHG : (V, E)$ be an even SuperHyperComplete. Then*

(i) *the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ is a dual SuperHyperDefensive Failed SuperHyperClique;*
(ii) $\Gamma = \lfloor \frac{n}{2} \rfloor$;
(iii) $\Gamma_s = \min\{\Sigma_{s \in S} \Sigma_{i=1}^{3} \sigma_i(s)\}_{S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}}$;
(iv) *the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ is only a dual maximal SuperHyperDefensive Failed SuperHyperClique.*

Proposition 49. *Let $\mathcal{NSHF} : (V, E)$ be a m-SuperHyperFamily of neutrosophic SuperHyperStars with common neutrosophic SuperHyperVertex SuperHyperSet. Then*

(i) *the SuperHyperSet $S = \{c_1, c_2, \cdots, c_m\}$ is a dual SuperHyperDefensive Failed SuperHyperClique for $\mathcal{NSHF}$;*
(ii) $\Gamma = m$ *for $\mathcal{NSHF} : (V, E)$;*
(iii) $\Gamma_s = \Sigma_{i=1}^{m} \Sigma_{j=1}^{3} \sigma_j(c_i)$ *for $\mathcal{NSHF} : (V, E)$;*
(iv) *the SuperHyperSets $S = \{c_1, c_2, \cdots, c_m\}$ and $S \subset S'$ are only dual Failed SuperHyperClique for $\mathcal{NSHF} : (V, E)$.*

Proposition 50. *Let $\mathcal{NSHF} : (V, E)$ be an m-SuperHyperFamily of odd SuperHyperComplete SuperHyperGraphs with common neutrosophic SuperHyperVertex SuperHyperSet. Then*

(i) *the SuperHyperSet $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ is a dual maximal SuperHyperDefensive Failed SuperHyperClique for $\mathcal{NSHF}$;*

(*ii*) $\Gamma = \lfloor \frac{n}{2} \rfloor + 1$ *for* $\mathcal{NSHF} : (V, E)$;
(*iii*) $\Gamma_s = \min\{\Sigma_{s \in S} \Sigma_{i=1}^{3} \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}}$ *for* $\mathcal{NSHF} : (V, E)$;
(*iv*) *the SuperHyperSets* $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor + 1}$ *are only a dual maximal Failed SuperHyperClique for* $\mathcal{NSHF} : (V, E)$.

Proposition 51. *Let* $\mathcal{NSHF} : (V, E)$ *be a m-SuperHyperFamily of even SuperHyperComplete SuperHyperGraphs with common neutrosophic SuperHyperVertex SuperHyperSet. Then*

(*i*) *the SuperHyperSet* $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ *is a dual SuperHyperDefensive Failed SuperHyperClique for* $\mathcal{NSHF} : (V, E)$;
(*ii*) $\Gamma = \lfloor \frac{n}{2} \rfloor$ *for* $\mathcal{NSHF} : (V, E)$;
(*iii*) $\Gamma_s = \min\{\Sigma_{s \in S} \Sigma_{i=1}^{3} \sigma_i(s)\}_{S=\{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}}$ *for* $\mathcal{NSHF} : (V, E)$;
(*iv*) *the SuperHyperSets* $S = \{v_i\}_{i=1}^{\lfloor \frac{n}{2} \rfloor}$ *are only dual maximal Failed SuperHyperClique for* $\mathcal{NSHF} : (V, E)$.

Proposition 52. *Let* $ESHG : (V, E)$ *be a strong neutrosophic SuperHyperGraph. Then following statements hold;*

(*i*) *if* $s \geq t$ *and a SuperHyperSet* S *of SuperHyperVertices is an t-SuperHyperDefensive Failed SuperHyperClique, then* S *is an s-SuperHyperDefensive Failed SuperHyperClique;*
(*ii*) *if* $s \leq t$ *and a SuperHyperSet* S *of SuperHyperVertices is a dual t-SuperHyperDefensive Failed SuperHyperClique, then* S *is a dual s-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 53. *Let* $ESHG : (V, E)$ *be a strong neutrosophic SuperHyperGraph. Then following statements hold;*

(*i*) *if* $s \geq t + 2$ *and a SuperHyperSet* S *of SuperHyperVertices is an t-SuperHyperDefensive Failed SuperHyperClique, then* S *is an s-SuperHyperPowerful Failed SuperHyperClique;*
(*ii*) *if* $s \leq t$ *and a SuperHyperSet* S *of SuperHyperVertices is a dual t-SuperHyperDefensive Failed SuperHyperClique, then* S *is a dual s-SuperHyperPowerful Failed SuperHyperClique.*

Proposition 54. *Let* $ESHG : (V, E)$ *be a[an] [r-]SuperHyperUniform-strong-neutrosophic SuperHyperGraph. Then following statements hold;*

(*i*) *if* $\forall a \in S$, $|N_s(a) \cap S| < \lfloor \frac{r}{2} \rfloor + 1$, *then* $ESHG : (V, E)$ *is an 2-SuperHyperDefensive Failed SuperHyperClique;*
(*ii*) *if* $\forall a \in V \setminus S$, $|N_s(a) \cap S| > \lfloor \frac{r}{2} \rfloor + 1$, *then* $ESHG : (V, E)$ *is a dual 2-SuperHyperDefensive Failed SuperHyperClique;*
(*iii*) *if* $\forall a \in S$, $|N_s(a) \cap V \setminus S| = 0$, *then* $ESHG : (V, E)$ *is an r-SuperHyperDefensive Failed SuperHyperClique;*
(*iv*) *if* $\forall a \in V \setminus S$, $|N_s(a) \cap V \setminus S| = 0$, *then* $ESHG : (V, E)$ *is a dual r-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 55. *Let* $ESHG : (V, E)$ *is a[an] [r-]SuperHyperUniform-strong-neutrosophic SuperHyperGraph. Then following statements hold;*

(*i*) $\forall a \in S$, $|N_s(a) \cap S| < \lfloor \frac{r}{2} \rfloor + 1$ *if* $ESHG : (V, E)$ *is an 2-SuperHyperDefensive Failed SuperHyperClique;*
(*ii*) $\forall a \in V \setminus S$, $|N_s(a) \cap S| > \lfloor \frac{r}{2} \rfloor + 1$ *if* $ESHG : (V, E)$ *is a dual 2-SuperHyperDefensive Failed SuperHyperClique;*
(*iii*) $\forall a \in S$, $|N_s(a) \cap V \setminus S| = 0$ *if* $ESHG : (V, E)$ *is an r-SuperHyperDefensive Failed SuperHyperClique;*
(*iv*) $\forall a \in V \setminus S$, $|N_s(a) \cap V \setminus S| = 0$ *if* $ESHG : (V, E)$ *is a dual r-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 56. *Let ESHG* : (V, E) *is a[an] [r-]SuperHyperUniform-strong-neutrosophic SuperHyperGraph which is a SuperHyperComplete. Then following statements hold;*

(i) $\forall a \in S,\ |N_s(a) \cap S| < \lfloor \frac{\mathcal{O}-1}{2} \rfloor + 1$ *if ESHG* : (V, E) *is an 2-SuperHyperDefensive Failed SuperHyperClique;*
(ii) $\forall a \in V \setminus S,\ |N_s(a) \cap S| > \lfloor \frac{\mathcal{O}-1}{2} \rfloor + 1$ *if ESHG* : (V, E) *is a dual 2-SuperHyperDefensive Failed SuperHyperClique;*
(iii) $\forall a \in S,\ |N_s(a) \cap V \setminus S| = 0$ *if ESHG* : (V, E) *is an* $(\mathcal{O} - 1)$*-SuperHyperDefensive Failed SuperHyperClique;*
(iv) $\forall a \in V \setminus S,\ |N_s(a) \cap V \setminus S| = 0$ *if ESHG* : (V, E) *is a dual* $(\mathcal{O} - 1)$*-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 57. *Let ESHG* : (V, E) *is a[an] [r-]SuperHyperUniform-strong-neutrosophic SuperHyperGraph which is a SuperHyperComplete. Then following statements hold;*

(i) *if* $\forall a \in S,\ |N_s(a) \cap S| < \lfloor \frac{\mathcal{O}-1}{2} \rfloor + 1$*, then ESHG* : (V, E) *is an 2-SuperHyperDefensive Failed SuperHyperClique;*
(ii) *if* $\forall a \in V \setminus S,\ |N_s(a) \cap S| > \lfloor \frac{\mathcal{O}-1}{2} \rfloor + 1$*, then ESHG* : (V, E) *is a dual 2-SuperHyperDefensive Failed SuperHyperClique;*
(iii) *if* $\forall a \in S,\ |N_s(a) \cap V \setminus S| = 0$*, then ESHG* : (V, E) *is* $(\mathcal{O} - 1)$*-SuperHyperDefensive Failed SuperHyperClique;*
(iv) *if* $\forall a \in V \setminus S,\ |N_s(a) \cap V \setminus S| = 0$*, then ESHG* : (V, E) *is a dual* $(\mathcal{O} - 1)$*-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 58. *Let ESHG* : (V, E) *is a[an] [r-]SuperHyperUniform-strong-neutrosophic SuperHyperGraph which is SuperHyperCycle. Then following statements hold;*

(i) $\forall a \in S,\ |N_s(a) \cap S| < 2$ *if ESHG* : $(V, E))$ *is an 2-SuperHyperDefensive Failed SuperHyperClique;*
(ii) $\forall a \in V \setminus S,\ |N_s(a) \cap S| > 2$ *if ESHG* : (V, E) *is a dual 2-SuperHyperDefensive Failed SuperHyperClique;*
(iii) $\forall a \in S,\ |N_s(a) \cap V \setminus S| = 0$ *if ESHG* : (V, E) *is an 2-SuperHyperDefensive Failed SuperHyperClique;*
(iv) $\forall a \in V \setminus S,\ |N_s(a) \cap V \setminus S| = 0$ *if ESHG* : (V, E) *is a dual 2-SuperHyperDefensive Failed SuperHyperClique.*

Proposition 59. *Let ESHG* : (V, E) *is a[an] [r-]SuperHyperUniform-strong-neutrosophic SuperHyperGraph which is SuperHyperCycle. Then following statements hold;*

(i) *if* $\forall a \in S,\ |N_s(a) \cap S| < 2$*, then ESHG* : (V, E) *is an 2-SuperHyperDefensive Failed SuperHyperClique;*
(ii) *if* $\forall a \in V \setminus S,\ |N_s(a) \cap S| > 2$*, then ESHG* : (V, E) *is a dual 2-SuperHyperDefensive Failed SuperHyperClique;*
(iii) *if* $\forall a \in S,\ |N_s(a) \cap V \setminus S| = 0$*, then ESHG* : (V, E) *is an 2-SuperHyperDefensive Failed SuperHyperClique;*
(iv) *if* $\forall a \in V \setminus S,\ |N_s(a) \cap V \setminus S| = 0$*, then ESHG* : (V, E) *is a dual 2-SuperHyperDefensive Failed SuperHyperClique.*

5. Extreme Problems and Extreme Questions

In what follows, some "Extreme problems" and some "Extreme questions" are Extremely proposed.
The Failed SuperHyperClique and the Extreme Failed SuperHyperClique are Extremely defined on a real-world Extreme application, titled "Cancer's Extreme recognitions".

Question 1. *Which the else Extreme SuperHyperModels could be defined based on Cancer's Extreme recognitions?*

Question 2. *Are there some Extreme SuperHyperNotions related to Failed SuperHyperClique and the Extreme Failed SuperHyperClique?*

Question 3. *Are there some Extreme Algorithms to be defined on the Extreme SuperHyperModels to compute them Extremely?*

Question 4. *Which the Extreme SuperHyperNotions are related to beyond the Failed SuperHyperClique and the Extreme Failed SuperHyperClique?*

Problem 5. *The Failed SuperHyperClique and the Extreme Failed SuperHyperClique do Extremely a Extreme SuperHyperModel for the Cancer's Extreme recognitions and they're based Extremely on Extreme Failed SuperHyperClique, are there else Extremely?*

Problem 6. *Which the fundamental Extreme SuperHyperNumbers are related to these Extreme SuperHyperNumbers types-results?*

Problem 7. *What's the independent research based on Cancer's Extreme recognitions concerning the multiple types of Extreme SuperHyperNotions?*

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