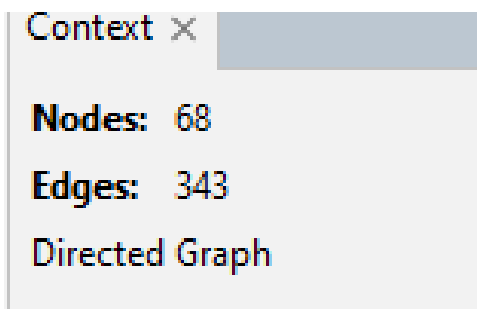
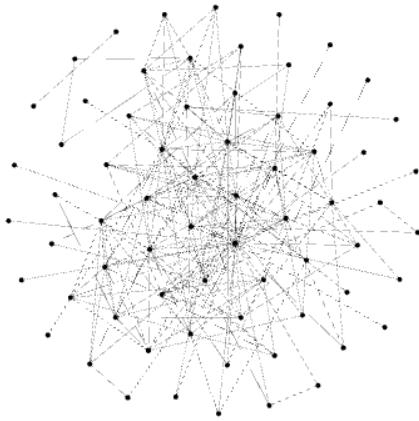


1ST TASK

NON-CONSPIRACY graph -840 (Normal Twitter Community)



Indicates network size and overall activity.

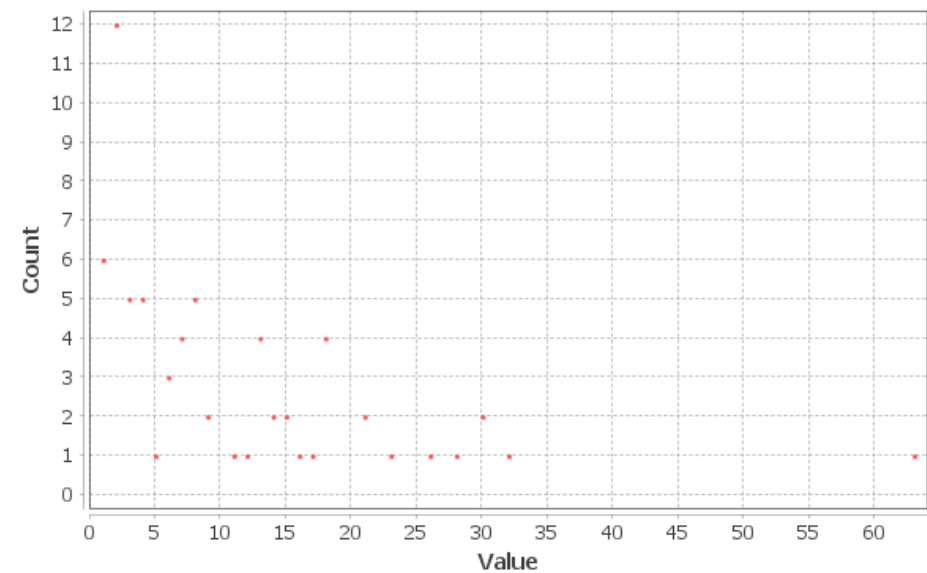
Large node/edge count = active community with many interactions.

Average degree:

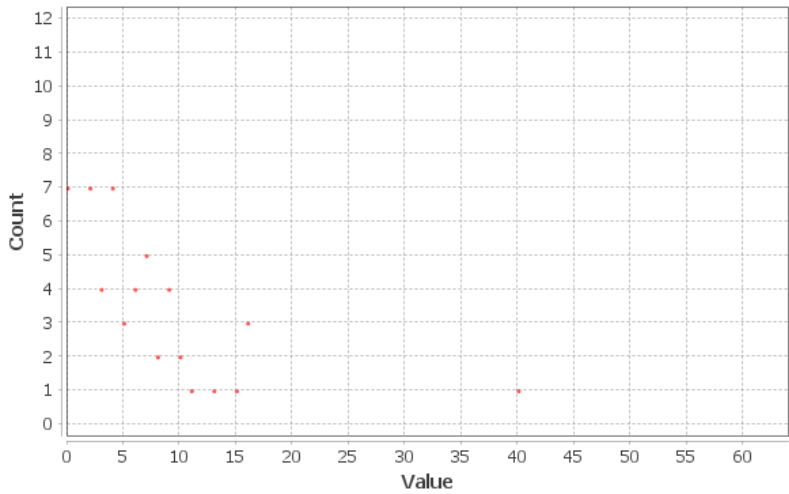
Average number of connections per user.

Higher degree = more engagement, replies, mentions.

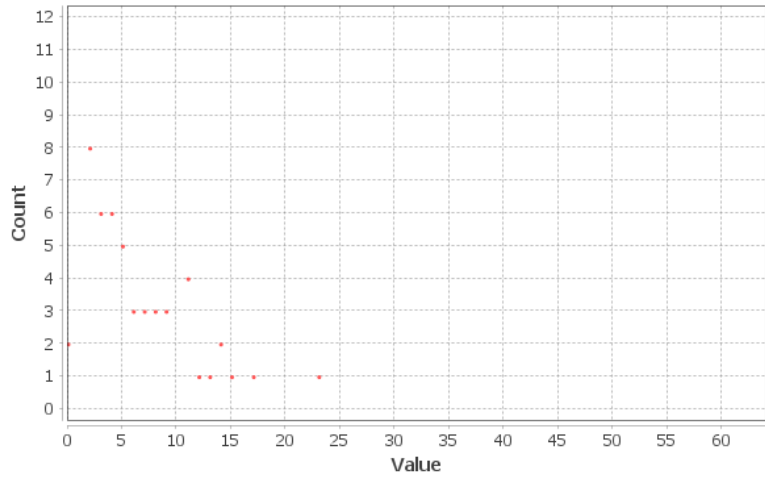
Degree Distribution



In-Degree Distribution



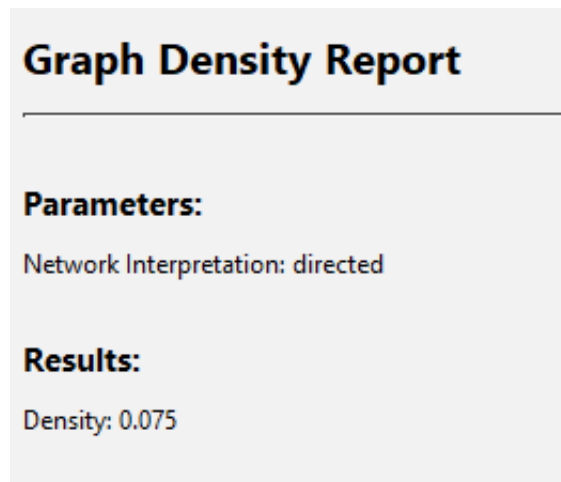
Out-Degree Distribution



Graph Density:

Density = (actual edges) ÷ (possible edges)

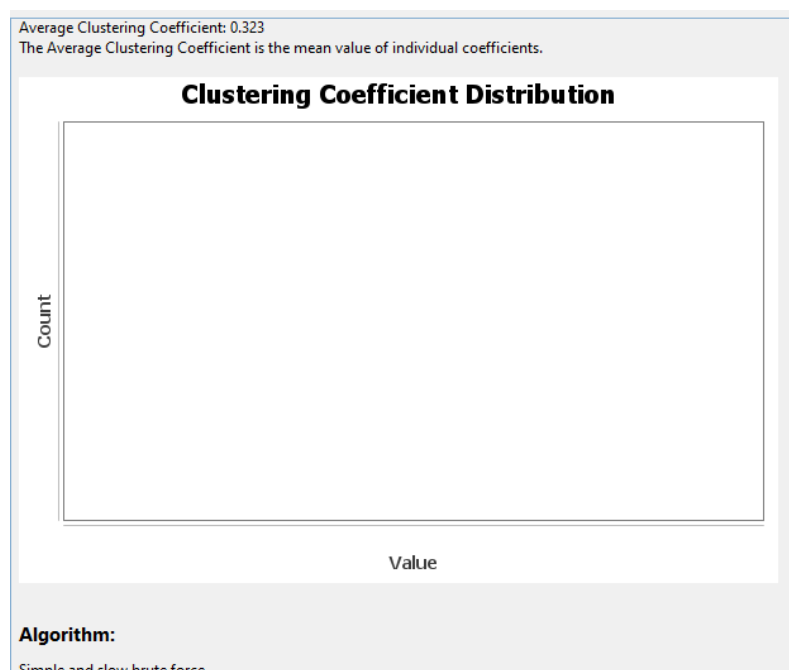
Low density is normal for Twitter because not everyone interacts with everyone



average clustering coefficient:

Likelihood that a user's connections also interact with each other.

Higher clustering = more local conversation circles.



Modularity:

Measures how well the network separates into groups.

Higher modularity = clear topic-based or interest-based clusters.

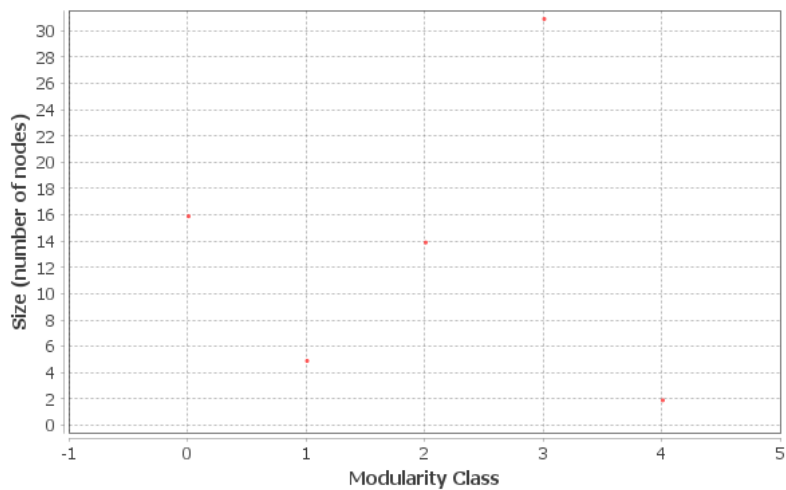
Results:

Modularity: 0.344

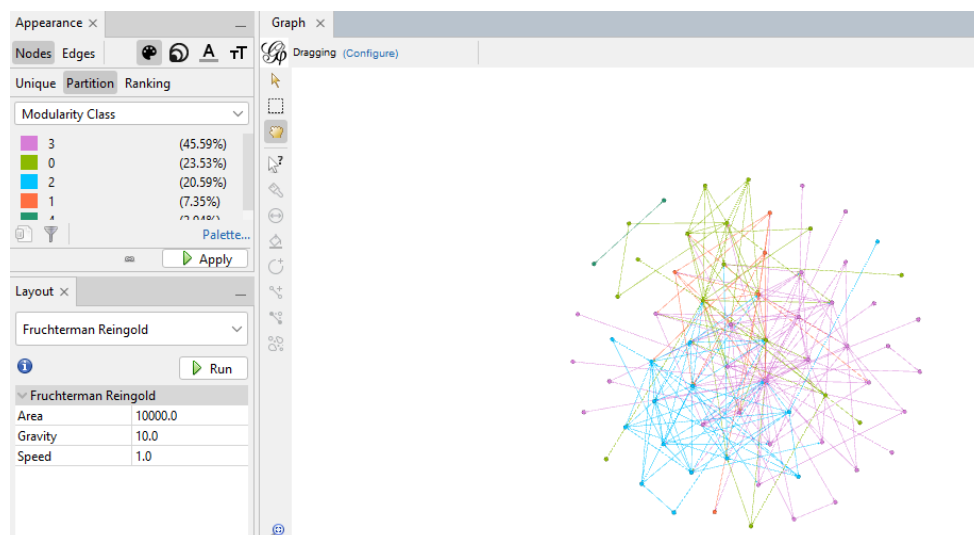
Modularity with resolution: 0.344

Number of Communities: 5

Size Distribution



color nodes by community:



Centrality (Betweenness & Closeness)

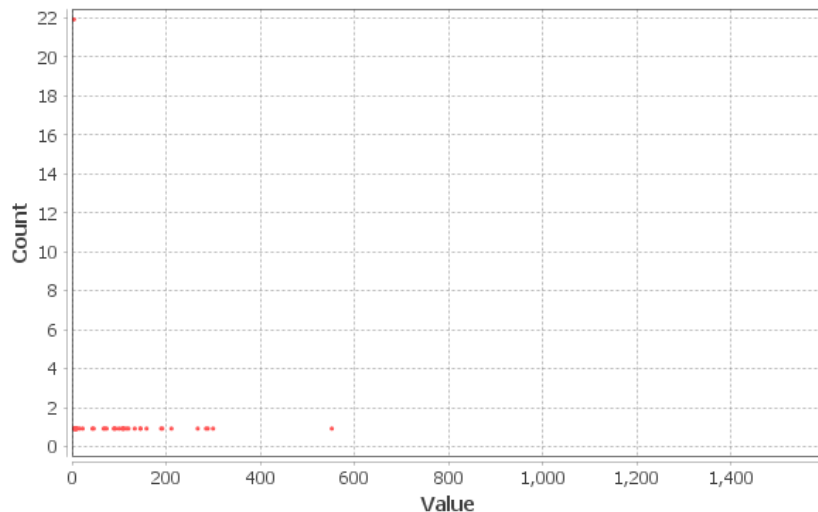
Results:

Diameter: 6

Radius: 0

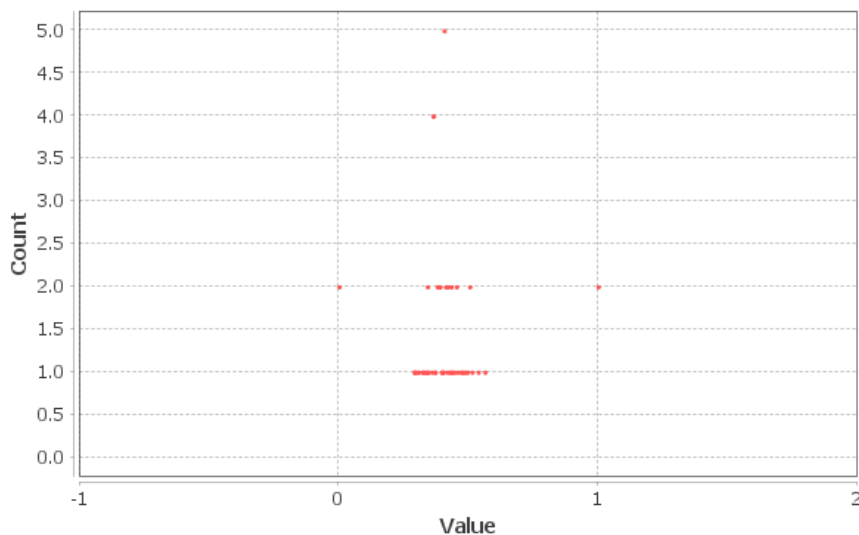
Average Path length: 2.554420854608976

Betweenness Centrality Distribution



Betweenness Centrality: Shows which nodes act as bridges.
High values mean users who connect separate discussion groups.

Closeness Centrality Distribution



closeness Centrality: Measures how easily a node can reach all others.
High closeness = influential nodes that spread information quickly.

connected components:

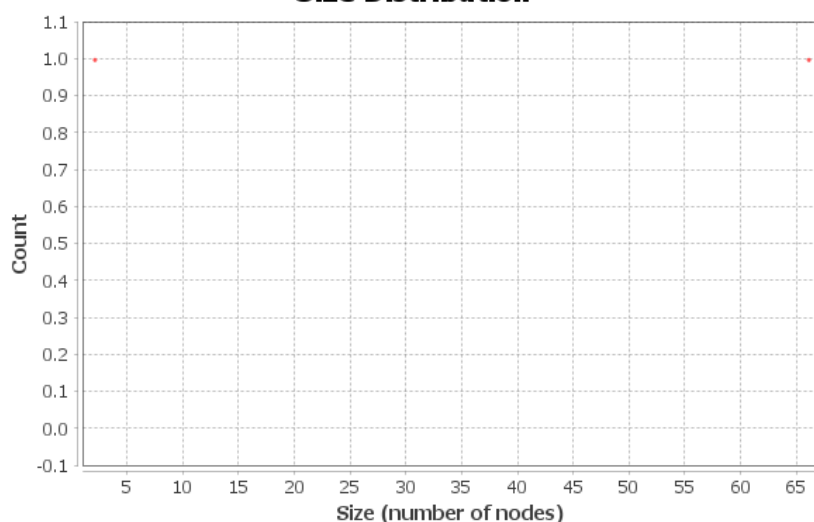
Represents isolated clusters in the network.
Fewer components = more unified conversation.

Results:

Number of Weakly Connected Components: 2

Number of Strongly Connected Components: 11

Size Distribution



5G-CONSPIRACY graph-25 (Misinformation Subgraph)



Nodes: 6

Edges: 10

Directed Graph

very small with minimal interaction.

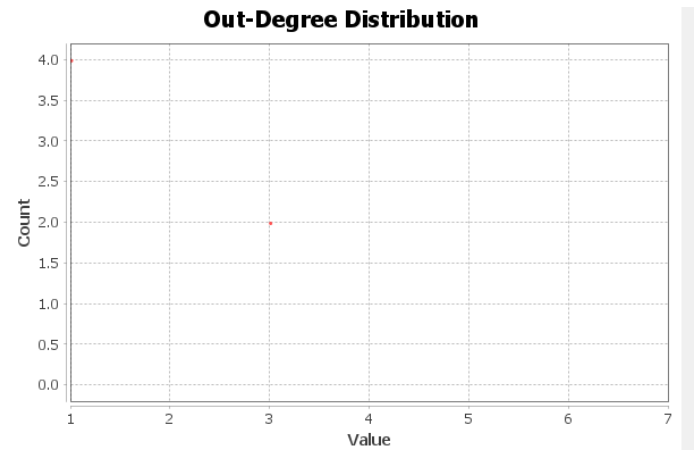
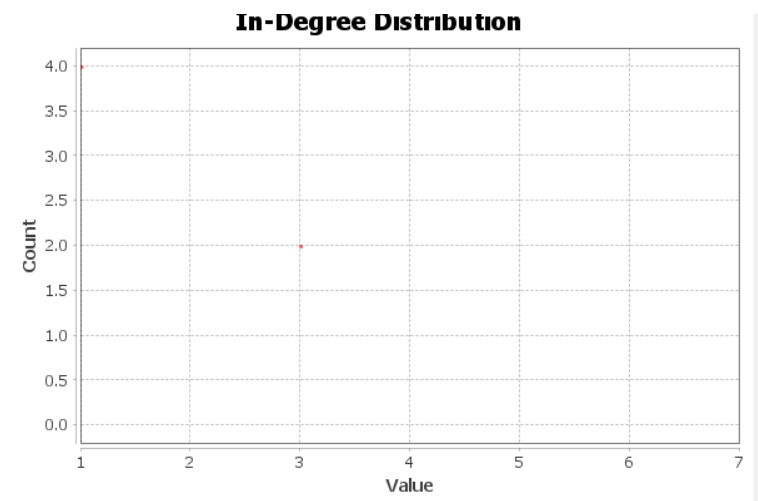
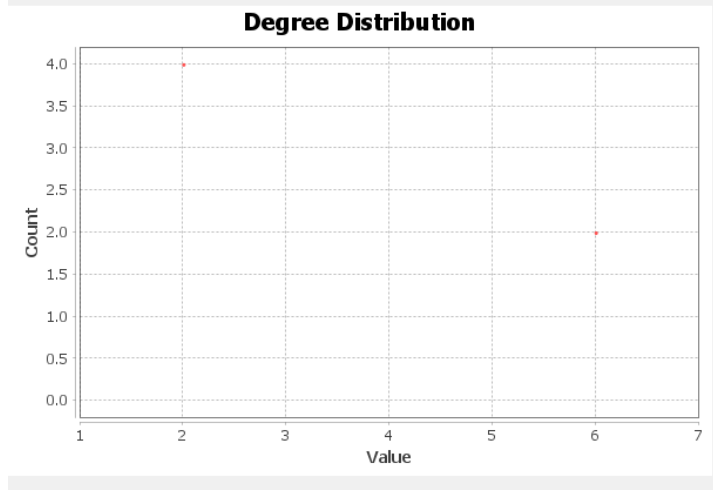
Indicates weak or dying misinformation thread.

Average Degree:

Low degree = users barely interact.

Rumor clusters often form around isolated retweets or one-way mentions.

Average Degree: 1.667



Graph Density: Despite being small, density is still low.
Suggests weak internal communication.

Graph Density Report

Parameters:

Network Interpretation: directed

Results:

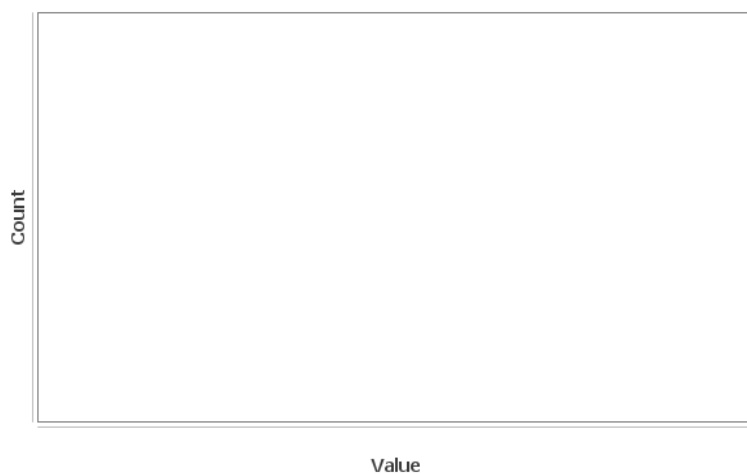
Density: 0.333

Average clustering coefficient: Often **0.0** in misinformation fragments.
Users talking separately, not forming conversation circles.

Average Clustering Coefficient: 0.000

The Average Clustering Coefficient is the mean value of individual coefficients.

Clustering Coefficient Distribution



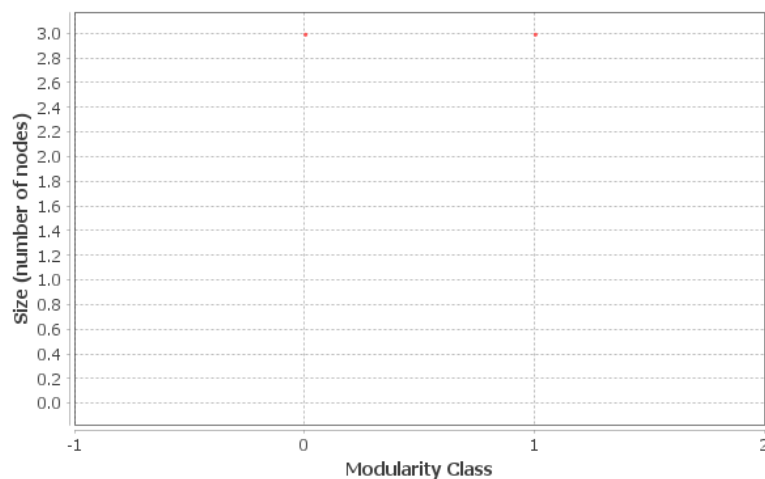
Modularity: High number of communities despite tiny size = strong fragmentation.
Each mini-cluster is isolated.

Modularity: 0.300

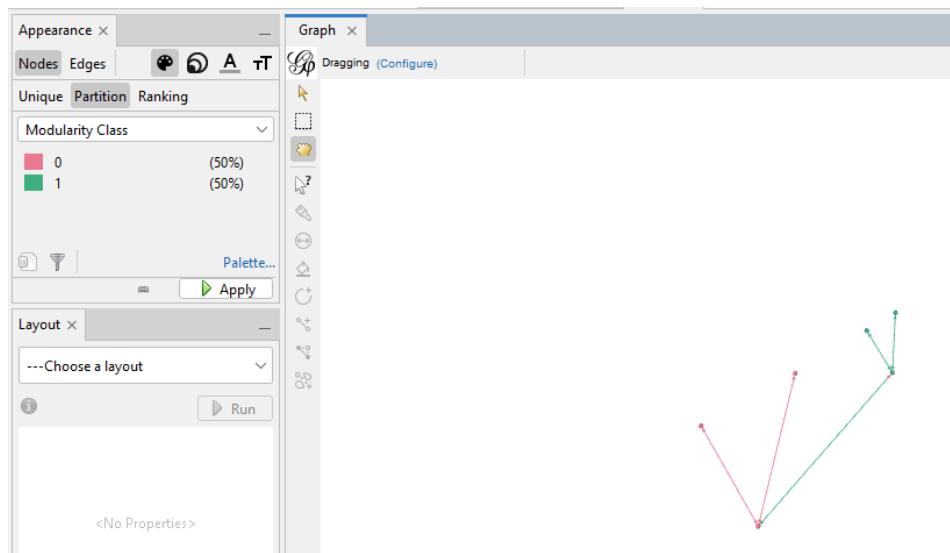
Modularity with resolution: 0.300

Number of Communities: 2

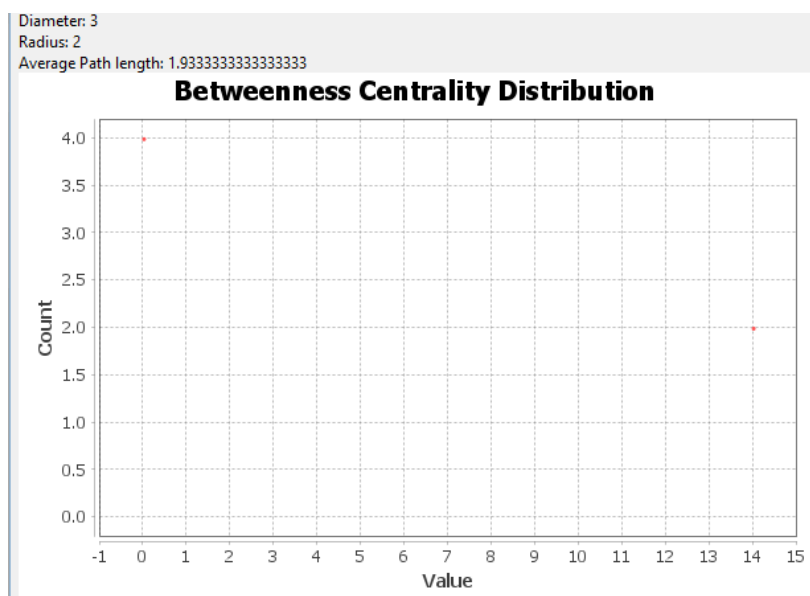
Size Distribution



color nodes by community:

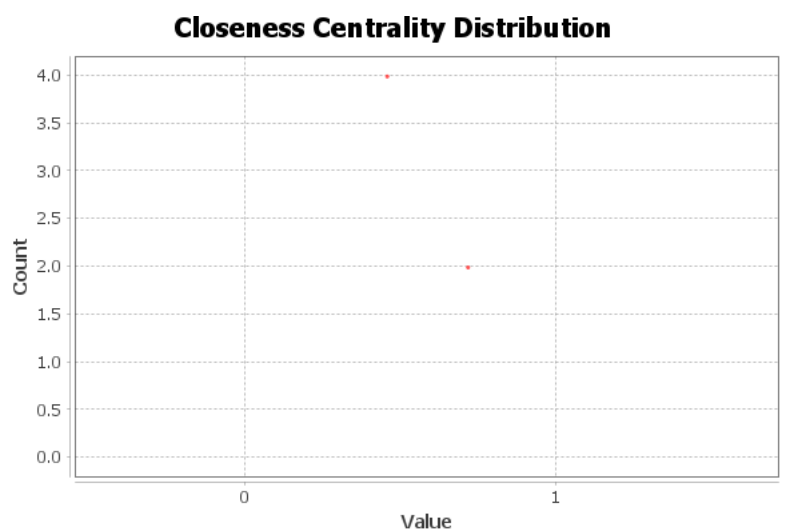


Centrality (Betweenness & Closeness)



Betweenness Centrality: Mostly zero.

No central hub, no bridging users → misinformation does *not* spread widely.



Closeness Centrality

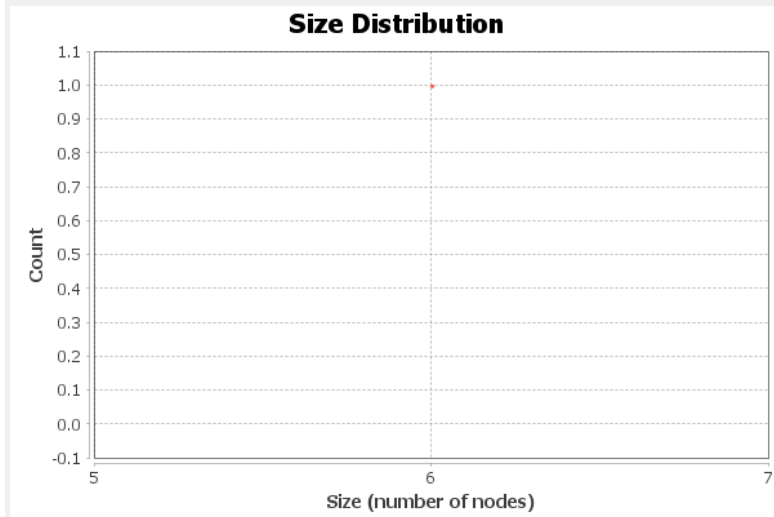
Highest value per node may reach **1.0**, but this is **local** because the graph is tiny.

Doesn't imply influence; just a measurement artifact of small network

connected components: Many small components.

The graph is scattered and disconnected

Number of Weakly Connected Components: 1
Number of Strongly Connected Components: 1



Metric	5G-Conspiracy Graph	Non-Conspiracy Graph	Interpretation
Nodes & Edges	Very small	Large	Normal discussion more active
Average Degree	Very low	Moderate	Conspiracy users hardly interact
Density	Low	Low (normal)	Both sparse, but conspiracy extremely sparse
Clustering Coefficient	0.0	Higher	Misinfo cluster has no triangle structure
Modularity	Many tiny communities	Few large communities	Misinfo is fragmented; normal is organized
Betweenness	Mostly zero	Clear hubs	Normal network has information brokers
Closeness	High only because graph is tiny	Varied, meaningful	Misinfo "closeness" is not real influence
Connected Components	Many	Very few	Misinfo graph is broken and disconnected