FUNDAMENTALS OF DATABASE MANAGEMENT SYSTEM

END TERM PROJECT

TERM - III

SOCIAL NETWORK ANALYSIS

2018_Contributions_Reddit_Amber Heard Data

Submitted to:

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This dataset is of the **year 2018** which gives us an insight about Reddit threads of the actress Amber Heard. After getting our nodes and edges file of our Network Analysis on **Amber Heard's Reddit** thread to further analyse it we imported all the 3 files to Gephi. We have in total **2826 Nodes and 2693 Edges.**

For **Graph Processing** we choose the option **Fruchterman Reingold** with parameters(Area = 30000 and Speed = 30) and the output can be clearly visible in Fig 1and 2.

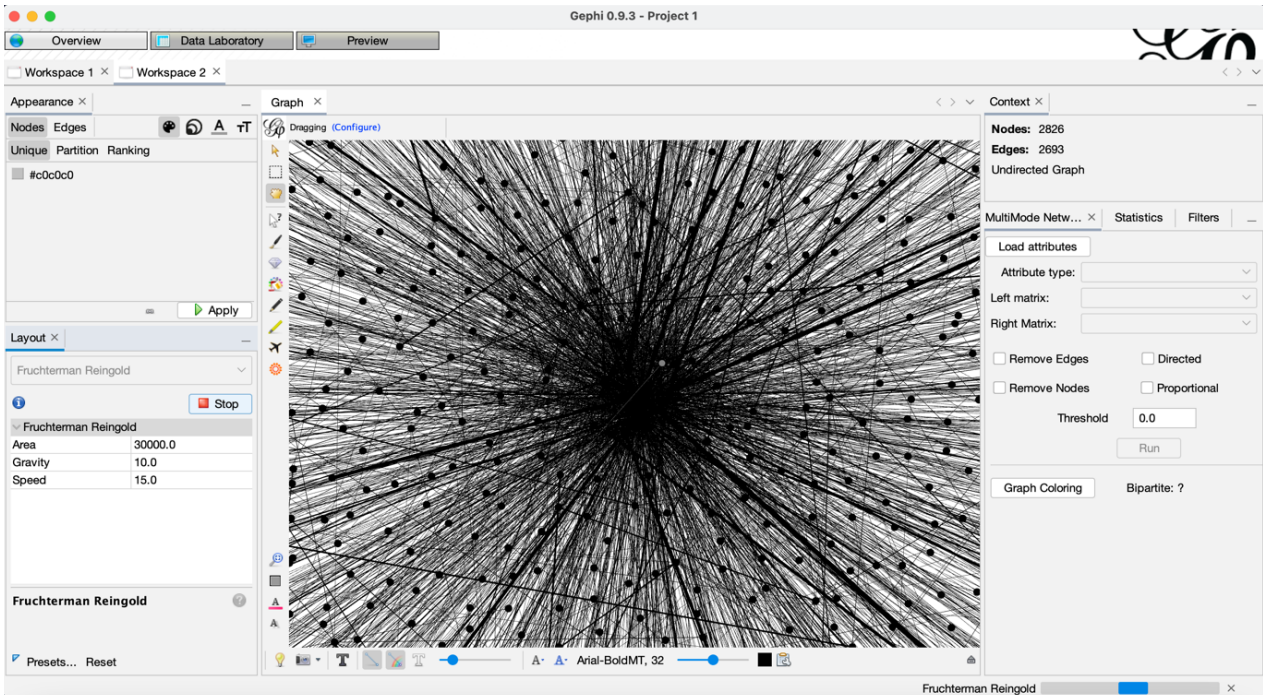


Figure 1

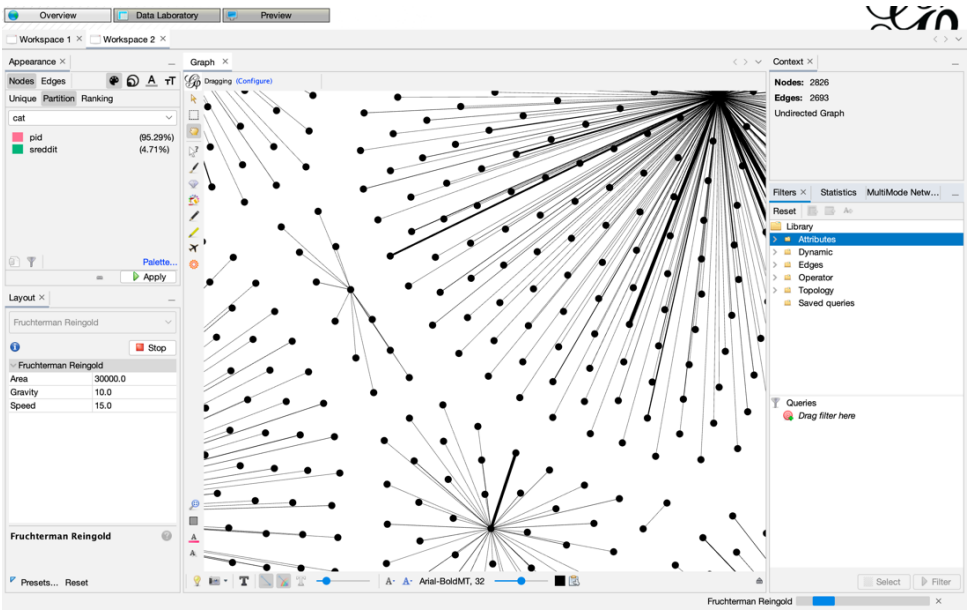


Figure 2

In Figure 3 we can see the zoomed out picture of the same

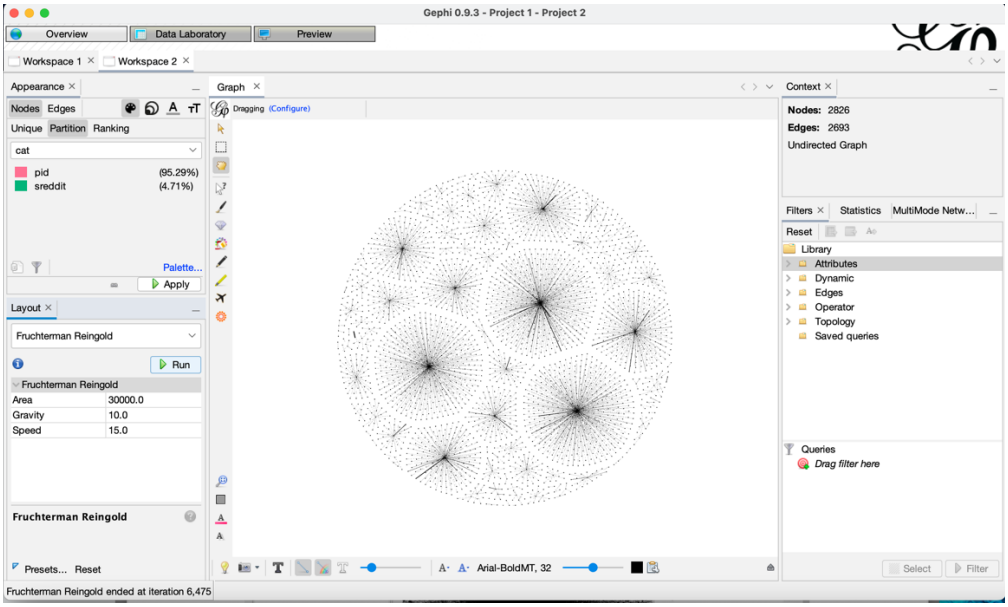


Figure 3

After getting the layout of our Network Analysis to further analyse it we portioned them as per category and coloured them.

In the Partition Dropdown we selected cat**. The Pink one denotes Sreddit id (Subreddit id) and Green ones denotes pid (Parent id)** which is clearly visible in Figure 4 and 5.

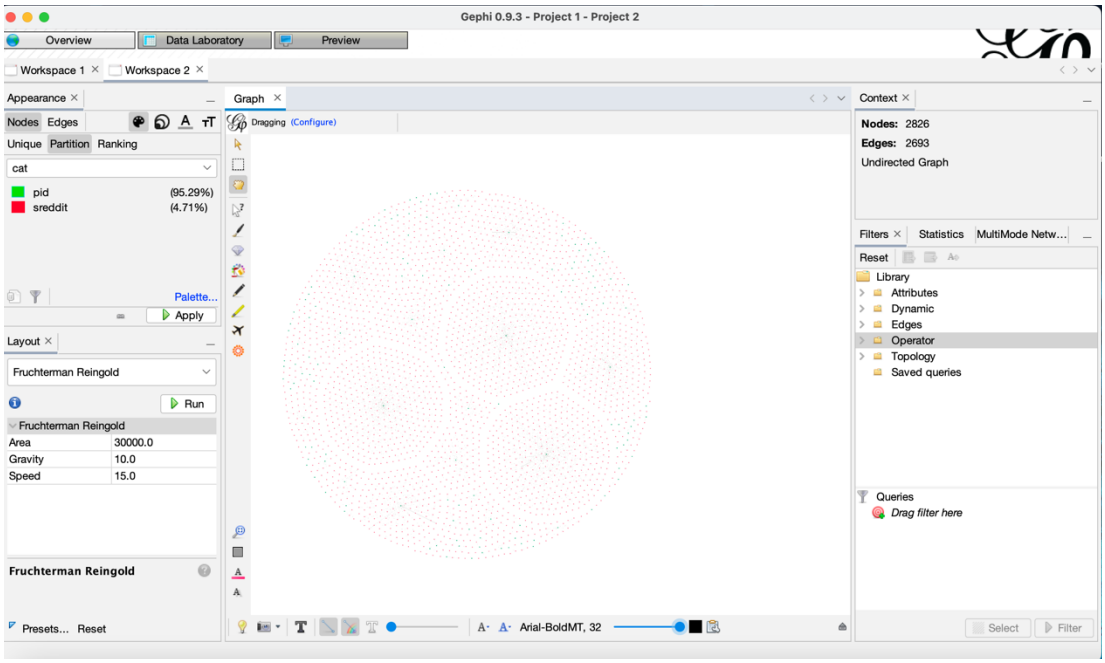


Figure 4

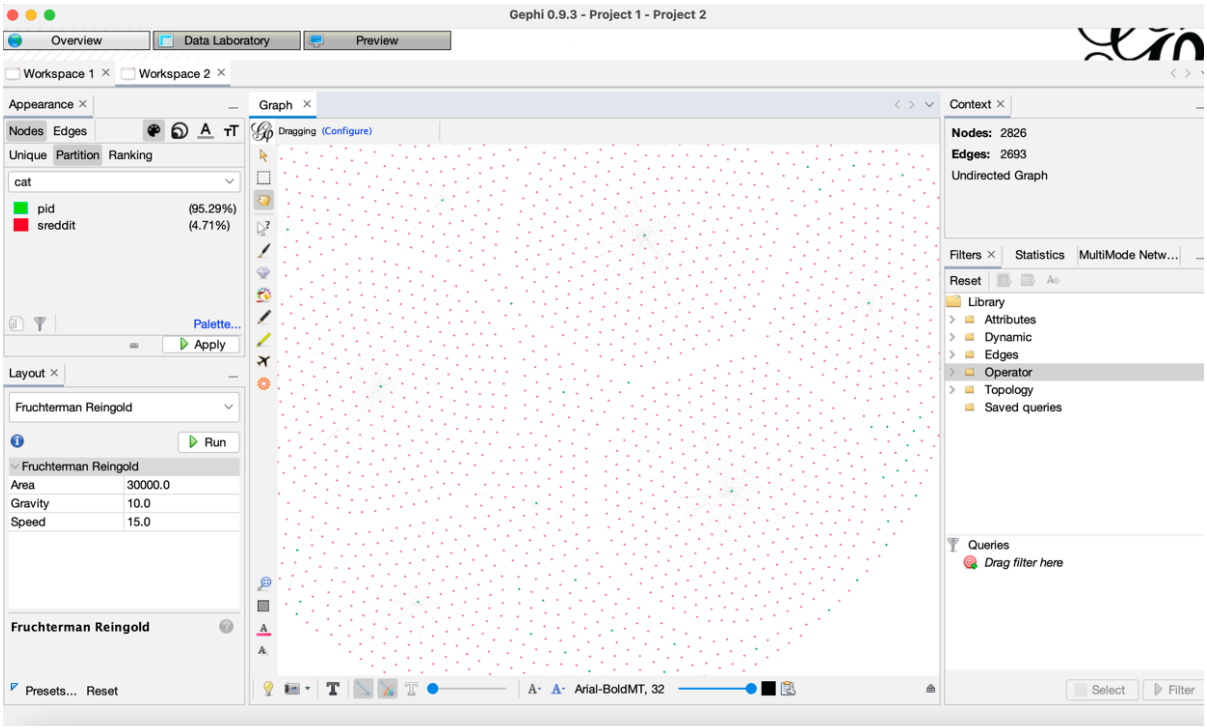


Figure 5 (Zoomed in)

To extract the more valuable insights we used sentiments and **increased the size of the nods** to make them clearly visible on the rim which is visible in Figure 6.

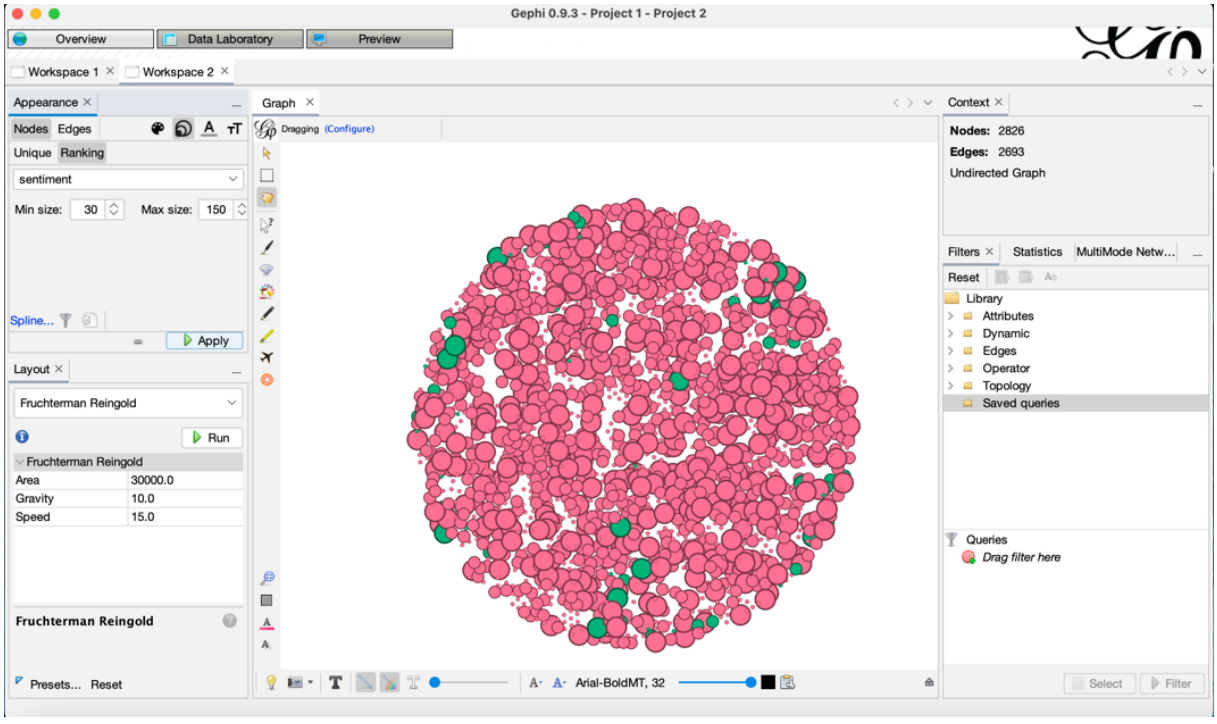


Figure 6

Then we **Projected the two mode graph to one mode**. In **Multimode Network for Projection** .We selected our attribute as cat. Then we selected our left and Right matrix and removed extra nodes and edges.

In figure 7 we can see the output as just sreddit nodes when we selected our Left Matrix as sreddit–pid and Right Matric – pid–sreddit.

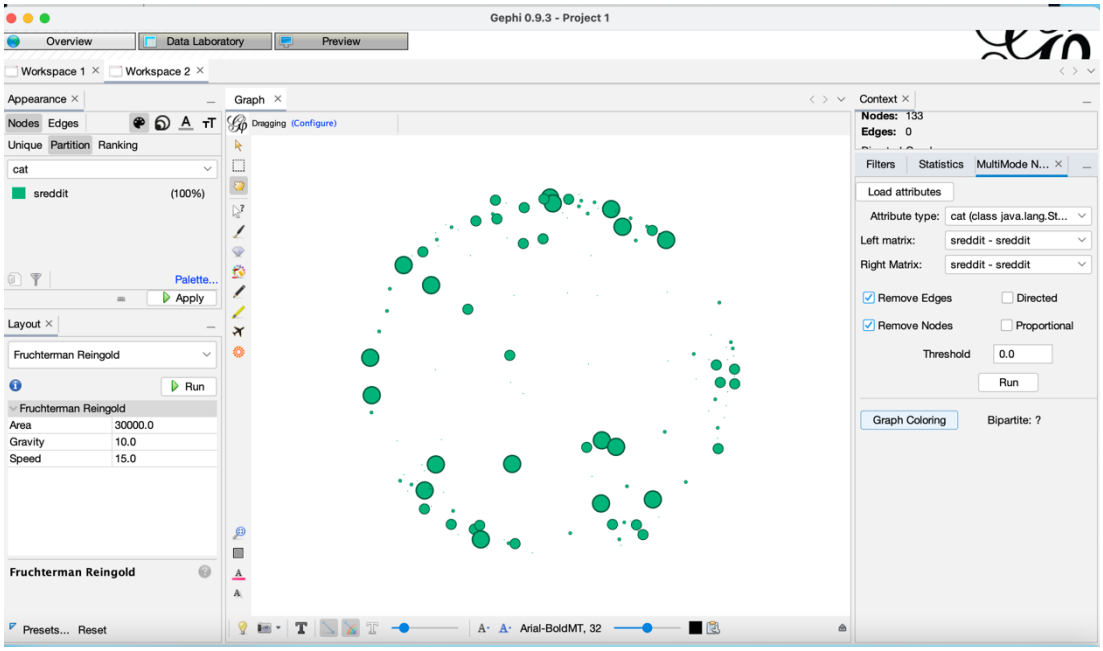


Figure 7

In figure 8 we can see the output when we selected our left matrix as pid-sreddit and right matrix as sreddit-pid which is only pid nodes.

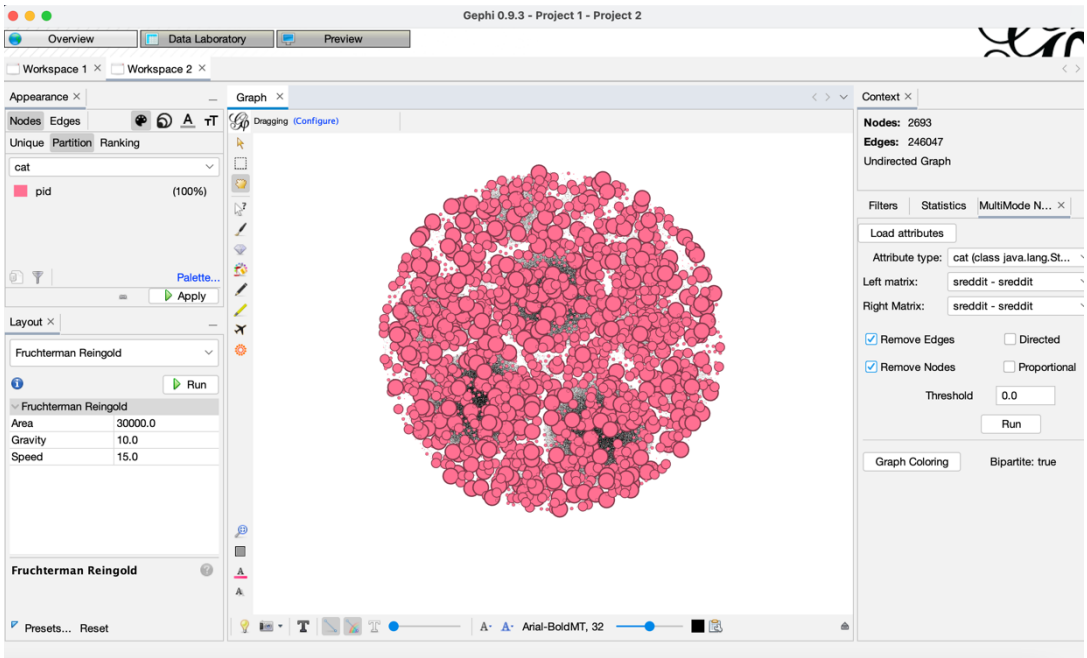


Figure 8

Then we checked the **modularity report** in the Statistics tab. In which the modularity came out as 0.801with 133 as number of communities as denoted in Figure 9 .

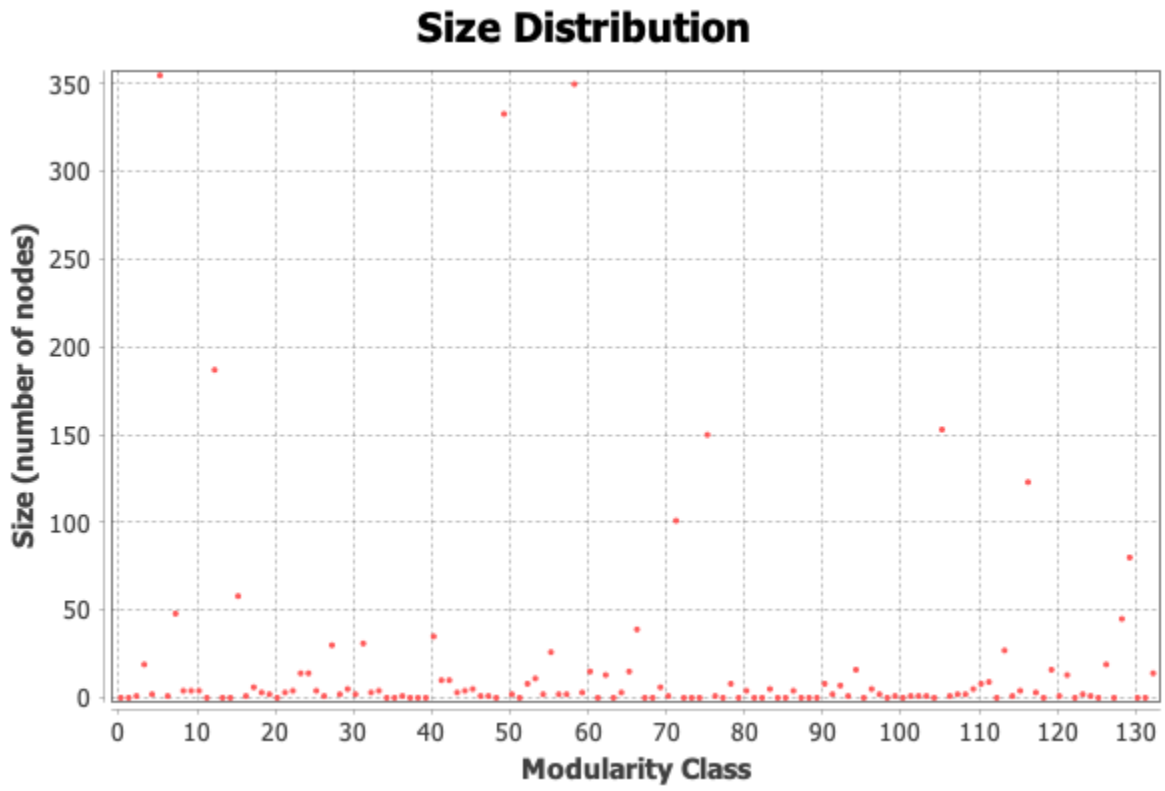
Modularity Report

Parameters:

Randomize: On
Use edge weights: On
Resolution: 1.0

Results:

Modularity: 0.801
Modularity with resolution: 0.801
Number of Communities: 133



Algorithm:

Vincent D Blondel, Jean-Loup Guillaume, Renaud Lambiotte, Etienne Lefebvre, *Fast unfolding of communities in large networks*, in Journal of Statistical Mechanics: Theory and Experiment 2008 (10), P1000

Resolution:

R. Lambiotte, J.-C. Delvenne, M. Barahona *Laplacian Dynamics and Multiscale Modular Structure in Networks 2009*

Figure 9

Then we **Coloured nodes as per community class**. We Clicked on Nodes and Partition, colour icon and in the drop-down we selected Modularity class. We can see the output in Figure 10, 11 and 12.

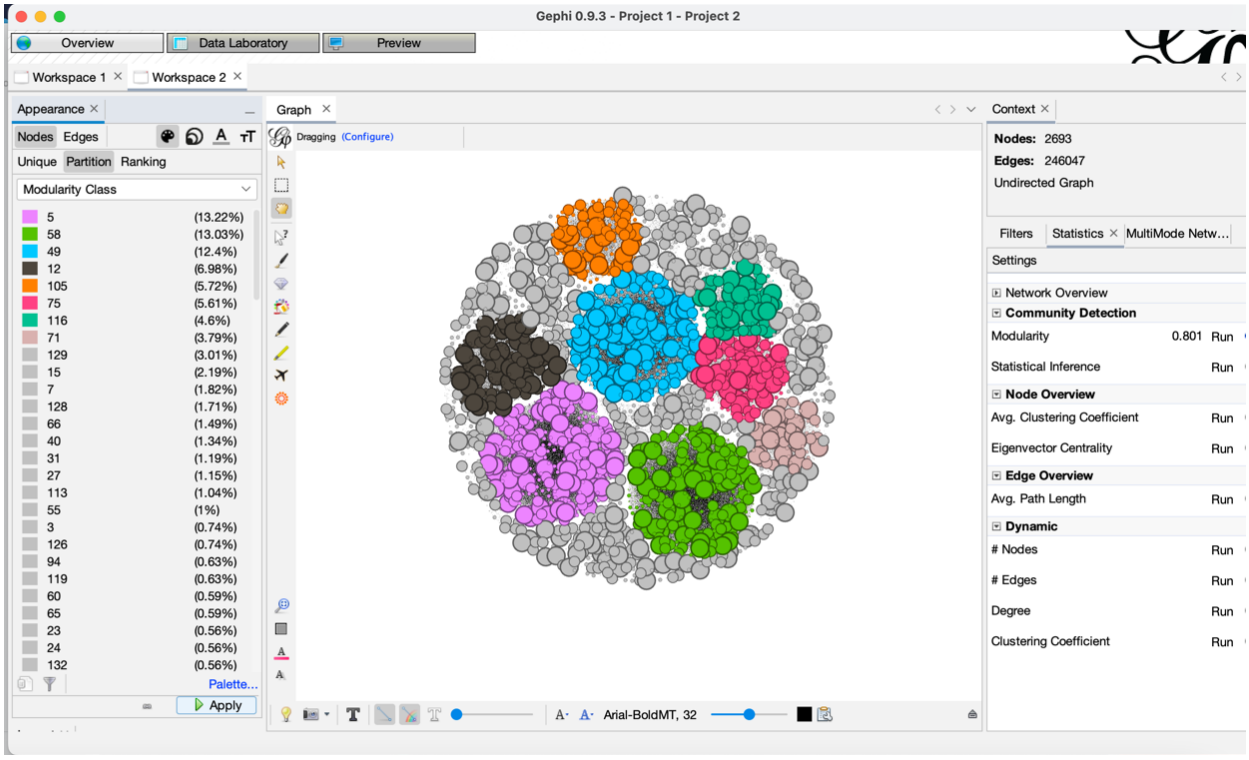


Figure 10

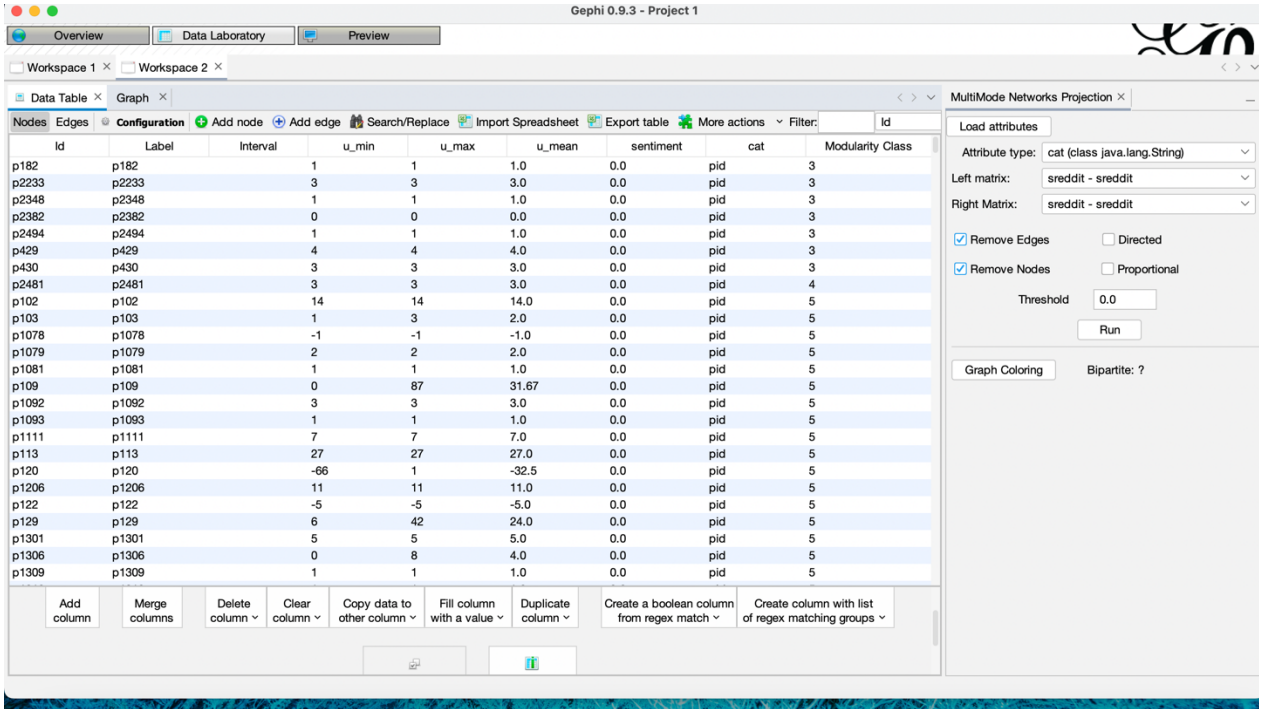


Figure 11

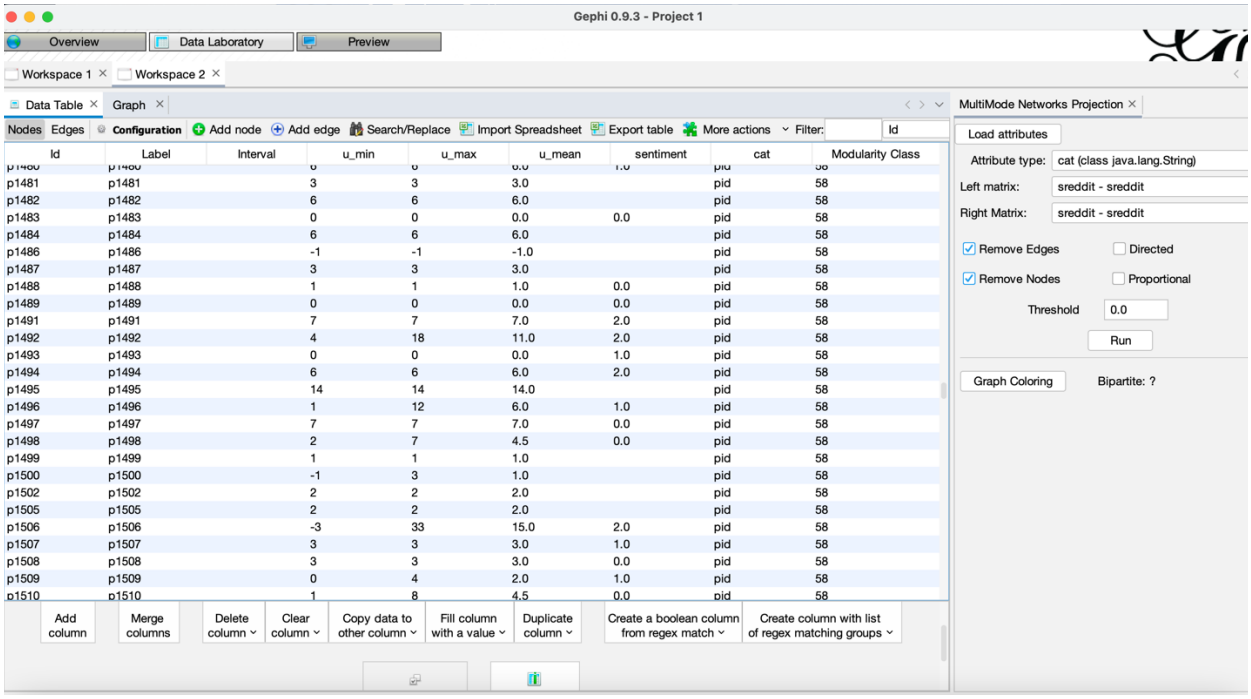


Figure 12

Then we started with **Filtration** where we created **nested filters**. In the filter tab in Range we selected (U._ mean). Then we added a filter which we selected from Partition i.e., Sentiment.

In figure 13 we can see all the messages with sentiment 0 - neutral

In figure 14 we can see all the messages with sentiment 1 - positive

In Figure 15 we can see all the messages with sentiment 2v- negative

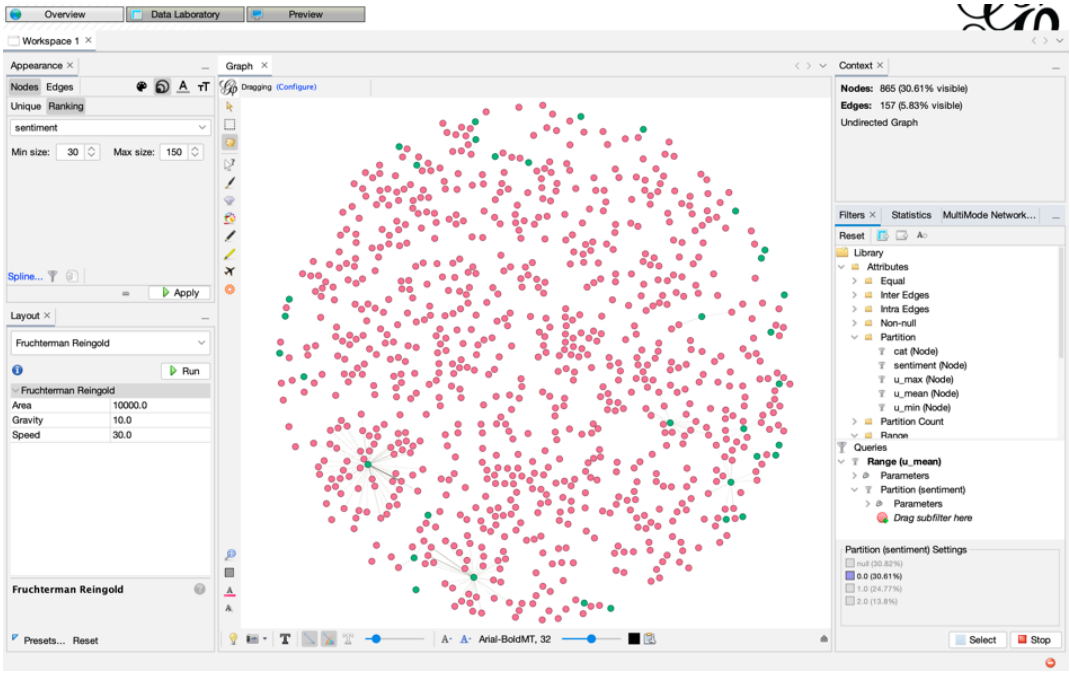


Figure 13

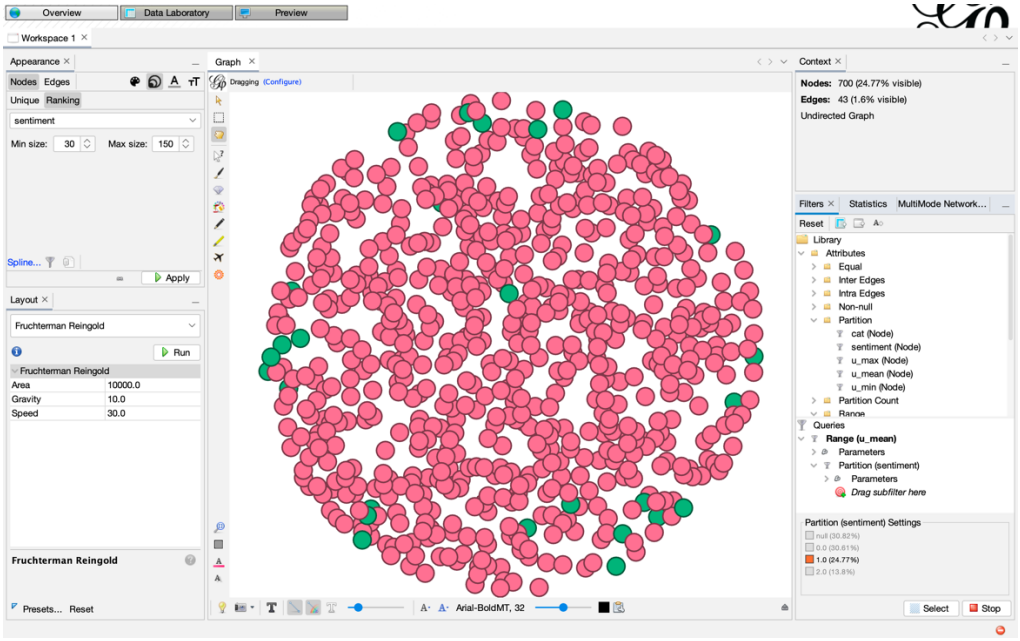


Figure 14

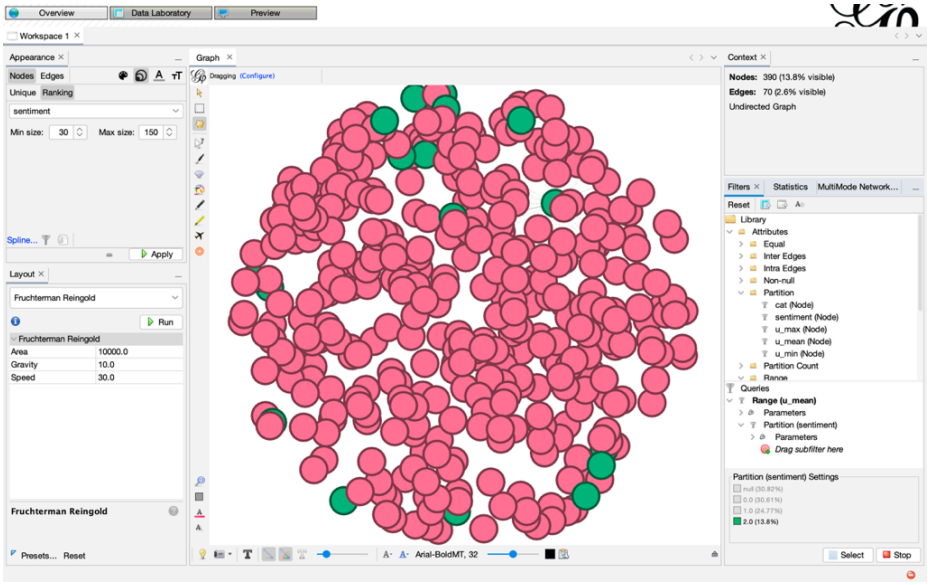


Figure 15

Masking Operator

Masking operator can mask all edges but the ones you want. We have 3 filters here one after another as you can see in figure 16

1. Mask all sources
2. Where sentiment is 2
3. Where u._mean is 1

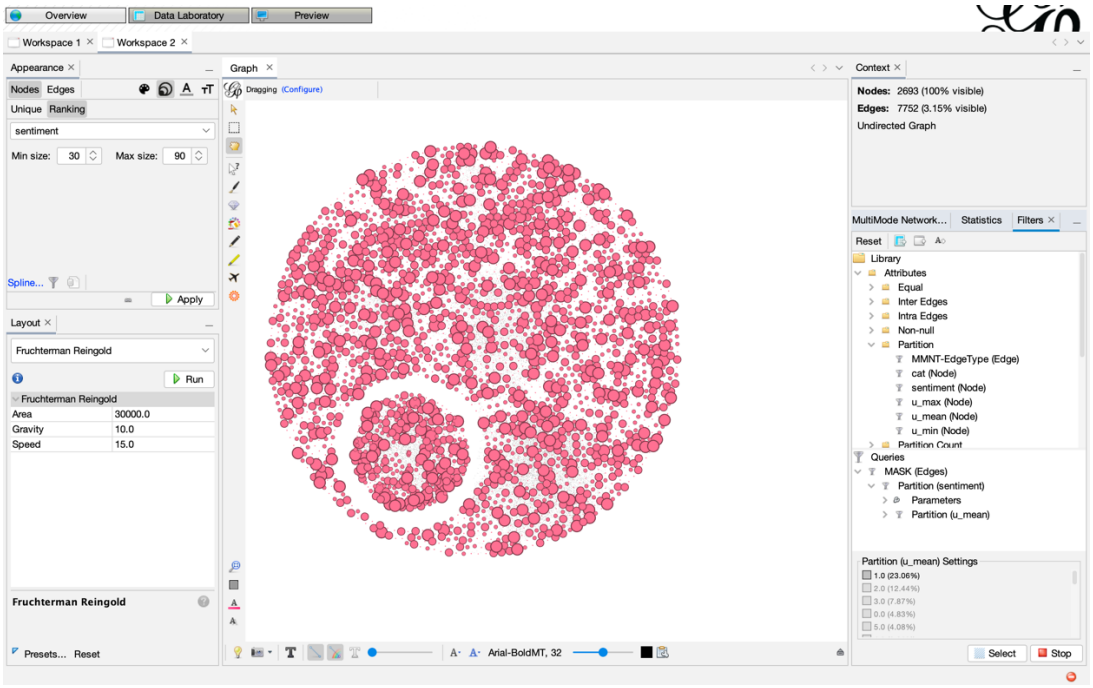


Figure 16

Towards the end we applied **Edge weight filter** which displays strong bindings. In Figure 17,18 and 19 we can see some strong connections.

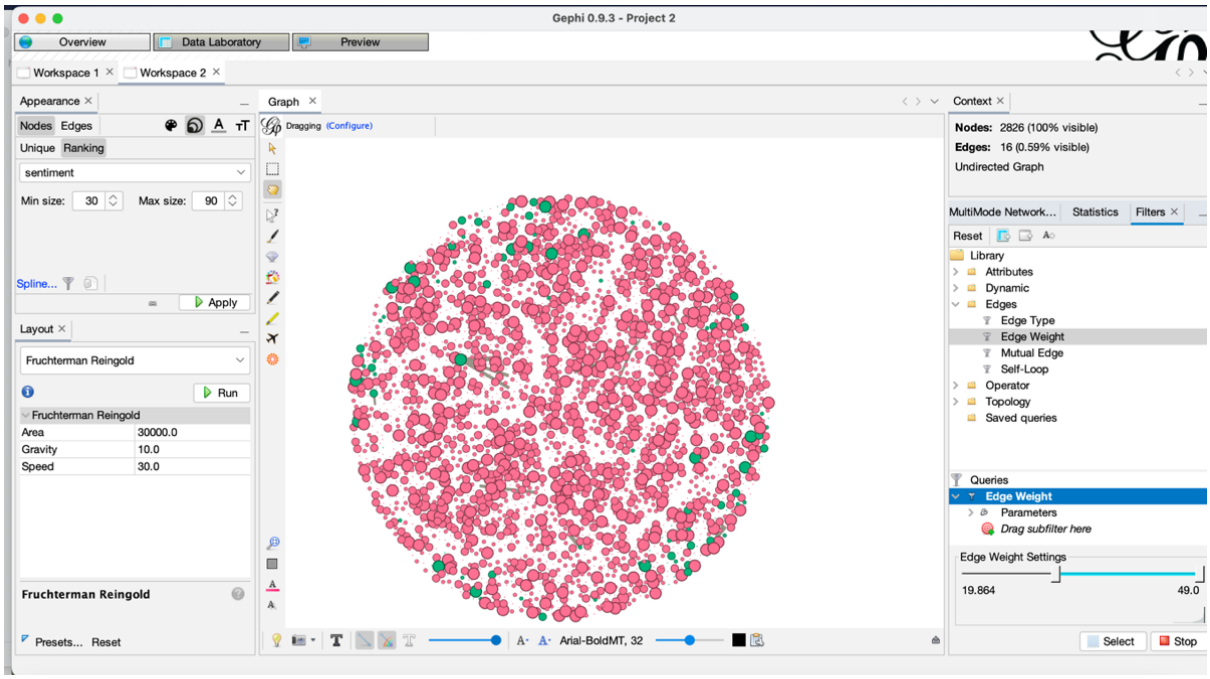


Figure 17

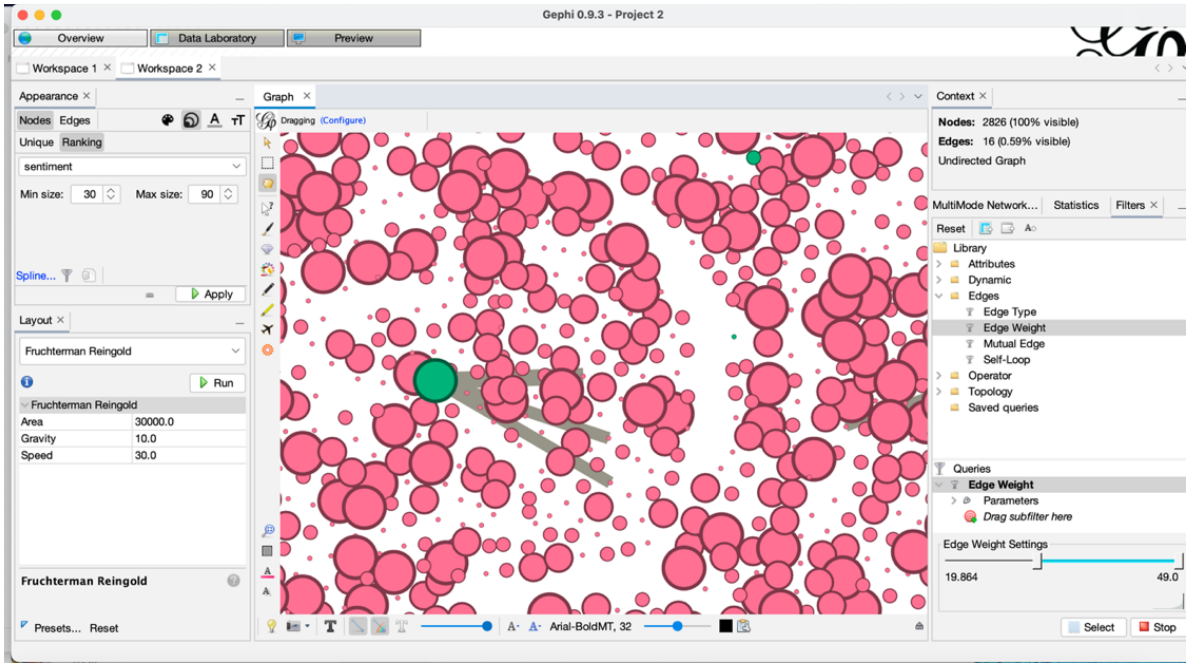


Figure 18 (zoomed in)

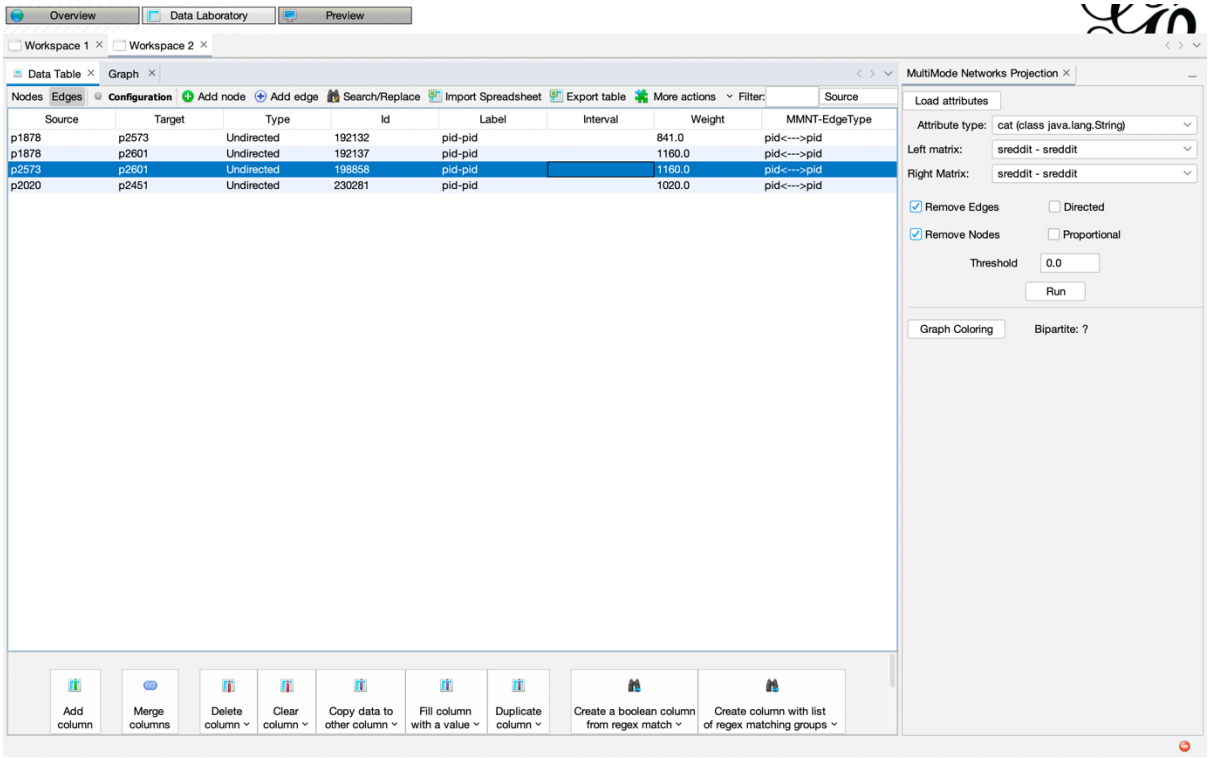


Figure 19

CONCLUSION

In our data we have about 4.71% is subreddit which means that 4.71% data is a specific to some community/post whereas the rest 95.29% data is normal texts and has a parent id. From our modularity test we got to know we have 133 communities which is a high number which means we have dense connections between the nodes within modules but sparse connections between nodes in different modules. Through our modularity class we got to know that 6-7 communities dominate with 13.22% coming from community 5 (Pink) and 13.03% coming from community 58 (Green). After that from nested filters we got to know sentiment of each text whether it was positive/negative/neutral and grouped them accordingly. According to our data p31 is of a positive sentiment , eg “First thing that pops into my head. Every time.”

We also got to know that 13.85% text were negative , 25.02% positive and rest were neutral . Then we say Edge weigh filter which is highest with p2573 (Source) and P2601(Target) which is 1160 (shows the strongest connection).

21	dt5ntm0	t1_dt5ntm0	/r/goddesses/comments/7sgl66/amber_heard/dt5ntm0/	First thing that pops into my head. Every time.	p31	sr104	{'name': '-banned-', 'created_at': None, 'has_...

x----x