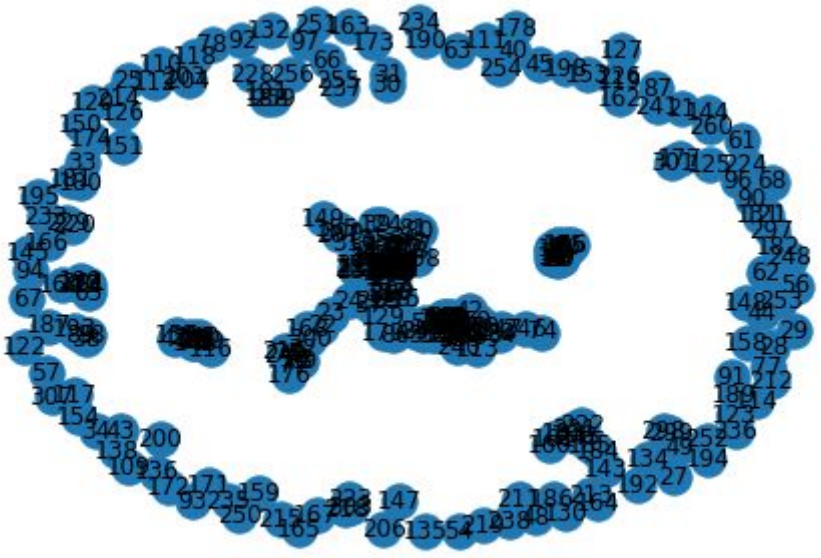
I tried to find all maximum cliques from the graph from task 3. and this is what I found

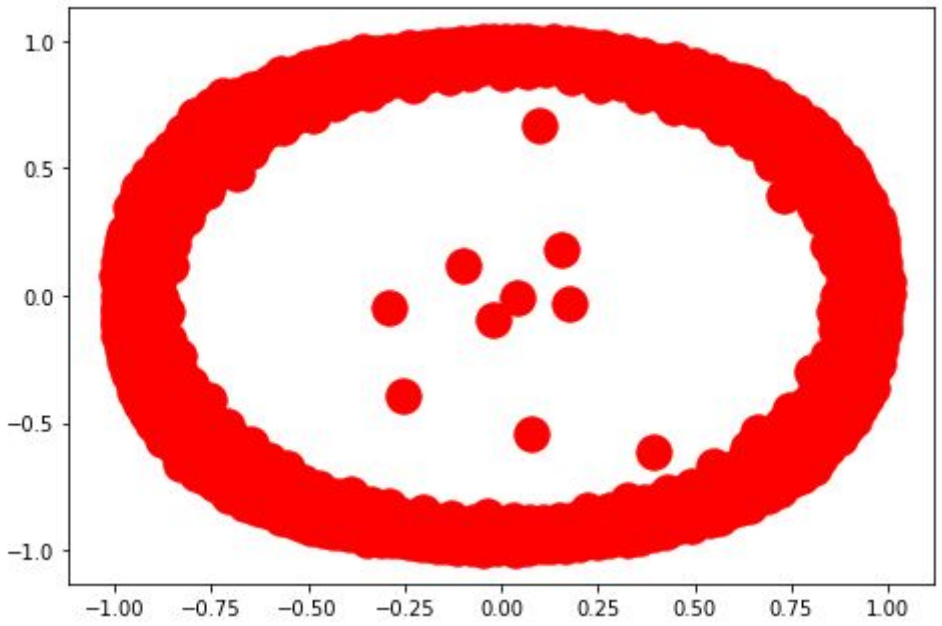


using this code:

```
G = nx.read_gpickle("Our_Gragh_0.4Sim")
Gg = nx.make_max_clique_graph(G, create_using=None)

nx.draw(Gg, with_labels=True)
plt.show()
```

Edge betweenness centrality



using this code:

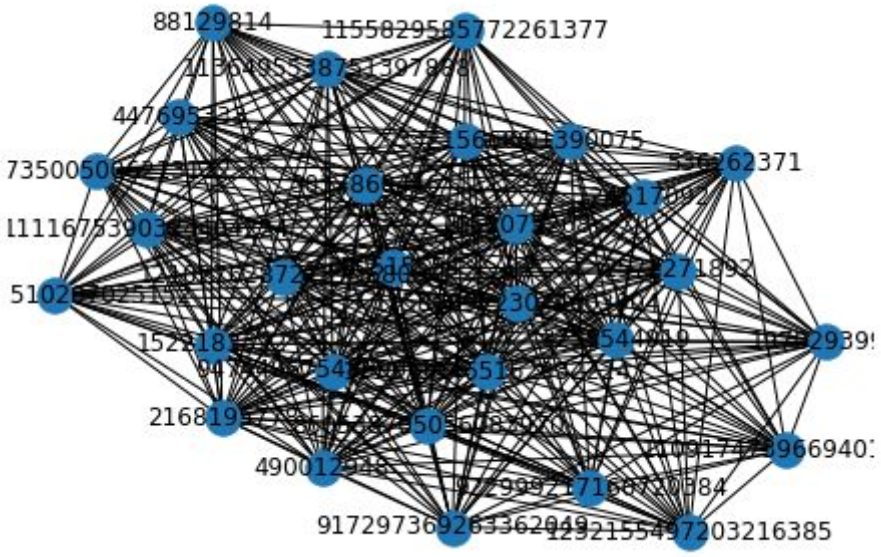
```
G = nx.read_gpickle("Our_Gragh_0.4Sim")

Gg = nx.edge_betweenness_centrality(G, normalized=True, weight=None)
nx.draw(Gg, with_labels=True)
plt.show()
```

I couldn’t draw a graph from Girvan Newman algorithm because it returns iterator. But I managed to get a list of numbers from it.
The iterators and numbers I got from Girvan Newman are in the girvan_newman_numbers.txt file and I used this code:

```
G = nx.read_gpickle("Our_Gragh_0.4Sim")
k = 4
comp = community.girvan_newman(G)
tuple(sorted(c) for c in next(comp))
```

Getting the k-core from the graph



using this code:

```
G = nx.read_gpickle("Our_Gragh_0.4Sim")
Gg = nx.k_core(G)
nx.draw(Gg, with_labels=True)
plt.show()
```