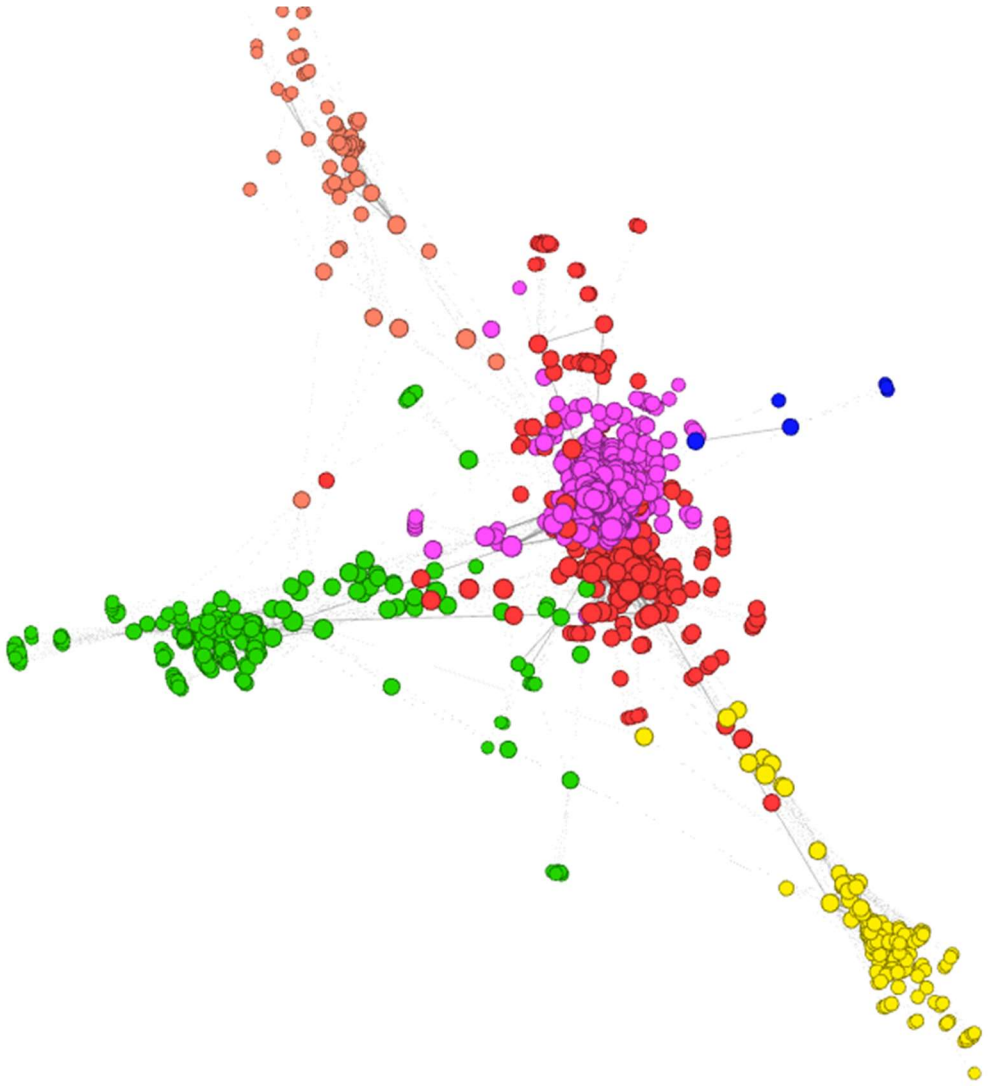
Assignment 2 : Network Visualization

Using the 'Lost Circles' extension, I extracted the data for this visualization from my Facebook account. After importing the data on Gephi, my network consisted of *1526 nodes* and *7165 edges*.

The following is my final **Network Visualization** :



Steps performed for the Network Visualization:

- I applied the Yifan Hu Proportional layout algorithm and ran the modularity with a resolution of 2.5 in order to get distinct clusters. By applying a 2.5 resolution, the separation of groups in my visualization became clearer with the number of communities reduced from ~100 to communities of 6.
- Further I performed network diameter statistics. The nodes are sized by closeness centrality. Closeness centrality for a node is the average length of all the shortest paths from that one node to every other node in the network. I used this in the hope to visualize

mutual relationships of my connections with respect to each other and how they affect my connections.

- Next, I color differentiated the nodes based by modularity class. This helped me get much distinctive clusters.
- Next, I put the network filters, and in the topology section, I selected the degree filter and chose the range 1-264 for my network. I further added a sub-filter of giant component that only kept the nodes with the most components in my visualization

Analysis of the Network Visualization:

- The **pink cluster** is the most dense out of all the clusters formed making up about **28.96%** of the nodes. Examining the nodes in the data laboratory revealed that this cluster denoted the people who went to the **same school** as me and who also live in the **same hometown** as me.
- The **red cluster** was the next most dense making up about **15.6%** of the nodes. Examining the nodes in the data laboratory revealed that this cluster denoted the people I went to **Junior College** with or became friends with during that time.
- The **green cluster** makes up about **13.7%** of the nodes. . Examining the nodes in the data laboratory revealed that this cluster denoted the people who also attended the same **Undergraduate Institution** as me.
- The **yellow cluster** makes up **9.44%** of the nodes. Examining the nodes in the data laboratory revealed that this cluster denotes the people who also attend/attended **University of Maryland**.
- The **orange cluster** at the top makes up **4.26%** of the nodes. Examining the nodes in the data laboratory revealed that this cluster represented my **family members** and other **distant relatives**
- The **blue cluster** is the least dense and makes up about **0.46%** of the nodes. It represents the **relatives of my close friends** that I am connected with.

The most important nodes seem to be the people I went to school with. Since I joined Facebook during that time, it only makes sense that the most of my connections are my fellow classmates and peers from school. Furthermore, the connections are the strongest because a lot of my school friends share approximately more than 50 mutual friends with me as well as with each other. Moreover, since most of the people in my inner circle live in the same hometown as me, I am more connected to them as well which is aptly depicted according to the visualization.