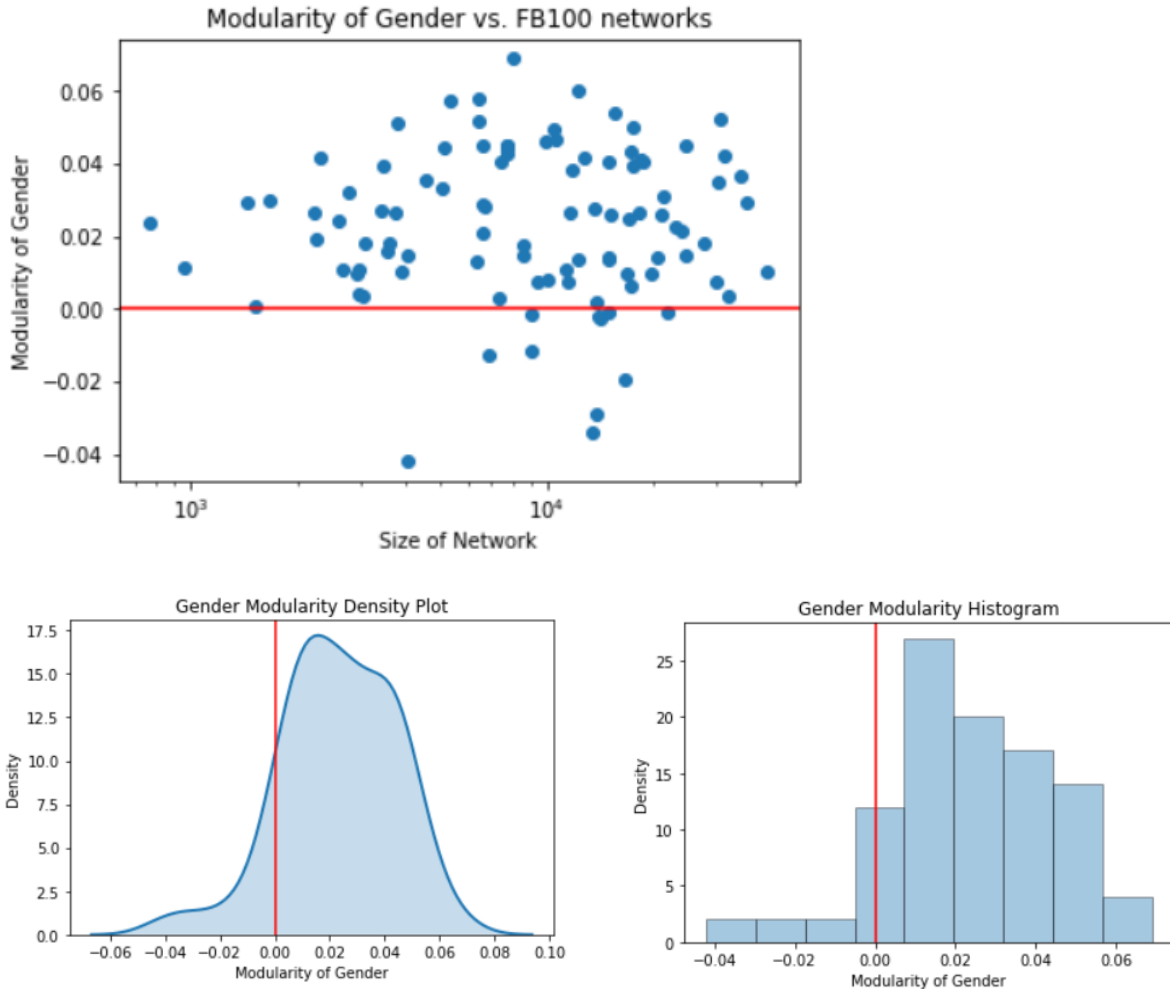Variable Modularity vs. FB100 Networks

i.   Gender

According to the plots, there is a slight assortative mixing based on gender. We see a majority of the modularity values lie above 0, with a majority of them ranging between 0.02-0.04 with a slight tail indicating there were some networks with a slight disassortative mixing based on gender. I would imagine that people are more likely to know more people of the same gender; within social circles, most men will have more male friends and most women will have more female friends, and therefore will be more likely to friend people of the same gender on Facebook. This holds true based on the modularity scores.

ii.   Student/Faculty Status

Modularity of Student/Faculty Status vs. FB100 networks

Student/Faculty Status Modularity Density Plot



Student/Faculty Status Modularity Histogram
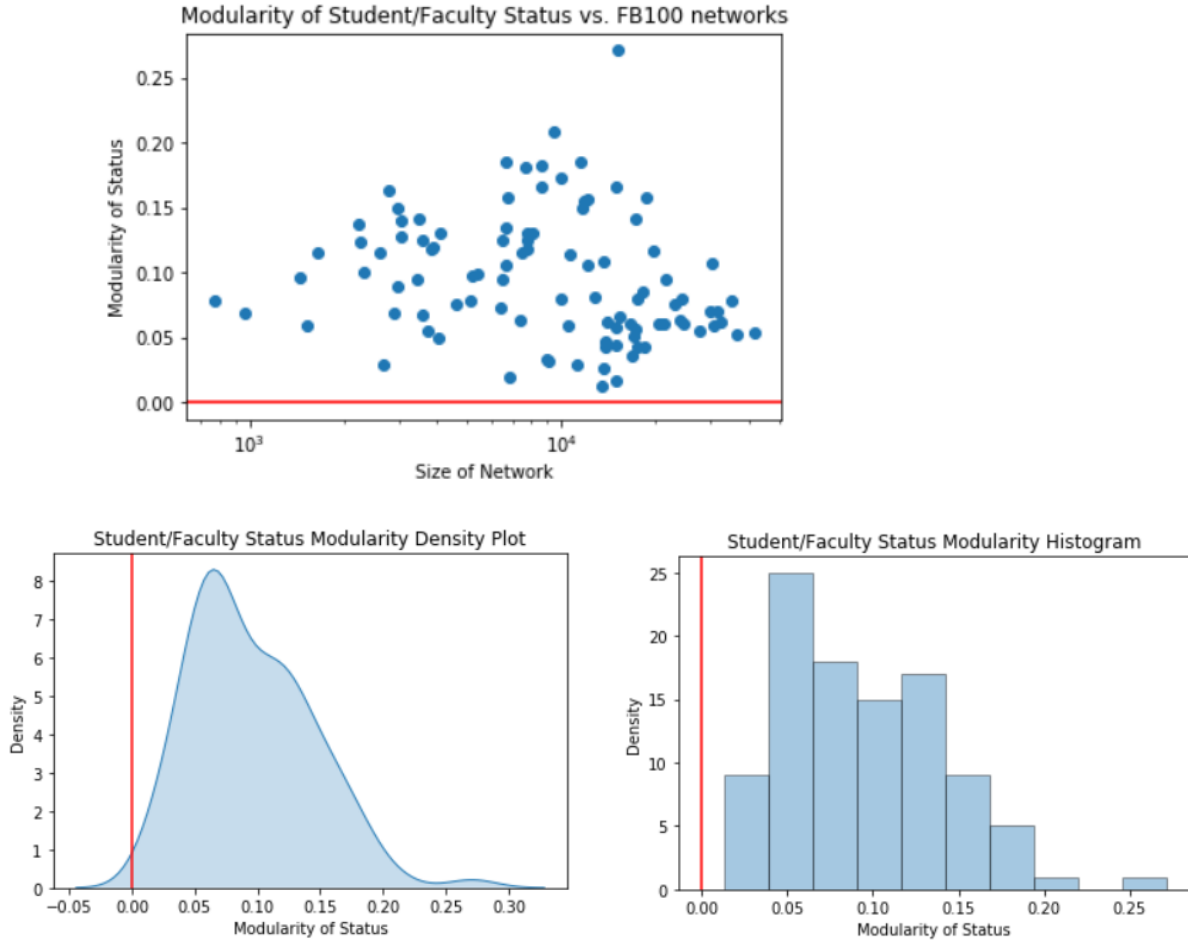
The plots show completely positive modularity scores, implying a strong assortative mixing of Facebook friends based on student/faculty status. This pattern is intuitive, as students are more likely to know other students, while faculty are more likely to know each other on a friendly basis. The age and experience discrepancy also plays a large factor. Students and faculty are more likely to friend those of the same age and stage of their life than not, and therefore it makes sense that there would be a strong assortative mixing pattern based on student/faculty status.

iii.   Major

Modularity of Major vs. FB100 networks

Major Modularity Density Plot

Major Modularity Histogram
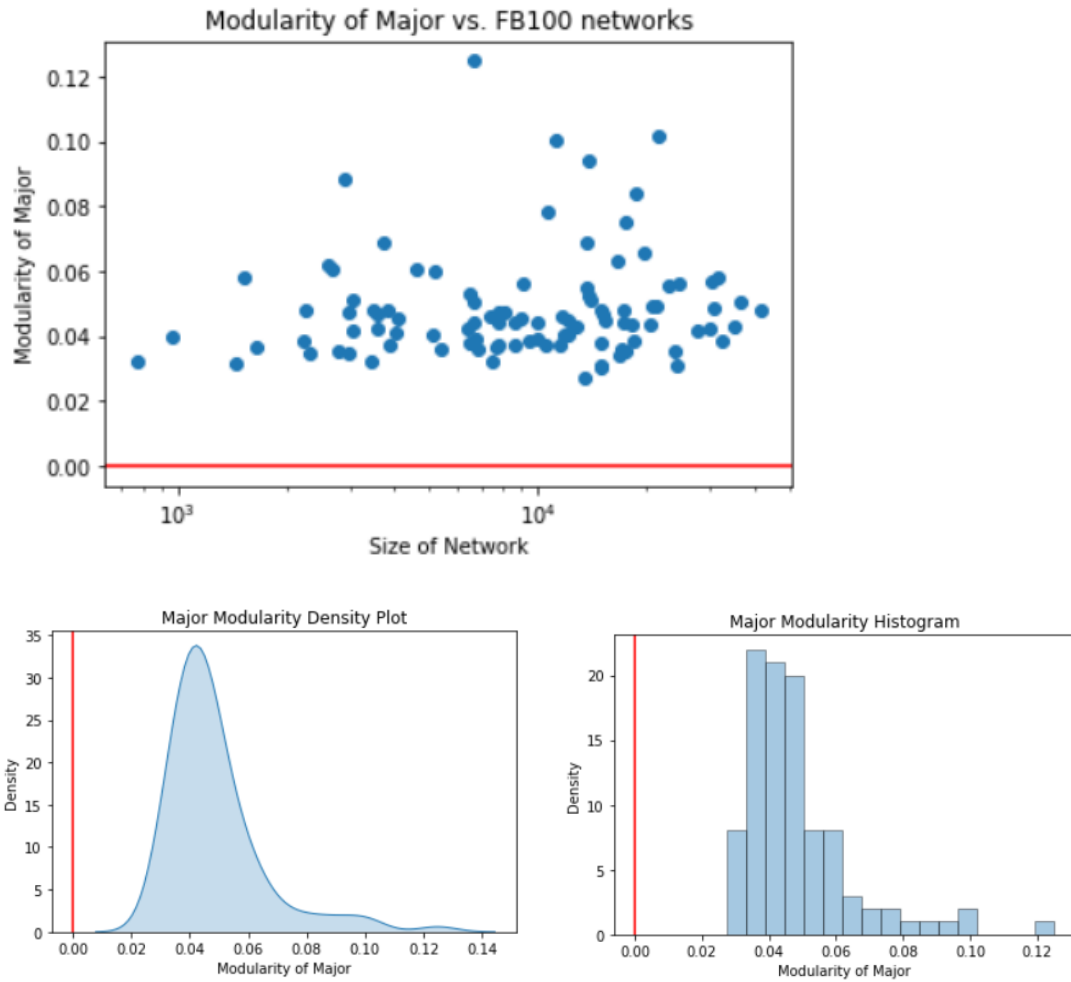
The plots indicate a strong assortative mixing based on a person's major, as every modularity score lies in the positive range. This was surprising to me at first, as I would think a person's major would not hold as much weight when it comes to making friends. However, it does make sense that you are more likely to know others who share your major, as you have more chances for interaction. Most interactions with those of other majors are usually through student organizations or by chance, while you will meet others in your major through daily classes and in study rooms. Therefore, it makes sense that there would be a pattern of assortative mixing based on major.

iv.   Vertex Degree
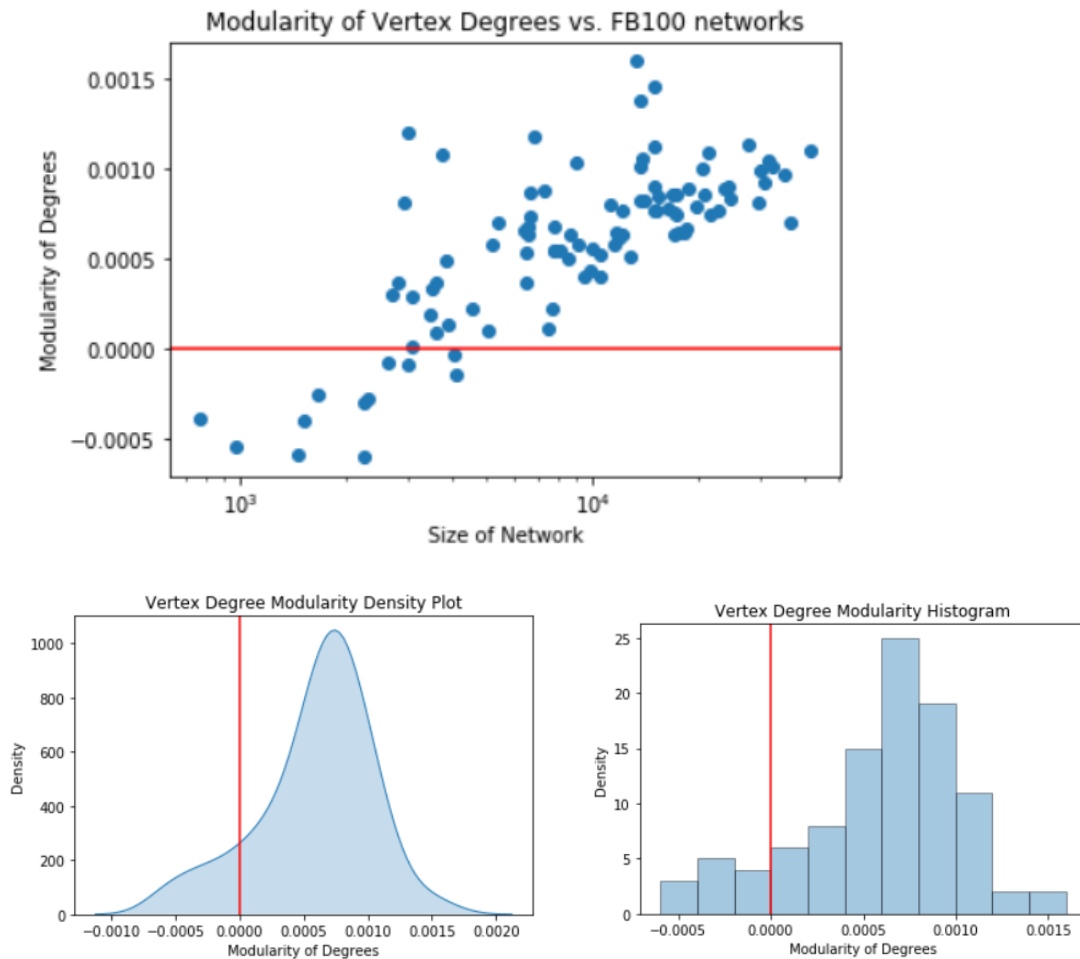
The plots show a very slight assortative mixing, where a majority of the values are positive, specifically centered between 0.0005-0.0010, while there is a tail indicating some dissassortative mixing. The linear relationship in the scatterplot confirms the intuition that those within larger networks are more likely to know more people. This also indicates that those with larger networks of friends tend to befriend others with large networks. This makes sense, as those with larger friend circles tend to be more social and therefore hear about and meet more people, so two people with larger friend circles are more likely to know of each other and friend each other on Facebook.