Weekly Report 4
Yiduo Ke
ORIE 4999 supervised by Professor Williamson

What I did

I finished writing these 3 functions:

1. Brute force max cut
2. Flip a coin for each vertex max cut
3. Greedy max cut

I wrote 5 manual tests for each (and they all passed), which obviously isn't enough, so I also wrote this function for testing purposes:

- given inputs $\mathbf{n}$ and $\mathbf{p}$, randomly generate a graph. Each pair of vertices has probability $\mathbf{p}$ that there's an edge connecting them. Return this graph's adjacency lists representation and the number of edges in this graph.

All functions are documented and have comments.

The folder containing all the code is attached in the email.

What I will do next week

I will use the random graph generator function to do massive testing on the three functions I wrote. I will also begin implementing the Goemans-Williamson semidefinite programming approximation, which probably begins with exploring some linear algebra packages.