

Sara Nehring

*Small World Networks: I Know Someone You Know, But You Don't Know It and Neither Do I*

This year my project is based on the six degrees of separation which is the idea that everybody in the world is connected to each other through six people. I wrote a computer program that uses Dijkstra's Algorithm which is an algorithm that finds the shortest path between one node and all other nodes. I used the program that I wrote for Dijkstra's algorithm to create different types of networks and find the degrees of separation. I wrote three programs that created a random network, a clustered network, and a cluster in cluster network. With this project I learned how to use MATLAB computer language as well as learned a lot about networks in general. I also learned that it is incredibly difficult to correctly model a human world or network where people are separated by six degrees because there are so many factors and variables that I can change that will drastically change the outcome. In the real world, the degrees of separation is used in social media and how people have recommended to follow or be friends with.