

Hassan Zahid
DS 210

Data Set: <https://snap.stanford.edu/data/ego-Facebook.html>

The project explores the connection between Facebook users, and seeks to find how interconnected any member is from another. In order to determine this, I chose to compute the smallest distance between any two selected users.

The program takes as input a text file representing the edges of a social network graph. Within this file, each line signifies a connection between two users. The program makes use of breadth first search in order to find the minimum distance between the users. When the program is run, users are prompted to input a start user and end user. The output of this program provides the number of connections away these users are from each other, and otherwise informs you if they are not connected.

The program is broken down into four key modules which help to produce the output. 'Main.rs' centers around the user interaction of the program while the 'file_reader.rs' module serves to read the text file. Breadth first search is implemented through 'bfs.rs' and finally the 'graph.rs' module contains the graph data structure.

When the program is run, the output is a string in addition to a number, which represents the number of connections which separate the input users. According to the Facebook graph data set, the maximum number of connections apart which any two users are is 6, and the rest fall within the range of 1 to 5. Through this program, the relationship between any two users can easily be found through its implementation of breadth first search.