I built my graph using matplotlib library in python and to form network used networkx. I used dfs to make connections between the nodes i.e network among the people to become friends. Then I made a function to find number of friend groups (find_connected_components) and number of people in a particular friend group (dfs_collect). I also calculated the friend group with max and min friends. In the second part I used random library to randomly select 5 persons and used dijkstra theorem to find shortest distance between them. Then I used the A* using a basic heuristic for a pair i.e shortest distance between a pair.