CS225 Project Goals

The goals for this project is to load one or more files in C++ into a graph using Stanford Large Network Dataset Collection. We will use specifically undirected graphs in the dataset, but if we have time we will add a directed graph functional. For the traversal we have to implement we are choosing to implement DFS for less memory requirements as the datasets are large and levels might be really wide so we might not have access to the required memory. For the functional of the program, we will implement the shortest path algorithm, the landmark path algorithm, and, if time allows, delta-stepping SSSP.

We are pursuing our project using the following, highlighted available subjects:

- Datasets
  - OpenFlights
  - LLVM
  - Stanford Large Network Dataset Collection
- Traversal
  - BFS or DFS
- 2 or more of:
  - One or zero of:
    - Shortest Path -
    - Minimum spanning Tree
  - One or two of:
    - Landmark Path - shortest path from node to node visiting a node "landmark"
    - A* search
    - Iterative deepening depth-first search
    - Delta-stepping SSSP - another shortest path algorithm
    - Graphic Output of Graph
    - Betweenness Centrality
    - Graph Coloring
    - Eulerian path/cycle identification
    - Strongly connected components
    - PageRank