Taylor Dugger
COM S 311 P2 Report
April 5, 2017

1. Vertex with highest out degree: /wiki/Computer_Science with degree of 499
2. Number of components of the graph: 9
3. Size of the largest component: 493

4. Write a report that describes the following:

- Data structures used for Q and visited. Your rationale behind the choice of data structures.
    My data structures for this project were HashMaps and ArrayLists. I choose hash maps to speed up the look up times when storing and retrieving information from them. I used a hash map to store graph, the reverse graph, and S which is the result set containing the scc's. The arraylists were allSCC's which is just a list of strings that are the scc's. And visitedNodes, which is for BFS to hold the visited nodes. Using these I think I have a fairly efficient way of storing a lot of nodes and edges.

- Number of edges and vertices in the graph WikiCS.txt
    The number of vertices is just graph.size(). Its the amount that I store in graph. And for the edges you go through each vertex and call getEdges() and sum those up.

- Vertex with largest out degree in the graph WikiCS.txt
    OutDegree I store the amount of edges each node has and you can go through the vertices and get the largest return from getEdges

- Number of strongly connected components in WikiCS.txt
    For strongly connected components, every time after I found the SCC's in SCC class I just had a counter add one. So this way I could find the scc's in a fast manner.

- Size of the largest component in WikiCS.txt
    Like the last part, when I found the SCC's I checked everytime how big that one was and compared it to the previously largest one.

- The data structures that you built/used in GraphProcessor
    I made a new Object Vertex for the crawler.