
Data Structures used for Q and $visited$.

Number of edges and vertices.

There are 200 edges.

Vertex with largest out degree.

Diameter of the Graph.

Vertex/page with highest centrality.

Run-time analysis of GraphProcessor.

V is the number of vertices, and E is the number of edges in graph G .

outDegree(String v)

Runs in $O(1)$ time because you just return the size of the Linkedlist of edges for the vertex v .

bfsPath(String u, String v)

Runs in $O(V + E)$ time because you look at each vertex and each edge once.

diameter()

Runs in $O((V^2)V + E)$ time because you do BFS for each pair of vertices.

centrality(String v)

Runs in $O((V^2)V + E)$ time because you do BFS for each pair of vertices.