CSC2001:ASSIGNMENT 5: GRAPHS

# 1.OOP design

Two classes were constructed; Graphgen(Graph Geneartor) and GraphExperiment. Graphgen takes in the parameter for the Number of vertices, edges and cost limit; It creates and writes to a text file the Nodes,Edges and cost associated with each edge.Nodes are generated randomly and conditions are put in place to remove the possibility of of generating repeat node. The class also generates a DataX, where X is the number of the dataset contain the number of vertices edges , vertex operation count, edge operation count, Priority queue counts and ElogV.

GraphExperiment sets the Number of vertices, edges and cost limit for the Graphgen class to create data that will be used to generate Grpahs using the Graph class. It also calculates ElogV and sums the number of operations that will be written to DataX text file. The class runs 42 experiments and complies the results per run into the DataX file using different edges and vertices limits. A total of 4 experiments (using 42 of the same parameters ie Vertix and Edge number) to test the different graphs that can be made by the Dijkstra shortest path method in Graphs.

# 2.RESULTS

4 files of Data were generated. The following graphs show the results for each run.

## ELOG(V) and Operations compared

# 3. DISCUSSION OF RESULTS

# 4. CREATIVITY

# 5. GIT USAGE LOG