Project 8: Number of Walks of a certain Length between any Two Vertices

Due: Nov 12th: by 11.59 PM (in Canvas)

In this project, you will implement the matrix multiplication-based solution we saw in class to determine the number of walks of length *l* between any two vertices.

The walk length is 4 for all students. The graph on which your code has to be tested is assigned below.

You are given a startup code (in C++) that reads in the list of edges and sets up the adjacency matrix as a two-dimensional array. Your task would be to extend the code such that the procedure to compute the number of walks of length *l* is implemented. For ease of implementation, vertex ID starts with 0.

Below, I show the list of edges (stored as a text file) and a screenshot of the expected output for a sample graph.

Sample Graph

```
0   1
0   5
1   2
1   3
1   4
1   5
2   3
3   4
4   5
```
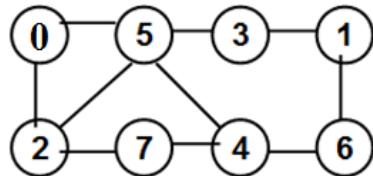edgeInfo.txt
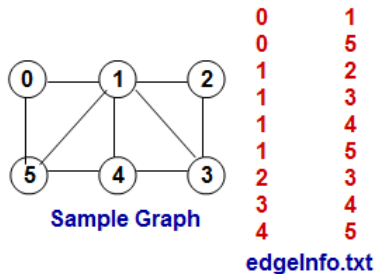
```
Enter the file name for the edges of the graph: edgeInfo.txt
Enter number of nodes: 6
Enter the walk length: 4
Initial Adjacency Matrix
0 1 0 0 0 1
1 0 1 1 1 1
0 1 0 1 0 0
0 1 1 0 1 0
0 1 0 1 0 1
1 1 0 0 1 0
Final Walk Length Matrix (Length (Length 4)
12 16 11 12 16 12
16 39 16 24 24 24
11 16 12 12 16 12
12 24 12 20 16 19
16 24 16 16 23 16
12 24 12 19 16 20
```
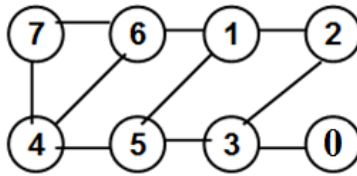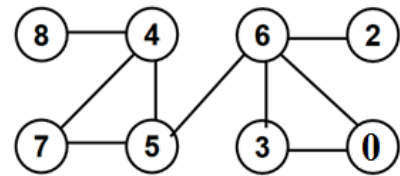
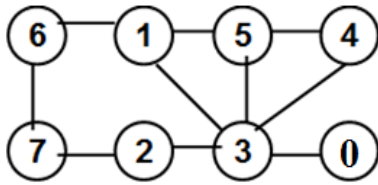**Graph Assigned for each Student**
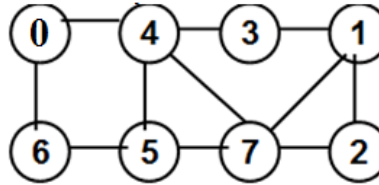
Perry Butler

Latamla Culley-Triggs

Justin Epps

Kalil-Dan Ford

Chawne Harris

Ashly Horner
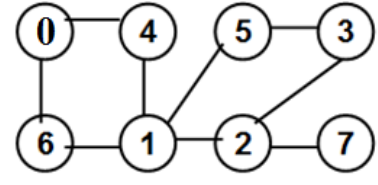
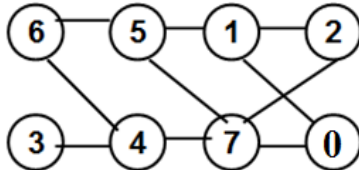**Martice Jackson**
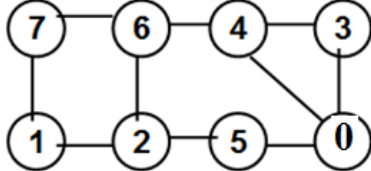
Jorian Lenard
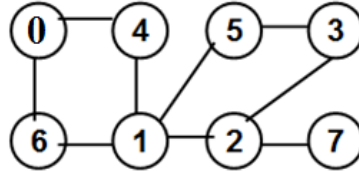
Damian Patterson
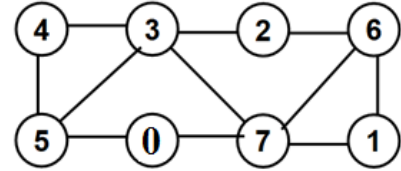
Brandon Redmond
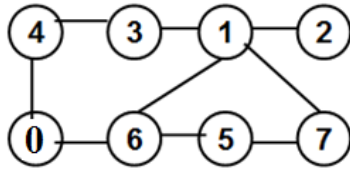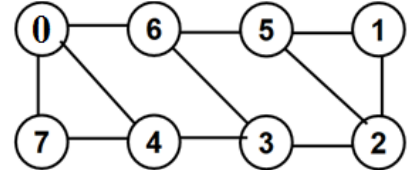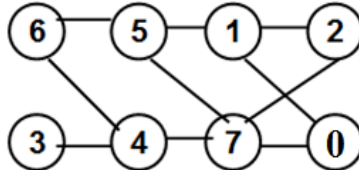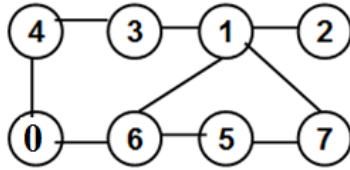

Daren Washington

Alicia Wells
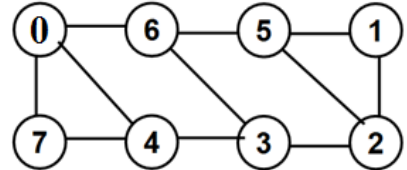
Marcus Wynn
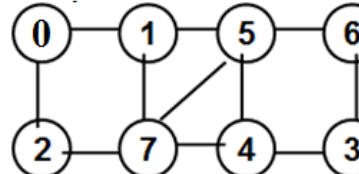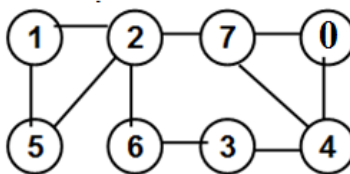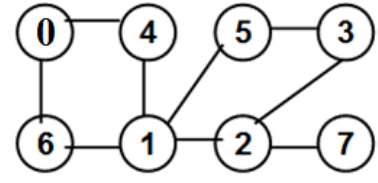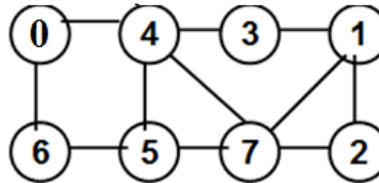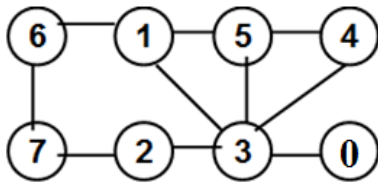
WHAT TO SUBMIT

1) C++ code of the entire project
2) Screenshot of the output for the graph assigned to you and the walk length of 4.