

CSC 323 Algorithm Design and Analysis, Fall 2018
Instructor: Dr. Natarajan Meghanathan

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

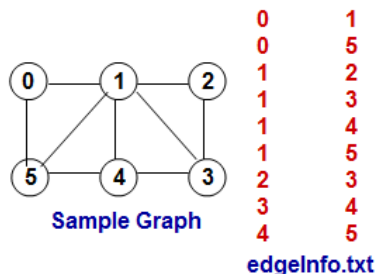
Due: November 15, 2018: by 11.30 AM (in Canvas)

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++/Java) 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.

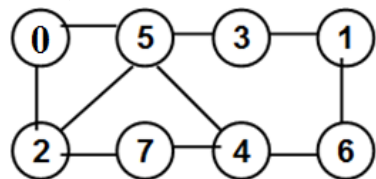


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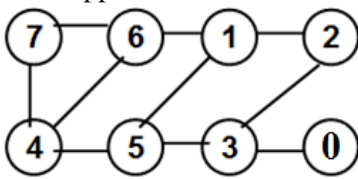
edgeInfo.txt
Enter the file name for the edges of the graph: edgeInfo.txt
Enter number of nodes: 6
Enter the walk length: 4
Initial Adjacency Matrix
0 1 0 0 0 1
1 0 1 1 1 1
0 1 0 1 0 0
0 1 1 0 1 0
0 1 0 1 0 1
1 1 0 0 1 0
Final Walk Length Matrix <Length <Length 4>
12 16 11 12 16 12
16 39 16 24 24 24
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

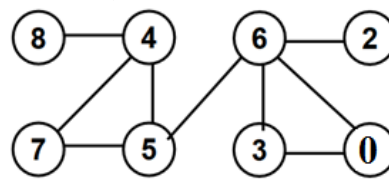
Clark, Lavaskie



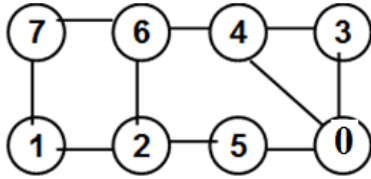
Epps, Justin



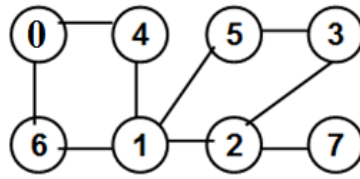
Harris, James



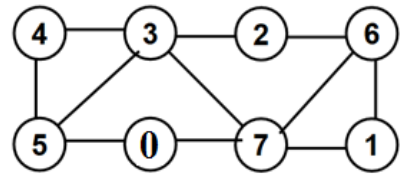
Hester, Larriel



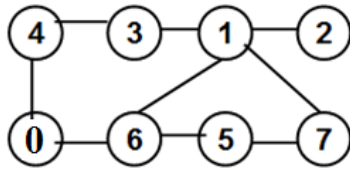
Hopson, Shanice



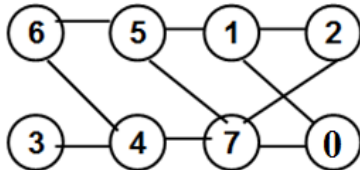
Jackson, Martice



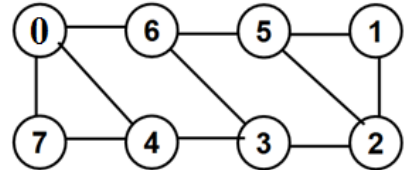
Jones, Demarius



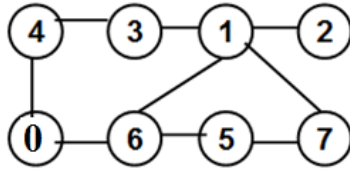
Kang, Ning



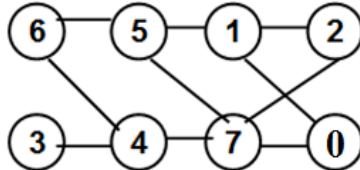
Kirk, Damon



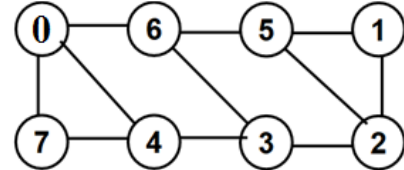
Manuel, Jackie



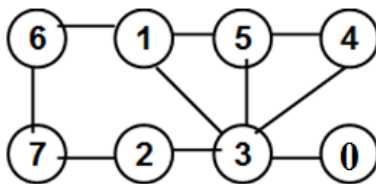
McIntosh, Blair



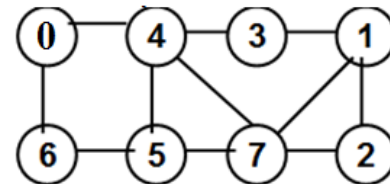
Sheffey, Varlin



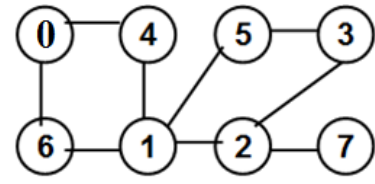
Simmons, Jetnya



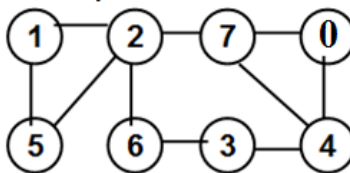
Thomas, Eriana



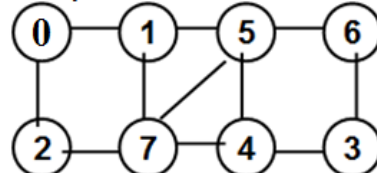
Walker, Brandon



Wynn, Marcus



Zimmerman, Taba



WHAT TO SUBMIT

(submit as a Word or PDF file in Canvas)

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