CS69011: Computing Lab-1
Task 2: Graph (Part - A)

August 21, 2023

==========Instructions==========

1. In the case of user input, assume only valid values will be passed as input.
2. Regarding submission: Create separate C file : <RollNo>_Q1.c, <RollNo>_Q2.c
3. Create a zip file of all these C files in the name: <RollNo>_T2_Part_A.zip and submit it to Moodle.
4. Input is provided from the input file from command line arguments.

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T3. Check if the given undirected graph is a bipartite graph or not.

Input / output
Input- first line will be V number of vertices (0 - V-1)
Next V lines contain the adjacency list <v1, v2, …, vn>, such that <v2,v3,...vn> are adjacent vertices of v1.

Input-
5
0 1
2 1 3
1 0 2 4
3 2 4
4 1 3

Output-
Bipartite

T4. Find the diameter of the given undirected graph.

Input / output
Input- first line will be V number of vertices (0 - V-1).

Next V lines contain the adjacency list <v1, v2, …, vn>, such that <v2,v3,...vn> are adjacent vertices of v1.

Input-
5
0 1
1 0 2 4
2 1 3
3 2 4
4 1 3

Output-
3

T5. Find the Number of vertices which are k distance from the given node of the given simple undirected graph.

Input / output
Input- first line will be V number of vertices (0 - V-1), root vertex and distance k
Next V lines contain the adjacency matrix

Input:
5 2 1
0 0 0 1 0
0 0 1 0 1
0 1 0 1 0
1 0 1 0 1
0 1 0 1 0

Output -
2