**Lab Report – Week 10**

CS2023 Data Structures and Algorithms

Dept. of Computer Science and Engineering, University of Moratuwa

|  |  |
| --- | --- |
| Name: Tharindu Perera | Index Number: 210472J |

|  |
| --- |
|  |

# Section1: Implementing Graph ADT

### 1.

1: 2, 3, 4, 5

2: 1, 3, 6

3: 1, 2

4: 1, 6, 7, 8

5: 1, 6, 7, 8

6: 2, 4, 5

7: 4, 5

8: 4, 5

4.

A screen shot of a computer

Description automatically generated with medium confidence

A screenshot of a computer

Description automatically generated

### 5.

*void* addedge(*int* *from*, *int* *to*){

        //select node from and push to into from's neighbour

        nodes[*from*-1].neighbours.push\_back(*to*-1);

    }

\*Index is decremented to fit the zero based indexing in the list.

# Section2: Working out link prediction, no coding required

Traverse through each of the neighbours of node 1 and and for each of them travers through their neighbours and save it to a set data structure. Next traverse through the neighbours of node 4 and save it to a nother set data structure. Save bothe of those to another set structure to get all naighbours of both and get the count of it (n\_all) get the counts of the previous two sets n\_1 nd n\_4 we can get the count of neighbours that both 1 and 4 have in common by n\_com = n\_1 + n\_4 - n\_all then find similarity of each of 1s neighbours and 4 by similarity = n\_com / n\_all. Suggest 1s neigh bour with the highest similarity with 4.

GitHub Link : [Tharindu6516/UoM-DSA-S2-Labs (github.com)](https://github.com/Tharindu6516/UoM-DSA-S2-Labs)