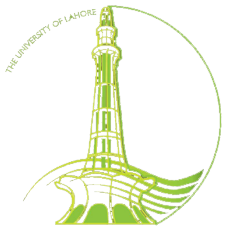

THE UNIVERSITY OF LAHORE
ISLAMABAD CAMPUS

DATA STRUCTURE AND ALOGRITHUM

Lab Report

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Experiment # 1
ADJANCY MATRIX

Objective
To understand the implementation of adjancy matrix.

Software Tool
1.
DEV C++

1 Theory

1. This algorithm takes the input of the number of vertex. 2. For each pair of vertex ask user whether they are connected or not. 3. Print the adjacency matrix. 4. Exit.

2 Task

2.1 Procedure: Task 1

```
#include<iostream>
#include<iomanip>

using namespace std;

// A function to print the adjacency matrix.
void PrintMat(int mat[][20], int n)
{
        int i, j;

        cout<<"\n\n"<<setw(4)<<"";
        for(i = 0; i < n; i++)
                cout<<setw(3)<<"("<<i+1<<")";
        cout<<"\n\n";
```

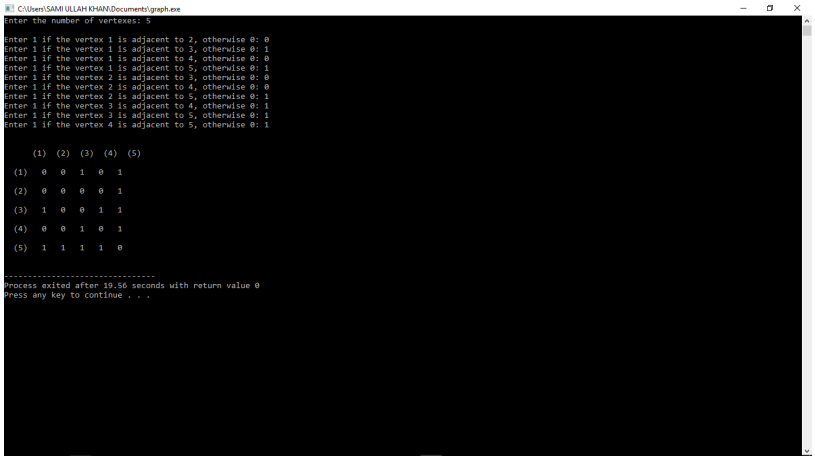

Figure 1: Time Independent Feature Set

```
        // Print 1 if the corresponding vertexes are connected otherwise 0
        for(i = 0; i < n; i++)
        {
                cout<<setw(3)<<"("<<i+1<<")";
                for(j = 0; j < n; j++)
                {
                        cout<<setw(4)<<mat[i][j];
                }
                cout<<"\n\n";
        }
}

int main()
{
        int i, j, v;

        cout<<"Enter the number of vertexes: ";
        cin>>v;

        int  mat[20][20];

        cout<<"\n";
        // Take input of the adjacency of each pair of vertexes.
        for(i = 0; i < v; i++)
```

```
        {
                for(j = i; j < v; j++)
                {
                        if(i != j)
                        {
                                cout<<"Enter 1 if the vertex "<<i+1<<" is
                                cin>>mat[i][j];

                                mat[j][i] = mat[i][j];
                        }
                        else
                                mat[i][j] = 0;
                }
        }

        PrintMat(mat, v);
}
```

3 Conclusion

in this lab we perform adjancy matrix that which vertix connected to which vertix and dispaly them in matrix form