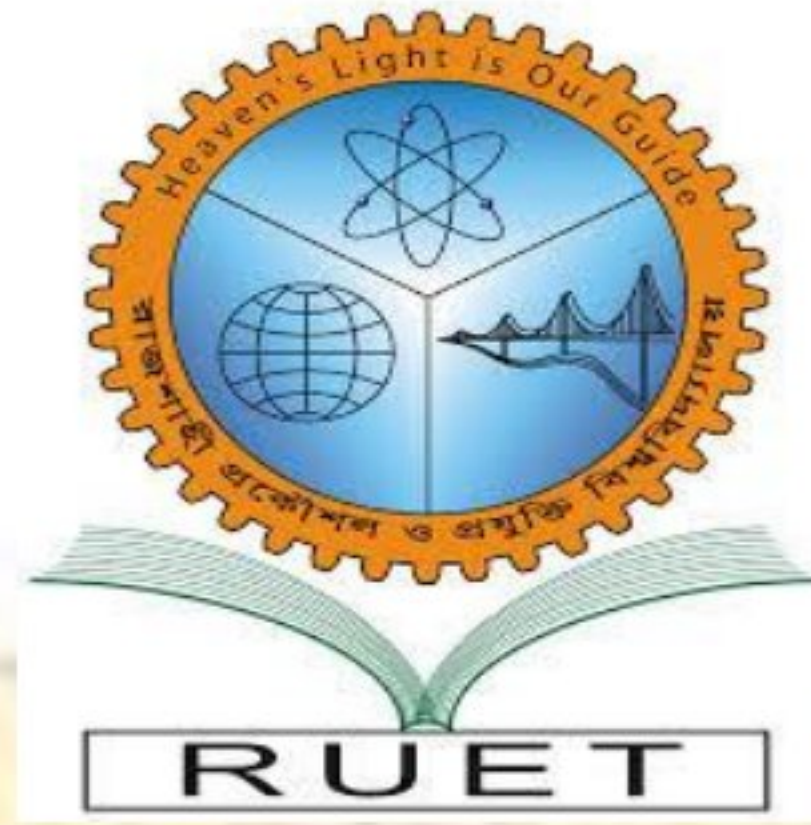# Rajshahi University of Engineering and Technology

Department of Computer Science and Engineering

Course No: CSE.2202

Course Title: Sessional based on CSE.2201 (Computer Algorithms)

Report On: Lab Final Problem 5

Submitted To

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Problem 5 :

Algorithm :

```
① BFS (node) {

        for i = 0 to n do {
            if (node[x][i] = 1) then
                    enqueue (i);

            }

        }

    while ( queue is not empty) {

        x = queue font();

        dequeue ();

        if x is not visited then {
                print x;
                visits x;

            }

        BFS (x);

    }

}
```

Code :

```cpp
#include <bits/stdc++.h>
using namespace std;
typedef long long ll;

queue <int> q;
int gp[105][105] = {0};
int vis[105] = {0};

void bfs (int n, int v){
    for (int i=1; i<=v; i++){
        if (gp[n][i] == 1 && vis[i]!=1){
            q.push (i);
        }
    }

    while (! q.empty()){
        n= q.front();
        q.pop();
        if (vis[n]!= 1){ cout<<n<<"\t";
            vis[n] =1; }
        bfs (n); }
```

```cpp
int main(){
    int v,i,j,k;
    cout << "Enter the Number of vertexes: ";
    cin >> v;

    cout<<" Enter graph data in matrix form : "<<endl;
    for( i=1; i<=v; i++){
        for( j=1; j<=v; j++){
            cin>> gp[i][j];
        }
    }

    cout << "Enter the start node: "; cin>>k;

    vis[k]=1;
    cout <<"\nThe node which are reachable are: ";

    bfs(k,v);
    cout << endl;

    return 0;

}
```

```
"F:\4th Semester\CSE\CSE.2202\Lab Final\5\5.exe"

Enter the Number of vertexes: 4

Enter graph data in matrix form:
0  1  1  1
0  1  0  0
0  0  0  0
0  0  1  0
Enter the starting vertex: 1

The node which are reachable are: 2        3          4

Process returned 0 (0x0)    execution time : 42.691 s
Press any key to continue.
```