**ASSIGNMENT 4**

BFS

code

#include<iostream>

#include<queue>

#include<vector>

using namespace std;

int main()

{

int edges,a,b;

vector<int>nodes[1000];

cout<<"Enter the no of edges"<<endl;

cin>>edges;

for(int i=0;i<edges;i++){

cin>>a>>b;

nodes[a].push\_back(b);

nodes[b].push\_back(a);

}

cout<<endl;

for(int i=0;i<1000;i++)

{

if(!nodes[i].empty())

{ cout<<"[ "<<i<<" ]"<<"-->";

for(vector<int>::iterator it=nodes[i].begin();

it!=nodes[i].end();++it)

{

cout<<\*it<<"-->";

}

cout<<"NULL"<<endl;

}

}

queue<int> que;

bool visited[1000];

for(int i=0;i<1000;i++)

visited[i]=false;

int start;

cout<<"\nEnter the starting node"<<endl;

cin>>start;

que.push(start);

visited[start]=true;

cout<<"\nBFS Traversal\n";

while(!que.empty())

{

int front = que.front();

cout<<front<<" ";

que.pop();

for(vector<int>::iterator it=nodes[front].begin();

it!=nodes[front].end();++it)

{

if(visited[\*it]==false)

{

visited[\*it]=true;

que.push(\*it);

}

}

}

cout<<endl;

return 0;

}

OUTPUT

