**Code**

#include<bits/stdc++.h>

using namespace std;

int n,e,A,B,E,C,D,c=0;

int X[10];

int Y[10];

char a,b;

int main()

{

int p = 0;

char arr[10000];

cout<<"Enter the no. of nodes: ";

scanf("%d",&n);

cout<<"\nEnter the number of edges: ";

scanf("%d,&",&e);

int AM[n][n];

int INC[n][e];

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

for(int j=0 ; j<n ; j++)

AM[i][j] = 0;

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

for(int j=0 ; j<10 ; j++)

INC[i][j] = 0;

cout<<"\nEnter the edge connection between two nodes\n";

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

{

scanf(" %c",&a);

scanf(" %c",&b);

A = a - 'a';

B = b - 'a';

C = a - 'a';

AM[A][B]++;

INC[C][p]++;

INC[B][p]++;

p++;

X[A]++;

Y[B]++;

}

cout<<"\nIncident Matrix\n"<<endl;

cout<<" ";

for(int i=1 ; i<=e ; i++)

cout<<"e"<<i<<" ";

cout<<endl;

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

{

char ch = 'a' + i;

cout<<ch<<" ";

for(int j=0 ; j<e ; j++)

cout<<INC[i][j]<<" ";

cout<<endl;

}

cout<<"\nAdjacency Matrix: \n\n";

cout<<" ";

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

{

char ch = 'a' + i;

cout<<ch<<" ";

}

cout<<endl;

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

{

char ch = 'a' + i;

cout<<ch<<" ";

for(int j=0 ; j<n ; j++)

cout<<AM[i][j]<<" ";

cout<<endl;

}

cout<<"\nOut-degree(Out) and In-degree(In) of Nodes:\n\n";

cout<<"Node "<<" Out"<<" In"<<endl;

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

{

char ch ='a' +i;

cout<<ch<<" "<<X[i]<<" "<<Y[i]<<endl;

}

return 0;

}

**Output**

