**GRAPH COLOURING**

#include<stdio.h>

int G[50][50],x[50];

void next\_color(int k){

int i,j;

x[k]=1;

for(i=0;i<k;i++){

if(G[i][k]!=0 && x[k]==x[i])

x[k]=x[i]+1;

}

}

int main(){

int n,e,i,j,k,l;

printf("Enter no. of vertices : ");

scanf("%d",&n);

printf("Enter no. of edges : ");

scanf("%d",&e);

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

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

G[i][j]=0;

printf("Enter indexes where value is 1-->\n");

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

scanf("%d %d",&k,&l);

G[k][l]=1;

G[l][k]=1;

}

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

next\_color(i);

printf("Colors of vertices -->\n");

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

printf("Vertex[%d] : %d\n",i+1,x[i]);

return 0;

}

