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| Assignment No: 03     1. A program of “Node coloring using Backtracking”. | |
| Date of Performance: 21/07/2019  Date of Submission: 28/07/2019 | Student ID: 17-02-04-058  Group: B1 |

**No.1:**

**#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;**

**}**