LAB 2

Write program to obtain the Topological ordering of vertices in a given digraph.

Code:

```c
#include<stdio.h>

#include<conio.h> void dfs(int n, int a[10][10])

{ int i,j,k,u,v,top,s[10],t[10],indeg[10],sum;

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

        sum=0;

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

        sum+=a[j][i];

        indeg[i]=sum;

        }

        top=-1;

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

        if(indeg[i]==0)

        s[++top]=i;

        }

        k=0; while(top!=-

        1) { u=s[top--];

        t[k++]=u;

        for(v=0;v<n;v++) {

        if(a[u][v]==1) {
```

```c
            indeg[v]=indeg[v]-
            1; if(indeg[v]==0)
            s[++top]=v;
            }
            }
            }
            printf("Topological order :");
            for(i=0;i<n;i++) printf(" %d",
            t[i]);
}


void main() {
int i,j,a[10][10],n; printf("Enter
number of nodes\n"); scanf("%d",
&n); printf("Enter the adjacency
matrix\n"); for(i=0;i<n;i++)
for(j=0;j<n;j++) scanf("%d", &a[i][j]);
dfs(n,a); getch();
}
```
Output:

```
Enter number of nodes
5
Enter the adjacency matrix
0 0 1 0 0
0 0 1 0 0
0 0 0 1 1
0 0 0 0 1
0 0 0 0 0
Topological order :  2  1  3  4  5
```