WEEK 2

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

Code:

```
#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) {
                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