

TOPOLOGICAL ORDERING OF VERTICES

```

#include<stdio.h>
int temp[10],k=0;

void topo(int n,int indegree[10],int a[10][10])
{
    int i,j;

    for(i=1;i<=n;i++)
    {
        if(indegree[i]==0)
        {
            indegree[i]=1;
            temp[++k]=i;
            for(j=1;j<=n;j++)
            {
                if(a[i][j]==1&&indegree[j]!=-1)
                    indegree[j]--;
            }
            i=0;
        }
    }
}

int main()
{
    int i,j,n,indegree[10],a[10][10];
    printf("Enter the number of vertices:");
    scanf("%d",&n);
    for(i=1;i<=n;i++)
        indegree[i]=0;
    printf("\nEnter the adjacency matrix\n");
    for(i=1;i<=n;i++)
        for(j=1;j<=n;j++)
        {
            scanf("%d",&a[i][j]);
            if(a[i][j]==1)
                indegree[j]++;
        }
    topo(n,indegree,a);
    if(k!=n)
        printf("Topological ordering is not possible.\n");
}

```

```
else
{
    printf("\nTopological ordering is :\n");
    for(i=1;i<=k;i++)
        printf("v%d\t",temp[i]);
}
printf("\n");
return 0;
}
```

Enter the number of vertices:4

Enter the adjacency matrix

```
0 1 1 0
0 0 0 1
0 0 0 1
0 0 0 0
```

Topological ordering is :

```
v1      v2      v3      v4
```