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ADA LAB TEST 1

for

19CS

WRITEUP

```
#include <stdio.h>
int temp[10], k=0, top=-1;

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("\n enter 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("\n topological ordering is: \n");
for(i=1; i<=k; i++)
printf("v%d\t", temp[i]);
}
}
```

Modification Dfs method.

```
#include<stdio.h>
#include<conio.h>
int a[10][10], n, indegree[10];
void find_indegree()
{
int j, i, sum;
for(i=0; i<n; i++)
sum+=a[i][j];
indegre[j]=sum;
```

```
for(i=0;i<n;i++)
{
 if(indegree[i]==0)s[++top]=i;
}
while(top!=-1)
{
u=s[top--];
t[k++]=u;
for(v=0;v<n;v++)
{
 if(a[u][v]==1)
{
  indegree[v]--;
 if(indegree[v]==0)s[++top]=v;
}
}
}
printf("The topological sequence is:\n");
 for(i=0;i<n;i++)
 printf("%d",t[i]);
 }
 void main()
 {
  int i,j;
  printf("Enter the value of n:");
  scanf("%d",&n);
  printf("\n Enter the adjacency matrix:\n");
  for(i=0;i<n;i++)
  {
   for(j=0;j<n;j++)
   scanf("%d",&a[i][j]);
  }
   topology();
  }
```