## LAB-2

## Q1. Write a program to obtain topology ordering of vertices in a given diagraph.

Aim: To write a c program for topological sort algorithm.

```
#include<stdio.h>
#include<conio.h>
void source removal(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[i][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]);
source removal(n,a);
getch();
```

## **RESULT:**

```
"C:\Users\B Venkatesh\Desktop\c programming\progr
Enter number of nodes
5
Enter the adjacency matrix
Enter row 1
0 0 1 0 0
Enter row 2
0 0 1 0 0
Enter row 3
0 0 0 1 1
Enter row 4
0 0 0 0 1
Enter row 5
0 0 0 0
Topological order : 2 1 3 4 5_
```

```
22/6/23 LAB-2
a program to obtain topological
  orderly of voltices in a given oliaplaph.
#Muludecstolio. h)
#mchalesconio.hs
void 200-degoec (Mn, intalio][10])
 Int 1, 1, k, u, v, top, s[10], t[10], when [10], sum
Los (i=0; i€n; i+1)
 { sum = 0;
 Los (j = 0; ) cn; j++)
     sumit = a [i][i];
    indeg [i] = sum;
  top=-1;
  Ros (120; icn) it+) 13/30
     H (Indeq[i]==0)
       S[++top]=i;
    k > 0)
   while (40p 1 = -) ]
      U25[top -- ];
     + [K++] = U;
      100 (N=0; VCN; V++) 5
```

```
H(a[v][v]=2){
    Noting[v] = mdeg[v]-1;
    of (indeq [v]==0)
       S[+++0p] = v3 1 provides with 1800
                          1 Wall Both
                         00100
 point ("Topological order!");
 $05 (120) icn; itt)
   pont (" 1/0 ", (+[i]+1)); and sta
                            11000
Drian bion
{ nt }, ), a[10][10], n)
point ("Fintel number of nodis[n");
scant ("/d", en);
point ("Finta the adjacency notoix n")!
 AS (120, 1cn; it+) 21 812
  pointf ("Ender Row "Ad In", i+1);
  tox (j 20; jcn; j++)
    scanf ("/d", &a[i][i]);
 200-degree (n,a);
  getch ();
```

Result1 Entel number of nodes - Enter the obligacency modern Enta ROW 1 00100 Entel ROW 2 0 0 1 0 0 Entel ROW 3 MILIT 00011 Entel ROW 4 0 0 0 0 1 0000111 Enta ROW 5. 0 0 0 0 0 To pological order of the given adjacency natoix 17 ! 213 45