**Topological ordering**

Design and implement C/C++ Program to obtain the Topological ordering of vertices in a

Given digraph.

#include<stdio.h>

const int MAX = 10;

void fnTopological(int a[MAX][MAX], int n);

int main(void)

{

int a[MAX][MAX],n;

int i,j;

printf("Topological Sorting Algorithm -\n");

printf("\nEnter the number of vertices : ");

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]);

fnTopological(a,n); printf("\n");

return 0;

}

void fnTopological(int a[MAX][MAX], int n)

{

int in[MAX], out[MAX], stack[MAX], top=-1; int i,j,k=0;

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

{

in[i] = 0;

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

if (a[j][i] == 1)

in[i]++;

}

while(1)

{

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

{

if (in[i] == 0)

{

stack[++top] = i;

in[i] = -1;

}

}

if (top == -1) break;

out[k] = stack[top--];

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

{

if (a[out[k]][i] == 1)

in[i]--;

}

k++;

}printf("Topological Sorting (JOB SEQUENCE) is:- \n");

for (i=0;i<k;i++)

printf("%d ",out[i] + 1);

}

OUTPUT:

Input Graph : 5 vertices 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 Sorting (JOB SEQUENCE) is:- 2 1 3 4 5