ANAGHA ACHARYA

1BM19CS224

|  |
| --- |
| Write program to obtain the Topological ordering of vertices in a given digraph. |
| #include<stdio.h>  #include<time.h>  void findindegree(int a[10][10],int indegree[10],int n)  {  int i,j,sum;  for(j=1;j<=n;j++)  {  sum=0;  for(i=1;i<=n;i++)  sum=sum+a[i][j];  indegree[j]=sum;  }  }  void topological(int n,int a[10][10])  {  int i,k,u,v,top,t[100],stack[20],indegree[20];  k=1;  top=-1;  findindegree(a,indegree,n);  for(i=1;i<=n;i++)  {  if(indegree[i]==0)  stack[++top]=i;  }  while(top!=-1){  u=stack[top--];  t[k++]=u;  for(v=1;v<=n;v++)  {  if(a[u][v]==1)  {  indegree[v]--;  if(indegree[v]==0)  stack[++top]=v;  }  }  }  printf("Topological sequence is\n");  for(i=1;i<=n;i++)  printf("%d ",t[i]);  }  void main()  {  int a[10][10],i,j,n;  clock\_t start,end;  double time;  printf("Enter the number of nodes:");  scanf("%d",&n);  printf("Enter the adjacency matrix:\n");  for(i=1;i<=n;i++){  for(j=1;j<=n;j++)  scanf("%d",&a[i][j]);  }  start=clock();  topological(n,a);  end=clock();  time=((double)(end-start))/CLOCKS\_PER\_SEC;  printf("\nTime taken=%1f",time);  }  OUTPUT: |
|  |
|  |
|  |
| |  | | --- | |  | |