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LAB-5

```
#include<stdio.
h>
                    #include<conio.h>
                    #include<process.h>
                    #include<stdlib.h>
                    int a[10][10],vis[10],n;


                    void bfs(int v)
                    {
                           int q[10],f=0,r=0,u;
                           vis[v]=1;
                           q[r]=v;//push into the queue


                           while(f<=r)
                           {
                                  u=q[f++];
                                  printf("%d --> ",u);//print front value of the
                    queue
                                  for(int i=1;i<=n;i++)
                                  {
                                         if(a[u][i]==1&&vis[i]==0)
                                         {
                                                vis[i]=1;
                                                r++;
```

```
                        q[r]=i;//push into the queue
                    }
                }
        }
}


void main()
{
        int src;
        printf("enter no of vertices \n");
        scanf("%d",&n);
        printf("enter adjacency matrix :\n");
        for(int i=1;i<=n;i++)
        {
                for(int j=1;j<=n;j++)
                        scanf("%d",&a[i][j]);
        }

        for(int i=1;i<=n;i++)
                vis[i]=0;

        printf("enter source vertex \n");
        scanf("%d",&src);
        printf("nodes reachable from source node %d are :\n",src);
        bfs(src);
```

```
        printf("\n BFS TRAVERSAL:\n");


        for(int i=1;i<=n;i++)
                vis[i]=0;


        for(int i=1;i<=n;i++)
        {
                if(vis[i]==0)
                        bfs(i);
        }


}
```

```
enter no of vertices
5
enter adjacency matrix :
0 1 1 0 0
0 0 0 0 1
0 0 0 0 0
0 0 0 0 0
0 0 0 0 0
enter source vertex
1
nodes reachable from source node 1 are :
1 --> 2 --> 3 --> 5 -->
 BFS TRAVERSAL:
1 --> 2 --> 3 --> 5 --> 4 -->

...Program finished with exit code 0
Press ENTER to exit console.
```

```
enter no of vertices
5
enter adjacency matrix :
0 0 1 1 1
0 0 0 1 1
0 0 0 1 0
0 0 0 0 0
0 0 0 0 0
enter source vertex
1
nodes reachable from source node 1 are :
1 --> 3 --> 4 --> 5 -->
 BFS TRAVERSAL:
1 --> 3 --> 4 --> 5 --> 2 -->

...Program finished with exit code 0
Press ENTER to exit console.
```

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

```
        indegre[j]=s;
    }
}
void topology()
{
    int i,u,v,t[10],s[10],top=-1,k=0;
    findindeg();
    for(i=0;i<n;i++)
    {
    if(indegre[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)
    {
    indegre[v]--;
    if(indegre[v]==0) s[++top]=v;
    }
    }
    }
printf("The topological Sequence
:\n");
for(i=0;i<n;i++)
printf("%d ",t[i]);
}
void main()
{
int i,j;
```

```
printf("Enter the  no. of vertices:");
scanf("%d",&n);
printf("\nEnter adjacency matrix:\n");
for(i=0;i<n;i++)
{
for(j=0;j<n;j++)
scanf("%d",&a[i][j]);
}
topology();


}
```