EXPERIMENT 11

Graph Traversal Technique

Program:

```
#include<stdio.h>
#include<conio.h>
#include<queue.h>
   int a[20][20],visited[20],n; void dfs(int v)
   {
      int i;
      printf("%d\t",v);
      visited[v]=1;
      for(i=0;i<=n;i++)
      {
         if(!visited[i] && a[v][i]==1)
         {
            dfs(i);
         }
      }
   }
   void bfs(int v)
   {
      int i;
      enqueue(v);
      printf("%d->",v);
```

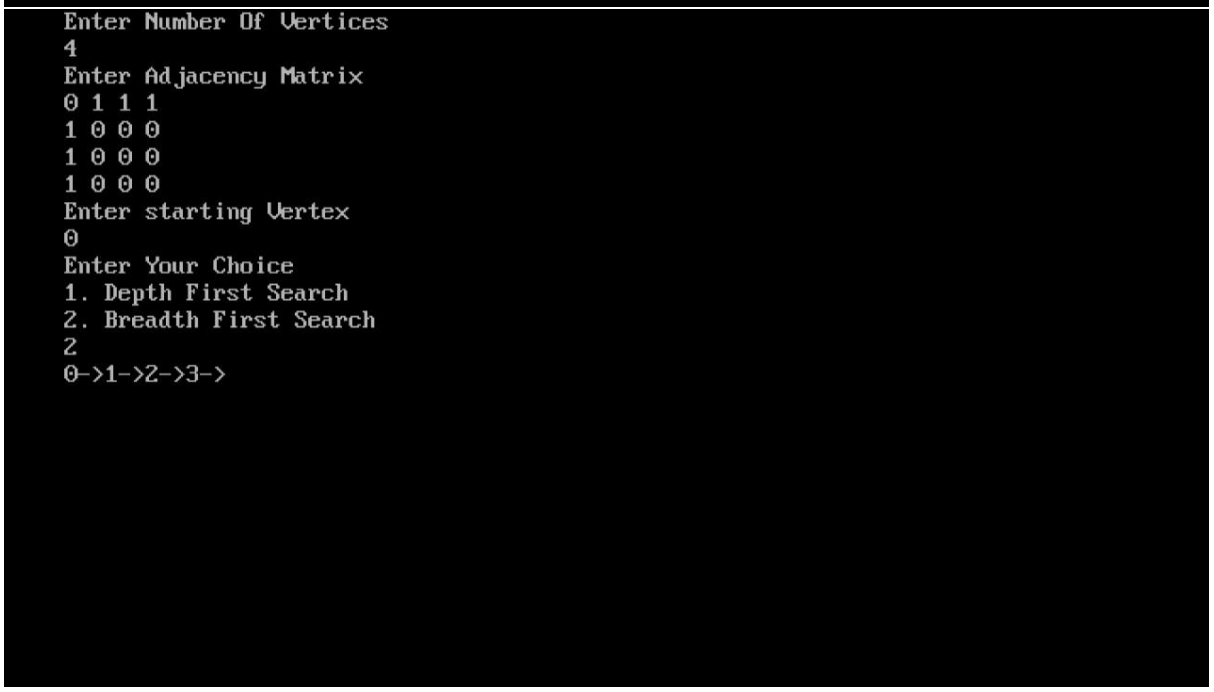
```
        visited[v]=1;
        while(!isEmpty())
        {
           v=dequeue();
           for(i=0;i<n;i++)
           {
              if(visited[i]==0 && a[v][i]!=0)
              {
                 enqueue(i);
                 visited[i]=1;
                 printf("%d->",i);
              }
           }
        }
    }

void main()
{
    int i,j,v,ch;
    printf("Enter Number Of Vertices\n");
    scanf("%d",&n);
    printf("Enter Adjacency Matrix\n");
    for(i=0;i<n;i++)
    {
        for(j=0;j<n;j++)
```

```
        {
            scanf("%d",&a[i][j]);
        }
    }
    for(i=0;i<n;i++)
    {
        visited[i]=0;
    }
    printf("Enter starting Vertex\n");
    scanf("%d",&v);
    printf("Enter Your Choice\n");
    printf("1. Depth First Search\n");
    printf("2. Breadth First Search\n");
    scanf("%d",&ch);
    switch(ch)
    {
        case 1: dfs(v);
                break;
        case 2: bfs(v);
                break;
        default:printf("Wrong Choice\n");
    }
    getch();
}
```

Output:


Enter Number Of Vertices
4
Enter Adjacency Matrix
0 1 0 0
1 0 1 0
0 0 0 1
0 0 0 0
Enter starting Vertex
1
1 2 3 4


Enter Number Of Vertices
4
Enter Adjacency Matrix
0 1 1 1
1 0 0 0
1 0 0 0
1 0 0 0
Enter starting Vertex
0
Enter Your Choice
1. Depth First Search
2. Breadth First Search
2
0->1->2->3->