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1 //CODEBLOCKS
2 //SHREYAS SAWANT D7A 55
3 //Implement Graph Traversal-BFS and DFS
4
5
6 #include<stdio.h>
7 #include<stdlib.h>
8 #define max 7
9 int a[max][max],visited[max];
10
11 void DFS()
12 {
13     int stack[max];
14     int top=0,i,start;
15     printf("Enter start node: ");
16     scanf("%d",&start);
17     printf("\nDepth-First Search: ");
18     printf("%d ",start);
19     visited[start]=1;
20     stack[top]=start;
21
22     while(top!=-1)
23     {
24         start=stack[top];
25         for(i=0;i<max;i++)
26             if(a[start][i] && !visited[i])
27             {
28                 stack[++top]=i;
29                 printf("%d ",i);
30                 visited[i]=1;
31                 break;
32             }
33         if(i==max)
34             top--;
35     }
36     printf("\n");
37 }
38 void BFS()
39 {
40     int queue[max];
41     int f=-1,r=-1,i,start;
42     printf("Enter start node: ");
43     scanf("%d",&start);
44     queue[++r]=start;
45     visited[start]=f;
46     printf("\nBreadth-First Search: ");
47     while(r!=f)
48     {
49         start=queue[++f];
50         printf("%d ",start);
51         for(i=0;i<max;i++)
52         {
53             if(a[start][i] && !visited[i])
54             {
55                 queue[++r]=i;
56                 visited[i]=1;
57             }
58         }
59     }
60     printf("\n");
61 }
62
63
64 int main(){
65     int choice;
66     printf("\nEnter Adjacency Matrix is: \n");
67     for(int i=0;i<max;i++)
68     {
69         for(int j=0;j<max;j++)
70         {
71             scanf("%d",&a[i][j]);
72         }
73     }
74     printf("\n1. Breadth First Search\n2. Depth First Search\n\nEnter your choice: ");
75     scanf("%d",&choice);
76
77     switch(choice)
78     {
79         case 1:
80             BFS();
81             break;
82         case 2:
83             DFS();
84             break;

```

```
85         default:
86             printf("INVALID");
87
88     }
89     return 0;
90 }
91
92
```