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1  //*****//
2  //*****string Author = "SACHIN SAINI " *****//
3  //*****//
4
5
6  //BFS using adjacency matrix
7  #include<iostream>
8  using namespace std;
9  int
10 mat[20][20], VisitedArray[20], QueueForBFS[20], frontQueue=0, rearQueue=0, numOfVertices=0;
11 void BFS(int src) //src is on which we are calling BFS i.e. Which node we are expending
12 {
13     VisitedArray[src]=1; //Visited array of source Node = 1
14     QueueForBFS[rearQueue++]=src; //Insert source node by the rear of the Queue
15     while(rearQueue!=numOfVertices) //When rearQueue reaches end of the node then stop
16     {
17         for(int i=0; i<numOfVertices; i++) //Visit all node from one source
18         {
19             if(mat[src][i]==1 && VisitedArray[i]==0)
20             {
21                 QueueForBFS[rearQueue++]=i;
22                 VisitedArray[i]=1;
23             }
24         }
25         src=QueueForBFS[frontQueue]; //Change the source node to front of queue
26         frontQueue++; //Change the front by increasing one as previous one is visited
27     }
28 }
29 void print(int n)
30 {
31     for(int i=0; i<n; i++)
32     {
33         cout<<QueueForBFS[i]<<" ";
34     }
35 }
36 int main()
37 {
38     //Filling data by own we can take from user as well
39     numOfVertices=10;
40     mat[0][1]=1;
41     mat[1][0]=1;
42     mat[0][3]=1;
43     mat[3][0]=1;
44     mat[3][2]=1;
45     mat[2][3]=1;
46     mat[1][2]=1;
47     mat[2][1]=1;
48     mat[1][4]=1;
49     mat[4][1]=1;
50     mat[1][7]=1;
51     mat[7][1]=1;
52     mat[6][1]=1;
53     mat[1][6]=1;
54     mat[4][5]=1;
55     mat[5][4]=1;
56     mat[4][7]=1;
57     mat[7][4]=1;
58     mat[4][6]=1;
59     mat[6][4]=1;
60     mat[6][7]=1;
61     mat[7][6]=1;
62     mat[2][9]=1;
63     mat[9][2]=1;
64     mat[2][8]=1;
65     mat[8][2]=1;
66     BFS(0); //Calling BFS by source 0
67     print(10);
68 }

```

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69
70  //////////////////////////////////////
71  //////////////////////////////////////
72  //////////////////////////////////////
73  //////////////////////////////////////
74  //////////////////////////////////////
75  //////////////////////////////////////
76  //////////////////////////////////////
77  //////////////////////////////////////
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Output:
0 1 3 2 4 6 7 8 9 5