Graph Theory - S001 (E017)

Solved Challenges 1/2

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Iterations Count All Zero

ID:11091 **Solved By 690 Users**

The program must accept an integer matrix of size **R*C** and an integer **K** as the input. For each occurrence of K in the matrix, the program must replace K and all the adjacent non-zero cell values with zero which are to it's left, right, top and bottom. The program must repeat the process untill all the values become zero. The program must print how many times the process has to be performed to convert all the cell values to zero.

Boundary Condition(s):

Input Format:

The first line contains R and C separated by a space.

The next R lines, each containing C integers separated by a space.

The (R+2)nd line contains K.

Output Format:

The first line contains an integer representing the number of times the above process has to be performed to convert all the cell values to zero.

Example Input/Output 1:

Input:

5 5

56056

18802

55506

45550

88888

6

Output:

2

Explanation:

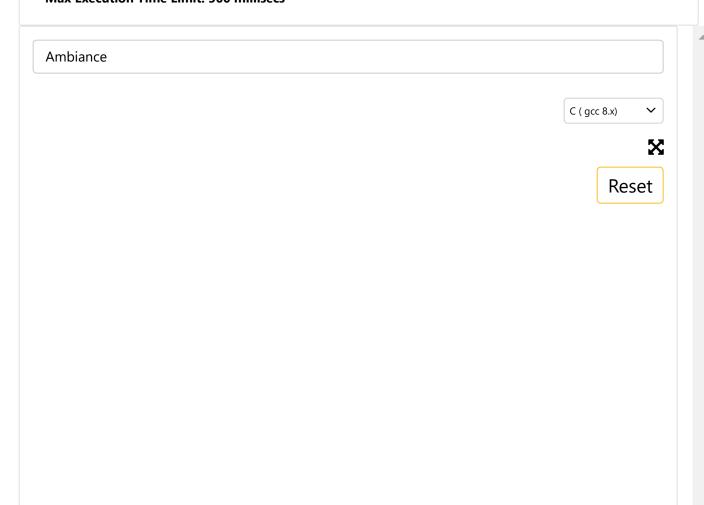
After performing the process for the first occurrence of 6, the matrix becomes 00056

00002 00006 00000 $0 \ 0 \ 0 \ 0 \ 0$ After performing the process for the second occurrence of 6, the matrix becomes $0 \ 0 \ 0 \ 0 \ 0$ 00000 $0 \ 0 \ 0 \ 0 \ 0$ 00000 00000 Now, all the cell values in the matrix become zero. Hence the output is 2 **Example Input/Output 2:** Input: 4 5 50056 10810 05006 45052 5

Output:

4

Max Execution Time Limit: 500 millisecs



```
#include<stdio.h>
 1
 2
    #include<stdlib.h>
 3
 4
    int R,C;
    void traverse(int matrix[R][C], int row,int col)
 5
 6
    {
 7
        if(row>=0 && row<R && col>=0 && col<C)
 8
 9
             if(matrix[row][col]==0)
10
             {
11
                 return;
12
13
             matrix[row][col] = 0;
14
             traverse(matrix,row,col+1);
             traverse(matrix,row,col-1);
15
16
             traverse(matrix,row+1,col);
17
             traverse(matrix,row-1,col);
        }
18
19
    }
20
    int main()
21
    {
        scanf("%d%d",&R,&C);
22
23
        int matrix[R][C];
24
25
        for(int row=0;row<R;row++)</pre>
             for(int col=0;col<C;col++)</pre>
26
27
                 scanf("%d",&matrix[row][col]);
        int k,count=0;
28
29
        scanf("%d",&k);
        for(int row=0;row<R;row++)</pre>
30
31
        {
32
             for(int col=0;col<C;col++)</pre>
33
             {
                 if(matrix[row][col]==k)
34
35
36
                      count++;
                      traverse(matrix,row,col);
37
38
                 }
             }
39
        }
40
41
42
        printf("%d",count);
43
44
45
    }
```



```
1 SkillRack Message : Iterations Count All Zero
#include<stdio.h>
#include < stdlib.h >
int R,C;
void traverse(matrix[][C], int row,int col)
if(row>=0 && row<R && col>=0 && col<C)
if(matrix[row][col]==0)
return;
matrix[row][col] = 0;
traverse(matrix,row,col+1);
traverse(matrix,row,col-1);
traverse(matrix,row+1,col);
traverse(matrix,row-1,col);
}
int main()
int R,C;
scanf("%d%d",&R,&C);
int matrix[R][C];
for(int row=0;row<R;row++)</pre>
for(int col=0;col<C;col++)
scanf("%d",&matrix[R][C]);
int k,sourceR,sourceC,count=0;
scanf("%d",&k);
for(int row=0;row<R;row++)</pre>
for(int col=0;col<C;col++)</pre>
if(matrix[row][col]==k)
count++;
traverse(matrix,sourceR,sourceC);
}
printf("%d",count);
}
```

Please wait while we run the program



Run with a custom test case (Input/Output)