



Shri Vile Parle Kelavani Mandal's  
**INSTITUTE OF TECHNOLOGY**  
**DHULE (M.S.)**  
**DEPARTMENT OF COMPUTER ENGINEERING**

**Subject : Competitive Programming Lab**

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**Roll No. : 32**

**Class : TY. Comp. Engg.**

**Batch : T2**

**Division: T**

**Expt. No. :01**

**Date : 03/03/2025**

**Title : Mine Sweeper Problem**

Remark

Signature

**Language: C++**

```
#include <iostream> //Mohammed Meraj - Roll No 32 - Batch: T2
```

```
using namespace std;
```

```
int main(){
```

```
    int m,n,flag;
```

```
    printf("Enter mine Grid Dimensions: \n");
```

```
    printf("Enter Rows \n");
```

```
    cin >> m;
```

```
    printf("Enter Columns \n\n");
```

```
    cin >> n;
```

```
    char grid[m][n];
```

```
    printf("Enter 0 if yes \nEnter 1 if no:\n");
```

```
    for(int i=0; i<m ; i++){
```

```
        for(int j = 0 ; j<n ; j++){
```

```
            printf("Do you want to put mine at [%d][%d]: ",i,j);
```

```
            cin >> flag;
```

```
            if(flag == 0){
```

```
                grid[i][j] = '*';
```

```
            } else {
```

```
                grid[i][j] = '.';
```

```
            }
```

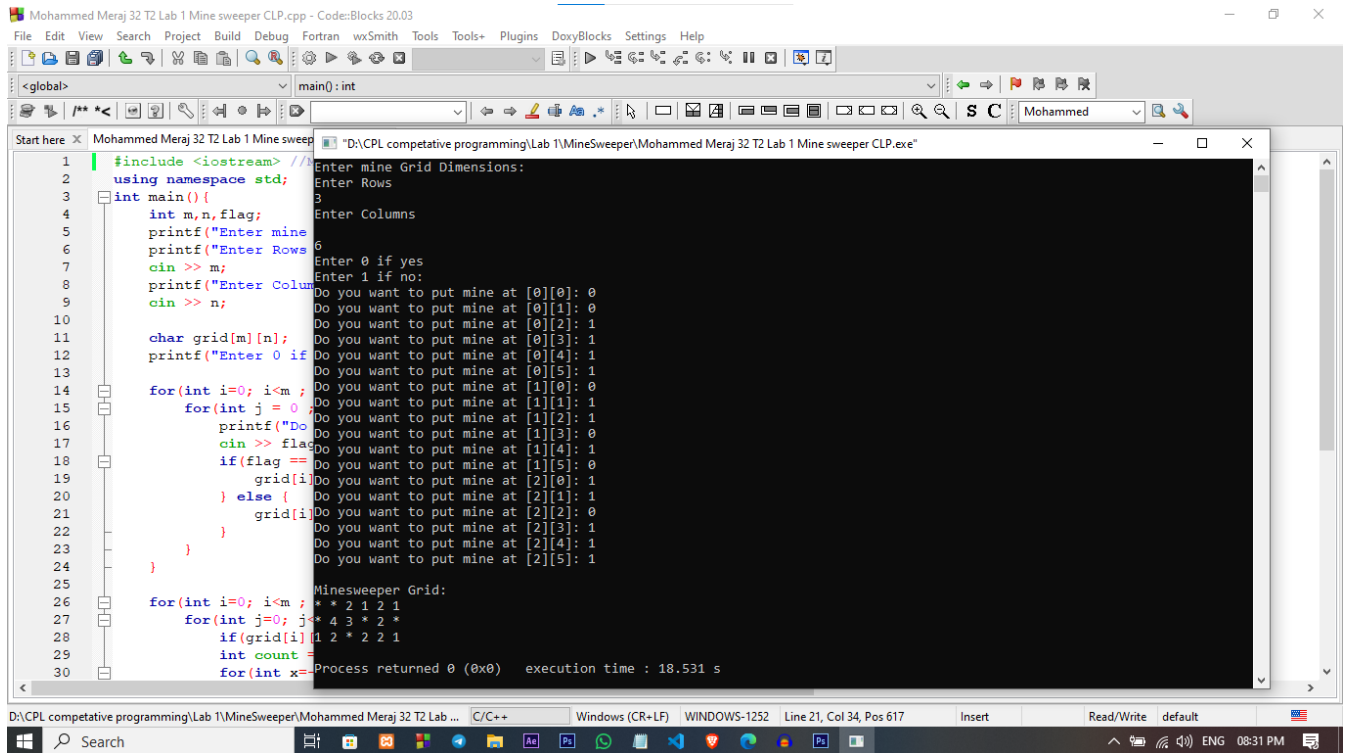
```
        }
```

```
}

for(int i=0; i<m ; i++){
    for(int j=0; j<n; j++){
        if(grid[i][j] == '*') continue;
        int count = 0;
        for(int x=-1; x<=1; x++){
            for(int y=-1; y<=1; y++){
                int ni = i + x;
                int nj = j + y;
                if(ni>=0 && ni<m && nj>=0 && nj<n && grid[ni][nj] == '*'){
                    count++;
                }
            }
        }
        grid[i][j] = count + '0';
    }
}

printf("\nMinesweeper Grid:\n");
for(int i=0; i<m ; i++){
    for(int j=0; j<n; j++){
        printf("%c ",grid[i][j]);
    }
    printf("\n");
}
}
```

## Output :



The screenshot displays a C++ IDE with a source code editor on the left and a console window on the right. The source code is a Minesweeper game implementation in C++.

```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      int m,n,flag;
6      printf("Enter mine Grid Dimensions:
7      printf("Enter Rows
8      cin >> m;
9      printf("Enter Columns
10     cin >> n;
11
12     char grid[m][n];
13     printf("Enter 0 if no mine and 1 if yes:
14     for(int i=0; i<m; i++)
15     {
16         for(int j=0; j<n; j++)
17         {
18             printf("Do you want to put mine at [%d][%d]: ", i, j);
19             cin >> flag;
20             if(flag == 1)
21                 grid[i][j] = 1;
22             else
23                 grid[i][j] = 0;
24         }
25     }
26
27     Minesweeper Grid:
28     for(int i=0; i<m; i++)
29     {
30         for(int j=0; j<n; j++)
31             printf("%d ", grid[i][j]);
32         printf("\n");
33     }
34
35     int count = 0;
36     for(int x=0; x<m; x++)
37     {
38         for(int y=0; y<n; y++)
39             if(grid[x][y] == 1)
40                 count++;
41     }
42
43     printf("Total mines: %d", count);
44 }
```

The console window shows the program's execution. It prompts the user for grid dimensions (3 rows, 6 columns) and then for mine placement at various coordinates. The final output displays the Minesweeper grid and the total number of mines (10).

```
Enter mine Grid Dimensions:
Enter Rows
3
Enter Columns
6
Do you want to put mine at [0][0]: 0
Do you want to put mine at [0][1]: 0
Do you want to put mine at [0][2]: 1
Do you want to put mine at [0][3]: 1
Do you want to put mine at [0][4]: 1
Do you want to put mine at [0][5]: 1
Do you want to put mine at [1][0]: 0
Do you want to put mine at [1][1]: 1
Do you want to put mine at [1][2]: 1
Do you want to put mine at [1][3]: 0
Do you want to put mine at [1][4]: 1
Do you want to put mine at [1][5]: 0
Do you want to put mine at [2][0]: 1
Do you want to put mine at [2][1]: 1
Do you want to put mine at [2][2]: 0
Do you want to put mine at [2][3]: 1
Do you want to put mine at [2][4]: 1
Do you want to put mine at [2][5]: 1
Minesweeper Grid:
* * 2 1 2 1
* * 4 3 * 2 *
1 2 * 2 2 1
Total mines: 10
Process returned 0 (0x0)   execution time : 18.531 s
```

## Program ScreenShot:

The screenshot shows a C++ program in the DoxyBlocks IDE. The program is titled "Mohammed Meraj 32 T2 Lab 1 Mine sweeper CLP.cpp" and is located at "D:\CPL competitive programming\Lab 1\MineSweeper\Mohammed Meraj 32 T2 Lab 1 Mine sweeper CLP.cpp". The code is as follows:

```
1 #include <iostream> //Mohammed Meraj | Batch: T2 | Roll no: 32
2 using namespace std;
3 int main(){
4     int m,n,flag;
5     printf("Enter mine Grid Dimensions: \n");
6     printf("Enter Rows \n");
7     cin >> m;
8     printf("Enter Columns \n\n");
9     cin >> n;
10    char grid[m][n];
11    printf("Enter 0 if yes \nEnter 1 if no:\n");
12
13    for(int i=0; i<m ; i++){
14        for(int j = 0 ; j<n ; j++){
15            printf("Do you want to put mine at [%d][%d]: ",i,j);
16            cin >> flag;
17            if(flag == 0){
18                grid[i][j] = '*';
19            } else {
20                grid[i][j] = '.';
21            }
22        }
23    }
24    for(int i=0; i<m ; i++){
25        for(int j=0; j<n; j++){
26            if(grid[i][j] == '*') continue;
27            int count = 0;
28            for(int x=-1; x<=1; x++){
29                for(int y=-1; y<=1; y++){
30                    int ni = i + x;
31                    int nj = j + y;
32                    if(ni>=0 && ni<m && nj>=0 && nj<n && grid[ni][nj] == '*'){
33                        count++;
34                    }
35                }
36            }
37            grid[i][j] = count + '0';
38        }
39    }
40    printf("\nMinesweeper Grid:\n");
41    for(int i=0; i<m ; i++){
42        for(int j=0; j<n; j++){
43            printf("%c ",grid[i][j]);
44        }
45        printf("\n");
46    }
47 }
```

The IDE interface includes a menu bar (File, Edit, View, Search, Project, Build, Debug, Fortran, wxSmith, Tools, Tools+, Plugins, DoxyBlocks, Settings, Help), a toolbar, and a status bar at the bottom showing the file path, compiler (C/C++), and window information (Line 39, Col 37, Pos 1204).