

Aeroplane bombing

Tuesday, July 22, 2025 9:31 PM

1	2	2	1	0
1	0	2	1	0
2	2	1	0	1
2	1	0	1	2

<https://www.hackerrank.com/contests/target-samsung-13-nov19/challenges/aeroplane-bombing/problem>

→ (N-1)th row theke start করলে।
যদি বম্বার পর (এই 3 টির যেকোন 1 টি থাকে) start করতে পারবে।

SpaceShip এর কাছে available move, 3, (↖, ↑, ↗)

$$\left. \begin{matrix} f(N-1, col-1) \\ f(N-1, col+1) \\ f(N-1, col) \end{matrix} \right\} \quad \text{for } (int\ d=-1; d \leq 1; d++) \quad \{ f(N-1, col+d)$$

If I encounter bomb.
I check if I have used up my bomb. (bomb use করলে return)
If I have not, then make the bomb, 0 of the upper 5x5 box of that, spaceship
then after the recursion is completed. revert it back to original.

```
#include <cmath>
#include <cstdio>
#include <vector>
#include <iostream>
#include <algorithm>
using namespace std;
int maxCnt = 0;
void solve(vector<vector<int>>& field, vector<vector<int>>& copyField, int currCount, int row, int col, int bombed)
{
    //jodi top row er baire chole jai
    if(row < 0 || col< 0 || col >= 5) return;
    if(field[row][col] == 1 || field[row][col] == 0)
    {
        currCount += field[row][col];
        maxCnt = max(currCount,maxCnt);
        for(int d = -1;d <=1;d+=1)
        {
            solve(field,copyField,currCount,row-1,col+d,bombed);
        }
    }

    else if(field[row][col] == 2)
    {
        if(bombed == 0)
        {
            return;
        }
        else
        {
            bombed = 0;
            for(int i = row;i>=0 && i >= row-4;i--)
            {
                for(int j = col-2;j<=col+2;j++)
                {
                    if(j>=0 && j<=4){
                        if(field[i][j] == 2)field[i][j] = 0;
                    }
                }
            }
            for(int d = -1;d <=1;d+=1)
            {
                solve(field,copyField,currCount,row-1,col+d,bombed);
            }

            for(int i = row;i>=0 && i >= row-4;i--)
            {
                for(int j = col-2;j<=col+2;j++)
                {
                    if(j>=0 && j<=4){
                        field[i][j] = copyField[i][j];
                    }
                }
            }
        }
    }
}

int main() {
    /* Enter your code here. Read input from STDIN. Print output to STDOUT */
    int t;
    cin>>t;
    for(int i = 1;i<=t;i++){
        int N;
        cin>>N;
        vector<vector<int>>field(N,vector<int>(5,0));
        vector<vector<int>>copyField(N,vector<int>(5,0));

        for(int i = 0;i<N;i++)
        {
            for(int j = 0;j<5;j++)
            {
                cin>>field[i][j];
                copyField[i][j] = field[i][j];
            }
        }
        maxCnt = 0;
        int currCount = 0;
        int col = 2;
        int bombed = 1;
        solve(field,copyField,currCount,N-1,col,bombed);
        solve(field,copyField,currCount,N-1,col+1,bombed);
        solve(field,copyField,currCount,N-1,col-1,bombed);

        cout<< "#" << i << " " << maxCnt << endl;
    }
}
```