

406410114 UVA10908 Largest Square

```
// test num T,
// M ,N ,Q  -> [M][N], Q line r and c
//

#include <bits/stdc++.h>
using namespace std;

int largest_square( vector < vector <char> > grid,int m,int n ,int r,int c ){
    int i,j,k;

    //3 5
    int result = 1,test = 0;
    bool end = false;
    char ch = grid[r][c];
    // 3,5 4,6 5,7 6,8 7,9
    //2 [r-1][c-1],[r][c-1],[r-1][c],[r][c]
    //3 2, [r+1][c-1],[r+1][c],[r+1][c+1],[r-1][c+1],[r][c+1]
    while ( end == false ){
        //cout << "test: "<<test <<endl;

        if ( r+test >m-1 || c+test >n-1 || r-test <0 || c-test <0 )
            return test*2-1;
        for ( i = r-test ; i <= r+test ;i++ ){
            for( j = c-test ; j <= c+test ;j++ ){
                if ( grid[i][j] != ch ){
                    //cout << "grid[" <<i<<"]["<<j<<"] != ch \n";
                    return test*2-1;
                }
            }
        }
        test++;
    }

    //while
}

//largest_square

int main(){
    int i,j,k;
    int t,m,n,q;
    cin >> t;
    while ( t-- ){
        cin >> m >> n >> q;
        vector < vector <char> > grid;
        vector <char> temp;
        for ( j = 0 ; j <m ;j++ ){
            temp.clear();
            for ( i = 0; i < n ;i++ ){
                char ch;
                cin >> ch;
                temp.push_back(ch);
            }
            grid.push_back(temp);
        }

        cout << m << " " << n << " " << q <<endl;
        while ( q-- ){
            int r,c;
            cin >>r >>c;
            cout << largest_square( grid,m,n ,r,c ) <<endl;
        }
    }

    //while

    return 0;
}

//main
```