Experiment 3.3

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Semester: 5 **Subject Code: 20CSP-317 Subject**
Name: Competitive Coding

Marc's Cake Walk

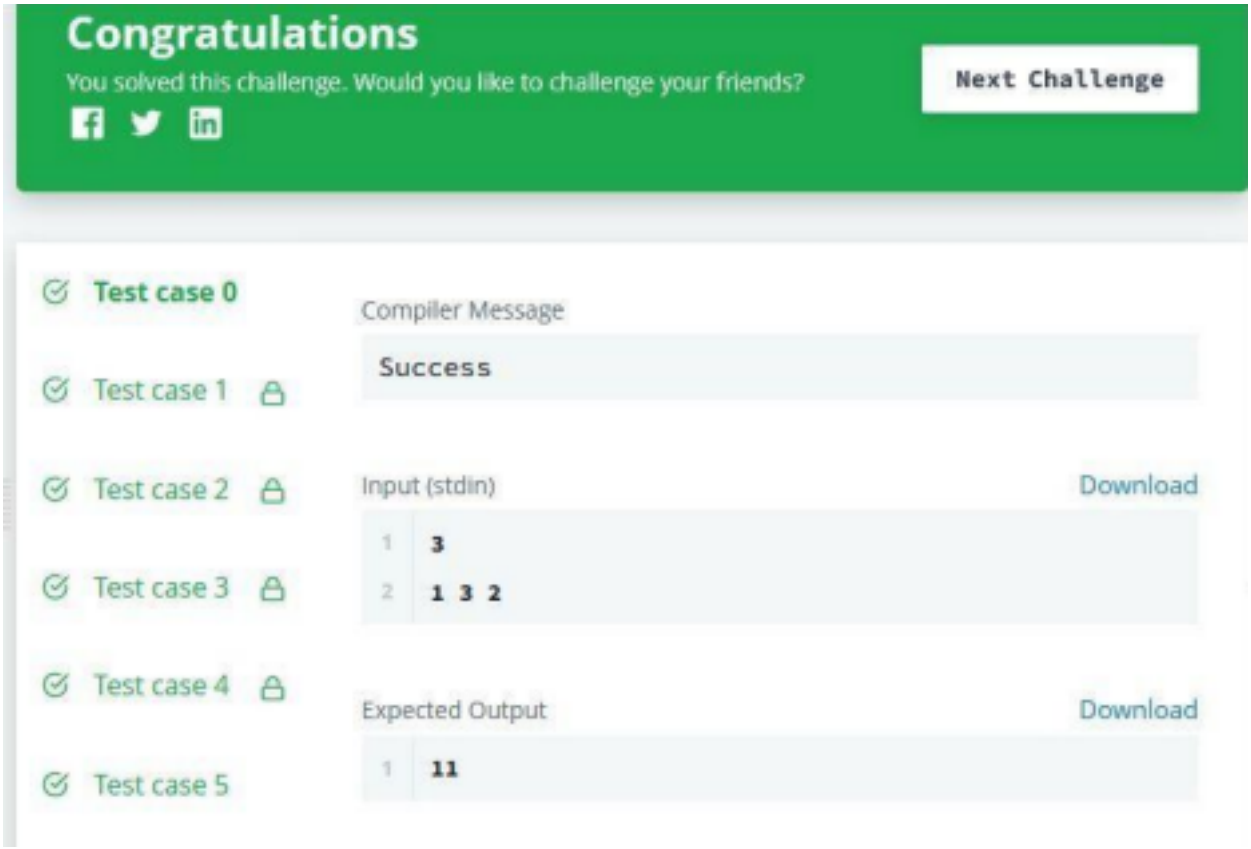
Aim: Marc loves cupcakes, but he also likes to stay fit. Each cupcake has a calorie count, and Marc can walk a distance to expend those calories. If Marc has eaten cupcakes so far, after eating a cupcake with calories he must walk *at least* miles to maintain his weight. You are given a function,

CODE:

```
//Jitesh Kumar

import java.util.Arrays;
import java.util.Scanner;

class Solution {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        int arr[] = new int[n];
        for (int i = 0; i < n; i++)
            arr[i] = sc.nextInt();
```

```
        Arrays.sort(arr);
        long res = 0;
        for (int i = 0; i < n; i++) {
            res += (long) (Math.pow(2, i) * arr[n - i - 1]);
        }
        System.out.println(res);
        sc.close();


    }
}
```

OUTPUT:



Grid Challenge

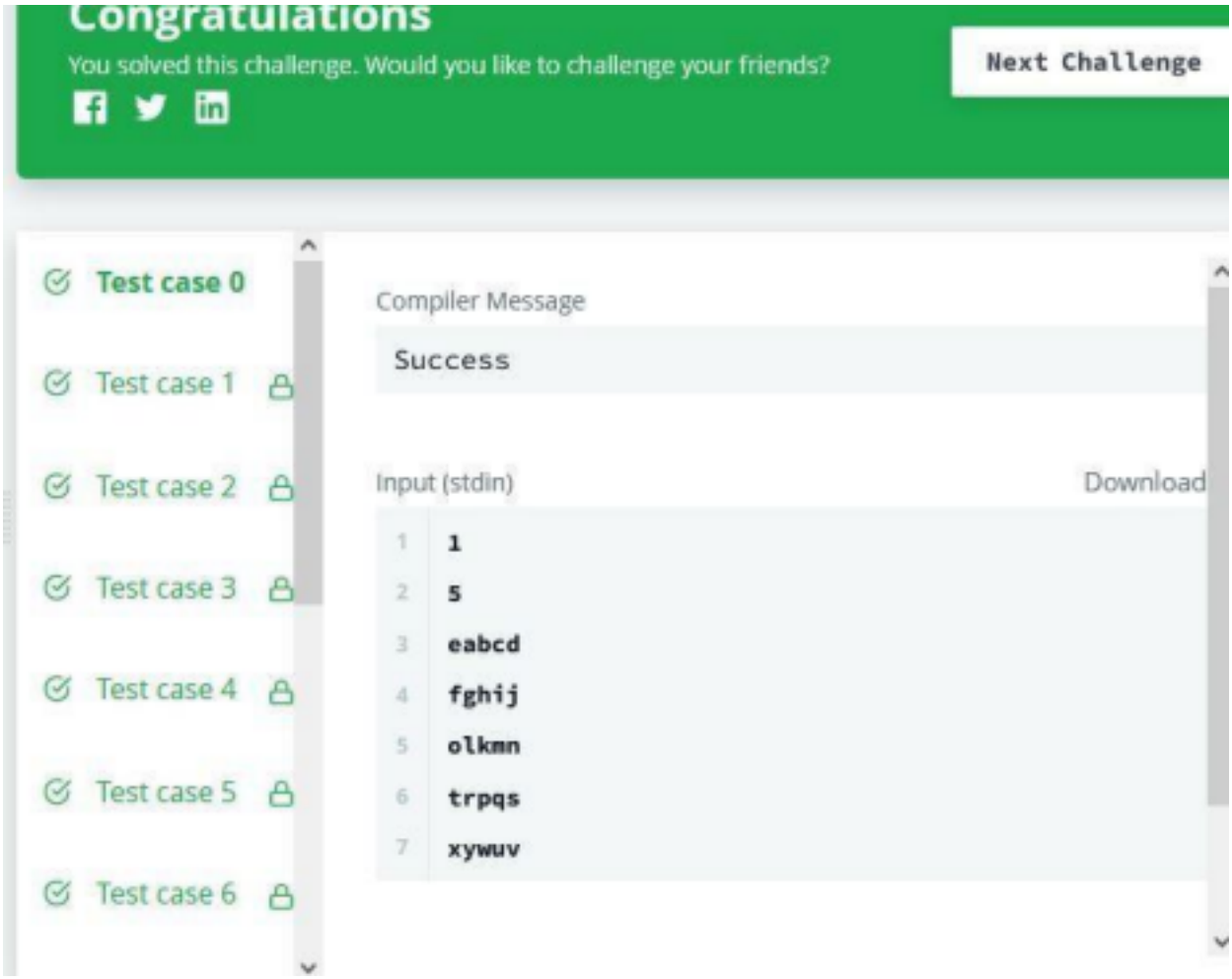
Aim: Given a square grid of characters in the range ascii[a-z], rearrange elements of each row alphabetically, ascending. Determine if the columns are also in ascending alphabetical order, top to bottom. Return `YES` if they are or `NO` if they are not.:

CODE:

```
#include <iostream>
#include <algorithm>
#include <string>
using namespace std;

string s[111];
//Jitesh

int main() {
    int t;
    cin >> t;
    while (t--) {
        int n;
        cin >> n;
        for (int i = 0; i < n; i++) cin >> s[i], sort(s[i].begin(),
s[i].e nd());
        bool flag = true;
            for (int i = 0; i < n;
        i++) for (int j = 0; j + 1
           < n; j++) if (s[j][i] >
        s[j + 1][i]) flag = false;
        puts(flag ? "YES" : "NO");
            }
            return 0;
```

```
}
```

OUTPUT:



Learning Outcomes:

1. Learn About the Greedy Approach
2. Learn About How to Use Greedy Approach in different questions