
 Marwadi University	Marwadi University Faculty of Technology Department of Information and Communication Technology	
Sem : 4	Name : VEDANT BHARAD	
Day : 90	Date : 15/01/2023	Enrollment No: 92100133023

CP Club 365 Days Challenge

Programming language – C++


Problem Statement

<https://www.hackerrank.com/challenges/small-triangles-large-triangles/problem?isFullScreen=true>

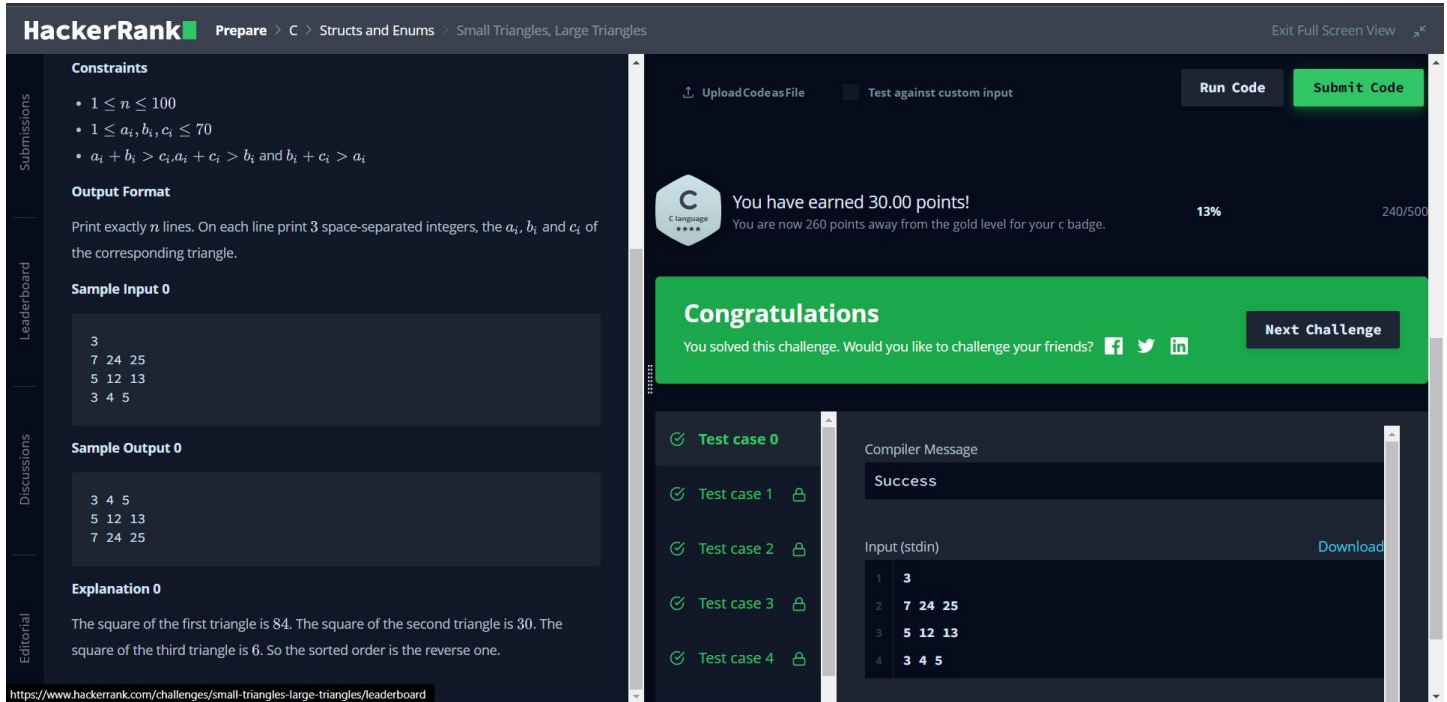
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Your Code:

```
// 0x90Day of 0x365Days challenge
// VEDANT BHARAD
// 15-1-2023
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
struct triangle
{
    int a;
    int b;
    int c;
};
typedef struct triangle triangle;
void sort_by_area(triangle* tr, int n) {
    int *arr=malloc(n*sizeof(int));
    for(int loop1=0;loop1<n;loop1++){
        float p=(tr[loop1].a+tr[loop1].b+tr[loop1].c)/2.0;
        arr[loop1]=(p*(p-tr[loop1].a)*(p-tr[loop1].b)*(p-tr[loop1].c));
    }
    for(int loop1=0;loop1<n;loop1++){
        for(int loop2=0;loop2<n-loop1-1;loop2++){
            if(arr[loop2]>arr[loop2+1]){
                int temp=arr[loop2];
                arr[loop2]=arr[loop2+1];
                arr[loop2+1]=temp;
                temp=tr[loop2].a;
                tr[loop2].a=tr[loop2+1].a;
                tr[loop2+1].a=temp;
                temp=tr[loop2].b;
                tr[loop2].b=tr[loop2+1].b;
                tr[loop2+1].b=temp;
                temp=tr[loop2].c;
                tr[loop2].c=tr[loop2+1].c;
                tr[loop2+1].c=temp;}
        }
    }
}
int main()
{
    int n;
    scanf("%d", &n);
    triangle *tr = malloc(n * sizeof(triangle));
    for (int i = 0; i < n; i++) {
        scanf("%d%d%d", &tr[i].a, &tr[i].b, &tr[i].c);
    }
    sort_by_area(tr, n);
    for (int i = 0; i < n; i++) {
        printf("%d %d %d\n", tr[i].a, tr[i].b, tr[i].c);
    }
    return 0;
}
```

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Output (Screen Shot):



HackerRank Prepare > C > Structs and Enums > Small Triangles, Large Triangles

Constraints

- $1 \leq n \leq 100$
- $1 \leq a_i, b_i, c_i \leq 70$
- $a_i + b_i > c_i$, $a_i + c_i > b_i$ and $b_i + c_i > a_i$

Output Format

Print exactly n lines. On each line print 3 space-separated integers, the a_i , b_i and c_i of the corresponding triangle.

Sample Input 0

```
3
7 24 25
5 12 13
3 4 5
```

Sample Output 0

```
3 4 5
5 12 13
7 24 25
```

Explanation 0

The square of the first triangle is 84. The square of the second triangle is 30. The square of the third triangle is 6. So the sorted order is the reverse one.

Congratulations

You have earned 30.00 points!
You are now 260 points away from the gold level for your c badge.

13% 240/500

You solved this challenge. Would you like to challenge your friends? [f](#) [t](#) [in](#) **Next Challenge**

Test case 0 ✓ **Test case 1** ✓ **Test case 2** ✓ **Test case 3** ✓ **Test case 4** ✓

Compiler Message: Success

Input (stdin):

```
1 3
2 7 24 25
3 5 12 13
4 3 4 5
```

<https://www.hackerrank.com/challenges/small-triangles-large-triangles/leaderboard>

Understanding about problem:

- In this task I need to sort the array based on their area.
- First stores their area into `arr[]` then based on that sort the main array.

Note: If you can't understand the problem, feel free to contact us and we'll help you. Please don't copy and paste from anywhere.

ALL THE BEST
Team CP Club