

**Code:**

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

struct student
{
    char name[50];
    float marks;
};

int main(){
    int n;
    cout << "\nEnter number of students : ";
    cin >> n;
    student s[n];
    int sum = 0, max_score = 0;
    cout << "\nEnter name of the student and his respective marks\n\n";
    for(int i = 0; i < n; i++){
        cout << "Enter name of Student " << i+1 << " : ";
        cin >> s[i].name;
        cout << "Enter marks of Student " << i+1 << " : ";
        cin >> s[i].marks;
        //calculates sum of marks
        sum += s[i].marks;
        //calculates highest examination score
        if(max_score <= s[i].marks){
            max_score = s[i].marks;
        }
    }

    //calculate average of examination marks
    float average = sum / (float) n;
    cout << "\n-----\n";
    cout << "\nThe average of examination marks is : " << average << "\n";

    //prints names of students who scored below average examination mark
    cout << "\n-----\n";
    cout << "\nStudents who got marks below average" << "\n";
    for(int i = 0; i < n; i++){
        if(s[i].marks < average){
            cout << s[i].name << "\t" << s[i].marks << "\n";
        }
    }

    //prints highest examination score
    cout << "\n-----\n";
    cout << "\nThe highest examination score is : " << max_score << "\n";

    //prints names of students whose examination score is same as highest examination score
    cout << "\n-----\n";
    cout << "\nStudents who scored highest marks in the examination" << "\n";
    for(int i = 0; i < n; i++){
        if(s[i].marks == max_score){
            cout << s[i].name << "\t" << s[i].marks << "\n";
        }
    }
    cout << "\n-----\n";
    return 0;
}
```

## Code:

```
1  #include<iostream>
2  using namespace std;
3
4  struct student
5  {
6      char name[50];
7      float marks;
8  };
9
10 int main(){
11     int n;
12     cout << "\nEnter number of students : ";
13     cin >> n;
14     student s[n];
15     int sum = 0, max_score = 0;
16     cout << "\nEnter name of the student and his respective marks\n\n";
17     for(int i = 0; i < n; i++){
18         cout << "Enter name of Student " << i+1 << " : ";
19         cin >> s[i].name;
20         cout << "Enter marks of Student " << i+1 << " : ";
21         cin >> s[i].marks;
22         //calculates sum of marks
23         sum += s[i].marks;
24         //calculates highest examination score
25         if(max_score <= s[i].marks){
26             max_score = s[i].marks;
27         }
28     }
29
30     //calculate average of examination marks
31     float average = sum / (float) n;
32     cout << "\n-----\n";
33     cout << "\nThe average of examination marks is : " << average << "\n";
34
35     //prints names of students who scored below average examination mark
36     cout << "\n-----\n";
37     cout << "\nStudents who got marks below average" << "\n";
38     for(int i = 0; i < n; i++){
39         if(s[i].marks < average){
40             cout << s[i].name << "\t" << s[i].marks << "\n";
41         }
42     }
43
44     //prints highest examination score
45     cout << "\n-----\n";
46     cout << "\nThe highest examination score is : " << max_score << "\n";
47
48     //prints names of students whose examination score is same as highest examination score
49     cout << "\n-----\n";
50     cout << "\nStudents who scored highest marks in the examination" << "\n";
51     for(int i = 0; i < n; i++){
52         if(s[i].marks == max_score){
53             cout << s[i].name << "\t" << s[i].marks << "\n";
54         }
55     }
56     cout << "\n-----\n";
57     return 0;
58 }
```

## Input & Output:

```
PS C:\Users\DELL\OneDrive\Desktop\DSA LAB\LAB 1> cd "c:\Users\DELL\OneDrive\Desktop\DSA LAB\LAB 1\" ; if ($?) { g++ dsa_lab1.cpp -o dsa_lab1 } ; if ($?) { .\dsa_lab1 }
```

Enter number of students : 10

Enter name of the student and his respective marks

Enter name of Student 1 : Tony  
Enter marks of Student 1 : 99  
Enter name of Student 2 : Steve  
Enter marks of Student 2 : 85  
Enter name of Student 3 : Jake  
Enter marks of Student 3 : 80  
Enter name of Student 4 : Bruce  
Enter marks of Student 4 : 99  
Enter name of Student 5 : Natasha  
Enter marks of Student 5 : 62  
Enter name of Student 6 : Clint  
Enter marks of Student 6 : 58  
Enter name of Student 7 : Bucky  
Enter marks of Student 7 : 71  
Enter name of Student 8 : Peter  
Enter marks of Student 8 : 80  
Enter name of Student 9 : Nick  
Enter marks of Student 9 : 35  
Enter name of Student 10 : Vision  
Enter marks of Student 10 : 99

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The average of examination marks is : 76.8

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Students who got marks below average  
Natasha 62  
Clint 58  
Bucky 71  
Nick 35

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The highest examination score is : 99

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Students who scored highest marks in the examination  
Tony 99  
Bruce 99  
Vision 99

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PS C:\Users\DELL\OneDrive\Desktop\DSA LAB\LAB 1> █