

Open compareStdmarks.cpp Save ~/C++Lab/labTest1

```
1 #include <iostream>
2 using namespace std;
3
4 class Student
5 {
6     private:
7         string name;
8         int id;
9         int marks[4];
10    public:
11        void inputData();
12        bool operator==(Student s2);
13        bool operator>(Student s2);
14        void outputData();
15 };
16
17 void Student::inputData()
18 {
19     cout << "Enter Name : ";
20     cin >> name;
21     cout << "Enter Id : ";
22     cin >> id;
23     cout << "Enter the 4 subjects marks in order : ";
24     for(int i = 0; i < 4; ++i)
25         cin >> marks[i];
26 }
27
28 bool Student::operator==(Student s2)
29 {
30     int totalMarks1 = 0, totalMarks2 = 0;
31     for(int i = 0; i < 4; ++i)
32     {
33         totalMarks1 += marks[i];
34         totalMarks2 += s2.marks[i];
35     }
36     if(totalMarks1 == totalMarks2)
37         return true;
38     else
39         return false;
40 }
41
42 bool Student::operator>(Student s2)
43 {
44     int totalMarks1 = 0, totalMarks2 = 0;
45     for(int i = 0; i < 4; ++i)
46     {
47         totalMarks1 += marks[i];
48         totalMarks2 += s2.marks[i];
49     }
```

C++ Tab Width: 4 Ln 1, Col 1 INS

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36     if(totalMarks1 == totalMarks2)
37         return true;
38     else
39         return false;
40 }
41
42 bool Student::operator>(Student s2)
43 {
44     int totalMarks1 = 0, totalMarks2 = 0;
45     for(int i = 0; i < 4; ++i)
46     {
47         totalMarks1 += marks[i];
48         totalMarks2 += s2.marks[i];
49     }
50     if(totalMarks1 > totalMarks2)
51         return true;
52     else
53         return false;
54 }
55
56 void Student::outputData()
57 {
58     cout << endl << "Student details : " << endl;
59     cout << "Name : " << name << endl;
60     cout << "Id : " << id << endl;
61     cout << "Marks : ";
62     for(int i = 0; i < 4; ++i)
63         cout << marks[i] << " ";
64     cout << endl;
65 }
66
67 int main()
68 {
69     Student s1, s2;
70     cout << "Student 1 : " << endl;
71     s1.inputData();
72     s1.outputData();
73     cout << endl << "Student 2 : " << endl;
74     s2.inputData();
75     s2.outputData();
76     if(s1 == s2)
77         cout << "Student 1 has the same marks as student 2" << endl;
78     else if(s1 > s2)
79         cout << "Student 1 marks is greater than student 2's marks" << endl;
80     else
81         cout << "Student 1 marks is less than student 2's marks" << endl;
82     return 0;
83 }
```

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```
deven@deven-VirtualBox: ~/C++Lab/labTest1
deven@deven-VirtualBox: ~/C++Lab/labTest1$ g++ compareStdmarks.cpp
deven@deven-VirtualBox: ~/C++Lab/labTest1$ ./a.out
Student 1 :
Enter Name : dev1
Enter Id : 456
Enter the 4 subjects marks in order : 4 5 6 7

Student details :
Name : dev1
Id : 456
Marks : 4 5 6 7

Student 2 :
Enter Name : dev2
Enter Id : 789
Enter the 4 subjects marks in order : 7 8 9 6

Student details :
Name : dev2
Id : 789
Marks : 7 8 9 6
Student 1 marks is less than student 2's marks
deven@deven-VirtualBox: ~/C++Lab/labTest1$ ./a.out
Student 1 :
Enter Name : dev1
Enter Id : 456
Enter the 4 subjects marks in order : 2 3 4 5

Student details :
Name : dev1
Id : 456
Marks : 2 3 4 5

Student 2 :
Enter Name : dev2
Enter Id : 345
Enter the 4 subjects marks in order : 2 3 4 5

Student details :
Name : dev2
Id : 345
Marks : 2 3 4 5
Student 1 has the same marks as student 2
deven@deven-VirtualBox: ~/C++Lab/labTest1$
```

```
student.cpp
~/C++Lab/labTest1

1 #include <iostream>
2 using namespace std;
3
4 class Student
5 {
6     private:
7         string name;
8         int usn;
9         int marks[3][6];
10        float avgMarks[6];
11    public:
12        void inputData();
13        void calculateAvgMarks();
14        void outputData();
15 };
16
17 void Student::inputData()
18 {
19     cout << "Enter Name : ";
20     cin >> name;
21     cout << "Enter USN : ";
22     cin >> usn;
23     for(int i = 0; i < 3; ++i)
24     {
25         cout << "Enter the 6 subjects marks in order of test " << i + 1 << " : ";
26         for(int j = 0; j < 6; ++j)
27             cin >> marks[i][j];
28     }
29 }
30
31 void Student::calculateAvgMarks()
32 {
33     int mark1, mark2;
34     for(int i = 0; i < 6; ++i)
35     {
36         if(marks[0][i] >= marks[1][i])
37         {
38             mark1 = marks[0][i];
39             if(marks[1][i] >= marks[2][i])
40                 mark2 = marks[1][i];
41             else
42                 mark2 = marks[2][i];
43         }
44         else
45         {
46             mark1 = marks[1][i];
47             if(marks[0][i] >= marks[2][i])
48                 mark2 = marks[0][i];
49             else
50                 mark2 = marks[2][i];
51         }
52     }
53 }
```



```
student.cpp
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34 for(int i = 0; i < 6; ++i)
35 {
36     if(marks[0][i] >= marks[1][i])
37     {
38         mark1 = marks[0][i];
39         if(marks[1][i] >= marks[2][i])
40             mark2 = marks[1][i];
41         else
42             mark2 = marks[2][i];
43     }
44     else
45     {
46         mark1 = marks[1][i];
47         if(marks[0][i] >= marks[2][i])
48             mark2 = marks[0][i];
49         else
50             mark2 = marks[2][i];
51     }
52     avgMarks[i] = static_cast<float>(mark1 + mark2) / 2;
53 }
54 }
55
56 void Student::outputData()
57 {
58     cout << endl << "Student details : " << endl;
59     cout << "Name : " << name << endl;
60     cout << "USN : " << usn << endl;
61     cout << "Average Marks : ";
62     for(int i = 0; i < 6; ++i)
63         cout << avgMarks[i] << " ";
64     cout << endl;
65 }
66
67 int main()
68 {
69     int n;
70     cout << "Enter the number of students : " << endl;
71     cin >> n;
72     Student s[n];
73     for(int i = 0; i < n; ++i)
74     {
75         cout << endl << "Student " << i + 1 << endl;
76         s[i].inputData();
77         s[i].calculateAvgMarks();
78         s[i].outputData();
79     }
80     return 0;
81 }
```

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C++ Tab Width: 4 Ln 81, Col 2 INS

```
deven@deven-VirtualBox: ~/C++Lab/labTest1
deven@deven-VirtualBox: ~/C++Lab/labTest1$ g++ student.cpp
deven@deven-VirtualBox: ~/C++Lab/labTest1$ ./a.out
Enter the number of students :
2

Student 1
Enter Name : dev1
Enter USN : 123
Enter the 6 subjects marks in order of test 1 : 2 3 4 5 6 7
Enter the 6 subjects marks in order of test 2 : 2 3 4 5 6 7
Enter the 6 subjects marks in order of test 3 : 3 4 5 6 7 8

Student details :
Name : dev1
USN : 123
Average Marks : 2.5 3.5 4.5 5.5 6.5 7.5

Student 2
Enter Name : dev2
Enter USN : 678
Enter the 6 subjects marks in order of test 1 : 1 1 1 1 1 1
Enter the 6 subjects marks in order of test 2 : 2 2 2 2 2 2
Enter the 6 subjects marks in order of test 3 : 3 4 5 6 7 8

Student details :
Name : dev2
USN : 678
Average Marks : 2.5 3 3.5 4 4.5 5
deven@deven-VirtualBox: ~/C++Lab/labTest1$
```