

Dear students,

Here's your next programming activity. This one covers most of the same broad topics as before - data types, variables, input/output operations, arithmetic operations, conditional statements, and functions - so, it's a good opportunity to practise these topics more.

However, there is a little twist - this time, unlike the previous activities, I'm not going to give you a step by step breakdown of details such as what variables or what functions to create, where to read inputs, where to display outputs, etc. Instead, I'm simply going to give you a problem statement and your goal is to write a program that ultimately gives us the output we're looking for.

This one is cricket themed, so, apologies if you're not a cricket fan, but don't worry, you don't need to know anything about cricket to write the program (though if you know about cricket, you can hopefully understand my not so funny jokes). Give it your best shot, I'm sure you can do it!

Problem Statement

Your friend is a new cricket fan and he's slowly starting to understand the rules and learn the names of players. But, one thing he doesn't understand is how the winner of the Man of the Match award is chosen. It feels so random to him. So, he proposes this (*not very good*) formula to mathematically calculate a rating for each player, and proposes that the player with the highest rating should be awarded the Man of the Match. Here's his formula:

$$\text{Rating} = (0.4 * \text{runs}) + (0.4 * \text{wickets}) + (0.1 * \text{catches}) + (0.1 * \text{run outs})$$

You figure it'll be easier to write a program to calculate the rating of a player based on your friend's formula than to explain to him how this formula is bad because it ignores important factors like strike rates, economy rates, getting the wickets of top-order batsmen vs those of tailenders, doesn't penalise misfieldings and dropped catches, etc.

So, you're going to write a C++ program that does the following

1. Get the names and the performance indicators (*runs, wickets, catches, run outs*) for two players
2. Calculate the ratings of both players using your friend's formula (just to make him happy)
3. Announce that whichever player has the higher rating is the Man of the Match

Ensure the following in your code

- **Code readability** (correct indentation, meaningful variable and function names, spacing between code blocks, etc)
- Good **user experience** (clear prompts for inputs)
- **Appropriate data types** for your variables (in cricket, runs, wickets, catches, and run outs cannot have decimal values)

Try and use everything you've learnt so far, including from previous activities and my feedback, and incorporate them into this one. As always, if you have any questions, don't hesitate to reach out, but also try to solve the problem and fix any errors on your own first. Don't be afraid to make mistakes - a teacher can teach you what to do, mistakes teach you what not to do.

Have fun coding!

Kind regards,

Walter