

CS102 – Review for exam over Chapter 2

Variables

Know how to create and use variables (types we know: int, double, string)
Be able to use cin to read a variable

Comments

They explain what the program does
They increase readability (Know what readability is)
Know that indentation is only for people, and not for the compiler.
 Indentation is another way to increase readability.
We have // and the pair /* */

Math

Be able to declare a constant
Given a formula, be able to figure out the result of a calculation using it
% indicates the remainder after division
Know how to use the increment and decrement operators
Be able to use a cast if necessary
To calculate \sqrt{x} , use sqrt (x)
Don't get tripped up by integer math
 Integer arithmetic gives integer answers.
 Fractions are rounded down, not rounded off
In any (single) C++ calculation, C++ promotes the variables to the most precise type

Know basic string ideas

Be able to declare and initialize a string variable
Concatenation
The length function: name.length ();
The substring function: substr (m, n)
You can use cin to read a string, but it only reads the first word

Displaying results

Know how to use cout with strings and data values and endl

Here is a sample question with two partially wrong solutions

Write a Java if statement to print “Volume is too high” if the int variable speakerVolume is greater than 10.

Correct Solution: (Just do this; don’t do more.)

```
if (intVolume > 10)
    System.out.println (“Volume is too high”);
```

Bad Solution One:

```
int speakerVolume;
if (intVolume > 10)
    System.out.println (“Volume is too high”);
```

Bad Solution Two:

```
int speakerVolume = 13;
if (intVolume > 10)
    System.out.println (“Volume is too high”);
```

A problem with those solutions:

Why bother with the if statement?

In Bad Solution One, speakerVolume was just created and has no value.

This means that the if statement won’t work correctly.

In Bad Solution Two, you know the volume.

Why use the if statement to test? You don’t need it.

The moral of the story:

You are just creating the if.

The variable already has a value. Your job is merely to test it.

Do not create it or change its value.

You will lose points if you create the variable or change its value.