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# CMSC 115 Reading Guide

Please enter your responses in red.

## Chapter 1 Read

This is an important chapter, as it will lay a foundation we’ll build on for the rest of the semester. Read it well, and try to understand it, but don’t lose heart if it seems pretty abstract – a lot of these concepts will make a lot more sense once we’ve seen them in use in future chapters.

## Section 1.1 Practice, Practice, Practice Skim

1. What is one reason the authors think Python is a great language for learning? The authors think Python is a great language for learning because you can easily experiment with it.

## Section 1.2 Quickstart, Circumference Re-read

Your experience with this chapter will be much more satisfying if you have been able to successfully download and install Anaconda/Spyder (same product) and “play along at home”, typing in and executing the commands as listed in the text.

1. What does the line radius\_int = int(radius\_str) (line 9) do? This turns the radius\_str value from a string into an integer value, therefore it is considered a number.
2. Why does the value the user enters need to be converted from a string to an integer before it can be used? (Line 9) This needs to be converted into an integer before it can be used because we are working with a number and we need to tell the computer that the value that is stored is a number.
3. What are the *variables* present in their program (Code Listing 1.1)? The variables they have are radius\_str, radius\_int, circumference, and area.

## Section 1.3 Interactive Session Read

1. What is the difference between an interactive session and running a pre-written program? An interactive session requires the user’s input to run the program, while a pre-written program is a program that runs on its own without any outside input.

## Section 1.4 Parts of a program Re-Read

1. What is the distinction between a statement and an expression? An expression is a combination of values and operations that will create a new value. A statement does not have a return value, but it does perform a certain task.
2. What is the purpose of comments? A comment helps describe and document the thoughts and processes of the writer. This makes the code clearer to anyone who views it.
3. Why is naming objects well such an important part of programming? Naming objects well is an important part of programming as it allows the program to be more readable.

## Section 1.5 Variables Read

1. How is a variable created in Python? A variable is created in Python when a new name is first used, such as being assigned a value, or just defined as a function name.
2. What is the distinction they’re getting at in Section 1.5.1 between the equals sign (=) being for equality or for assignment? In math, the equals sign means that both sides are the same amount or that they are equal. In programming, the equals sign is more of a way to assign the two sides to be equal in value.
3. Why does “my\_var = my\_var + 1” make no sense is math, but perfectly good sense in programming? This makes sense in programming because the computer is treating the equals sign as an assignment to the my\_var variable and then adding 1 to it.
4. Complete #1 of the “Check Yourself” exercise on page 52. a, d, and e are acceptable variable names.

## Section 1.6 Objects and Types Read

1. What is a type? Why is it so important to know the type of an object that we’re working with? A type is any object in Python, and is generally defined as either an integer, string, or float, Boolean, list, dictionary, and sets. This is important to know because each Python type is stored and used differently by the computer, so knowing which type we are working with allows us to write the program for what we need to accomplish.

[Sections 1.7 – 1.11: Next Time]