Preparing for CS I (CS 141)

Reviewing CS 0 (CS 121) material

Computer Science is a subject where you typically learn by doing. This means that you also tend to forget by ***not doing***. If it has been a quarter or few since you last coded, it is recommended that you get back in the habit before starting CS I. One way that you can do this (if your previous experience with coding is in Python) is by working through several problems on codingbat.com (http://codingbat.com/python) .

It is expected that coming into CS 141 you are ***already exposed to*** the following concepts:

- Constructs (in Python or another language): ***variables***, ***functions***, ***conditionals*** (if/elif/else), ***loops*** (for/while), ***strings*** and associated operations (slicing/len/etc), ***lists*** and associated operations (iterating over/accessing elements in/etc)
- How and why to use ***pseudocode*** to plan code
- How to read and work with unfamiliar code
- How to test and debug code

Python to Java Transition

CS 141 is taught in Java. As Shoreline's CS 121 is taught in Python, here you will find a couple resources that should help you with the transition from Python to Java.

- Python to Java Syntax Guide (Python-to-Java-Syntax.pdf)
- youtube video - Python to Java Tutorial (https://www.youtube.com/watch?v=fL7bVIpwzxA)

Why Preview CS 141 Material?

Previewing material allows you to to gain exposure to a concept before tackling the computational thinking behind the concept. When you see material at a high level beforehand, you are able to become familiar with vocabulary and reflect on how this new concept relates to the concepts you already know.

The purpose of previewing material is NOT to understand the material at 100%.

The purpose of previewing material is to gain a high level understanding of the concept - in this case, to make connections between your prior programming exposure (presumably Python) and Java.

Below is a collection of guiding questions that you could try to answer as you preview material.

- Find, run, and tinker with a "Hello World" program (https://repl.it/@chess/HelloWorld) in Java.
  - What is the importance of the main method?
  - What is the difference between `System.out.print` and `System.out.println`?
- Declaring Variables
  - Assuming `int x = 10;`, what does `System.out.println("x = " + x);` print to the screen.
  - Declare int, double, and String variables to have values and then print those values to the screen.
- If statements
  - Write an if statement to test if a variable `x` is 10. If it is, print `x is ten` otherwise print `x is not ten`.
- For Loops
  - Write a for-loop to print the values 1 to 10 to the screen.
- Methods (Functions)
  - Define a method `printTo` to print the values from 1 to n (where n is a parameter passed to the method)
  - Call the method with the value 10. Then call the method again with the value 20.

Chapters Covered in CS 141

Over the course of the entire quarter, we will cover the material in Chapters 1 through 10 of:

Building Java Programs: A Back to Basics Approach, 4th edition by Stuart Reges and Marty Stepp (https://www.amazon.com/Building-Java-Programs-Basics-Approach/dp/0134322762/)

Below you will find some of the early chapter's publisher resources for the textbook for this course. It is recommended that you watch the videos listed below in Chapters 1 and 2 before our first class as we will fly through the first couple chapters of material.

- Chapter 1: Introduction to Java
  - 1-3: Static Methods (http://media.pearsoncmg.com/aw/aw_reges_bjp_2/videoPlayer.php?id=c1-3)
- Chapter 2: Primitive Data and Definite Loops
  - 2-1: Expressions (http://media.pearsoncmg.com/aw/aw_reges_bjp_2/videoPlayer.php?id=c2-1)
  - 2-2: Variables/Assignments (http://media.pearsoncmg.com/aw/aw_reges_bjp_2/videoPlayer.php?id=c2-2)
  - 2-3: For Loop (http://media.pearsoncmg.com/aw/aw_reges_bjp_2/videoPlayer.php?id=c2-3)
  - 2-4: Nested Loops (http://media.pearsoncmg.com/aw/aw_reges_bjp_2/videoPlayer.php?id=c2-4)