COSC 102 Spring 2015

CodingBat Java Lab 1

Due date: **At the start of next lab**
You will show and explain your instructor the work as described in **Your Task** section.

Java Syntax and CodingBat

During the first week of the term you are learning Java syntax, reviewing programming concepts you know in another language, most probably Python.

CodingBat is a "free site of live coding problems to build coding skill in Java, created by Nick Parlante who is computer science lecturer at Stanford. The coding problems give immediate feedback, so it's an opportunity to practice and solidify understanding of the concepts."

The purpose of this lab is to introduce you to CodingBat so you can continue on your own to put in application the Java readings you are assigned for each lecture.

Setup

Create an account online using

- your colgate email address and
- a different password than the one you use on campus.

You should be login then

Click on the link `prefs` at the top right corner.

- Enter in `Share To` the email of your lab instructor:
  - `efourquet@colgate.edu` for lab section A (Wed)
  - `mlyboult@colgate.edu` for lab section B and C (Tue and Thu)

Finally in the `CodingBat` home click on the link `All Java Sections + help/videos`.

Initial Practice

CodingBat is divided in sections and some problems present a solution or some hint: the sections Warmup-1 and Warmup-2 are guided.

- Read a few problems of these sections. Focus first on logic questions (conditionals and boolean), do `String` questions later.
- Think about them.
- Click the `Code Help and Videos` and read through the concepts you need to solve a particular problem.
- Try the process described in the next section.

After spending some time you are allowed to click on the `Show solution` button. Were you far from reaching an appropriate solution? What concept(s)/steps did you miss? Are they covered in the Appendix of our textbook or in the CodingBat `Help` link?

Learn from the solution, i.e. make sure you could use the concepts/ideas you missed next time around. I recommend you **to write down the solution on a piece of paper to fix it in your memory**.

Process

For each problem do the following.

1. Sketch a rough solution/pseudo-code on a piece of paper so to identify the steps and programming constructs you need (a conditional, a loop...).
2. Refer to the textbook Appendix B (printed or opened on your computer) to know the exact syntax.
3. Write the code in the online text box.
4. Submit your code.
    - If you get a syntax error message *carefully read* it to understand it so as to fix the mistake efficiently.
    - If your code compile read through the test report.
        - If all the tests passed read them to learn how the correctness of your solution is evaluate.
        - If some tests fail identify which case(s) your solution is not considering.

Your Task

1. Logic Problems

Once you have mastered logic problems of `Warmup-1`, i.e. you can solve problem similar to sleepIn, diff21, nearHundred on your own. Among other things you will to understand `return`, `Math.abs(n)` and `%` for mod.

Complete in the section `Logic-1` the problems of the first column: `cigarParty` to `blueTicket`.

2. String Problems

Similarly first learn for string problems of `Warmup-1` by studying the material included in missingChar, backAround and startHi.

Complete in the section `String-1` the problems of the first column: `helloName` to `startWord`.

3. Array Problems

From the section `Array-1` complete the following four problems

- `sum3`
- `makePi`
- `swapEnds`
- `frontPiece`

More Practice

You are **not required** to complete the following for next week. However we strongly recommend to do at least the following exercises before Exam 1. **One question of Exam 1 will be one of the problem below.**

From the AP-1 section

- `hasOne`
- `wordCount`
- `matchUp`
- `dividesSelf`

- wordsWithoutList
- wordsWithout
- commonTwo

From the String-2 section

- repeatSeperator
- xyzMiddle
- getSandwich

From the Array-2 section

- isEverywhere
- modThree
- shiftLeft
- tenRun