Advanced Placement Computer Science
Unit 10 – Strings

Each unit, you will have an assignment that includes some reading, some questions from the reading, called Review Exercises, and between one and three programming exercises.

Calendar of Meeting Places for November/December

2	3 Lab String CodingBat	4 Lab Unit 10 Programs	5	6 Lab Unit 10 Programs	7	8
9	10 Lab Unit 10 Programs	11 Lab Unit 10 Programs	12	13 Lab Unit 10 Programs	14	15
16	17 Lab Complete Unit 10 Programs	18 **Finals** Periods 1, 6, 7	19 **Finals** Periods 2, 4	20 **Finals** Periods 3, 5	21	

Assignment Type	Description
Reading	Java Methods – Chapter 10
Homework Exercises	Programming JavaBat Programming Assignments Please see JavaBat schedule for due dates

Program #1

Exploring with the String class methods

You are to do the following CodingBat String1 methods **(in addition to the required String1 methods)**. These are meant to explore the use of the methods of the String class that you are expected to know.

Method Name	**String methods that you might use.**
`1. makeTags`	`No methods needed. You will explore concatenation.`
`2. firstTwo`	`substring, length`
`3. extraEnd`	`substring, length`
`4. hasBad`	`substring, length, equals, indexOf`
`5. seeColor`	`substring, length, equals, indexOf`

Program #2

Magpie Chatbot Labs

You will be doing a series of 4 labs that have you modify a Chatbot. This series of labs will have you explore the use of `Strings` in java. The `String` class is a very important class because it allows programs to work with text. All text that you see in any computer program is held in a `String` variable.

These files can be found on my website.

Challenge (*if you are shooting for an A in this class*)

Flesch Readability Index

The following index was invented by Flesch as a simple tool to gauge the legibility of a document without linguistic analysis.

1. Count all the words in a file. A word is any sequence of characters delimited by white space, whether or not it is an actual English word.
2. Count all of the syllables in each word. To make this simple, use the following rules:
   - Each group of vowels counts as one syllable (for example, the "ea" in "real" contributes one syllable, but the "e…a" in "regal" count as two syllables).
   - However, an "e" at the end of a word does not count as a syllable.
   - Also, each word has at least one syllable, even if the previous rules give a count of 0.
3. Count all sentences. A sentence is ended by a period, colon, semicolon, question mark, or exclamation mark.
4. The index is computed by

$$\text{Index} = 206.835 - 84.6 * \frac{\text{Number of syllables}}{\text{Number of words}} - 1.015 * \frac{\text{Number of words}}{\text{Number of sentences}}$$

   (rounded to the nearest integer)

This index is a number, usually between 0 and 100, indicating how difficult the text is to read. Some examples for reading material are

Comics	95
Consumer Ads	82
Sports Illustrated	65
Time	57
New York Times	39
Auto Insurance Policy	10
IRS Document	-6

Translated into educational levels, the indices are

91 – 100	5th grader
81 – 90	6th grader
71 – 80	7th grader
66 – 70	8th grader
61 – 65	9th grader
51 – 60	High school student
31 – 50	College student
0 – 30	College graduate
< 0	Law school graduate

You should start with the templates located in my website and complete any "TO DO"'s.