



## COMP 1030

### In-Class Assignment #9

#### String Class Methods

#### Introduction

During this assignment you will build two java classes. The first class will contain the required state and behaviour for the object, **but NO main method**. The second class will contain simply the main method to give the JRE an entry point into the program, a line to instantiate a new object based upon the first class and a few lines to exercise the functionality of the first class.

**When writing your code, keep these guidelines in mind:**

- Start each class with the proper javadoc comment header. The first line of that comment should be the purpose of the class.
- Provide a comment for **each** section of code as well as a javadoc header.
- Follow the layout for your class as illustrated below:

```
Javadoc comment header
Import statements (if required)
Class declaration
    State (instance variables/data)
    Constructor(s) (if required)
    Behaviour(s) (method(s))
Close class declaration
```

- Use whitespace and indentations to make your code more readable and easy to debug.
  - Be sure to clearly understand your work – do not simply copy code from someone else.
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**Instructions: Use any IDE to complete this assignment other than a simple notepad or BlueJ.**

- Create a class which represents a Real Estate Transaction.
- The class will have the following state:
  - Street Number in text notation (type:String)
  - Street Name
  - City
  - Purchase Price in text notation (type:String)
- The class will have the following constructor(s):
  - Default constructor
  - A constructor that takes 4 arguments.
- The class will have the following behaviour:
  - Appropriate setters/getters
  - A method which will return the four fields of the object as one string in which the front half of the string is lowercase letters and the back half of the string is uppercase letters.
  - A method which returns a substring to the caller of the full state of the object concatenated into one string in which the front portion (length to be determined by a random number) of the string is lowercase letters and the back portion ((length to be determined by a random number)) of the string is uppercase letters based upon two **valid** random

numbers. The method must do internal checking to ensure that the random numbers are valid, ie. they cannot overlap and cannot go beyond the length of the String.

- A method which takes two ints. The purpose of the method is to return an encrypted version of the state of the object as a single encrypted string to the caller. The method will concatenate the state of the object into one String. The first int will represent the index of the "key character" of the String. The second int will represent the index value of the first character to be encrypted; the key character will replace the first character of the string and every third character thereafter. (For example: assume the concatenated String is ABCDEFGHIJ and the ints passed in are 2,3, this means that character 2 (C) replaces D , G and J.) The method must ensure that the first int is less than the second int passed in and that the neither int is greater than the length of the single concatenated String. If any of the info passed into the method is invalid return to the caller a "1" to represent an error.
- Create a test harness class which will instantiate a RealEstateTransaction object with 4 pieces of data you make up. Test method 1, Test method 2. Ask the user for two ints to test method three. If the ints are invalid ask the user for two more etc. until the user provide valid ints.

#### **Things to consider for success:**

- Follow the layout for your class as illustrated above.
- Write POC code before tackling the full problem.
- Write a section at a time and compile after each section so you do not have a volume of compiler errors to deal with.
- Comment as you go.
- Use indents and whitespace appropriately to make your code readable.
- Be sure that you actually understand the code you have written, simply copying someone else's code will not aid in your understanding of the java language.
- Stay focused and work diligently, collaborate with others if you are stuck.

