**Unit 5 Lab**

**Please go over keyword and concept summary at:** <https://csawesome.runestone.academy/runestone/books/published/csawesome/Unit5-Writing-Classes/topic-5-11-summary.html>

**More practice available at:**

<https://csawesome.runestone.academy/runestone/books/published/csawesome/Unit5-Writing-Classes/Exercises.html>

<https://csawesome.runestone.academy/runestone/books/published/csawesome/Unit5-Writing-Classes/timeFRQ.html>

**Practice midterm test:**

<https://csawesome.runestone.academy/runestone/books/published/csawesome/Unit5-Writing-Classes/midterm_unit5.html>

lab questions:

1. Create a class of your choice (class of books, video game characters etc.) and create at least 5 methods. Test your code with the help of print statements. For reference, please look at the Person class at <https://runestone.academy/runestone/books/published/apcsareview/JavaBasics/firstOOClass.html>

* Make sure to use accessor and mutator methods (get and set)

1. Add a default constructor to your class.
2. Add precondition and postcondition comments to your class.
3. Do activity 5.6.2.1 in the textbook <https://csawesome.runestone.academy/runestone/books/published/csawesome/Unit5-Writing-Classes/topic-5-6-writing-methods.html>
4. Do activity 5.9.2 and 5.93 in the textbook <https://csawesome.runestone.academy/runestone/books/published/csawesome/Unit5-Writing-Classes/topic-5-9-this.html>
5. Create a class for common computer science questions, each method will be able to solve common questions. The class should include the following methods:

* isPalindrome() – checks if a word or number is a palindrome. A palindrome is a word that is the same front to back. “Cat” is not a palindrome, “racecar” is a palindrome.
* printTriangle() – when calling the method you should be able to call for different types of triangles, different type of charcters to build the triangle, and different options for dimensions for the triangles.
* findAndReplace() – when calling this method you should be able to find and replace certain characters in strings. Similar to question 8 in the unit 4 lab.
* reverse() – when calling this method you should get a reversed string. Similar to question 9 in the unit 4 Lab.
* coinflip() – when calling this method you should get heads or tails in return.