

## Lab Assignment: Basic For Loops Practice

1. Create a file and set up a class skeleton with the main method following the pattern you have seen.
2. Use the template to write code that will perform each task as requested.
  - a. Print out the cubes of the integers from 1 to 10 inclusive
    - i. What does it mean to cube a number?
    - ii. What are two possibilities for the limits of the `for` loop?
  - b. Print out decreasing consecutive odd integers from 99 to 1
    - i. How do you get only the odds?
    - ii. How do you count down?
  - c. Compute and print the sum of the even integers from 2 to 100 inclusive
    - i. How do you store the sum during the loop?
    - ii. Do you need to initialize the sum variable before using it? Try it both ways.
    - iii. Should you print out the sum inside the loop or outside it? Try it both ways.
  - d. Print out the characters of the string on separate lines "Sphinx of black quartz, judge my vow."
    - i. Declare a `String` variable and assign it the sentence above.
    - ii. You can get the length of a string using the Java method `.length()`. For example, suppose `myStr` is a `String` variable containing the string "ABCDEF". The code  

```
n = myStr.length()
```

 puts the number 6 into the variable `n`.
      - iii. You can print out an individual character of a string using the Java method `.charAt(i)` after the string variable. For example, `myStr.charAt(0)` gives S, `myStr.charAt(1)` gives p, and so on. Note: the first character of a string is index 0, not 1.
  - e. Print out all factors of some integer `n` (try 36 to start) from 1 to the largest factor
    - i. What does it mean for an integer `i` to be a factor of an integer `n`?
    - ii. How can you test this in Java?
    - iii. Does your loop need to go through every integer from 1 to `n`? Or can it test fewer numbers?
3. If you have time, there are some challenge questions to think through.
  - a. Ask the user, "How many numbers do you intend to enter?" Then ask them to input that many numbers. At the end, print out:
    - i. The sum
    - ii. The average (careful here with integer division)
    - iii. The maximum
    - iv. The minimum

```
//Java class ForLoops.java

/**
 * Skeleton code for the for loops practice day.
 *
 * @author Roy Chancellor
 * @version 2/26/2019
 */
public class ForLoops
{
    public static void main( String args[] ) {
        //variable declarations

        //for loop to perform the task

    } //end main
} //end ForLoops class
```