

Trace the following Bowling Score algorithm (taken for Section 2.9 in the textbook).  
Use the setup shown below the algorithm.

```
1 SET totalScore TO 0
2 SET count TO 0
3 PRINT "Enter score (-1 to quit): "
4 INPUT score
5 WHILE score IS NOT EQUAL TO -1
6   SET totalScore TO totalScore + score
7   SET count TO count + 1
8   PRINT "Enter score (-1 to quit): "
9   INPUT score
10 SET avg TO totalScore / count
11 PRINT "Average score is " avg
```

Trace setup:

Input  
=====  
95  
105  
-1

line#	score	totalScore	count	avg	output
-------	-------	------------	-------	-----	--------

Complete the program below. See the comments for what the program should do.

```
import javax.swing.JOptionPane;

/**
 * The following program asks the user to enter their first name and then
 * asks them to enter their last name. It then displays their name in
 * Last, First format.
 *
 * Example program interaction:
 *
 * Window 1:      Enter your first name: Chris
 * Window 2:      Enter your last name: Taylor
 * Window 3:      Hi there Taylor, Chris
 */
public class Quiz2 {

    public static void main(String[] args) {

        String firstName = JOptionPane.showInputDialog(null, "Enter your first name:");
        // Write code to ask the user for their last name and store it
        // in a variable called lastName.

        // Create a String called output that contains the phrase to be displayed.

        JOptionPane.showMessageDialog(output);
    }
}
```

Complete the program below. See the comments for what the program should do.

```
import java.util.Scanner;

/**
 * The following program asks the user to enter the price of a hamburger
 * and displays the number of pennies required to purchase the burger.
 *
 * Example program interaction:
 *
 *      Enter the price of a hamburger: $1.29
 *      It would take 129 pennies to purchase that burger.
 */
public class Quiz3 {

    public static void main(String[] args) {

        Scanner in = new Scanner(System.in);
        System.out.print("Enter the price of a hamburger: $");

    }
}
```

Complete the program below which asks the user to enter phrase via a pop-up window. The program should count the number of digits and the number of vowels (a, e, i, o, and u) and display both results in an informative message. If the user selects cancel, the program should end without displaying anything.

You may refer to the Java API documentation provided.

```
public class Quiz5 {  
    public static void main(String [] args) {
```

Consider the following code:

```
{  
    Quiz6 fun = new Quiz6();  
    fun.setName("Jon..Dough");  
    System.out.println(fun.getName());  
}
```

Complete the Quiz6 class so that the code above works as expected.

```
public class Quiz6 {
```

```
}
```

Implement the `toString` method from the `Complex` class we have been developing in lecture this week. Your implementation should result in complex numbers being represented as follows:

```
2.0 + i5.8
```

```
-2.0 - i5.8
```

```
3.8
```

```
2.0 - i5.2
```

```
<-- here the imaginary part not displayed because it is 0.0
```

Write a method that accepts an array of integers as returns an array with all the same elements only shifted to the right by one. For example, [6, 2, 5, 3] becomes [3, 6, 2, 5].



Write a method called `quiz9` that accepts an `ArrayList` of integers called `nums` and returns new `ArrayList` containing all values in `nums` that are evenly divisible by 3. For example, 0, 3, 8, 12, 15 should return 3, 12, 15.