**Problem 5.2 Using a Sentinel Value to control a while Loop**

On this exercise I need to write a while loop that uses a sentinel value to control a loop in a Java program. I also need to write the statements that make up the body of the loop. I have already entered the necessary variable declarations and output statements.

* Each theater patron enters a value from 0 to 4 indicating the number of stars that the patron awards to the Guide’s featured movie of the week. The program executes continuously until the theater manager enters a negative number to quit.
* I need to write the while loop using a sentinel value to control the loop, and also write the statements that make up the body of the loop.

import javax.swing.JOptionPane;  
  
public class MovieGuide   
{  
 public static void main(String args[])  
 {  
   
 // Declare and initialize variables.  
 double numStars; // star rating.  
 String numStarsString; // string version of star rating  
 double averageStars; // average star rating.  
 double totalStars = 0; // total of star ratings.  
 int numPatrons = 0; // keep track of number of patrons  
   
   
 // This is the work done in the housekeeping() method  
 // Get input.  
   
 // This is the work done in the detailLoop() method  
 // Convert to double.  
   
 // Write while loop here  
   
 // This is the work done in the endOfJob() method  
 // Calculate average star rating  
   
 System.out.println("Average Star Value: " + averageStars);   
   
 System.exit(0);  
 } // End of main() method.  
  
} // End of MovieGuide class.

**Problem 5.3 Using a for Loop**

After I have completed this program it should print the numbers 0 through 10, along with their values multiplied by 10 and by 100.

* I need to write a for loop that uses the loop control variable to take on the values 0 through 10.
* In the body of the loop, multiply the value of the loop control variable multiplied by 10 and by 100.

public class NewMultiply  
{  
 public static void main(String args[])  
 {  
   
 String head1 = "Number: ";  
 String head2 = "Multiplied by 10: ";  
 String head3 = "Multiplied by 100: ";   
 int numberCounter; // Numbers 0 through 10.  
 int byTen; // Stores the number multiplied by 10.  
 int byHundred; // Stores the number multiplied by 100.  
 final int NUM\_LOOPS = 10; // Constant used to control loop.  
  
 // This is the work done in the housekeeping() method  
 System.out.println("0 through 10 multiplied by 10 and by 100" + "\n");  
  
 // This is the work done in the detailLoop() method  
 // Write for loop  
   
 // This is the work done in the endOfJob() method  
 System.exit(0);  
 } // End of main() method.  
  
} // End of NewMultiply class.

**Problem 5.6 Accumulating Totals in a Loop**

After I have completed this program, it should calculate two totals: the number of left-handed people and the number of right-handed people in your class. The loop should execute until the user enters the character ‘X’ instead of a ‘L’ for left-handed or ‘R’ for right-handed.

|  |
| --- |
| Left or Right-Handed  L |
| R |
| R |
| R |
| L |
| L |
| R |
| X |

* I need to write a loop and a loop body that allows you to calculate a total of left-handed and a total of right-handed people in our class.

// LeftOrRight.java - This program calculates the total number of left-handed and right-handed  
// students in a class.   
// Input: L for left-handed; R for right handed; X to quit.  
// Output: Prints the number of left-handed students and the number of right-handed students.   
  
import javax.swing.JOptionPane;  
  
public class LeftOrRight  
{  
 public static void main(String args[])  
 {  
   
 String leftOrRight = ""; // L or R for one student.  
 int rightTotal = 0; // Number of right-handed students.  
 int leftTotal = 0; // Number of left-handed students.  
   
 // This is the work done in the housekeeping() method  
 leftOrRight = JOptionPane.showInputDialog("Enter L if you are left-handed, R if you are right-handed or X to quit.");  
  
 // This is the work done in the detailLoop() method  
 // Write your loop here.  
   
  
  
 // This is the work done in the endOfJob() method   
 // Output number of left or right-handed students.   
 System.out.println("Number of left-handed students: " + leftTotal);  
 System.out.println("Number of right-handed students: " + rightTotal);  
 System.exit(0);   
 } // End of main() method.  
  
} // End of LeftOrRight class.