Exposure Java	Lab 08
The "Palindrome" Program	80 & 100 Point Versions

Assignment Purpose:

This program requires knowledge and manipulation of Java **String** objects.
Do not use the **charAt** method for this program.

Write a program that determines if an entered string is a **Palindrome**. True palindromes are strings of characters that read the same backward as forward. This does mean all characters, including spaces and punctuations. Examples of palindromes are:

MADAM, RACECAR, BOB, HANNAH, CIVIC, KAYAK, LEVEL, REVIVER

Lab 08vst Student Version	Do not copy this file, which is provided.

```
// Lab08vst.java
// The "Palindrome" Program
// This is the student starting file.

import java.util.Scanner;

public class Lab08st {
   public static void main (String[] args) {
      Scanner input = new Scanner(System.in);
      boolean notFinished = false;
      do {
         System.out.print("Enter a string  ===>>  ");
         String str = input.nextLine();
         System.out.println();
         System.out.println("Entered String:     " + str);
         System.out.println("Palindrome:         " + Palindrome.isPal(str));
         System.out.println("Almost Palindrome:  " + Palindrome.almostPal(str));
         System.out.print("Do you wish to repeat this program [Y/N]?  ===>>  ");
         String repeat = input.nextLine();
         notFinished = (repeat.equals("Y")) || (repeat.equals("y"));
         System.out.println();
      } while (notFinished);
   }
}

class Palindrome
{
   /*
    * Precondition:  s is an arbitrary String.
    * Postcondition: The value of true is returned if s is a Palindrome, false otherwise.
    * Note:          This method is required for both the 80 point and the 100 point.
    */
   public static boolean isPal(String s) {
      return true;      // This statement is provided to allow initial compiling.
   }

   /*
    * Precondition:  s is a String of one character.
    * Postcondition: The value of true is returned if s is a letter and false otherwise.
    * Note:          >>>>> This method is only completed for the 100 point version  <<<<<
    */
   private static boolean isLetter(String letter) {
      return true;      // This statement is provided to allow initial compiling.
   }

   /*
    * Precondition:  s is an arbitrary String.
    * Postcondition: All non-letter characters are removed from s.
    * Note:          This method is only completed for the 100 point version.
   private static String purge(String s) {
      return "";        // This statement is provided to allow initial compiling.
   }

  /*
    * Precondition:  s is an arbitrary String.
    * Postcondition: After purging all non-letter characters from s,
    *                the value of true is returned if the resulting String is a
    *                Palindrome, false otherwise.
    * Note:          This method is only completed for the 100 point version.
    */
   public static boolean almostPal(String s) {
      return true;      // This statement is provided to allow initial compiling.
   }
}
```

80 Point Version Specifics

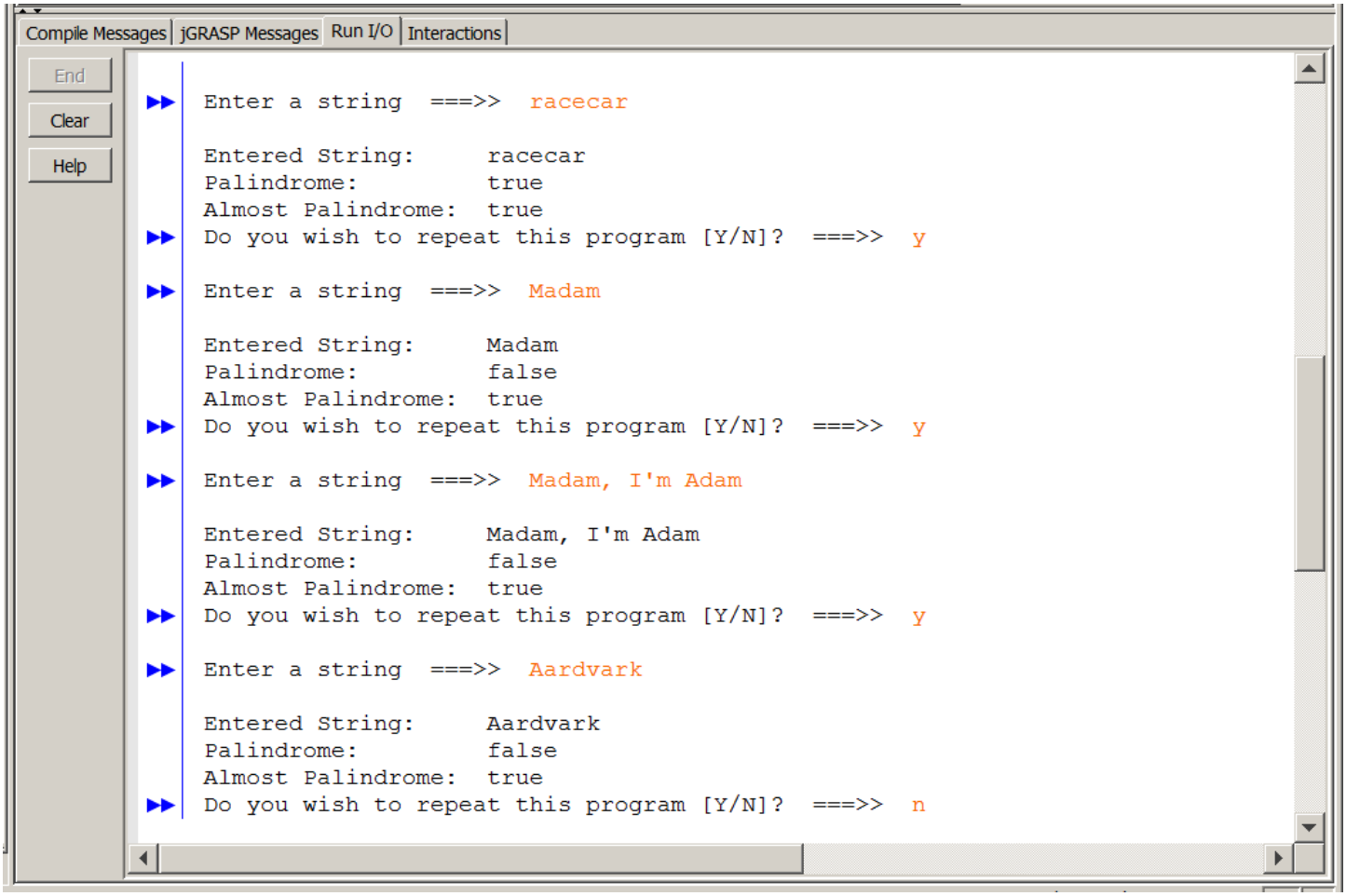
The main thing this program needs to do is determine if an entered string is a **Palindrome**. To do this, you must complete the **isPal** method. For this version, the **isPal** method is *case-sensitive* meaning while *madam* and *MADAM* are palindromes, *Madam* is not.

You also are not concerned with checking if the String is an *Almost Palindrome*. The program will generate **true** output for Almost Palindrome, but this can be ignored.

Two examples of "Almost Palindromes" are shown below:

A man, a plan, a canal, Panama **Not A Banana Baton!**

80 Point Version Output



Note that all the outputs for "Almost Palindrome" are **true**.

This is normal and not an issue. If you only do the 80-point version, the only part that matters is that your program can identify 100% true palindromes.

100 Point Version Specifics

The 100 point version is very similar to the 80 point version except now the **isPal** method is no longer *case sensitive*. So *madam* and *MADAM* are still palindromes, but now *Madam, mADAM*, and *mADam* are palindromes as well.

Al "Almost Palindrome" is a palindrome when the non-letter characters are removed.

For instance: "Madam, I'm Adam" is an "Almost Palindrome" when the non-letters are removed, you will get the string "MadamImAdam" and after you change to uppercase it is "MADAMIMADAM", which now checks out as a palindrome.

For this version you will need to complete methods **isLetter**, **purge** and **almostPal**. The conditions of the three methods are explained in the student starting file.

100 Point Version Output