CS272 Lab Assignment #1.

Part 0: Read Chapter 1 of the textbook.

Part 1: Do all the steps in Eclipse Tutorial that is posted on Canvas course page. It is also available here. If you already know Eclipse then you may start with Step 9 in the tutorial to answer the question for this part. There is one question in the tutorial. It is stated on the last page of the tutorial. The question is "What time is printed in the console window?" (after you changed the value of totalMilliseconds). You need to answer it and submit your answer with the Part 2 of the assignment.

Part 2: Do all the steps and answer all the questions in the Basics of Debugging exercises. You will need files PascalTriangle.java and PascalTriangleTester.java.

Part 3: Use Eclipse to write a Java program that does the following. Name your program lab1.java

1. It should read integer grades from the user until the user enters the **sentinel -1**. As you read the grades, count them, and store them in an integer array. Assume each grade entered is an integer in the range 0..100 and that there will be at most 100 grades entered. Hence, declare an int array named **grades** of size 100.
2. **After** all the grades have been counted and entered in the array **grades** do the following:

   (1) Output the number of grades entered;
   (2) Check whether the number of grades is greater than 0.
      - If it is greater than 0, then

         (a) compute and output the mean of the grades in the array (recall that the mean is the sum of the grades divided by the number of the grades);

         (b) compute and output the standard deviation of the grades in the array. Use the following formula to compute the standard deviation:

         $$\text{Standard deviation} = \sqrt{\frac{1}{N}\sum_{i=0}^{N-1}(grades[i] - mean)^2},$$

         where N is the number of grades and *mean* is the mean of the grades.

         Both mean and standard deviations should be floating point values.

      - If the number of grades is 0 (this can happen if the user enters -1 as the first number), then do nothing.

   Your **sample dialogs** with the user may look like the following:

   Dialog 1:

   ```
   Please enter the grades (-1 indicates the end of input)
   70 80 60 90 -1
   Total number of grades is 4
   The mean is 75.0
   The standard deviation is 11.180339887498949
   ```

Dialog 2:

```
Please enter the grades (-1 indicates the end of input)
-1
Total number of grades is 0
```

What to submit:

- Answers to Part 1 and Part 2 as a pdf file. You may print Basics of Debugging exercise, write your answers on it, scan, and submit as a pdf file. Alternatively, you may write you answers in the .docx file, save it as a pdf and submit.
- Submit your corrected PascalTriangle.java (*.java file) electronically on Canvas.
- Submit your code (lab1.java file) for Part 3 electronically on Canvas.