

Lab 07: Creating Calculator Objects

Objective

This lab will continue to work with the **Calculator** classes you created earlier. This system is a set of classes that perform basic math-oriented calculations. You will utilize the existing Java and **Math** class functionality to implement these classes and it will provide practice in creating classes, methods and attributes.

Overview

In this lab you will:

- Implement your methods
- Create a test class
- Test all of your methods

Step by Step Instructions

Exercise 1: Implement methods

Currently, most methods in the **Calculator** classes return 0. Using the functionality provided in the **Math** class, implement each of the methods by following these instructions.

1. **ScientificCalculator:**

- a. Use the **Math** class to implement the following methods.

i. `exp()` which has one parameter of type `double` and returns a `double` [This method will be used to calculate e^x]

ii. `log()` which has one parameter of type `double` and returns a `double` [This method will be used to calculate $\ln x$]

2. **Trigonometric Calculator:**

- a. Use the **Math** class to implement the following methods.

i. `sine()`
ii. `cosine()`
iii. `tangent()`
iv. `arcsine()`
v. `arccosine()`
vi. `arctangent()`

3. Test your work:

- a. Create a new class named **CalculatorDriver** in the **com.javaoo.calculators** package.
- b. Ensure that this class has a `main()` method.
- c. Instantiate each of your **Calculator** classes in the `main()` method and call each of the methods above to ensure they are working correctly. Use print statements to verify correct operation.