**Assignment: TestNG Annotations and Attributes**

**Objective:**

Demonstrate understanding and practical use of various TestNG annotations and attributes.

Implement data-driven testing using @DataProvider.

Prioritize and enable/disable test methods.

Utilize groups and dependency management.

**Scenario:**

You are tasked with testing a simple calculator class (Calculator.java) with basic arithmetic operations. The class has methods for addition, subtraction, multiplication, and division.

**Tasks:**

1. **Test Addition:**

Create a TestNG test class.

Write a test method to verify the add method of the Calculator class.

Use @Test, @BeforeMethod, and @AfterMethod annotations.

Provide a description, prioritize the test, and enable/disable it using attributes.

Utilize @BeforeClass and @AfterClass to set up and tear down resources shared by all test methods in the class.

1. **Test Subtraction:**

Write a test method to verify the subtract method of the Calculator class.

Utilize @Test, @BeforeMethod, and @AfterMethod annotations.

Use data provider to test different scenarios of subtraction.

Implement @BeforeSuite and @AfterSuite to set up and tear down resources shared by all test classes.

1. **Test Multiplication:**

Write a test method to verify the multiply method of the Calculator class.

Leverage @Test, @BeforeMethod, and @AfterMethod annotations.

Include grouping for the test.

Utilize @BeforeTest and @AfterTest to set up and tear down resources shared by multiple test classes.

1. **Test Division:**

Write a test method to verify the divide method of the Calculator class.

Use @Test, @BeforeMethod, and @AfterMethod annotations.

Implement dependency management to ensure successful execution.

Implement @BeforeSuite and @AfterSuite to set up and tear down resources shared by all test classes.

1. **DataProvider:**

Implement a data provider method to supply data for the subtraction test.

The data provider should cover various scenarios, including zero, positive, and negative numbers.

1. **Test Groups:**

Group the test methods into appropriate categories (e.g., "arithmetic", "sanity", "regression").

Run specific groups using TestNG configuration.

**Calculator.java**

public class Calculator {

public int add(int a, int b) {

return a + b;

}

public int subtract(int a, int b) {

return a - b;

}

public int multiply(int a, int b) {

return a \* b;

}

public int divide(int a, int b) {

if (b == 0) {

throw new IllegalArgumentException("Cannot divide by zero");

}

return a / b;

}

}