# Exercise 4: Arrange-Act-Assert (AAA) Pattern, Test Fixtures, Setup and Teardown Methods in Junit

From File Juint\_Basic Testing Excercise

## Calculator.java class:

#### Code:

```
package com.example;
public class Calculator {
   public int add(int a, int b) {
     return a + b;
   }
   public int subtract(int a, int b) {
     return a - b;
   }
}
```

## **Practice Screen from Intellij:**

```
CalculatorTest.java
Project ~
                                                        © Calculator.java ×
                                         package com.example;

→ Caddition C:\Users\91833\addition

  > 🗀 .idea
                                         public class Calculator { 2 usages
  ∨ 🗀 src
    🗸 🗀 main
              © Calculator
         > org.example

✓ □ test

         AssertionTest
              © CalculatorTest
         © AppTest
            AssertionTest
```

## CalculatotTest.java class:

#### Code:

```
package com.example;
import org.junit.jupiter.api.AfterEach;
import org.junit.jupiter.api.BeforeEach;
import org.junit.jupiter.api.Test;
import static org.junit.jupiter.api.Assertions.assertEquals;
public class CalculatorTest {
  private Calculator calculator;
  @BeforeEach
  void setUp() {
    calculator = new Calculator();
  }
  @AfterEach
  void tearDown() {
    calculator = null;
  }
  @Test
  void testAddition() {
    int a = 2;
    int b = 3;
    int result = calculator.add(a, b);
    assertEquals(5, result);
  }
  @Test
  void testSubtraction() {
    int a = 10;
    int b = 2;
    int result = calculator.subtract(a, b);
    assertEquals(8, result);
  }
}
```

## **Practice Screen from Intellij:**

```
■ A addition ∨ Version control ∨

→ Caddition C:\Users\91833\addition

                                          package com.example;
      > 🗀 .idea

∨ □ src

                                          import org.junit.jupiter.api.Test;
        🗸 🗀 main
                                         import static org.junit.jupiter.api.Assertions.assertEquals;
         🗸 🗀 java
                                         public class CalculatorTest {
                (Calculator
                                             private Calculator calculator; 4 usages
            > org.example

∨ □ test

          🗸 🗀 java
            AssertionTest
            @ AppTest
      > 🗀 target
        ② .gitignore
    Scratches and Consoles
2
                                                int result = calculator.subtract(a, b);
                                                assertEquals( expected: 8, result);
```

#### **OUTPUT SCREEN:**

