**Week-2: (Module 4)**

**TDD using JUnit5 and Mockito**

**Exercise 3: Assertions in JUnit**

**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;  
 }  
}

**CalculatorTest.java**

import org.junit.Test;  
import static org.junit.Assert.\*;  
  
public class CalculatorTest {  
  
 Calculator calc = new Calculator();  
  
 @Test  
 public void testAdd() {  
 *assertEquals*(10, calc.add(7, 3));  
 }  
  
 @Test  
 public void testSubtract() {  
 *assertEquals*(4, calc.subtract(10, 6));  
 *assertTrue*(calc.subtract(5, 3) == 2);  
 *assertFalse*(calc.subtract(5, 3) == 3);  
 }  
  
 @Test  
 public void testMultiply() {  
 *assertEquals*(15, calc.multiply(3, 5));  
 *assertNotEquals*(10, calc.multiply(2, 6));  
 }  
  
 @Test  
 public void testDivide() {  
 *assertEquals*(2, calc.divide(10, 5));  
 }  
  
 @Test(expected = IllegalArgumentException.class)  
 public void testDivideByZero() {  
 calc.divide(5, 0);  
 }  
  
 @Test  
 public void testNulls() {  
 Object obj1 = null;  
 Object obj2 = new Object();  
 *assertNull*(obj1);  
 *assertNotNull*(obj2);  
 }  
  
 @Test  
 public void testSameAndNotSame() {  
 Calculator sameRef = calc;  
 Calculator newCalc = new Calculator();  
 *assertSame*(calc, sameRef);  
 *assertNotSame*(calc, newCalc);  
 }  
}

Output:

