**WEEK 2 - JUNIT TESTING EXERCISES**

**EXERCISE 2:**

Using different assertions in JUnit to validate your test results.

**DIFFERENT TYPES OF ASSERTIONS:**

**assertEquals(expected, actual);**

This assertion checks whether two values are equal. It compares the expected value with the actual result. If both are equal, the test passes; otherwise, it fails.

**assertTrue(condition):**

This assertion checks whether the given boolean condition evaluates to true. If the condition is true, the test passes; if it is false, the test fails.

**assertFalse(condition):**

This assertion checks whether the given boolean condition evaluates to false. If the condition is false, the test passes; if it is true, the test fails.

**assertNull(object):**

This assertion checks whether the provided object is null. If the object is null, the test passes; if the object is not null, the test fails.

**assertNotNull(object):**

This assertion checks whether the provided object is not null. If the object is not null, the test passes; if it is null, the test fails.

**PROGRAM USING VARIOUS JUNIT ASSERTIONS:**

package com.example;

import org.junit.Test;

import static org.junit.Assert;

public class StudentTest {

@Test

public void testStudentAssertions() {

Student student1 = new Student("Alice", 20);

Student student2 = new Student("Bob", 16);

Student student3 = student1;

Student student4 = new Student("Alice", 20);

assertEquals("Alice", student1.getName());

assertNotEquals("Bob", student1.getName());

assertTrue(student1.isAdult());

assertFalse(student2.isAdult());

assertNotNull(student2);

Student nullStudent = null;

assertNull(nullStudent);

assertSame(student1, student3);

assertNotSame(student1, student4);

}

}

**SAMPLE OUTPUT**

Tests run: 1, Failures: 0, Errors: 0, Skipped: 0

BUILD SUCCESSFUL

**SUMMARY OF ASSERTIONS (Expected vs Actual)**

| **Assertion** | **Expected** | **Actual** | **Result** |
| --- | --- | --- | --- |
| assertEquals | "Alice" | student1.getName() = "Alice" | Pass |
| assertNotEquals | Not "Bob" | student1.getName() = "Alice" | Pass |
| assertTrue | true | student1.isAdult() = true | Pass |
| assertFalse | false | student2.isAdult() = false | Pass |
| assertNotNull | Not null | student2 is an object | Pass |
| assertNull | null | nullStudent = null | Pass |
| assertSame | Same reference | student1 == student3 | Pass |
| assertNotSame | Different references | student1 != student4 | Pass |