**Exercise 3: Assertions in JUnit**

**JUnit 5 Assertions Example**

import org.junit.jupiter.api.Assertions;

import org.junit.jupiter.api.Test;

public class AssertionExamples {

// assertEquals: checks equality

@Test

void testAssertEquals() {

int actual = getAnswer();

Assertions.assertEquals(42, actual, "The result should be 42");

}

// assertTrue: condition must be true

@Test

void testAssertTrue() {

boolean isEven = isEvenNumber(10);

Assertions.assertTrue(isEven, "10 should be even");

}

// assertFalse: condition must be false

@Test

void testAssertFalse() {

boolean isEven = isEvenNumber(7);

Assertions.assertFalse(isEven, "7 should not be even");

}

// assertNotNull: object should not be null

@Test

void testAssertNotNull() {

String str = getNonNullString();

Assertions.assertNotNull(str, "String should not be null");

}

// Additional: assertNull (optional)

@Test

void testAssertNull() {

String str = getNullString();

Assertions.assertNull(str, "String should be null");

}

// ---------- Helper Methods ----------

private int getAnswer() {

return 42;

}

private boolean isEvenNumber(int n) {

return n % 2 == 0;

}

private String getNonNullString() {

return "JUnit";

}

private String getNullString() {

return null;

}

}

|  |  |  |
| --- | --- | --- |
| assertEquals | actual == expected | "The result should be 42" |

|  |  |  |
| --- | --- | --- |
| assertTrue | checks condition is true | "10 should be even" |

|  |  |  |
| --- | --- | --- |
| assertFalse | checks condition is false | "7 should not be even" |

|  |  |  |
| --- | --- | --- |
| assertNotNull | checks object is **not null** | "String should not be null" |