JUnit Testing Exercises

Exercise 1: Setting Up JUnit

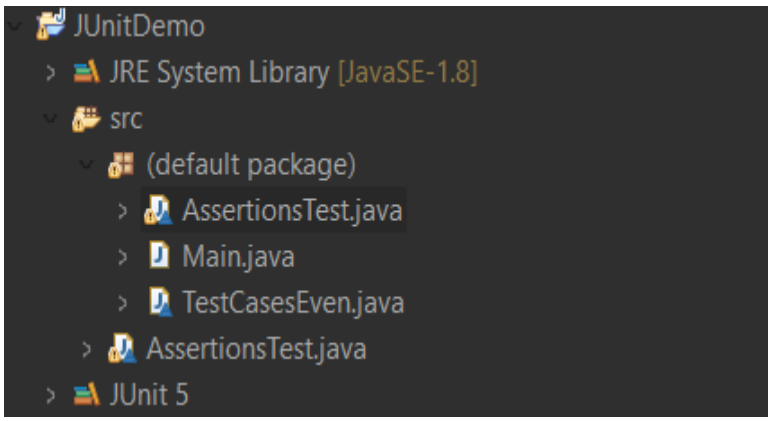
Scenario: You need to set up JUnit in your Java project to start writing unit tests.

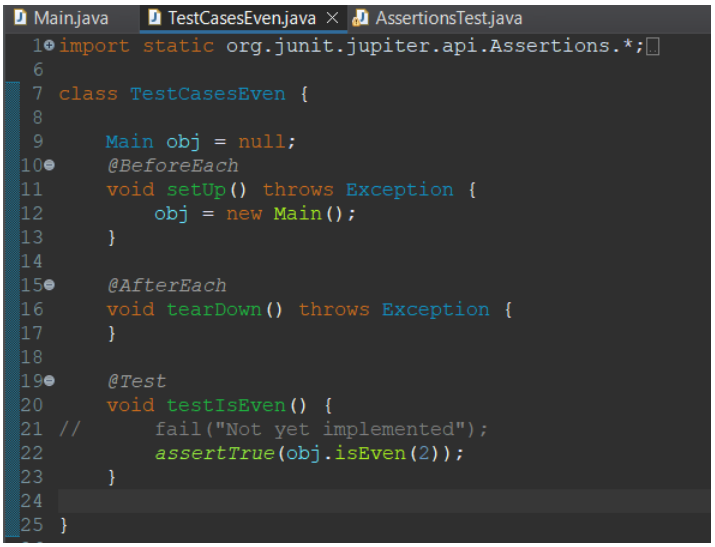
Steps:

1. Create a new Java project in your IDE (e.g., IntelliJ IDEA, Eclipse).

2. Add JUnit dependency to your project.

3. Create a new test class in your project.





Exercise 2: Writing Basic Junit

Tests Scenario:

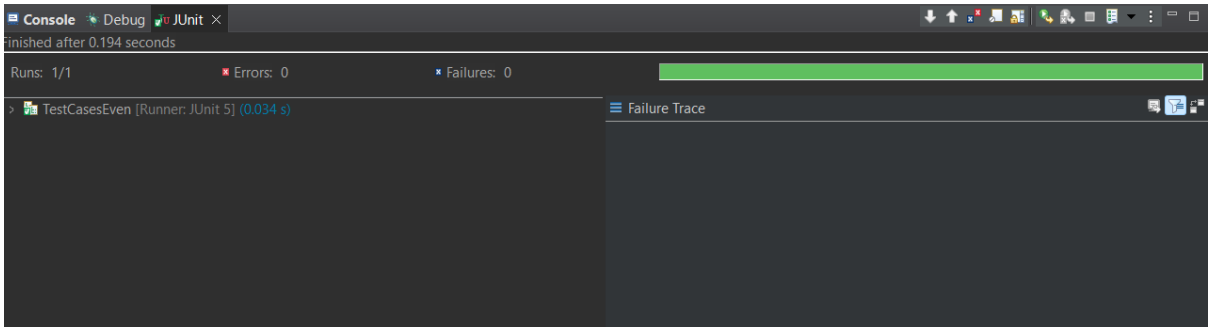
You need to write basic JUnit tests for a simple Java class.

Steps:

1. Create a new Java class with some methods to test.

2. Write JUnit tests for these methods.

```java
import static org.junit.jupiter.api.Assertions.*;

class TestCasesEven {

    Main obj = null;
    @BeforeEach
    void setUp() throws Exception {
        obj = new Main();
    }

    @AfterEach
    void tearDown() throws Exception {
    }

    @Test
    void testIsEven() {
//      fail("Not yet implemented");
        assertTrue(obj.isEven(2));
    }

}
```



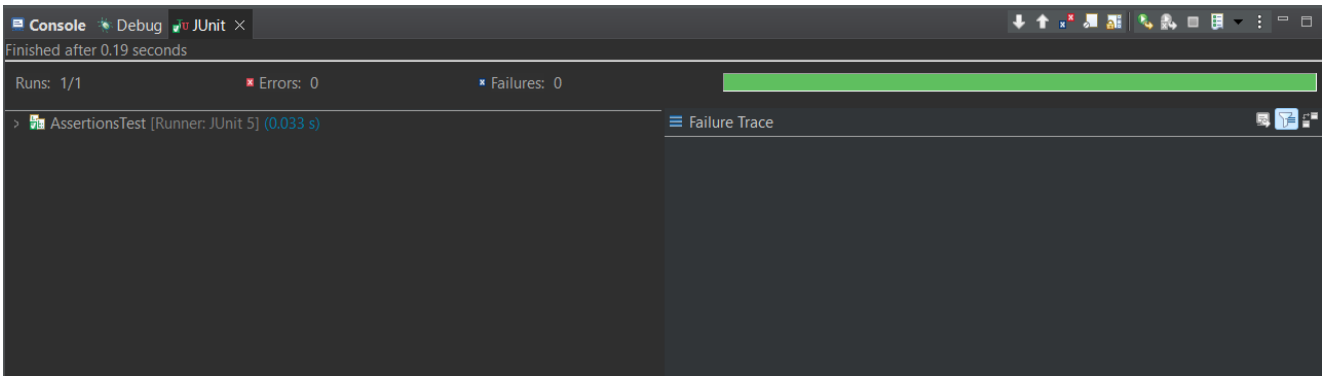
Exercise 3: Assertions in JUnit

Scenario:

You need to use different assertions in JUnit to validate your test results.
Steps:

1. Write tests using various JUnit assertions.
   Solution Code: public class AssertionsTest {
   @Test
   public void testAssertions() {
   // Assert equals assertEquals(5, 2 + 3);
   // Assert true assertTrue(5 > 3);
   // Assert false assertFalse(5 < 3);
   // Assert null assertNull(null);
   // Assert not null assertNotNull(new Object());
   }
   }

```java
import static org.junit.jupiter.api.Assertions.*;

class AssertionsTest {

    @BeforeEach
    void setUp() throws Exception {
    }

    @AfterEach
    void tearDown() throws Exception {
    }

    @Test
    void test() {
        assertEquals(5, 2 + 3);
        assertTrue(5 > 3);
        assertFalse(5 < 3);
        assertNull(null);
        assertNotNull(new Object());
    }

}
```



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

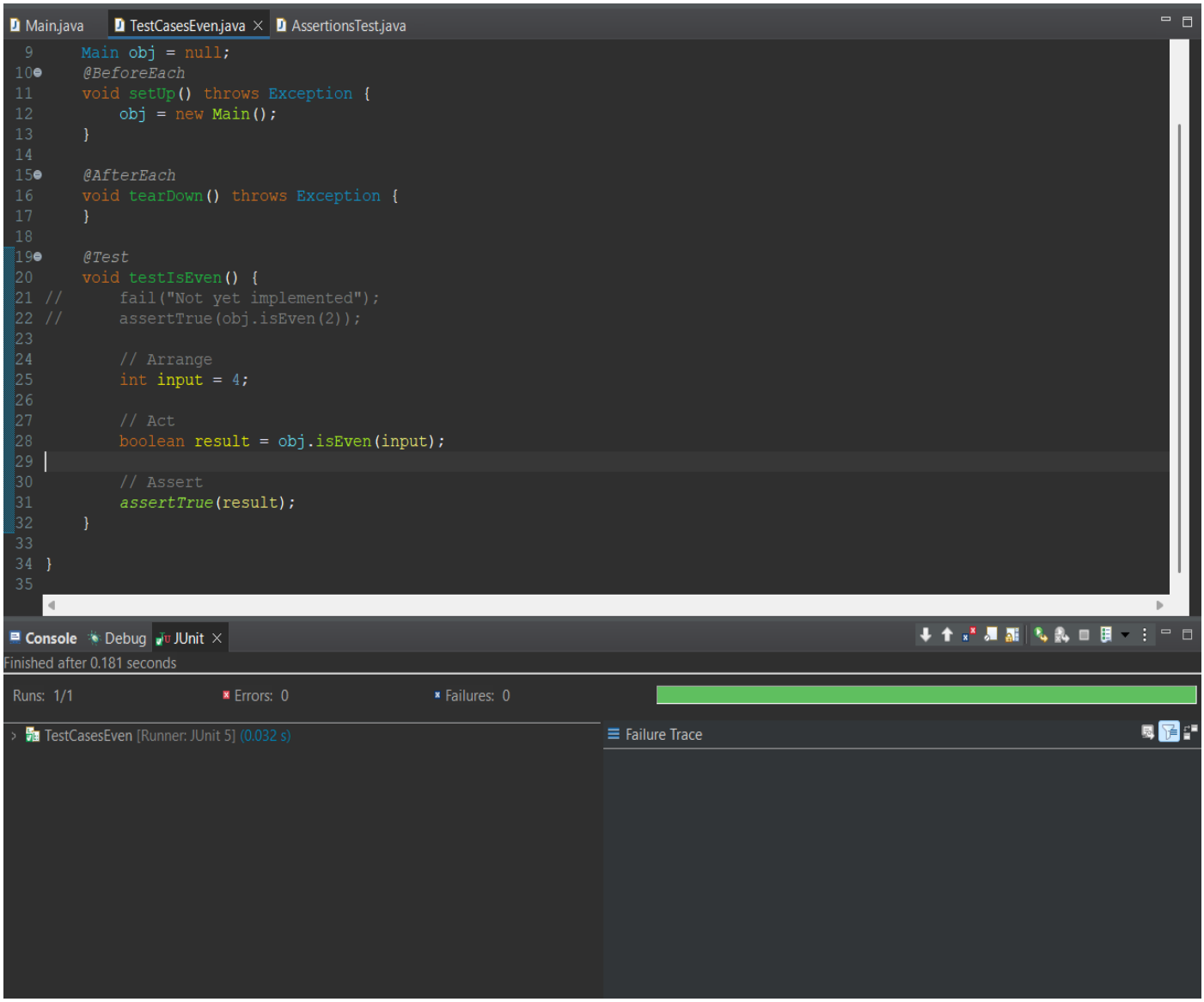
Scenario:

You need to organize your tests using the Arrange-Act-Assert (AAA) pattern and use setup and teardown methods.

Steps:

1. Write tests using the AAA pattern.

2.Use @Before and @After annotations for setup and teardown methods.



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