**Exercise 1: Setting Up Junit**

**pom.xml:**

|  |
| --- |
| <dependencies>  <dependency>  <groupId>junit</groupId>  <artifactId>junit</artifactId>  <version>4.13.2</version>  <scope>test</scope>  </dependency> |

**Output:**

A screen shot of a computer program

AI-generated content may be incorrect.

**Exercise 3: Assertions in JUnit**

Code:

|  |
| --- |
| package com.junit.Junitdemo;  import static org.junit.Assert.\*;  import org.junit.Test;  public class AssertionsTest {  @Test  public void testAssertions() {    assertEquals(5, 2 + 3);  assertTrue(5 > 3);  assertFalse(5 < 3);  assertNull(null);  assertNotNull(new Object());  }  } |

Output:

A screenshot of a computer screen

AI-generated content may be incorrect.

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

Code:

|  |
| --- |
| package com.junit.Junitdemo;  import static org.junit.Assert.assertEquals;  import org.junit.\*;  public class CalTest {  private Calculator calculator;  @Before  public void setUp() {  calculator = new Calculator();  System.out.println("Setup complete");  }  @After  public void tearDown() {  calculator = null;  System.out.println("Teardown complete");  }  @Test  public void testAddition() {  int a = 5;  int b = 3;  int result = calculator.add(a, b);  assertEquals(8, result);  }  @Test  public void testSubtraction() {  int a = 10;  int b = 4;  int result = calculator.subtract(a, b);  assertEquals(6, result);  }  } |

Output:

A screenshot of a computer program

AI-generated content may be incorrect.

**Exercise 1: Mocking and Stubbing**

Code:

|  |
| --- |
| package com.mockito.MockitoDemo;  import static org.mockito.Mockito.\*;  import static org.junit.jupiter.api.Assertions.\*;  import org.junit.jupiter.api.Test;  public class MyServiceTest {  @Test  public void testApi() {  Api mockApi = mock(Api.class);  // Step 2: Stub the getData() method  when(mockApi.getData()).thenReturn("Mock Data");  // Step 3: Inject mock into service and test  MyService service = new MyService(mockApi);  String result = service.fetchData();  // Step 4: Assert the result  assertEquals("Mock Data", result);  }  } |

Output:

A screenshot of a computer program

AI-generated content may be incorrect.

**Exercise 2: Verifying Interactions**

Code:

|  |
| --- |
| package com.mockito.MockitoDemo;  import static org.mockito.Mockito.\*;  import org.junit.jupiter.api.Test;  public class MyServiceVerifyTest {  @Test  public void testVerifyInteraction() {  Api mockApi = mock(Api.class);  MyService service = new MyService(mockApi);  service.fetchData();  verify(mockApi).getData();  }  } |

Output:

A screenshot of a computer program

AI-generated content may be incorrect.