Mockito Hands-On Exercises

Exercise 1: Mocking and Stubbing

Scenario:
You need to test a service that depends on an external API. Use Mockito to mock the external API and stub its methods.

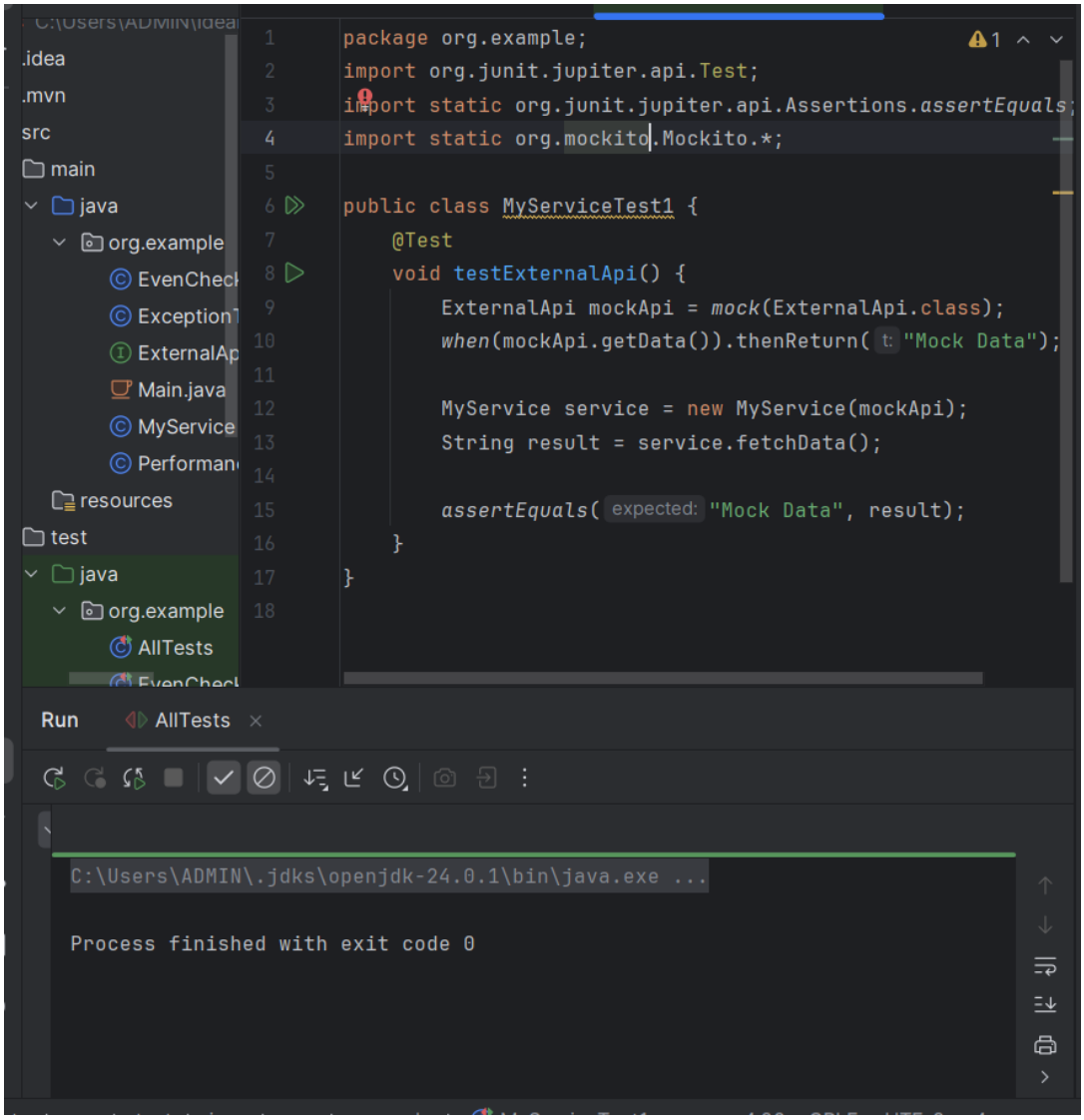
Steps:
1. Create a mock object for the external API.
2. Stub the methods to return predefined values.
3. Write a test case that uses the mock object.

Solution Code:

```
import static org.mockito.Mockito.*;
import org.junit.jupiter.api.Test; import
org.mockito.Mockito;

public class MyServiceTest {
   @Test
   public void testExternalApi() {
      ExternalApi mockApi = Mockito.mock(ExternalApi.class);
when(mockApi.getData()).thenReturn("Mock Data");
      MyService service = new MyService(mockApi);
String result = service.fetchData();        assertEquals("Mock
Data", result);
   }
}
```

OUTPUT:



Exercise 2: Verifying Interactions

Scenario:

You need to ensure that a method is called with specific arguments.

Steps:

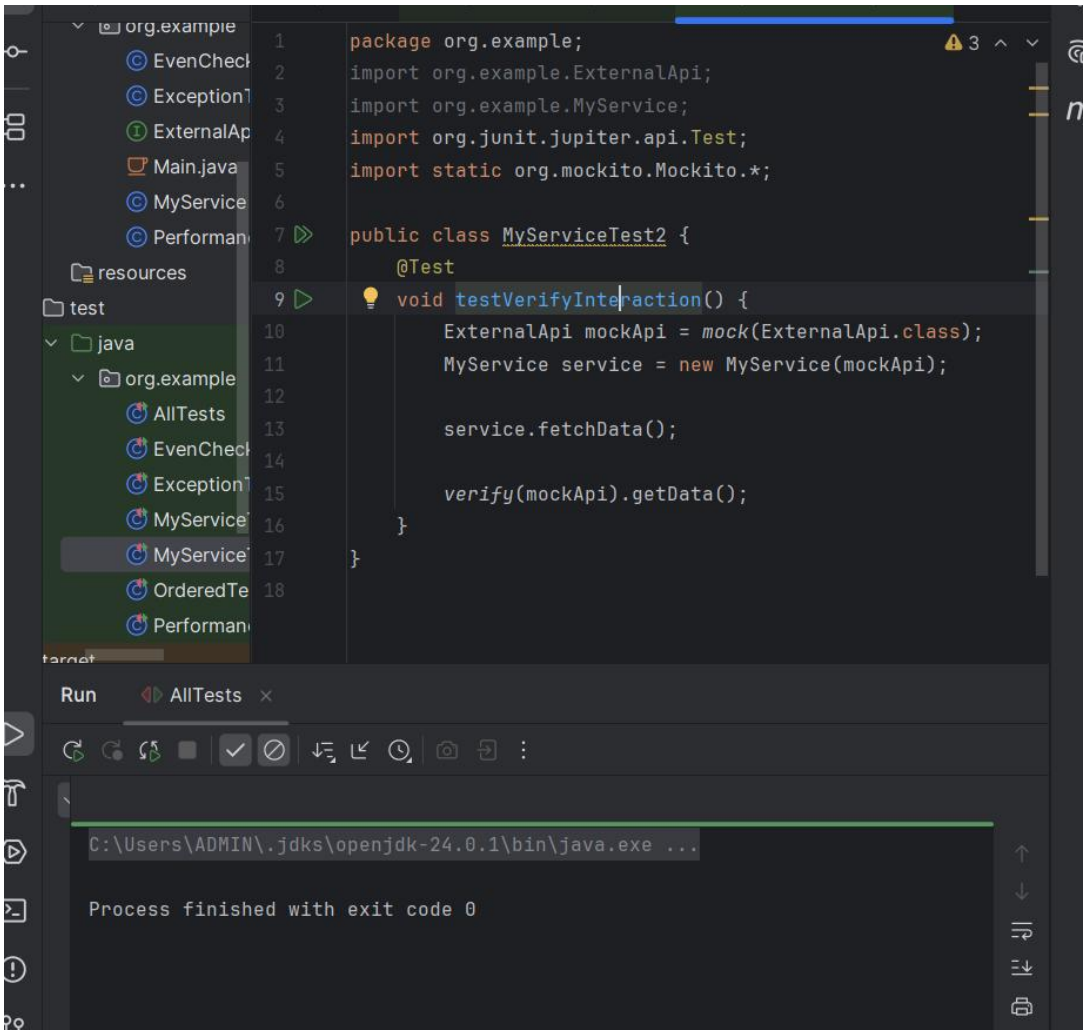
1. Create a mock object.
2. Call the method with specific arguments.
3. Verify the interaction.

Solution Code:

```
import static org.mockito.Mockito.*;
import org.junit.jupiter.api.Test; import
org.mockito.Mockito;

public class MyServiceTest {
   @Test
   public void testVerifyInteraction() {
      ExternalApi mockApi = Mockito.mock(ExternalApi.class);
MyService service = new MyService(mockApi);
service.fetchData();        verify(mockApi).getData();
   }
}
```

OUTPUT:



Exercise 3: Argument Matching

Scenario:

You need to verify that a method is called with specific arguments.

Steps:

1. Create a mock object.
2. Call the method with specific arguments.
3. Use argument matchers to verify the interaction.

```java
package org.example;

import org.junit.jupiter.api.Test;
import static org.mockito.Mockito.*;
import static org.mockito.ArgumentMatchers.anyString;

public class ArgumentMatchingTest {
    interface UserApi {  2 usages
        void login(String username);  2 usages
    }

    @Test
    void testArgumentMatching() {
        UserApi api = mock(UserApi.class);
        api.login( username: "admin");

        verify(api).login(anyString());
    }
}
```

```
C:\Users\ADMIN\.jdks\openjdk-24.0.1\bin\java.exe ...

Process finished with exit code 0
```

Exercise 4: Handling Void Methods

Scenario:
You need to test a void method that performs some action.

Steps:
1. Create a mock object.
2. Stub the void method.
3. Verify the interaction.

Exercise 5: Mocking and Stubbing with Multiple Returns

Scenario:
You need to test a service that depends on an external API with multiple return values.

Steps:
1. Create a mock object for the external API.
2. Stub the methods to return different values on consecutive calls.
3. Write a test case that uses the mock object.

Exercise 6: Verifying Interaction Order

Scenario:
You need to ensure that methods are called in a specific order.

Steps:
1. Create a mock object.
2. Call the methods in a specific order.
3. Verify the interaction order.

Exercise 7: Handling Void Methods with Exceptions

Scenario:
You need to test a void method that throws an exception.

Steps:
1. Create a mock object.
2. Stub the void method to throw an exception.
3. Verify the interaction.