JUnit Testing Exercises

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();
    }
}
```

pom.xml

```
<dependency>
    <groupId>org.mockito</groupId>
    <artifactId>mockito-core</artifactId>
    <version>4.11.0</version>
    <scope>test</scope>
</dependency>
```

ExternalApi.java

```
package com.example;

public interface ExternalApi {
    String getData();
}
```

MyService.java

```
package com.example;

public class MyService {
    private ExternalApi api;

    public MyService(ExternalApi api) {
        this.api = api;
    }

    public String fetchData() {
        return api.getData();
    }
}
```

MyServiceTest.java

```
package com.example;

import org.junit.Test;
import static org.mockito.Mockito.*;

public class MyServiceTest {

    @Test
    public void testVerifyInteraction() {
        // Step 1: Create a mock
        ExternalApi mockApi = mock(ExternalApi.class);
```

```
        // Step 2: Pass mock to service and call method
        MyService service = new MyService(mockApi);
        service.fetchData();

        // Step 3: Verify interaction
        verify(mockApi).getData();
    }
}
```

Explanation of Key Concepts Used

In this test, we use Mockito.verify() to check whether a specific method was called during the test. Instead of only checking results, this focuses on verifying behavior and interactions with dependencies. In real-world cases, this is useful for ensuring the service logic actually performs its intended actions (like saving, fetching, or logging).

OUTPUT: