

WEEK-2 Mockito Hands-On Exercises

(Implemented in Eclipse)

Mockito

Created a Maven project named `MockitoDemo` in Eclipse and added JUnit 5 and Mockito dependencies in the `pom.xml` to enable unit testing and mocking.

pom.xml

```
<project xmlns="http://maven.apache.org/POM/4.0.0"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0
https://maven.apache.org/xsd/maven-4.0.0.xsd">
  <modelVersion>4.0.0</modelVersion>
  <groupId>com.example</groupId>
  <artifactId>JUnitDemo</artifactId>
  <version>0.0.1-SNAPSHOT</version>
  <dependencies>
    <dependency>
      <groupId>junit</groupId>
      <artifactId>junit</artifactId>
      <version>4.13.2</version>
      <scope>test</scope>
    </dependency>
  </dependencies>
</project>
```

Exercise 1:Mocking and Stubbing:

1. Create a mock object for the external API.

ExternalApi.java (Interface)

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

2. Stub the methods to return predefined values.

MyService.java

```
public class MyService {
    private ExternalApi api;

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

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

3. Write a test case that uses the mock object.

MyServiceTest.java

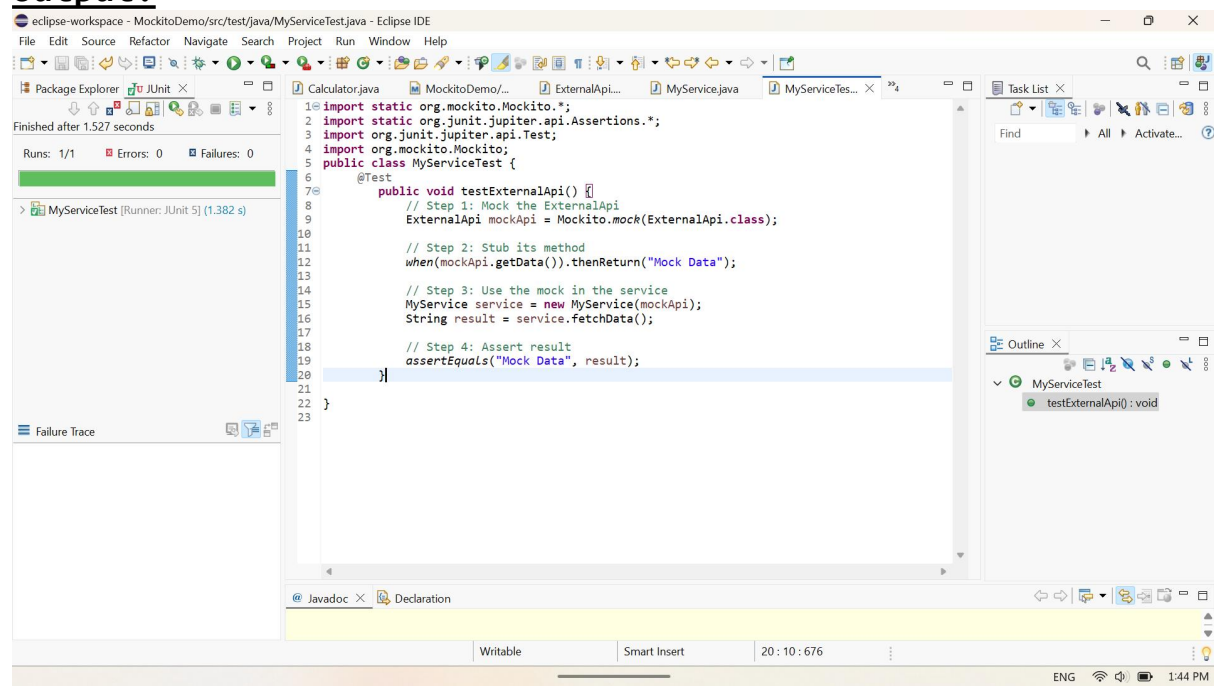
```
import static org.mockito.Mockito.*;
import static org.junit.jupiter.api.Assertions.*;
import org.junit.jupiter.api.Test;
import org.mockito.Mockito;
public class MyServiceTest {
    @Test
    public void testExternalApi() {
        // Step 1: Mock the ExternalApi
        ExternalApi mockApi = Mockito.mock(ExternalApi.class);

        // Step 2: Stub its method
        when(mockApi.getData()).thenReturn("Mock Data");

        // Step 3: Use the mock in the service
        MyService service = new MyService(mockApi);
        String result = service.fetchData();

        // Step 4: Assert result
        assertEquals("Mock Data", result);
    }
}
```

Output:



Exercise 2: Verifying Interactions:

MyServiceTest2.java

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

public class MyServiceTest2 {
    @Test
    public void testVerifyInteraction() {
        ExternalApi mockApi = Mockito.mock(ExternalApi.class);
        MyService service = new MyService(mockApi);

        // Call the method
        service.fetchData();

        // Verify that getData() was called
        verify(mockApi).getData();
    }
}
```

Output:

