**WEEK-2**

**1)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();

}

1. 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();

}

}

1. 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();

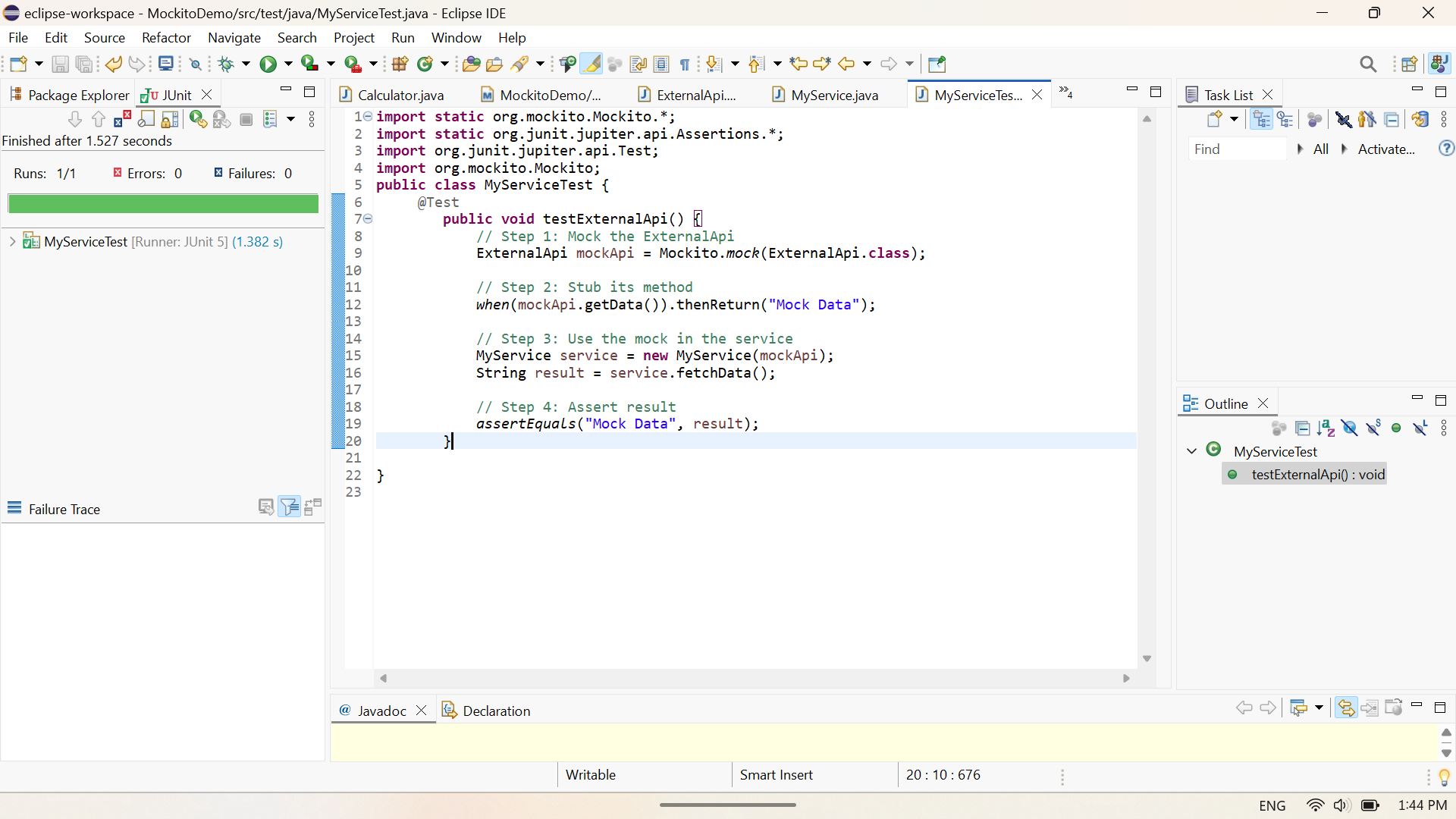
// Step 4: Assert result

*assertEquals*("Mock Data", result);

}

}

**Output:**

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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();

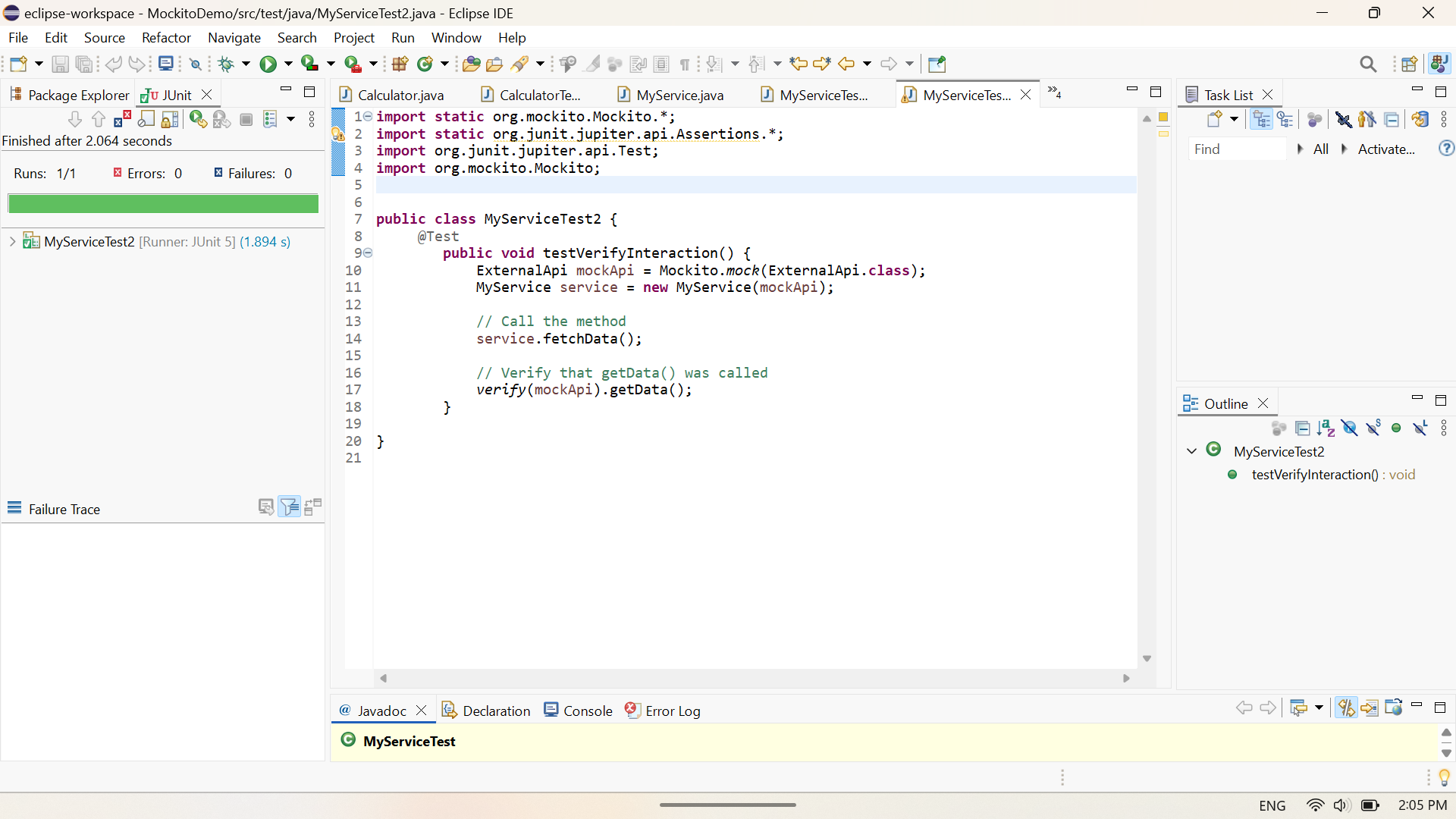
// Verify that getData() was called

*verify*(mockApi).getData();

}

}

**Output:**

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