TDD using JUnit5 and Mockito

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.

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 static org.junit.jupiter.api.Assertions.assertEquals;

import static org.mockito.Mockito.when;

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");

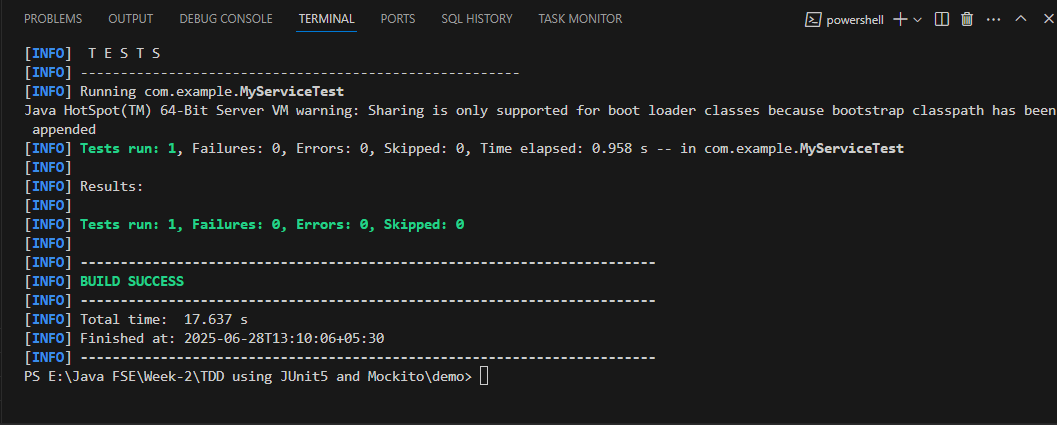
        Myservice service = new Myservice(mockApi);

        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.

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 static org.mockito.Mockito.verify;

import org.junit.jupiter.api.Test;

import org.mockito.Mockito;

public class MyServiceTest {

    @Test

    public void testVerifyInteraction() {

        ExternalApi mockApi = Mockito.mock(ExternalApi.class);

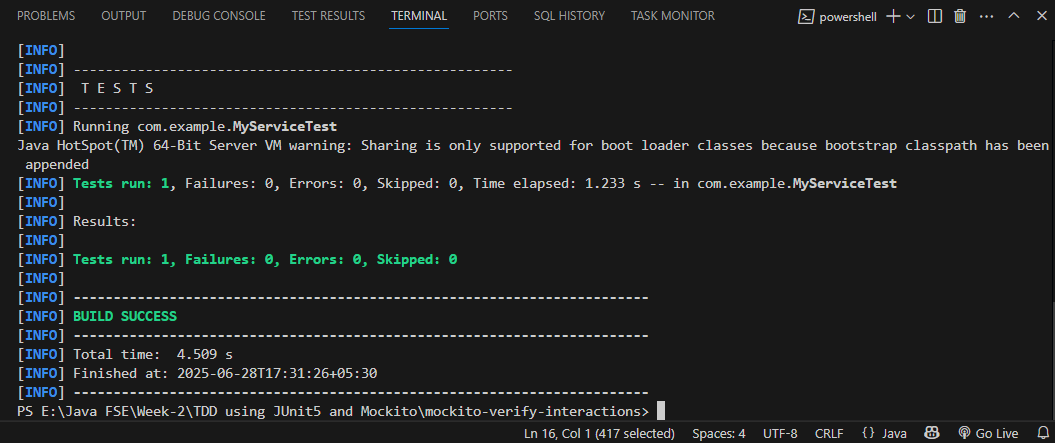
        MyService service = new MyService(mockApi);

        service.fetchData();

        verify(mockApi).getData();

    }

}

OUTPUT: