

Exercise 1: Mocking and Stubbing

Scenario

We have a service that uses a external API and we want to test the service class without calling the real API. So we use **Mockito** to mock the api and stub its methods to return fake data during testing.

Step 1: Maven Dependency for Mockito

First I added this in my `pom.xml` file so I can use mockito in my project:

```
<dependency>
  <groupId>org.mockito</groupId>
  <artifactId>mockito-core</artifactId>
  <version>5.10.0</version>
  <scope>test</scope>
</dependency>
```

Also I kept JUnit 5 because the example uses `org.junit.jupiter.api.Test`:

```
<dependency>
  <groupId>org.junit.jupiter</groupId>
  <artifactId>junit-jupiter</artifactId>
  <version>5.10.0</version>
  <scope>test</scope>
</dependency>
```

Step 2: Create ExternalApi interface

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

```
}
```

Step 3: Create MyService class

This is the class we want to test. It takes the external API as a dependency.

```
public class MyService {  
    private ExternalApi api;  
  
    public MyService(ExternalApi api) {  
        this.api = api;  
    }  
  
    public String fetchData() {  
        return api.getData();  
    }  
}
```

Step 4: Write the Test using Mockito

```
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() {  
        // mock the api  
        ExternalApi mockApi = Mockito.mock(ExternalApi.class);  
  
        // stub method to return fake data  
        when(mockApi.getData()).thenReturn("Mock Data");  
    }  
}
```

```
// pass the mocked api to our service
MyService service = new MyService(mockApi);

// call service method
String result = service.fetchData();

// check the result
assertEquals("Mock Data", result);
}
}
```

Output After Running mvn test

T E S T S

Running MyServiceTest
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
BUILD SUCCESS
