# Exercise 1: Mocking and Stubbing Using Mockito

## Scenario

You need to test a service class (MyService) that depends on an external API (ExternalApi). You will use Mockito to mock this dependency and stub its method to return a predefined value.

## Prerequisites

- Eclipse IDE  
- Java JDK 8 or higher  
- Maven support enabled in Eclipse

## Step-by-Step Procedure in Eclipse

### Step 1: Create a New Maven Project

1. Open Eclipse  
2. Go to: File > New > Project > Maven > Maven Project  
3. Select the default workspace → Click Next  
4. Choose Archetype: maven-archetype-quickstart → Click Next  
5. Fill in:  
 - Group Id: com.example  
 - Artifact Id: MockitoExample  
6. Click Finish

### Step 2: Add Dependencies to pom.xml

Add these dependencies in the <dependencies> section of your pom.xml:

<dependencies>  
 <!-- JUnit Jupiter (JUnit 5) -->  
 <dependency>  
 <groupId>org.junit.jupiter</groupId>  
 <artifactId>junit-jupiter</artifactId>  
 <version>5.9.3</version>  
 <scope>test</scope>  
 </dependency>  
  
 <!-- Mockito -->  
 <dependency>  
 <groupId>org.mockito</groupId>  
 <artifactId>mockito-core</artifactId>  
 <version>5.12.0</version>  
 <scope>test</scope>  
 </dependency>  
</dependencies>

Tip: After saving, right-click your project → Maven > Update Project.

### Step 3: Create the ExternalApi Interface

In src/main/java/com/example, create a new Java interface:

package com.example;  
  
public interface ExternalApi {  
 String getData();  
}

### Step 4: Create the MyService Class

Still in src/main/java/com/example, create MyService.java:

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

### Step 5: Create the Test Class Using Mockito

In src/test/java/com/example, create MyServiceTest.java:

package com.example;  
  
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() {  
 // Arrange  
 ExternalApi mockApi = Mockito.mock(ExternalApi.class);  
 when(mockApi.getData()).thenReturn("Mock Data");  
  
 MyService service = new MyService(mockApi);  
  
 // Act  
 String result = service.fetchData();  
  
 // Assert  
 assertEquals("Mock Data", result);  
 }  
}

### Step 6: Run the Test

1. Right-click MyServiceTest.java  
2. Click Run As > JUnit Test  
3. ✅ If everything is set up correctly, you’ll see a green bar in the JUnit panel indicating the test passed.

## ✅ Output

Test passed - green bar shown in Eclipse JUnit view.