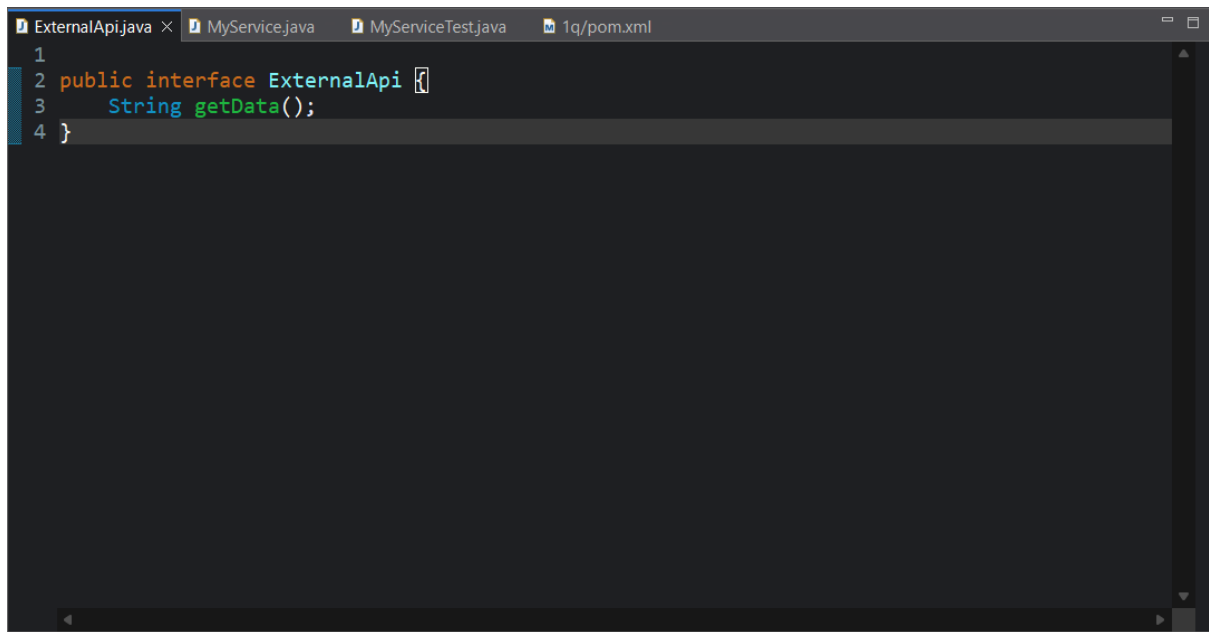


## WEEK 2

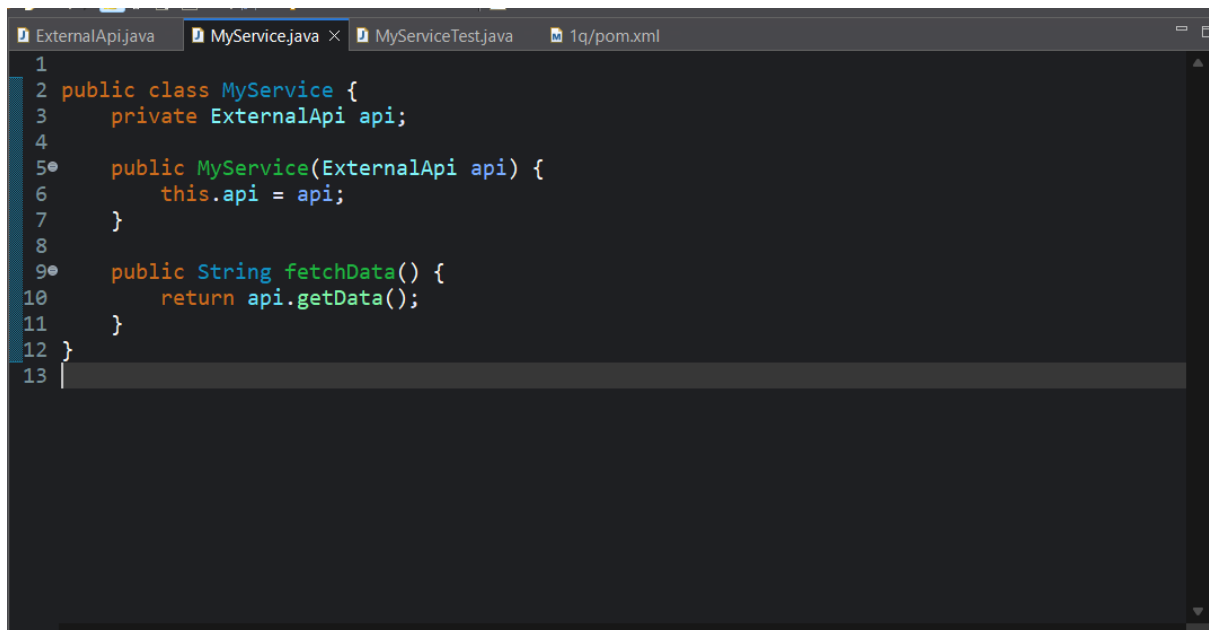
### Mocking and Stubbing

#### Code



A screenshot of an IDE window showing the `ExternalApi.java` file. The window has four tabs: `ExternalApi.java`, `MyService.java`, `MyServiceTest.java`, and `1q/pom.xml`. The `ExternalApi.java` file contains the following code:

```
1
2 public interface ExternalApi {
3     String getData();
4 }
```



A screenshot of an IDE window showing the `MyService.java` file. The window has four tabs: `ExternalApi.java`, `MyService.java`, `MyServiceTest.java`, and `1q/pom.xml`. The `MyService.java` file contains the following code:

```
1
2 public class MyService {
3     private ExternalApi api;
4
5     public MyService(ExternalApi api) {
6         this.api = api;
7     }
8
9     public String fetchData() {
10         return api.getData();
11     }
12 }
13 |
```

```
1
2 import static org.mockito.Mockito.*;
3 import static org.junit.jupiter.api.Assertions.*;
4
5 import org.junit.jupiter.api.Test;
6 import org.mockito.Mockito;
7
8 public class MyServiceTest {
9
10     @Test
11     public void testExternalApi() {
12         ExternalApi mockApi = Mockito.mock(ExternalApi.class);
13         when(mockApi.getData()).thenReturn("Mock Data");
14
15         MyService service = new MyService(mockApi);
16         String result = service.fetchData();
17
18         assertEquals("Mock Data", result);
19         verify(mockApi).getData();
20     }
21 }
22
```

## Output

The screenshot shows the Eclipse IDE interface with the following components:

- Project Explorer:** Shows the project structure with 'MyServiceTest' and 'testExternalApi'.
- Console:** Displays the output of the test run, including a warning about a dynamically loaded Java agent and a message about dynamic loading of agents being disallowed by default in a future release.
- Task List:** Shows the test results, indicating that the test passed successfully.

The console output is as follows:

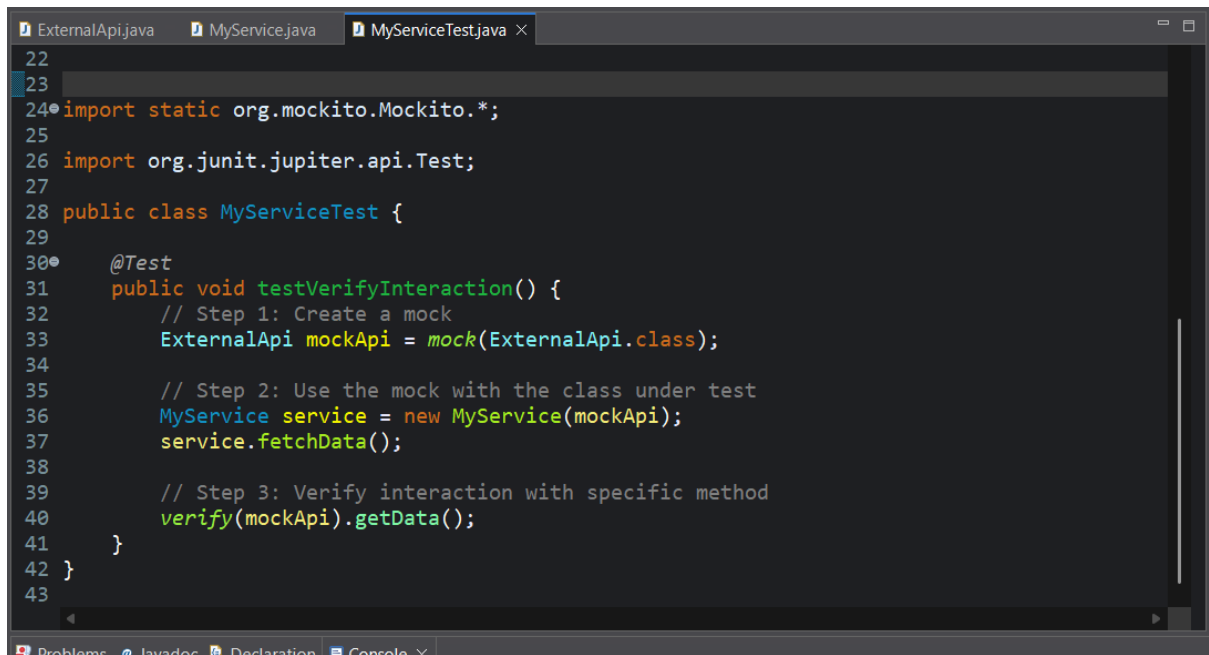
```
<terminated> MyServiceTest [JUnit5] C:\Program Files\Java\jdk-22\bin\javaw.exe (29-Jun-2025, 9:00:00 pm ~ 9:00:05 pm elapsed: 00004.813) [pid: 8228]
WARNING: A Java agent has been loaded dynamically (C:\Users\Hariprasad\.m2\repository\net\bytebuddy\byte-buddy-agent\1.14.12\byte-buddy-agent-1.14.12.jar)
WARNING: If a serviceability tool is in use, please run with -XX:+EnableDynamicAgentLoading to hide this warning
WARNING: If a serviceability tool is not in use, please run with -Djdk.instrument.traceUsage for more information
WARNING: Dynamic loading of agents will be disallowed by default in a future release
Java HotSpot(TM) 64-Bit Server VM warning: Sharing is only supported for boot loader classes because bootstrap classpath has been modified
```

# Verifying Interactions

## Code

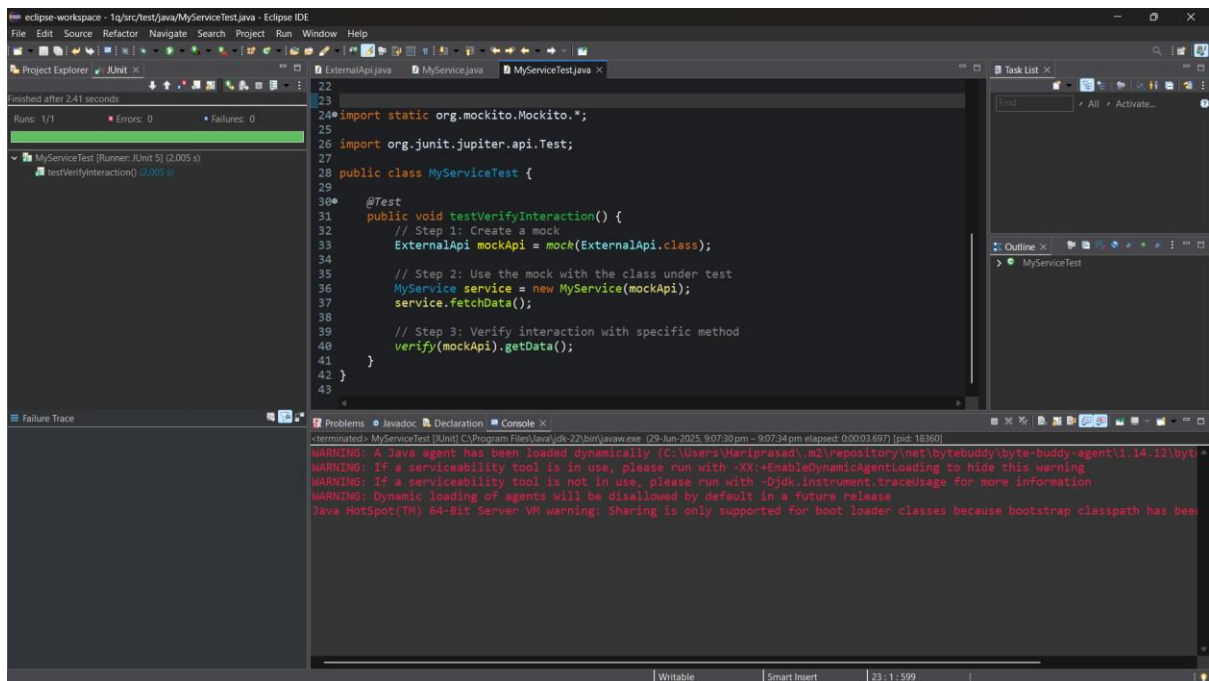
```
ExternalApi.java × MyService.java MyServiceTest.java 1q/pom.xml
1
2 public interface ExternalApi {
3     String getData();
4 }
```

```
ExternalApi.java × MyService.java × MyServiceTest.java 1q/pom.xml
1
2 public class MyService {
3     private ExternalApi api;
4
5     public MyService(ExternalApi api) {
6         this.api = api;
7     }
8
9     public String fetchData() {
10        return api.getData();
11    }
12 }
13 |
```



```
22
23
24import static org.mockito.Mockito.*;
25
26 import org.junit.jupiter.api.Test;
27
28 public class MyServiceTest {
29
30     @Test
31     public void testVerifyInteraction() {
32         // Step 1: Create a mock
33         ExternalApi mockApi = mock(ExternalApi.class);
34
35         // Step 2: Use the mock with the class under test
36         MyService service = new MyService(mockApi);
37         service.fetchData();
38
39         // Step 3: Verify interaction with specific method
40         verify(mockApi).getData();
41     }
42 }
43
```

## Output



```
Finished after 2.41 seconds
Runs: 1/1      Errors: 0      Failures: 0
MyServiceTest (Runner: JUnit 5) (2.005 s)
  testVerifyInteraction() (2.005 s)

-terminated- MyServiceTest [JUnit] C:\Program Files\Java\jdk-22\bin\javaw.exe (29-Jun-2025, 9:07:30 pm - 9:07:34 pm elapsed: 00003.697) [pid: 18360]
WARNING: A Java agent has been loaded dynamically (C:\Users\Hariprasad\.m2\repository\net\bytebuddy\byte-buddy-agent\1.14.12\byte-buddy-agent-1.14.12.jar)
WARNING: If a serviceability tool is in use, please run with -XX:+EnableDynamicAgentLoading to hide this warning
WARNING: If a serviceability tool is not in use, please run with -Djdk.instrument.traceUsage for more information
WARNING: Dynamic loading of agents will be disallowed by default in a future release
Java HotSpot(TM) 64-Bit Server VM warning: Sharing is only supported for boot loader classes because bootstrap classpath has been modified
```