Advanced Mocking Techniques

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Overview

More mock verification

Partial mocks

Dealing with code that is difficult to test

More Verification Tools

verifyNoMoreInteractions(mocks)

Called stubbed methods are also treated as interactions!

verifyNoMoreInteractions(ignoreStubs(mocks)) ignores stubs for the purposes of verification

Mockito Strictness: Default Modes

Mockito 2.X: WARN

Complaints logged in console when things are not ideal

Mockito 3: STRICT_STUBS *(planned)*

Enabling this mode explicitly in Mockito 2.X means ignoreStubs(...) is not necessary anymore

Demo

Verify no unexpected invocations on your mocks

Partial Mocks

You spy on **real** objects

Use occasionally

Spies are partial mocks

When creating a spy, Mockito creates a copy of the object, it doesn't delegate calls

Demo

Creating spies

Using spies to test tricky situations

Spies should only be used occasionally and come in useful when you find yourself in a situation with code that impossible, or too costly, to change

Solution One: The PowerMock Framework

Mockito cannot mock static methods, such as LocalDate.now()

This solution is useful when you *can't* change the source code making static calls

https://github.com/powermock/powermock/wiki/Mockito

We won't cover PowerMock in this course

Solution Two: Java’s Clock Class

Pluggable abstraction of time which simplifies tests

This solution is useful when you *can* change the source code making static calls

https://docs.oracle.com/javase/8/docs/api/java/time/Clock.html (since Java 1.8)

Let’s see this in action!

Demo

Testing code that deals with time

Mocking Final Methods

Mocking final classes and methods is now supported (since 2.1.0)

Final methods/classes can be mocked just like non-final ones

‘/mockito-extensions/org.mockito.plugins.MockMaker’ containing a single line: ‘mock-maker-inline’

Selective Partial Mocks

You can turn a mock into a spy by selectively enabling real methods

```
SomeType spy = spy(SomeType.class);
```

```
SomeType mock = mock(SomeType.class);

when(mock.someMethod).thenCallRealMethod();
```

Summary

More verification toolkit

- verifyNoMoreInteractions
- verifyNoMoreInteractions(ignoreStubs(…)

Partial mocks (spies)

Tested tricky scenarios