**Mockito course:**

**Mockito and spring boot test:**

**Steps:**

**1.Getting Ready for Mockito**

Setting up a maven project

Added dependencies (junit and mockito)

**2.Need For Mockito**

Setting up SUT (system under test)

Stub explanation, Need of stub: TodoServiceStub and test ToDoService

Test using Stub

Disadvantage of stub:

->If new method added in ToDoService interface, compulsory we should define it in interface.

->If we want to test for diff data set, or empty data set again need to add new methods.

**3.Mockito Basics**

-> **Mocking:**

What is mocking?

mocking is creating objects that simulate the behavior of real objects.

Unlike stubs, mocks can be dynamically created from code - at runtime.

You can verify method calls and a lot of other things.

->Debug TodoBusinessImplMockTest.java and confirm that mock object is created for ToDoService.java.

->when().thenReturn() usecase

->**Mocking List Interface(ListTest.java)**

->**BDD style: Given When Then:**

Good way for organizing the test.

class TodoBusinessImplMockTest: testRetrieveTodosRelatedToSpring\_usingBDD

class ListTest:

letsMockListGet\_usingBDD

->**Verify calls on mock:**

How to verify calls on a mock?

Verify how many times a method is called.

We will add deleteTodo method to the TodoService.

Code snippet:

**verify(todoService).deleteTodo("Learn to Dance");**

**then(todoServiceMock).should(never()).deleteTodo("Learn Spring MVC");**

Ex: class TodoBusinessImplMockTest

Method: testDeleteTodosNotRelatedToSpring\_usingBDD

**How many times method called:?**

verify(todoServiceMock,**never**()).deleteTodo("Learn Spring MVC");

verify(todoServiceMock,**times**(1)).deleteTodo("Learn to Dance");

verify(todoServiceMock,**atleastOnce**()).deleteTodo("Learn to Dance");

verify(todoServiceMock,**atleast**(5)).deleteTodo("Learn to Dance");

->**Capturing arguments passed to mocks:**

**Capture the argument which is passed on methods.**

//Define Arg captor

ArgumentCaptor<String> argumentCaptor = ArgumentCaptor.forClass(String.class);

Class: TodoBusinessImplMockTest

Methods:

testDeleteTodosNotRelatedToSpring\_usingBDD\_argumentCapture

testDeleteTodosNotRelatedToSpring\_usingBDD\_argumentCaptureMultipleTimes

**4.Mockito Advanced**

-> **Hamcrest Matchers**

-> Allow us to keep the application in very maintainable format.

-> Set up static import for

import static org.hamcrest.CoreMatchers.hasItems;

->First Snippet

<dependency>

<groupId>org.hamcrest</groupId>

<artifactId>hamcrest-library</artifactId>

<version>1.3</version>

<scope>test</scope>

</dependency>

->Code Snippets

assertThat(scores, hasSize(4));

assertThat(scores, hasItems(100, 101));

assertThat(scores, everyItem(greaterThan(90)));

assertThat(scores, everyItem(lessThan(200)));

// String

assertThat("", isEmptyString());

assertThat(null, isEmptyOrNullString());

->Locations:

package com.vardhan.mockito.mockito;

HamcrestMatchersTest

->Array Example:

// Arrays

Integer[] marks = { 1, 2, 3 };

assertThat(marks, arrayWithSize(3));

assertThat(marks, arrayContaining(1,2,3));

assertThat(marks, arrayContainingInAnyOrder(2,1,3));

**->Mockito Annotations:**

@Mock

@InjectMocks

@RunWith(MockitoJUnitRunner.class)

@Captor

**5.Powermock with Mockito**