CIT360 – W03 – JUnit Notes

May 6, 2019

JUnit:

FROM “CIT-360 Coding Topics Introduction.pptx”

* Summary
  + This is a testing framework used to create unit tests within Java. It is also used today to create functional tests in addition to unit tests. The framework is a library from junit.org. This technology can be pretty easy to set up. It comes with a set of assert methods that are used to show whether a test passed or failed.
  + JUnit is often used in connection with a programming technique called Test Driven Development where the unit tests are created first, before the actual program is written. This forces the developer to think through the desired result before getting too deep into writing code.
* References
  + <https://www.tutorialspoint.com/junit/junit_test_framework.htm>
  + <http://junit.org/junit4/>
  + <https://dzone.com/articles/junit-tutorial-beginners>
* Tips to get to Basic
  + I would like to see a program that incorporates all of the different assert methods. These include assertArrayEquals, assertEquals, assertFalse, assertNotNull, assertNotSame, assertNull, assertSame, assertThat, assertTrue.

I read your overview of JUNIT: “This is a testing framework used to create unit tests within Java…The framework is a library from junit.org...It comes with a set of assert methods that are used to show whether a test passed or failed.” I downloaded the jar file (junit-4.13-beta-2.jar) and to be on the safe side I downloaded (junit-4.12.jar). When I tried to run the sample program, I found out that I also needed the hamcrest-core-1.3.jar file. For Eclipse I added these jar files to the “Java Build Path/Libraries”. For PowerShell I added the jar files to the CLASSPATH. This initial test (Sandbox) was for assertEquals. The first test case passed.

I modified the test class to include all the assert methods your mentioned: assertArrayEquals, assertEquals, assertFalse, assertNotNull, assertNotSame, assertNull, assertSame, assertThat, assertTrue. I had trouble with the assertThat method in that the is() method is depreciated. Searching the web I found that I could use is(equalTo(0)) instead and compiled the class using (javac -Xlint:deprecation TestJunit\_mult.java). This gave me a compile time warning but it worked.

This is the result with all test passed:

PS C:\workarea> java TestRunner\_mult

Test Equals

Test False

Test True

Test not null

Test for null

Test for Array Equal

Test for Same object

Test for NotSame object

Test for asertThat

true

This is the results when the test failed.

PS C:\workarea> java TestRunner\_mult

Test Equals

testAdd(TestJunit\_mult): expected:<Junit Test [x ]String> but was:<Junit Test []String>

false

PS C:\workarea> java TestRunner\_mult

Test Equals

Test False

testAdd(TestJunit\_mult): null

false

PS C:\workarea> java TestRunner\_mult

Test Equals

Test False

Test True

testAdd(TestJunit\_mult): null

false

PS C:\workarea> java TestRunner\_mult

Test Equals

Test False

Test True

Test not null

testAdd(TestJunit\_mult): null

false

PS C:\workarea> java TestRunner\_mult

Test Equals

Test False

Test True

Test not null

Test for null

testAdd(TestJunit\_mult): expected null, but was:<Junit Test String>

false

PS C:\workarea> java TestRunner\_mult

Test Equals

Test False

Test True

Test not null

Test for null

Test for Array Equal

testAdd(TestJunit\_mult): arrays first differed at element [2]; expected:<[Third]> but was:<[Forth]>

false

PS C:\workarea> java TestRunner\_mult

Test Equals

Test False

Test True

Test not null

Test for null

Test for Array Equal

Test for Same object

testAdd(TestJunit\_mult): expected same:<TestJunit\_same@6d21714c> was not:<TestJunit\_same@108c4c35>

false

PS C:\workarea> java TestRunner\_mult

Test Equals

Test False

Test True

Test not null

Test for null

Test for Array Equal

Test for Same object

Test for NotSame object

testAdd(TestJunit\_mult): expected not same

false

PS C:\workarea> java TestRunner\_mult

Test Equals

Test False

Test True

Test not null

Test for null

Test for Array Equal

Test for Same object

Test for NotSame object

Test for asertThat

testAdd(TestJunit\_mult):

Expected: is <4>

but: was <3>

false

PS C:\workarea> java TestRunner\_mult

Test Equals

Test False

Test True

Test not null

Test for null

Test for Array Equal

Test for Same object

Test for NotSame object

Test for asertThat

testAdd(TestJunit\_mult):

Expected: a collection containing "Forth"

but: was "First", was "Second", was "Third"

false

I used this site to setup my first Test: <https://www.tutorialspoint.com/junit/junit_quick_guide.htm>