SOEN 6011 : SOFTWARE ENGINEERING PROCESSES

SUMMER 2022

ETERNITY

PROBLEM - 5

Unit Test Cases

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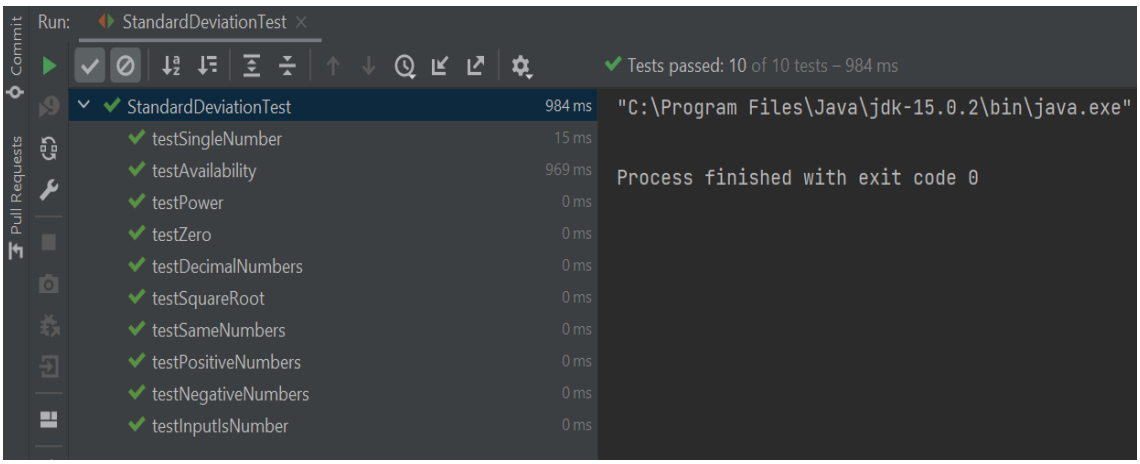
Contents

1 Unit Test Cases Description

1.1 Test Environment

1. IntelliJ IDE (2022) for Java.
2. JUnit4 framework in IntelliJ IDE for testing.



1.2 Descriptions

The unit test cases for σ function is done using Junit4 which is traceable to the requirements in Problem 2.

Test Case : F8_UnitTestCase_1

Test Case ID	F8_TestInputZero
Requirement ID	R1
Action	The user gives an input 0 and then clicks SD(σ) button.
Input(s)	0
Expected Output	0
Actual Output	0
Test Result	Success

Test Case : F8_UnitTestCase_2

Test Case ID	F8_TestSingleNumber
Requirement ID	R2
Action	The user gives an input 5 and then clicks SD(σ) button.
Input(s)	5
Expected Output	0
Actual Output	0
Test Result	Success

Test Case : F8_UnitTestCase_3

Test Case ID	F8_TestSameNumbers
Requirement ID	R3
Action	The user gives an input [8 8 8 8 8] and then clicks SD(σ) button.
Input(s)	[8 8 8 8 8]
Expected Output	0
Actual Output	0
Test Result	Success

Test Case : F8_UnitTestCase_4

Test Case ID	F8_TestNegativeNumbers
Requirement ID	R4
Action	The user gives an input [-8 -6 9 -10 5] and then clicks SD(σ) button.
Input(s)	[-8 -6 9 -10 5]
Expected Output	7.5630681604756
Actual Output	7.5630681604756
Test Result	Success

Test Case : F8_UnitTestCase_5

Test Case ID	F8_TestPositiveNumbers
Requirement ID	R5
Action	The user gives an input [8 6 9 10 5] and then clicks SD(σ) button.
Input(s)	[8 6 9 10 5]
Expected Output	1.8547236990991407
Actual Output	1.8547236990991407
Test Result	Success

Test Case : F8_UnitTestCase_6

Test Case ID	F8_TestDecimalNumbers
Requirement ID	R6
Action	The user gives an input [8.2 6.4 1.9 7.5 5] and then clicks SD(σ) button.
Input(s)	[8.2 6.4 1.9 7.5 5]
Expected Output	2.2297981971472
Actual Output	2.2297981971472
Test Result	Success

Test Case : F8_UnitTestCase_7

Test Case ID	F8_TestSquareRoot
Requirement ID	R7
Action	Input 2 is given to the $\sqrt{x}$ function.
Input(s)	2
Expected Output	1.4142135623746899
Actual Output	1.4142135623746899
Test Result	Success

Test Case : F8_UnitTestCase_8

Test Case ID	F8_TestPower
Requirement ID	R8
Action	Input 5 as base and exponent 2 is given to the power(x,y) function.
Input(s)	5,2
Expected Output	25
Actual Output	25
Test Result	Success

Test Case : F8_UnitTestCase_9

Test Case ID	F8_TestInputisNumber
Requirement ID	R9
Action	The user gives an input "g" and then clicks SD(σ) button.
Input(s)	"g"
Expected Output	false
Actual Output	false
Test Result	Success

Test Case : F8_UnitTestCase_10

Test Case ID	F8_TestAvailability
Requirement ID	R10
Action	The user gives any input then clicks SD(σ) button.
Input(s)	Any real numbers
Expected Output	positive real number
Actual Output	positive real number
Test Result	Success

Bibliography

[1] ReqView : Nykamp DQ: Requirements Specification Templates
`https://www.reqview.com/doc/iso-iec-ieee-29148-templates`

[2] 29148-2018-ISO/IEC/IEEE International Standard-Systems and software engineering-Life cycle processes-Requirements engineering,
`https://standards.ieee.org/standard/29148-2018.html`