

## 0.2 Problem 7: Testing

Testing for function 9, because Function 8 has been reviewed as person responsible for Function 7 dropped the course.

Repository details:<https://github.com/PrashanthiRamesh/SOEN-6011-Project-Calculator>

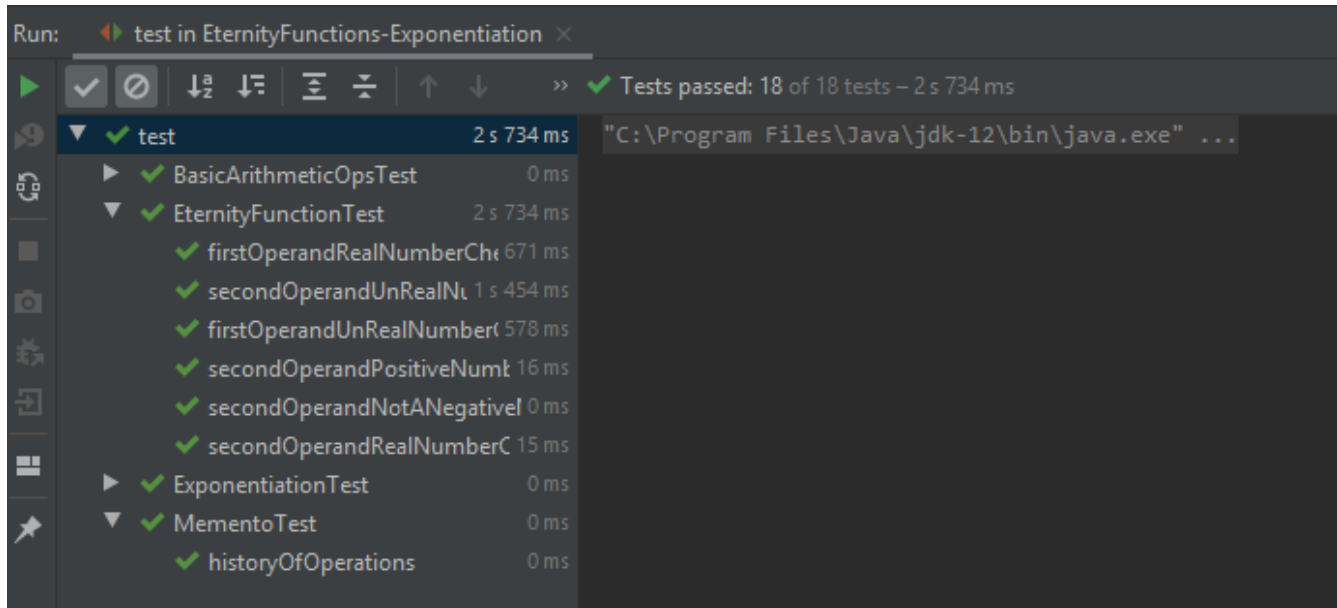
### Approach

1. Execution of the JUnit Test Cases provided to validate and verify that they meet the expected results.
2. Conducting manual tests on the application with boundary condition checks.

### JUnit Test Cases Execution:

Test Case Class	Test Case Method	Status
MementoTest	historyOfOperations()	Passing
ExponentiationTest	RealNumberRaisedToZero()	Passing
ExponentiationTest	RealNumberExceptZeroRaisedToOne()	Passing
ExponentiationTest	ZeroRaisedToZero()	Passing
ExponentiationTest	ZeroRaisedToRealNumber()	Passing
ExponentiationTest	NegativeRealNumberRaisedToOddRealNumber()	Passing
ExponentiationTest	NegativeRealNumberRaisedToEvenRealNumber()	Passing
EternityFunctionTest	firstOperandUnRealNumberCheck()	Passing
EternityFunctionTest	firstOperandRealNumberCheck()	Passing
EternityFunctionTest	secondOperandUnRealNumberCheck()	Passing
EternityFunctionTest	secondOperandRealNumberCheck()	Passing
EternityFunctionTest	secondOperandNotANegativeNumber()	Passing
EternityFunctionTest	secondOperandPositiveNumber()	Passing
BasicArithmeticOpsTest	add()	Passing
BasicArithmeticOpsTest	subtract()	Passing
BasicArithmeticOpsTest	multiply()	Passing
BasicArithmeticOpsTest	divide()	Passing
BasicArithmeticOpsTest	divideByZero()	Passing

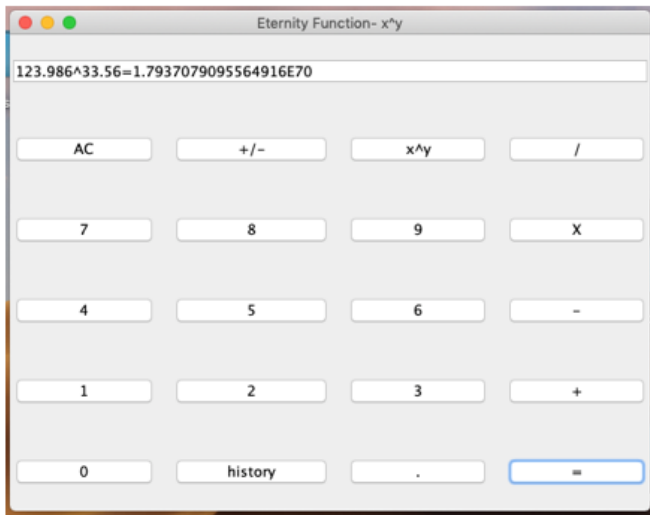
## Junit Tests Screenshot:



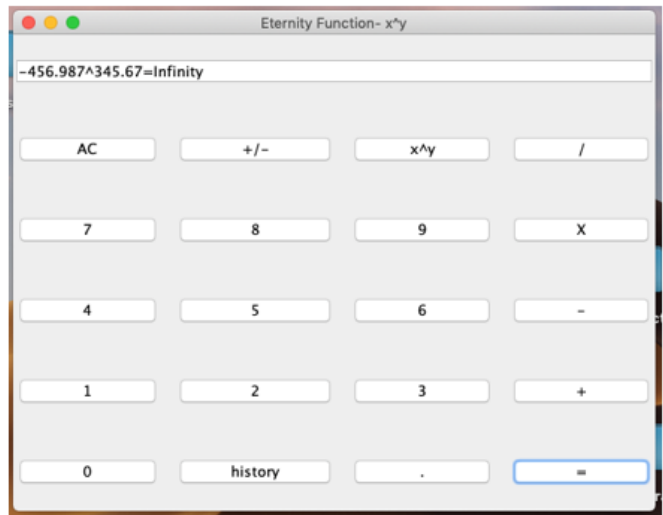
## Manual Test Report

ID	x	y	Expected Result	Obtained Result	Status
Test1	123.86	33.56	1.7328737e+70	1.79370790955649E70	Pass
Test2	-456.987	345.67	-Infinity	Infinity	Fail
Test3	-456.987	5.67	-1.2068542e+15	3.4131145685810292E218	Fail
Test4	-155.987	-6.68	-2.2395948e-15	Invalid Operand Error	Fail

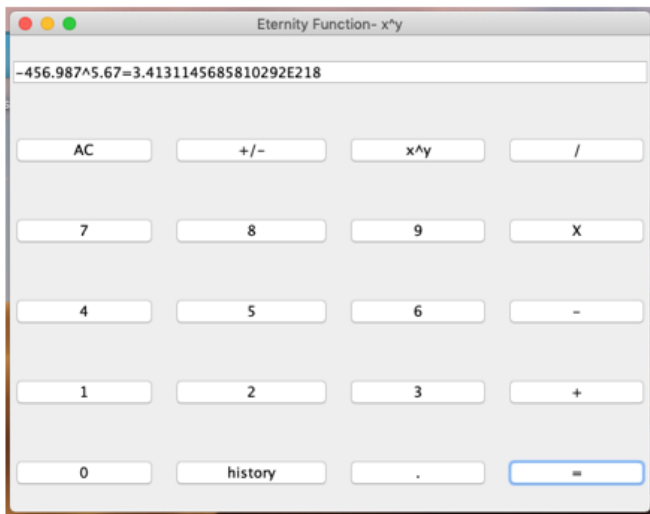
## Manual Test Screenshots:



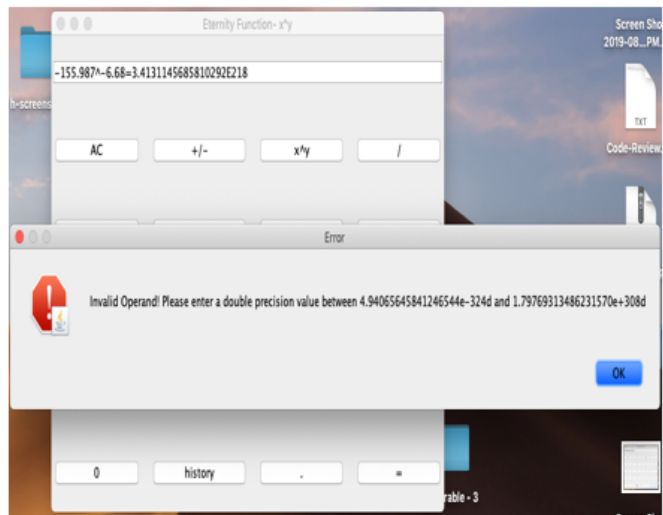
**Fig1: Test1**



**Fig2: Test2**



**Fig3: Test3**



**Fig4: Test4**

## Testing Comments/Suggestion:

1. It is better to name the test case method with 'test' followed by the method it is testing.
2. ExponentiationTest class has methods that begin with Uppercase letters.
3. Few more tests to validate boundary conditions can be included.