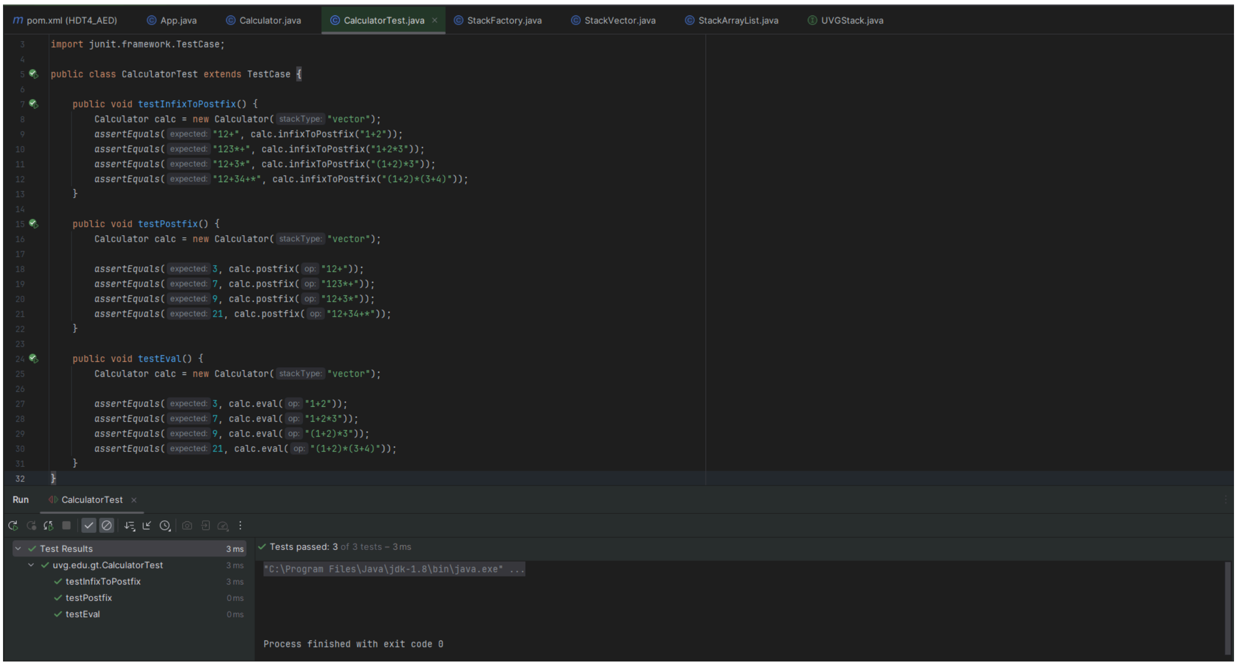
Unit Tests de Calculator



```
import junit.framework.TestCase;

public class CalculatorTest extends TestCase {

    public void testInfixToPostfix() {
        Calculator calc = new Calculator( stackType: "vector");
        assertEquals( expected: "12+", calc.infixToPostfix("1+2"));
        assertEquals( expected: "123*+", calc.infixToPostfix("1+2*3"));
        assertEquals( expected: "12+3*", calc.infixToPostfix("(1+2)*3"));
        assertEquals( expected: "12+34+*", calc.infixToPostfix("(1+2)*(3+4)"));
    }

    public void testPostfix() {
        Calculator calc = new Calculator( stackType: "vector");

        assertEquals( expected: 3, calc.postfix( op: "12+"));
        assertEquals( expected: 7, calc.postfix( op: "123*+"));
        assertEquals( expected: 9, calc.postfix( op: "12+3*"));
        assertEquals( expected: 21, calc.postfix( op: "12+34+*"));
    }

    public void testEval() {
        Calculator calc = new Calculator( stackType: "vector");

        assertEquals( expected: 3, calc.eval( op: "1+2"));
        assertEquals( expected: 7, calc.eval( op: "1+2*3"));
        assertEquals( expected: 9, calc.eval( op: "(1+2)*3"));
        assertEquals( expected: 21, calc.eval( op: "(1+2)*(3+4)"));
    }
}
```

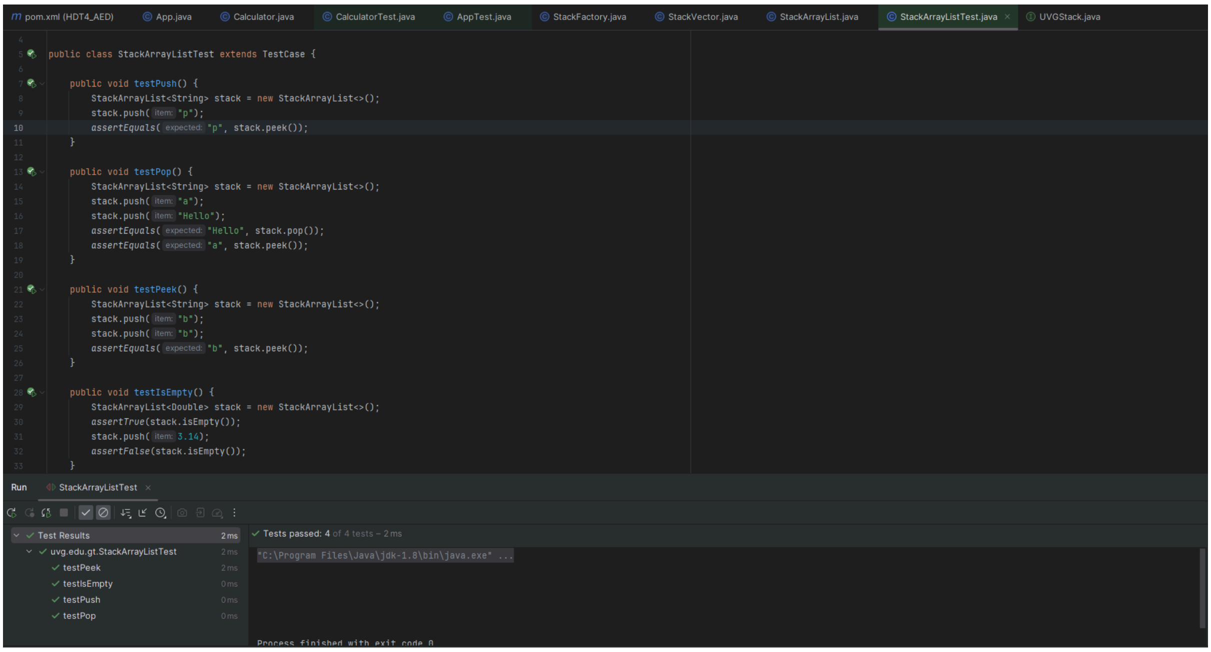
```
✓ Test Results                     3 ms
  ✓ uvg.edu.gt.CalculatorTest      3 ms
      ✓ testInfixToPostfix         3 ms
      ✓ testPostfix                0 ms
      ✓ testEval                   0 ms
```

```
✓ Tests passed: 3 of 3 tests – 3 ms

"C:\Program Files\Java\jdk-1.8\bin\java.exe" ...


Process finished with exit code 0
```

Unit Tests de StackArrayList



```

public class StackArrayListTest extends TestCase {

    public void testPush() {
        StackArrayList<String> stack = new StackArrayList<>();
        stack.push( item: "p");
        assertEquals( expected: "p", stack.peek());
    }

    public void testPop() {
        StackArrayList<String> stack = new StackArrayList<>();
        stack.push( item: "a");
        stack.push( item: "Hello");
        assertEquals( expected: "Hello", stack.pop());
        assertEquals( expected: "a", stack.peek());
    }

    public void testPeek() {
        StackArrayList<String> stack = new StackArrayList<>();
        stack.push( item: "b");
        stack.push( item: "b");
        assertEquals( expected: "b", stack.peek());
    }

    public void testIsEmpty() {
        StackArrayList<Double> stack = new StackArrayList<>();
        assertTrue(stack.isEmpty());
        stack.push( item: 3.14);
        assertFalse(stack.isEmpty());
    }
```

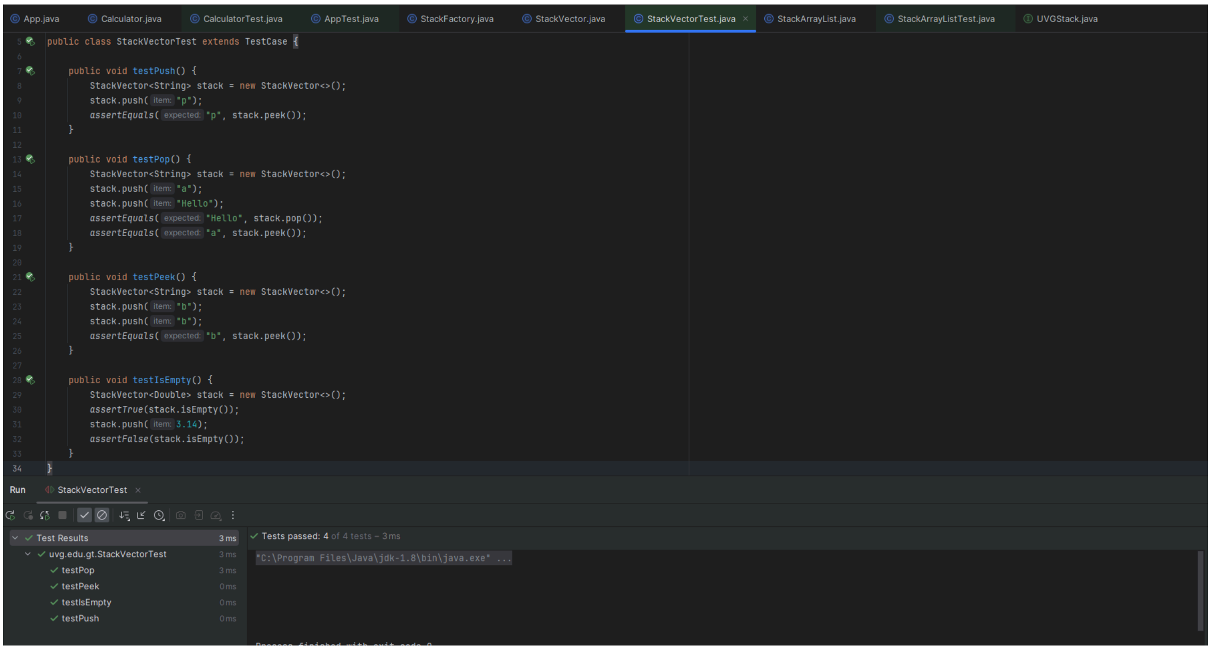
```
✓ Test Results                     2 ms
  ✓ uvg.edu.gt.StackArrayListTest  2 ms
      ✓ testPeek                   2 ms
      ✓ testIsEmpty                0 ms
      ✓ testPush                   0 ms
      ✓ testPop                    0 ms
```

```
✓ Tests passed: 4 of 4 tests – 2 ms

"C:\Program Files\Java\jdk-1.8\bin\java.exe" ...


Process finished with exit code 0
```

Unit Tests de StackVector



```java
public class StackVectorTest extends TestCase {

    public void testPush() {
        StackVector<String> stack = new StackVector<>();
        stack.push( item: "p");
        assertEquals( expected: "p", stack.peek());
    }

    public void testPop() {
        StackVector<String> stack = new StackVector<>();
        stack.push( item: "a");
        stack.push( item: "Hello");
        assertEquals( expected: "Hello", stack.pop());
        assertEquals( expected: "a", stack.peek());
    }

    public void testPeek() {
        StackVector<String> stack = new StackVector<>();
        stack.push( item: "b");
        stack.push( item: "b");
        assertEquals( expected: "b", stack.peek());
    }

    public void testIsEmpty() {
        StackVector<Double> stack = new StackVector<>();
        assertTrue(stack.isEmpty());
        stack.push( item: 3.14);
        assertFalse(stack.isEmpty());
    }
}
```

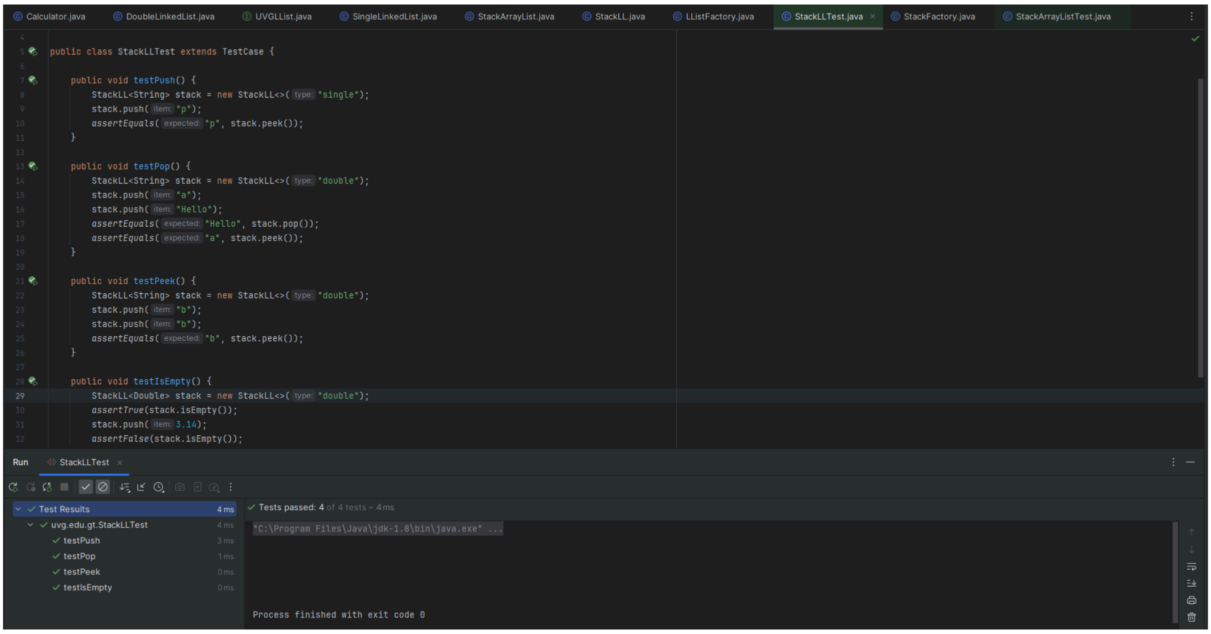
```
✓ Test Results                    3 ms
  ✓ uvg.edu.gt.StackVectorTest    3 ms
    ✓ testPop                     3 ms
    ✓ testPeek                    0 ms
    ✓ testIsEmpty                 0 ms
    ✓ testPush                    0 ms
```

```
✓ Tests passed: 4 of 4 tests – 3 ms

"C:\Program Files\Java\jdk-1.8\bin\java.exe" ...

Process finished with exit code 0
```

Unit Tests de StackLL



```java
public class StackLLTest extends TestCase {

    public void testPush() {
        StackLL<String> stack = new StackLL<>( type: "single");
        stack.push( item: "p");
        assertEquals( expected: "p", stack.peek());
    }

    public void testPop() {
        StackLL<String> stack = new StackLL<>( type: "double");
        stack.push( item: "a");
        stack.push( item: "Hello");
        assertEquals( expected: "Hello", stack.pop());
        assertEquals( expected: "a", stack.peek());
    }

    public void testPeek() {
        StackLL<String> stack = new StackLL<>( type: "double");
        stack.push( item: "b");
        stack.push( item: "b");
        assertEquals( expected: "b", stack.peek());
    }

    public void testIsEmpty() {
        StackLL<Double> stack = new StackLL<>( type: "double");
        assertTrue(stack.isEmpty());
        stack.push( item: 3.14);
        assertFalse(stack.isEmpty());
```

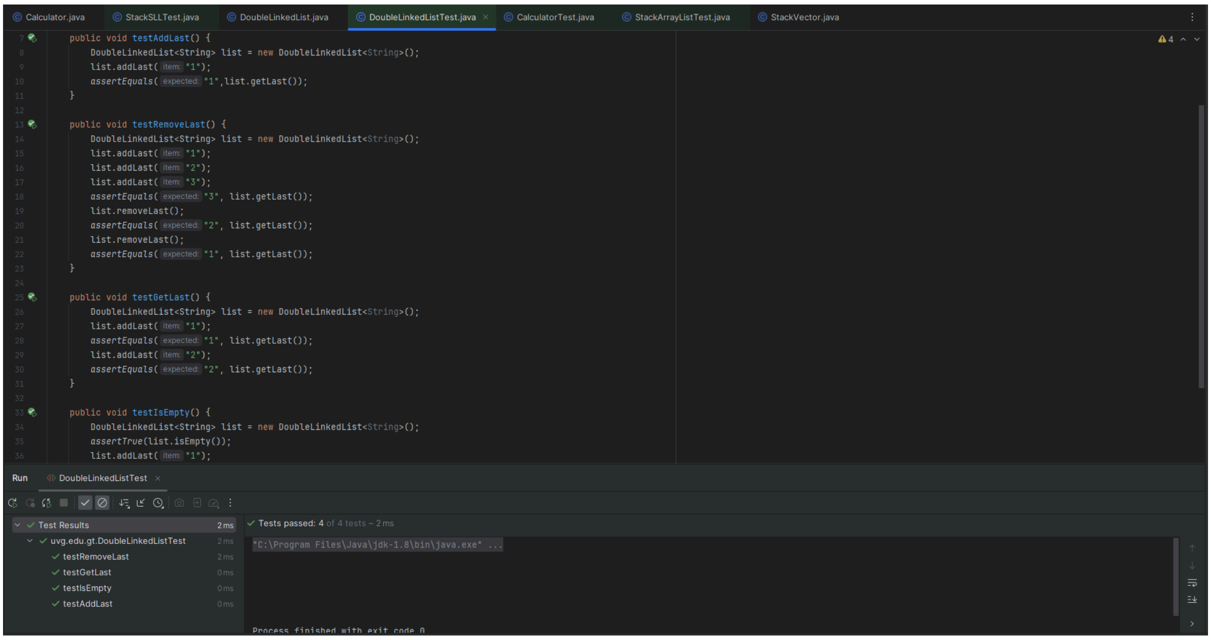
```
✓ Test Results                 4 ms
  ✓ uvg.edu.gt.StackLLTest     4 ms
    ✓ testPush                 3 ms
    ✓ testPop                  1 ms
    ✓ testPeek                 0 ms
    ✓ testIsEmpty              0 ms
```

```
✓ Tests passed: 4 of 4 tests – 4 ms

"C:\Program Files\Java\jdk-1.8\bin\java.exe" ...


Process finished with exit code 0
```

Unit Test de Double Linked List



```java
    public void testAddLast() {
        DoubleLinkedList<String> list = new DoubleLinkedList<String>();
        list.addLast( item: "1");
        assertEquals( expected: "1",list.getLast());
    }

    public void testRemoveLast() {
        DoubleLinkedList<String> list = new DoubleLinkedList<String>();
        list.addLast( item: "1");
        list.addLast( item: "2");
        list.addLast( item: "3");
        assertEquals( expected: "3", list.getLast());
        list.removeLast();
        assertEquals( expected: "2", list.getLast());
        list.removeLast();
        assertEquals( expected: "1", list.getLast());
    }

    public void testGetLast() {
        DoubleLinkedList<String> list = new DoubleLinkedList<String>();
        list.addLast( item: "1");
        assertEquals( expected: "1", list.getLast());
        list.addLast( item: "2");
        assertEquals( expected: "2", list.getLast());
    }

    public void testIsEmpty() {
        DoubleLinkedList<String> list = new DoubleLinkedList<String>();
        assertTrue(list.isEmpty());
        list.addLast( item: "1");
```

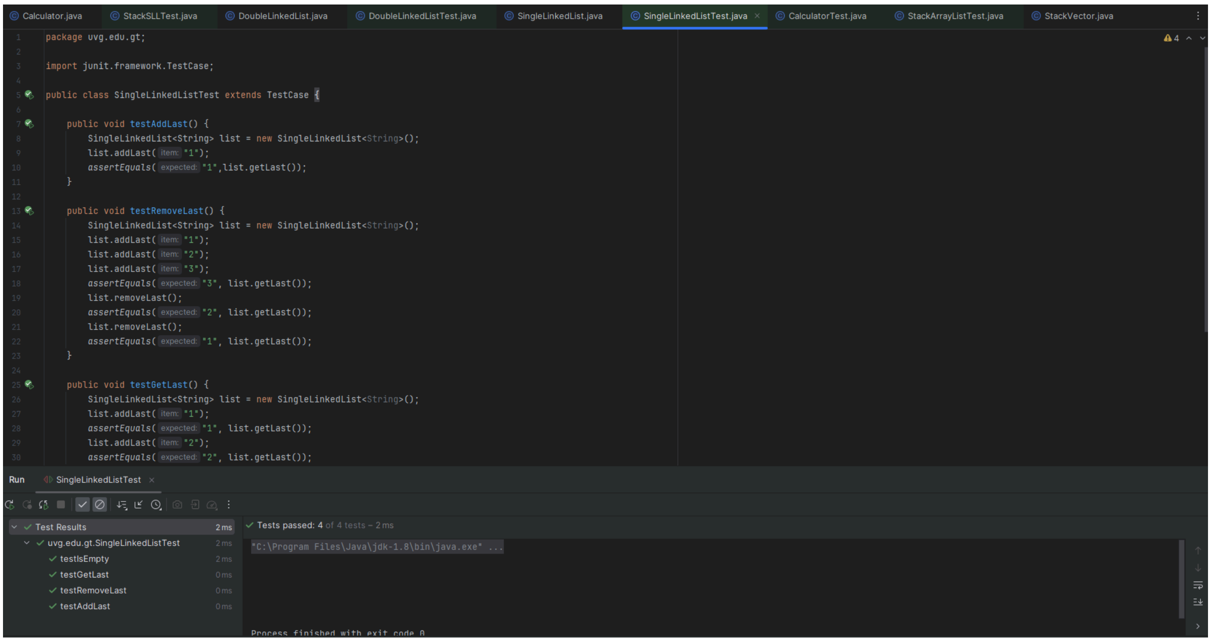
```
✓ Test Results                          2 ms
  ✓ uvg.edu.gt.DoubleLinkedListTest     2 ms
    ✓ testRemoveLast                    2 ms
    ✓ testGetLast                       0 ms
    ✓ testIsEmpty                       0 ms
    ✓ testAddLast                       0 ms
```

```
✓ Tests passed: 4 of 4 tests – 2 ms

"C:\Program Files\Java\jdk-1.8\bin\java.exe" ...


Process finished with exit code 0
```

Unit Test de Single Linked List



```java
package uvg.edu.gt;

import junit.framework.TestCase;

public class SingleLinkedListTest extends TestCase {

    public void testAddLast() {
        SingleLinkedList<String> list = new SingleLinkedList<String>();
        list.addLast( item: "1");
        assertEquals( expected: "1",list.getLast());
    }

    public void testRemoveLast() {
        SingleLinkedList<String> list = new SingleLinkedList<String>();
        list.addLast( item: "1");
        list.addLast( item: "2");
        list.addLast( item: "3");
        assertEquals( expected: "3", list.getLast());
        list.removeLast();
        assertEquals( expected: "2", list.getLast());
        list.removeLast();
        assertEquals( expected: "1", list.getLast());
    }

    public void testGetLast() {
        SingleLinkedList<String> list = new SingleLinkedList<String>();
        list.addLast( item: "1");
        assertEquals( expected: "1", list.getLast());
        list.addLast( item: "2");
        assertEquals( expected: "2", list.getLast());
```

```
✓ Test Results                          2 ms
  ✓ uvg.edu.gt.SingleLinkedListTest     2 ms
    ✓ testIsEmpty                       2 ms
    ✓ testGetLast                       0 ms
    ✓ testRemoveLast                    0 ms
    ✓ testAddLast                       0 ms
```

```
✓ Tests passed: 4 of 4 tests – 2 ms

"C:\Program Files\Java\jdk-1.8\bin\java.exe" ...


Process finished with exit code 0
```