Junit Testing

- Junit is a testing utility in Java (Unit testing)
- Made for testing classes
- Better than hand-running your program and inputting test cases!

To use:

- Link the Junit library to your project
- Write a Junit test class
    - A class which is a child of the **TestCase** class
- Add tester methods to the class
    - Each method name must start with the word **test**
    - Each test is independent
        - Results from a previous test does not affect future tests
- Optionally, can add a **setUp** method
    - This method is called before EACH test is executed
- **Run as Junit** to execute

If you wish to test more than one class

- Create a test suite containing all of the test classes

Test cases should have one or more of the following to ensure that some test value is correct

- assertEquals(String message, Expected Value, Value to test)
- assertFalse(String message, Value to test)
- assertTrue(String message, Value to test)
- assertNotNull(String message)
- assertNull(String message)
- assertNotSame(String message) ← makes sure that two objects actually different objects
- assertSame(String message)   (i.e. pointing to two different locations)
- fail(String message) ← automatic test failure

Key points

- Make sure you test constructors & getters first with simple tests
    - These are used for practically all other test cases
- Build tests in small units; don't make tests too complex
    - Complex testing code would need to be tested itself!