fail() method

This lesson demonstrates the importance of the fail method in JUnit 5 Assertions API.

WE'LL COVER THE FOLLOWING

fail() method

Assertions API provide static `fail()` method. As soon as, any `@Test` method encounters `fail()` static method, it will fail the test case. The primary usages of `fail()` method are as follows -

- It gives a piece of meaningful information to the programmer writing a test, that test case is in progress and still needs to be implemented.
- It can be used to verify that an actual exception is thrown. Usually based on some input when test case expects an exception at a certain line, providing `fail()` below that line will verify that exception was not thrown as code execution reached `fail()` method line. Thus, it explicitly fails the test case.

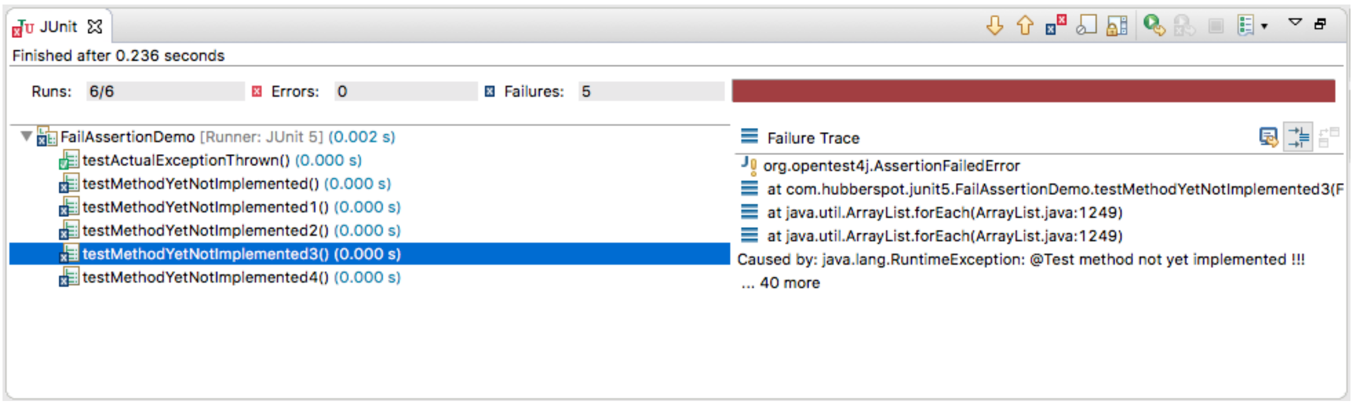
There are basically five useful overloaded methods to fail:-

```
public static void fail()

public static void fail(String message)

public static void fail(Supplier<String> messageSupplier)

public static void fail(Throwable throwable)

public static void fail(String message, Throwable throwable)
```

```
package io.educative.junit5;

import static org.junit.jupiter.api.Assertions.fail;
import org.junit.jupiter.api.Test;

public class FailAssertionDemo {


	// usage 1 - @Test not implemented with fail()
	@Test
	public void testMethodYetNotImplemented() {
		fail();
	}

	// usage 2 - @Test not implemented with fail(String message)
	@Test
	public void testMethodYetNotImplemented1() {
		fail("@Test method not yet implemented !!!");
	}

	// usage 3 - @Test not implemented with fail(Supplier<String> messageSupplier)
	@Test
	public void testMethodYetNotImplemented2() {
		fail(() -> "@Test method not yet implemented !!!");
	}

	// usage 4 - @Test not implemented with fail(Throwable throwable)
	@Test
	public void testMethodYetNotImplemented3() {
		fail(new RuntimeException("@Test method not yet implemented !!!"));
	}

	// usage 5 - @Test not implemented with fail(String message, Throwable throwable)
	@Test
	public void testMethodYetNotImplemented4() {
		fail("@Test method not yet implemented !!!", new RuntimeException("Failed exp
	}

	// usage 6 - It can be used to verify that an actual exception is thrown
	@Test
	public void testActualExceptionThrown() {
		try {
			methodThatShouldThrowException();
			fail("Exception not thrown !!!");
		} catch (UnsupportedOperationException e) {
			// test case passed
		}
	}

	private void methodThatShouldThrowException() {
		throw new UnsupportedOperationException(); // uncomment this line to will fai
	}

}
```

You can perform code changes to above code widget, run and practice different outcomes.

Step 4 - Run `FailedAssertionDemo.java` class as Junit Test.



```
JUnit
Finished after 0.236 seconds
Runs: 6/6    Errors: 0    Failures: 5

FailAssertionDemo [Runner: JUnit 5] (0.002 s)
    testActualExceptionThrown() (0.000 s)
    testMethodYetNotImplemented() (0.000 s)
    testMethodYetNotImplemented1() (0.000 s)
    testMethodYetNotImplemented2() (0.000 s)
    testMethodYetNotImplemented3() (0.000 s)
    testMethodYetNotImplemented4() (0.000 s)

Failure Trace
org.opentest4j.AssertionFailedError
at com.hubberspot.junit5.FailAssertionDemo.testMethodYetNotImplemented3(F
at java.util.ArrayList.forEach(ArrayList.java:1249)
at java.util.ArrayList.forEach(ArrayList.java:1249)
Caused by: java.lang.RuntimeException: @Test method not yet implemented !!!
... 40 more
```

In the next lesson, we will look into `assertTrue()` and `assertFalse()` assertion.