Assertions: Throws and Timeout

Assertions

Method name	Description
`assertThrows`	Assert that an executable throws an exception of expected type

Code to Test

Verify this method
throws an exception for values < 0

DemoUtils.java

```
package com.luv2code.junitdemo;

public class DemoUtils {

    public String throwException(int a) throws Exception {
        if (a < 0) {
            throw new Exception("Value should be greater than or equal to 0");
        }
        return "Value is greater than or equal to 0";
    }

}
```

DemoUtilsTest.java

```java
package com.luv2code.junitdemo;

import org.junit.jupiter.api.*;
import static org.junit.jupiter.api.Assertions.*;

class DemoUtilsTest {

    DemoUtils demoUtils;

    ...

    @DisplayName("Throws and Does Not Throw")
    @Test
    void testThrowsAndDoesNotThrow() {
        assertThrows(Exception.class, () -> { demoUtils.throwException(-1); }, "Should throw exception");

        assertDoesNotThrow(() -> { demoUtils.throwException(5); }, "Should not throw exception");
    }
}
```

Lambda expression

Lambda expression

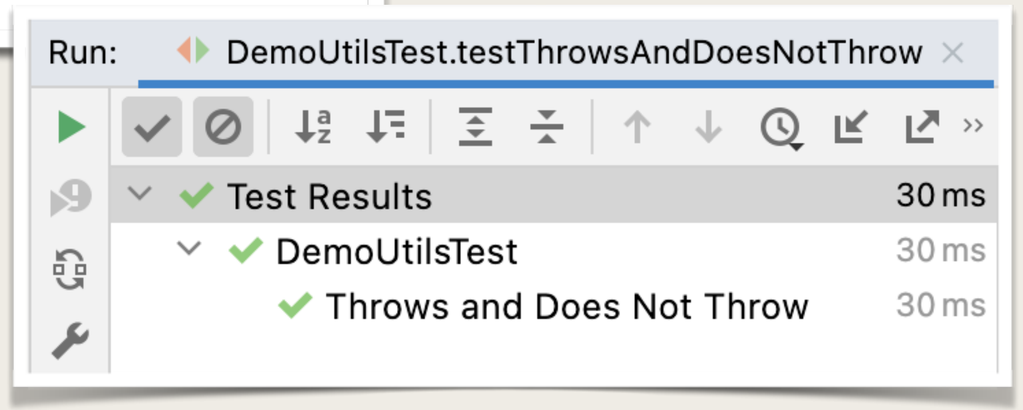
DemoUtils.java

```java
package com.luv2code.junitdemo;

public class DemoUtils {

    public String throwException(int a) throws Exception {
        if (a < 0) {
            throw new Exception("Value should be greater than or equal to 0");
        }
        return "Value is greater than or equal to 0";
    }

}
```



Assertions

Method name	Description
`assertTimeoutPreemptively`	Assert that an executable completes before given timeout is exceeded

Execution is preemptively aborted if timeout is exceeded

Code to Test

DemoUtils.java

```
package com.luv2code.junitdemo;

public class DemoUtils {

    public void checkTimeout() throws InterruptedException {
        System.out.println("I am going to sleep");
        Thread.sleep(2000);
        System.out.println("Sleeping over");
    }
}
```

Make sure method doesn't oversleep. :-)

DemoUtilsTest.java

```java
package com.luv2code.junitdemo;

import org.junit.jupiter.api.*;
import static org.junit.jupiter.api.Assertions.*;
import java.time.Duration;

class DemoUtilsTest {

    DemoUtils demoUtils;

    ...

    @DisplayName("Timeout")
    @Test
    void testTimeout() {

        assertTimeoutPreemptively(Duration.ofSeconds(3), () -> { demoUtils.checkTimeout(); },
                "Method should execute in 3 seconds");
    }
}
```

Timeout duration

Lambda expression

DemoUtils.java

```java
package com.luv2code.junitdemo;

public class DemoUtils {

    public void checkTimeout() throws InterruptedException {
        System.out.println("I am going to sleep");
        Thread.sleep(2000);
        System.out.println("Sleeping over");
    }
}
```