Spock versus JUnit

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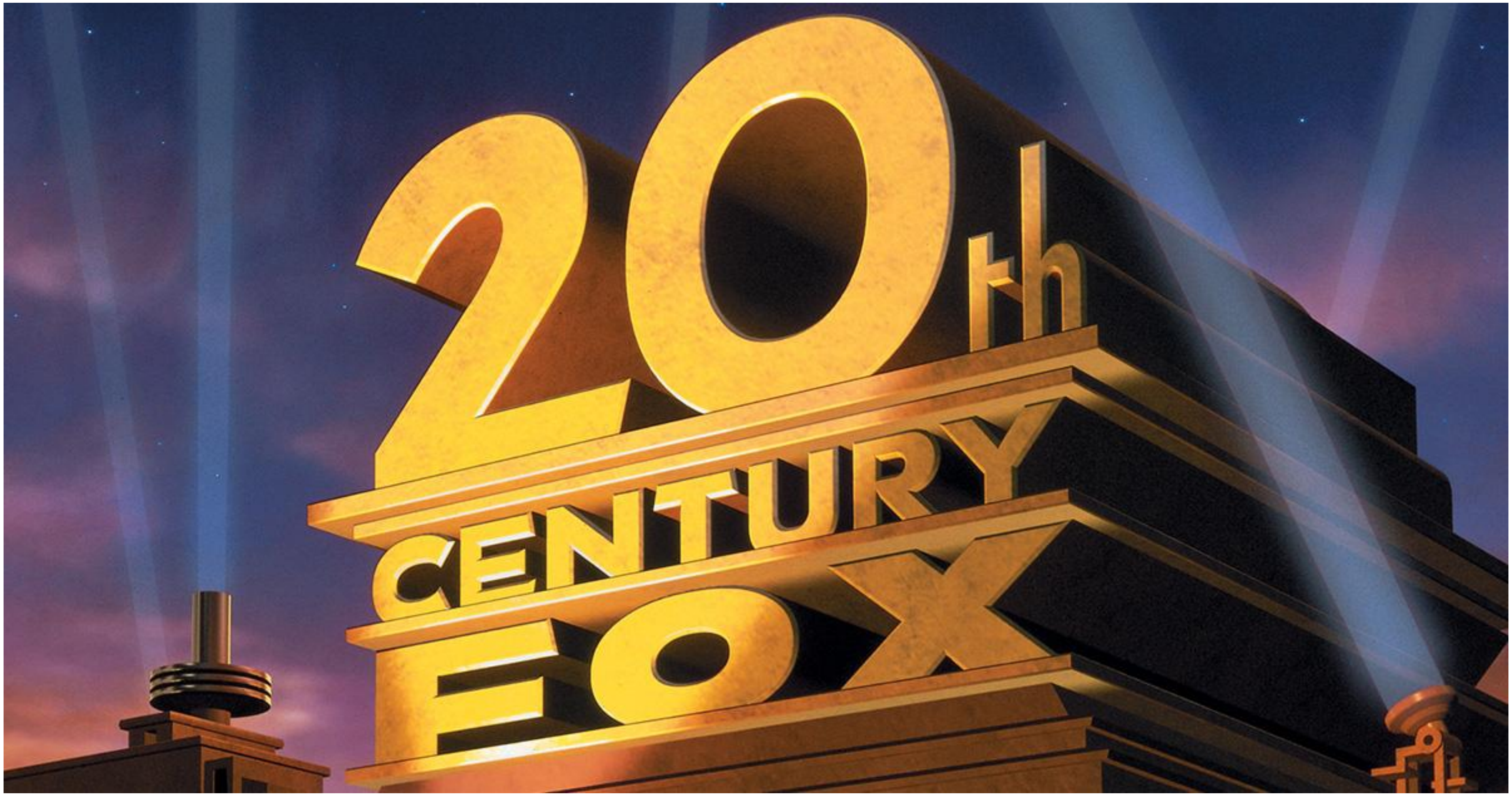
A trailer/Quiz



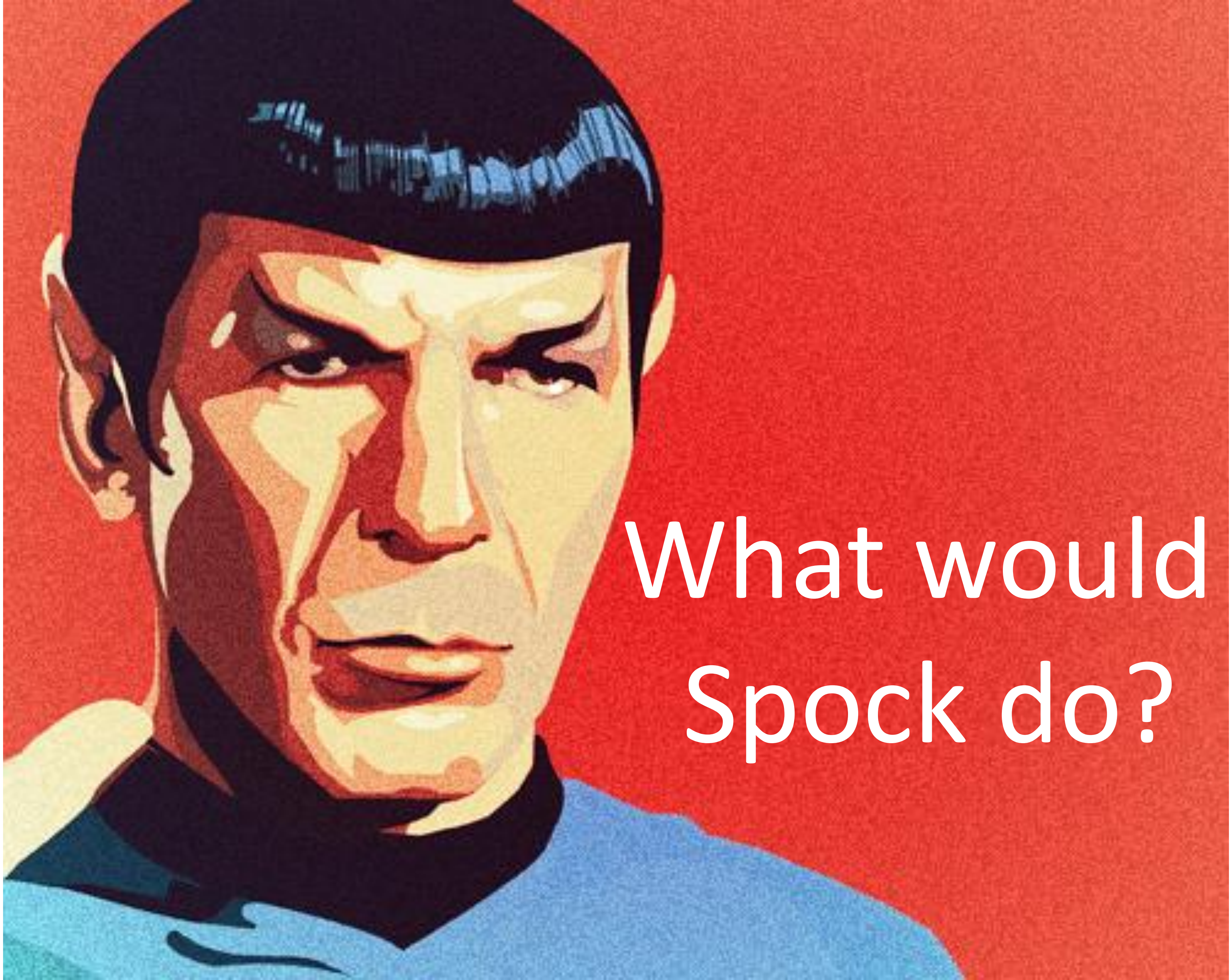
Sample class that checks JPEG files

```
public class ImageNameValidator
{
    public boolean isValidImageExtension(String
    fileName) { …}
}
```

Example Usage

```
ImageNameValidator v = ImageNameValidator ();

v.isValidImageExtension(“hello.jpg”) -> true
v.isValidImageExtension(“now.JPg”) -> true
v.isValidImageExtension(“s.JpEg”) -> true
v.isValidImageExtension(“wow.png”) -> false
```



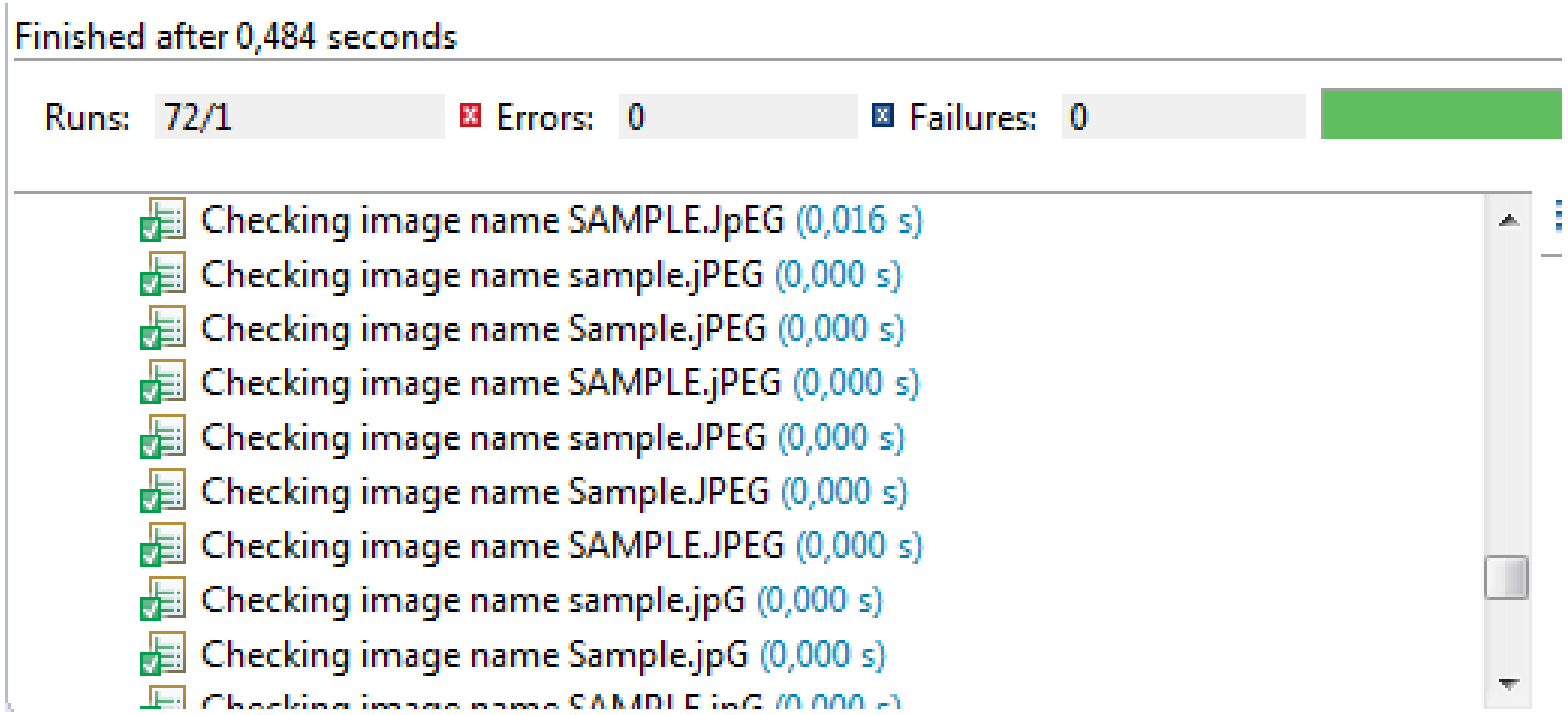
What would Spock do?

```
@Unroll("Checking image name #pictureFile")
def "All kinds of JPEG file are accepted"() {
   given: "an image extension checker"
   ImageNameValidator v = new
   ImageNameValidator() ;

   expect: "that all jpeg filenames are accepted
                    regardless of case"
   validator.isValidImageExtension(pictureFile)

   where: "sample image names are"
   pictureFile <<
   GroovyCollections.combinations([["sample.","Sa
   mple.","SAMPLE."],['j', 'J'], ['p',
   'P'],['e','E',''],['g','G']])*.join()
```

Test result



```
Finished after 0,484 seconds

Runs: 72/1    Errors: 0    Failures: 0

Checking image name SAMPLE.JpEG (0,016 s)
Checking image name sample.jPEG (0,000 s)
Checking image name Sample.jPEG (0,000 s)
Checking image name SAMPLE.jPEG (0,000 s)
Checking image name sample.JPEG (0,000 s)
Checking image name Sample.JPEG (0,000 s)
Checking image name SAMPLE.JPEG (0,000 s)
Checking image name sample.jpG (0,000 s)
Checking image name Sample.jpG (0,000 s)
```

Try the same with JUnit

The Spock class is 10 LOC and results in 72 test scenarios

Motivation

Why Spock? What is wrong with JUnit?

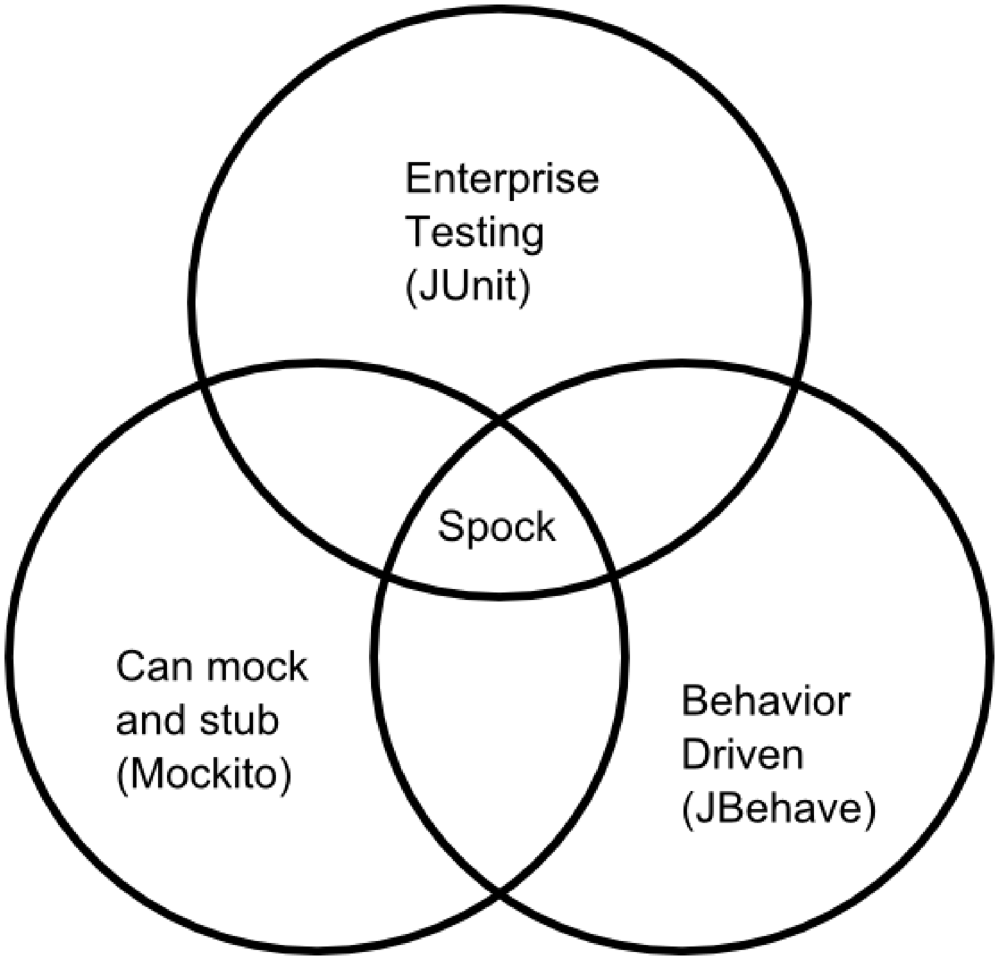
Spock history

- Created in 2008 by Peter Niederwieser (Gradle)
- Joined by Luke Daley (Gradle)
- Spock 1.0 released in 2015
- Default Test framework in Grails
- Used internally by Gradle, Groovy etc.
- Used by MongoDb, Tapestry, Netflix, JFrog

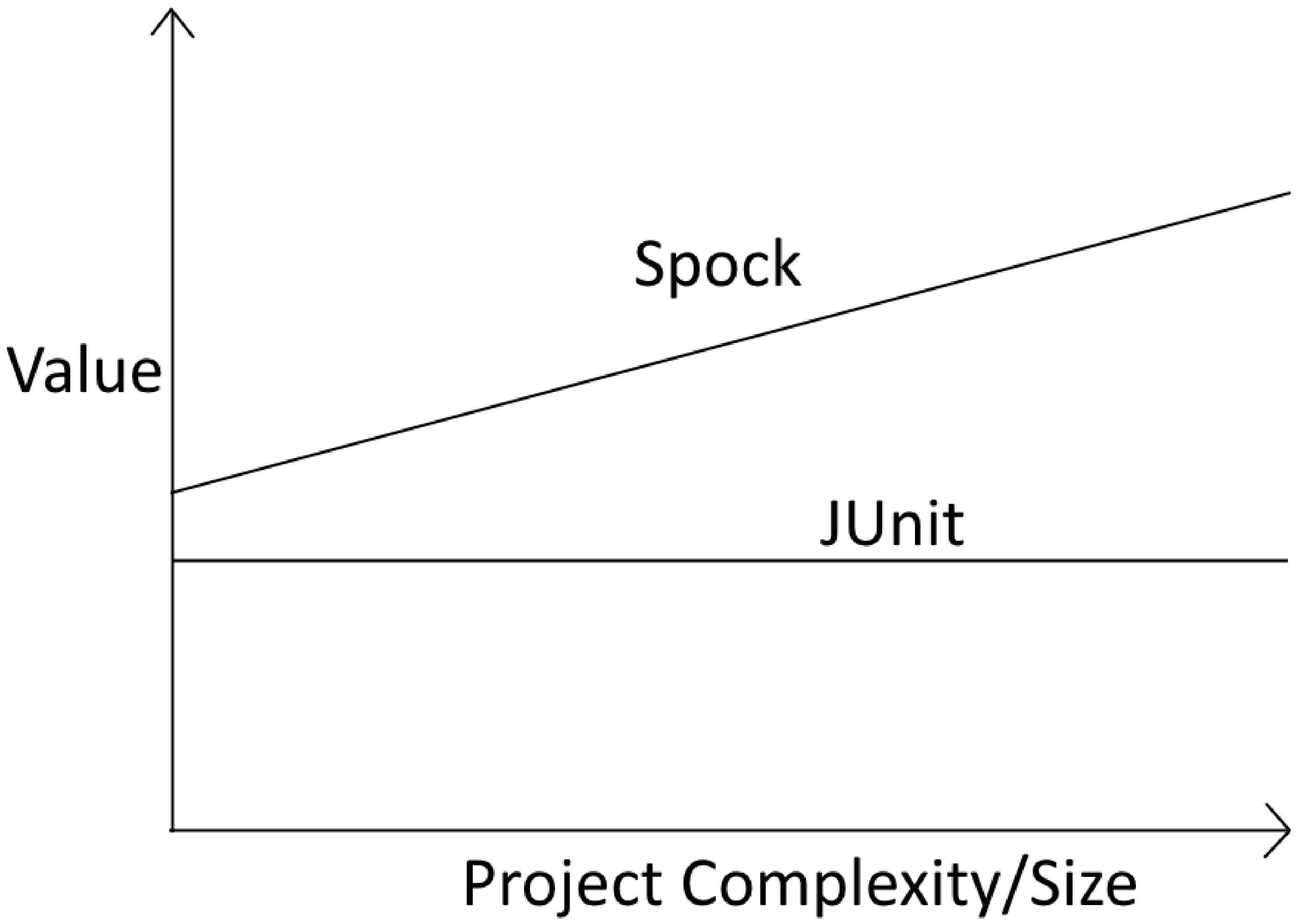
TestNG and JUnit

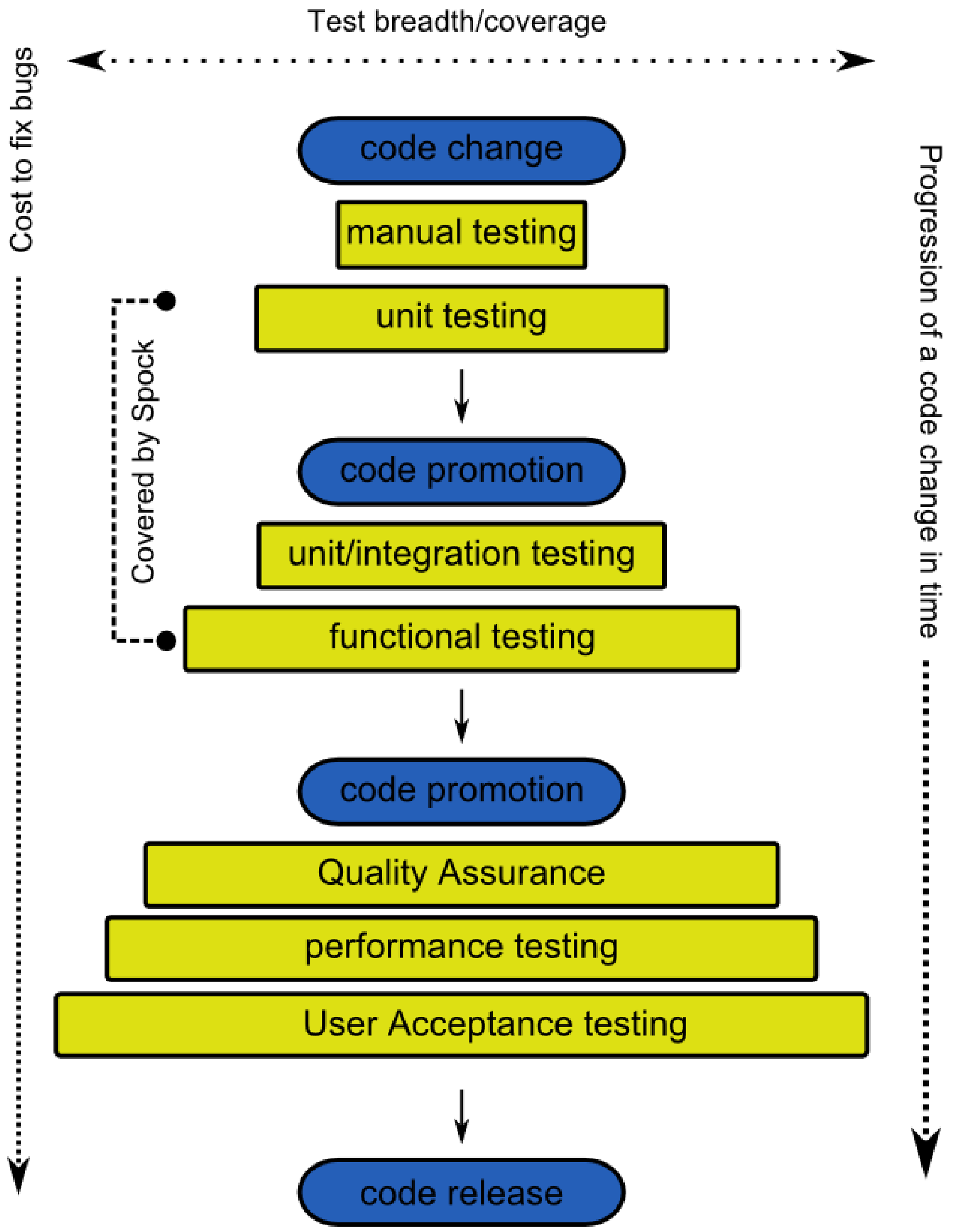
Spock (Something new)

Why Spock

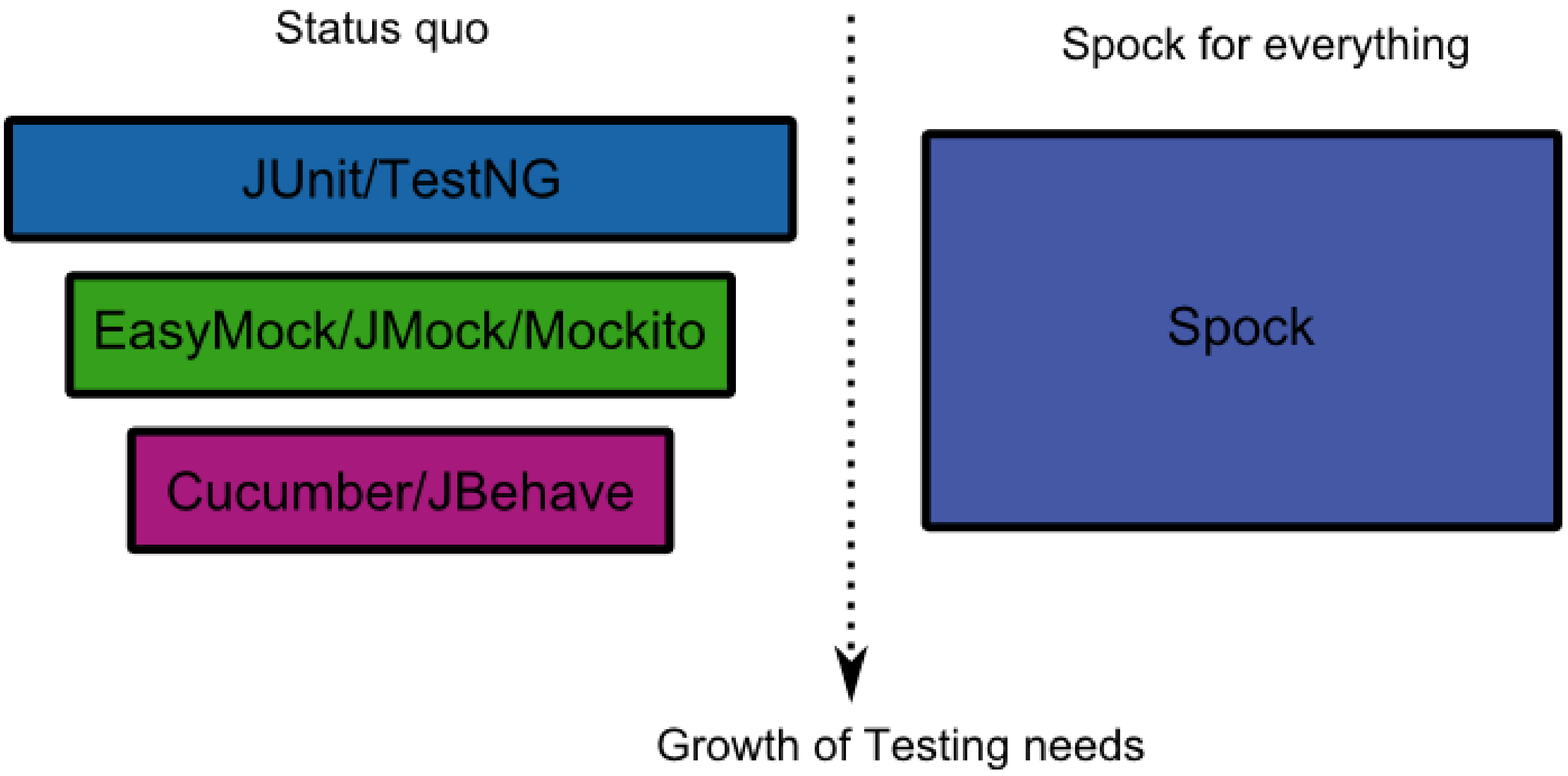

Enterprise Testing (JUnit)
Spock
Can mock and stub (Mockito)
Behavior Driven (JBehave)

Why Spock

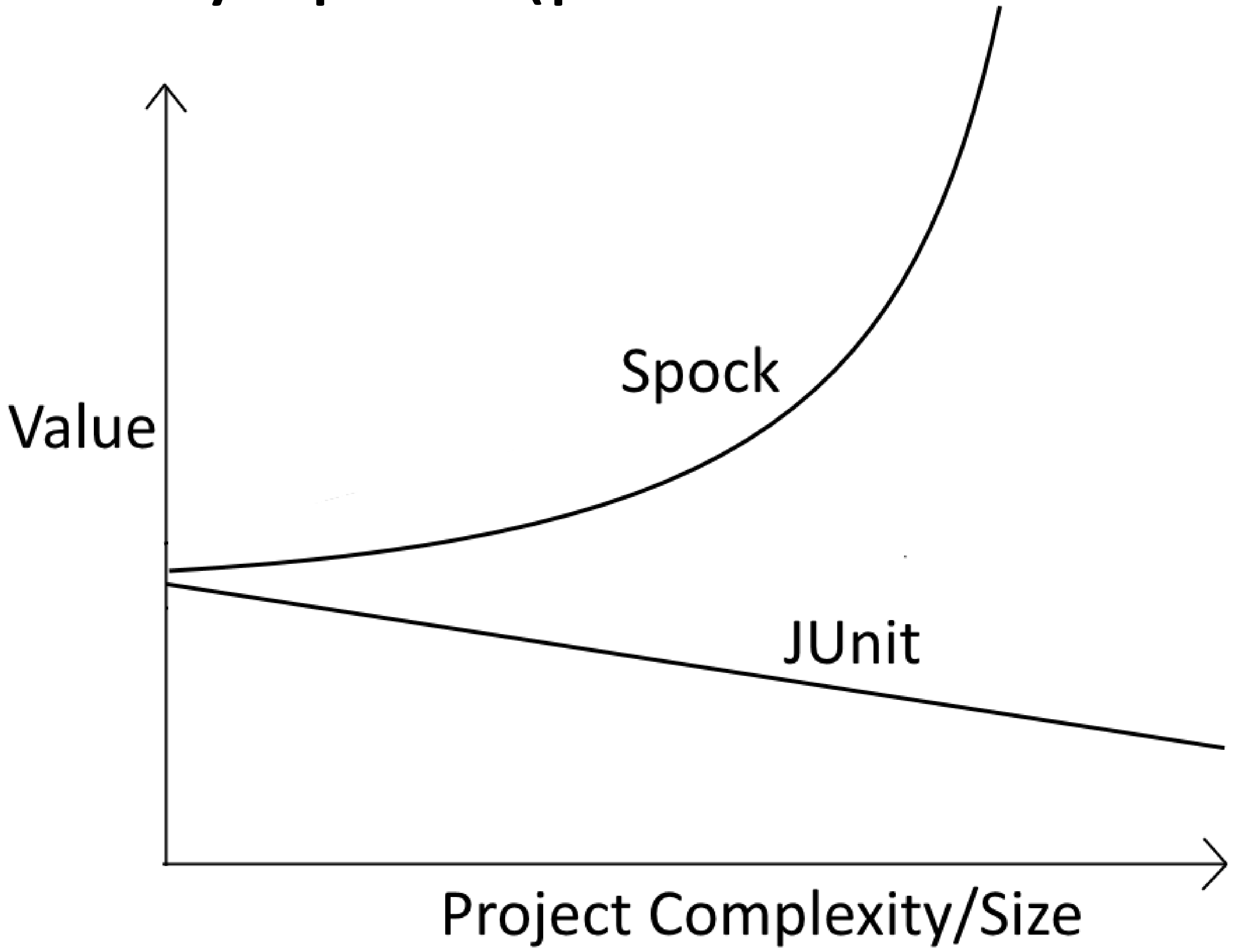



Test breadth/coverage
Cost to fix bugs
Progression of a code change in time
code change
manual testing
unit testing
Covered by Spock
code promotion
unit/integration testing
functional testing
code promotion
Quality Assurance
performance testing
User Acceptance testing
code release

Spock for everything



Why Spock (parameterized tests)



Spock F.A.Q

First things first

Let’s make 2 things clear

Spock uses the JUnit runner

This means that it is compatible with <u>all</u> existing JUnit tools

Spock FAQ

- How do I include Spock tests in my project?
- How do I run Spock tests?
- How do I debug Spock tests?
- How do I get code Coverage?
- How do I integrate with Sonar?
- How do I ….?

How do I…?

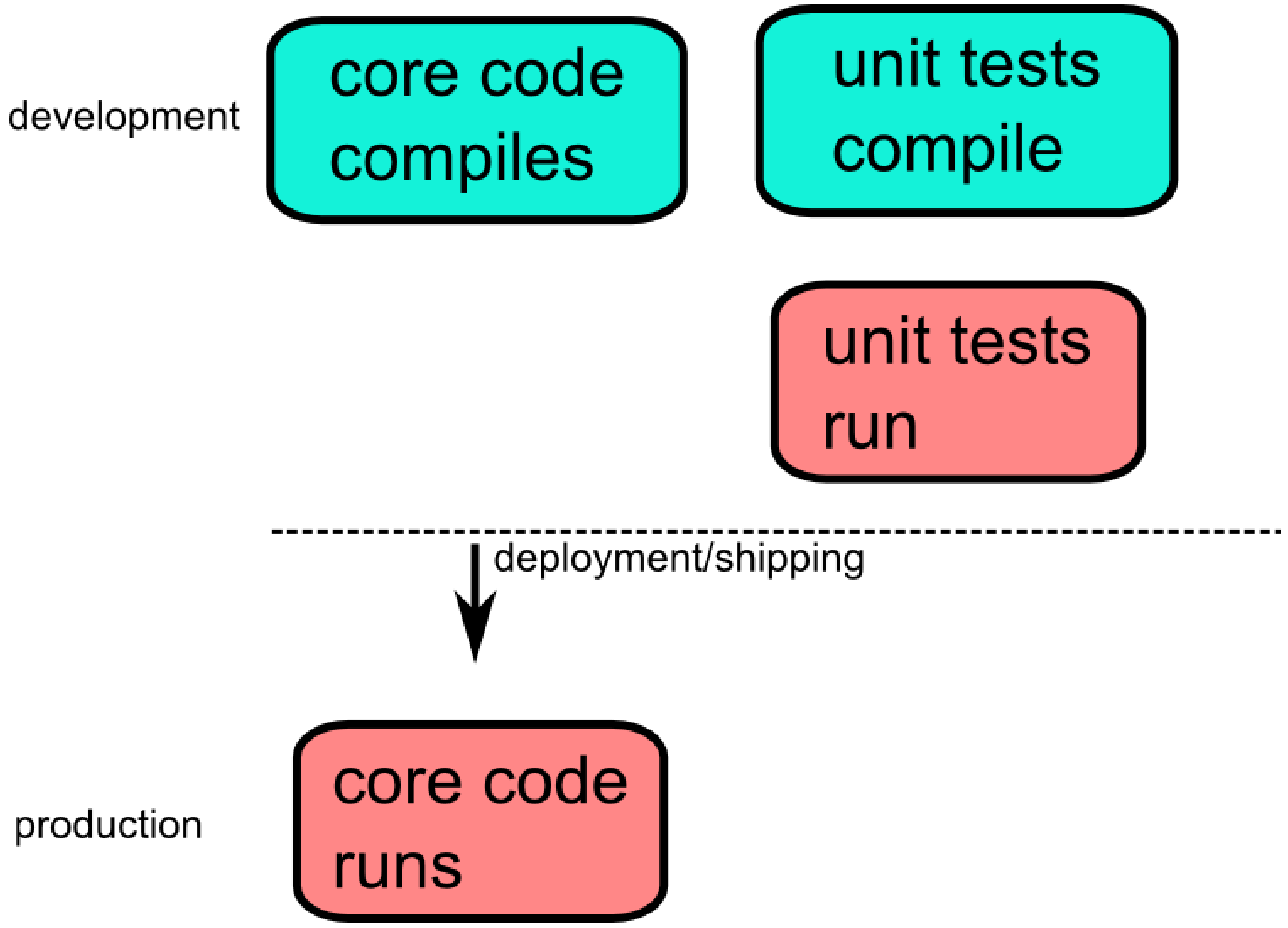
Answer: “the same way you did with JUnit”

Let's make 2 things clear

Spock can work with Java

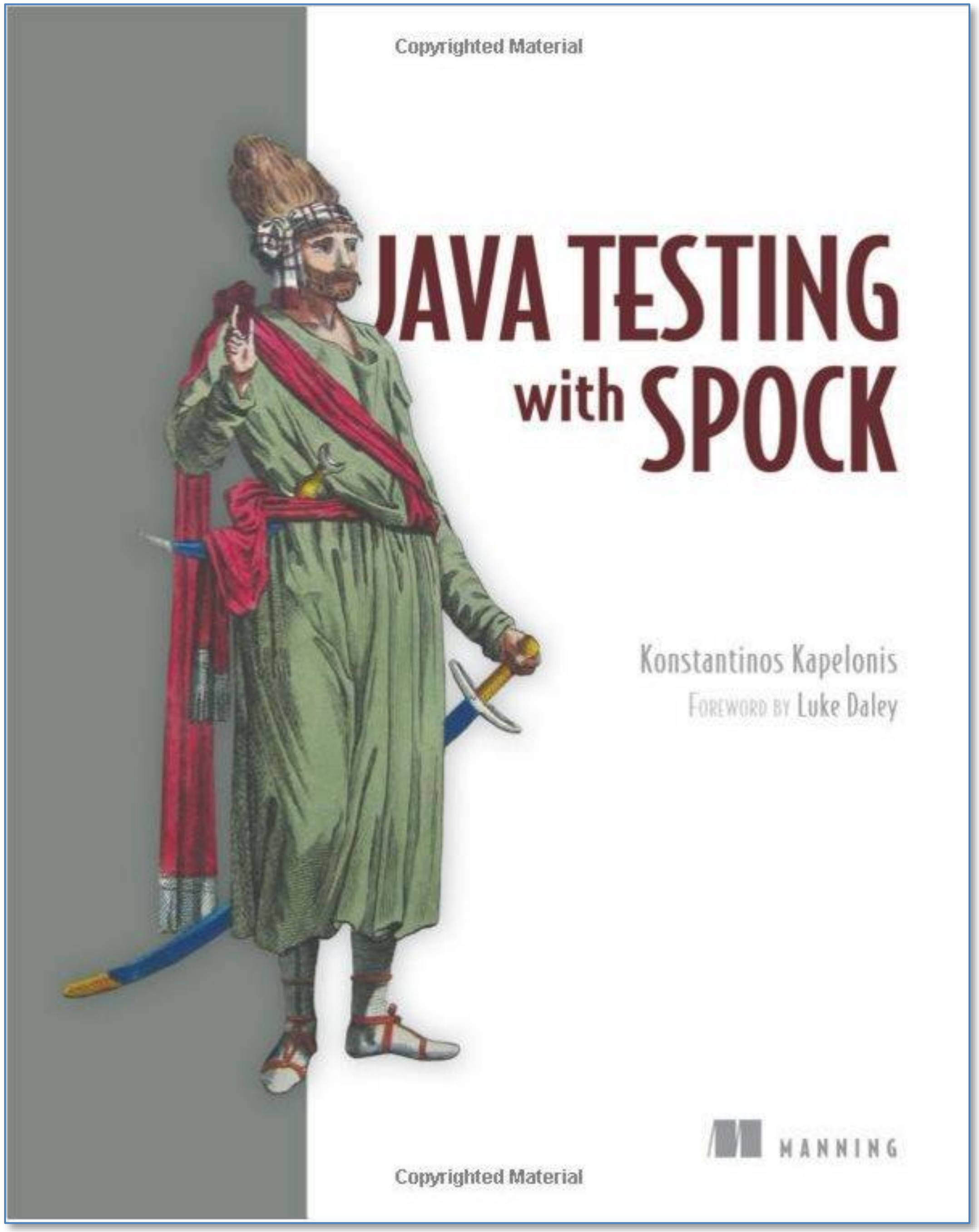
In fact Spock is written in Java and only has a Groovy front-end (same as Gradle)

Unit tests have different needs



Spock is the default Grails test framework

But it is not tied to Grails, (as Gradle is not tied with Groovy)

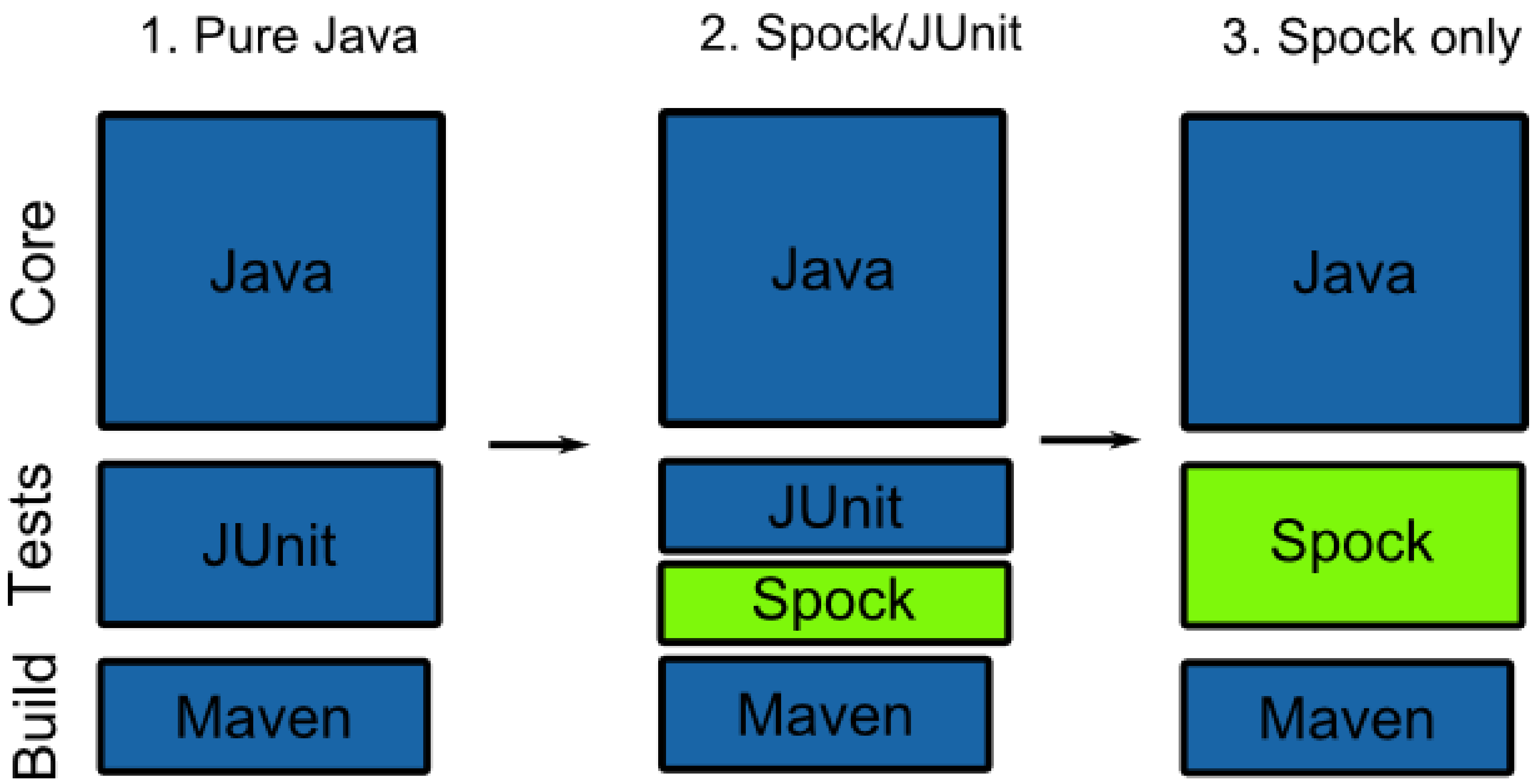


Spock can work with Java!

Spock with Java

1. You can add Spock tests to an existing Java project
2. You can keep your JUnit tests
3. You can run them together
4. You can still use Maven, Intellij, Sonar, Eclipse etc.

Gradual Spock acceptance



Recap - Spock Facts

- Spock can test Java code
- Spock tests behave as JUnit tests.

Spock versus JUnit

6 Reasons why Spock is better

1. Test structure

Spock enforces the setup-trigger-assert paradigm

A good JUnit test

```
@Test
public void oneSensorIsTriggered() {
    FireEarlyWarning fireEarlyWarning = new FireEarlyWarning();
    int triggeredSensors = 1;

    fireEarlyWarning.feedData(triggeredSensors);
    WarningStatus status = fireEarlyWarning.getCurrentStatus();

    assertTrue("Alarm sounds", status.isAlarmActive());
    assertFalse("No notifications",
    status.isFireDepartmentNotified());
}
```

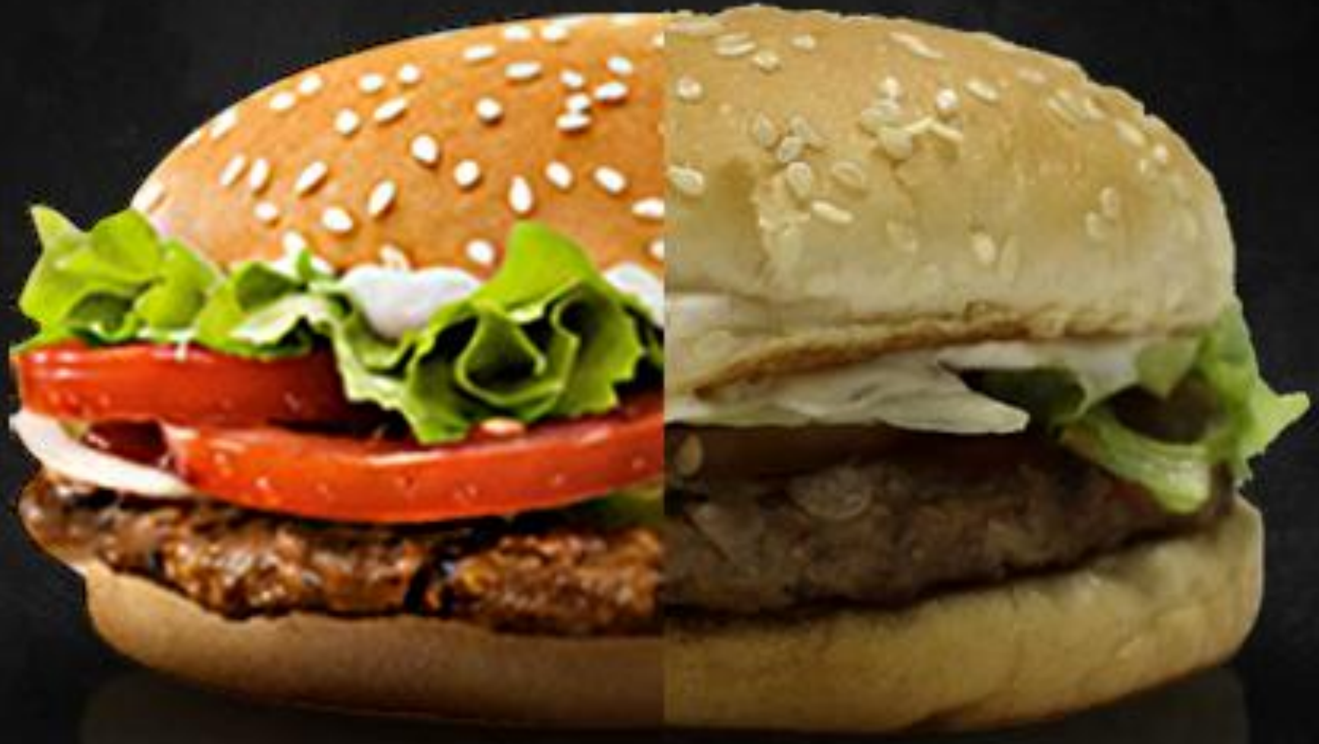
Arrange- Act-assert Pattern

```
@Test
public void oneSensorIsTriggered() {
    FireEarlyWarning fireEarlyWarning = new FireEarlyWarning();
    int triggeredSensors = 1;

    fireEarlyWarning.feedData(triggeredSensors);
    WarningStatus status = fireEarlyWarning.getCurrentStatus();

    assertTrue("Alarm sounds", status.isAlarmActive());
    assertFalse("No notifications",
    status.isFireDepartmentNotified());
}
```

What happens in real life



```
@Test
public void sentinelSet() {
  Jedis j = new Jedis(sentinel.getHost(), sentinel.getPort());

  try {
    Map<String, String> parameterMap = new HashMap<String, String>();
    parameterMap.put("down-after-milliseconds", String.valueOf(1234));
    parameterMap.put("parallel-syncs", String.valueOf(3));
    parameterMap.put("quorum", String.valueOf(2));
    j.sentinelSet(MASTER_NAME, parameterMap);

    List<Map<String, String>> masters = j.sentinelMasters();
    for (Map<String, String> master : masters) {
      if (master.get("name").equals(MASTER_NAME)) {
        assertEquals(1234, Integer.parseInt(master.get("down-after-
      milliseconds")));
        assertEquals(3, Integer.parseInt(master.get("parallel-syncs")));
        assertEquals(2, Integer.parseInt(master.get("quorum")));
      }
    }

    parameterMap.put("quorum", String.valueOf(1));
    j.sentinelSet(MASTER_NAME, parameterMap);
  } finally {
    j.close();
  }
}
```

REJECTED

Actual JUnit Test

Spock clearly marks phases

```
def "If one sensor is active the alarm should sound as a precaution"() {
        given: "that only one fire sensor is active"
        FireEarlyWarning fireEarlyWarning =new FireEarlyWarning()
        int triggeredSensors = 1

        when: "we ask the status of fire control"
        fireEarlyWarning.feedData(triggeredSensors)
        WarningStatus status = fireEarlyWarning.getCurrentStatus()

        then: "only the alarm should be triggered"
        status.alarmActive
        !status.fireDepartmentNotified
  }
```

Spock blocks

- given: Creates initial conditions
- setup: An alternative name for given:
- when: Triggers the action that will be tested
- then: Examines results of test
- and: Cleaner expression of other blocks
- expect: Simpler version of then:
- where: Parameterized tests
- cleanup: Releases resources

Given – Expect example

```
def "An empty basket has no weight "() {
    given: "an empty basket"
    Basket basket = new Basket()

    expect: "that the weight is 0"
    basket.currentWeight == 0
}
```

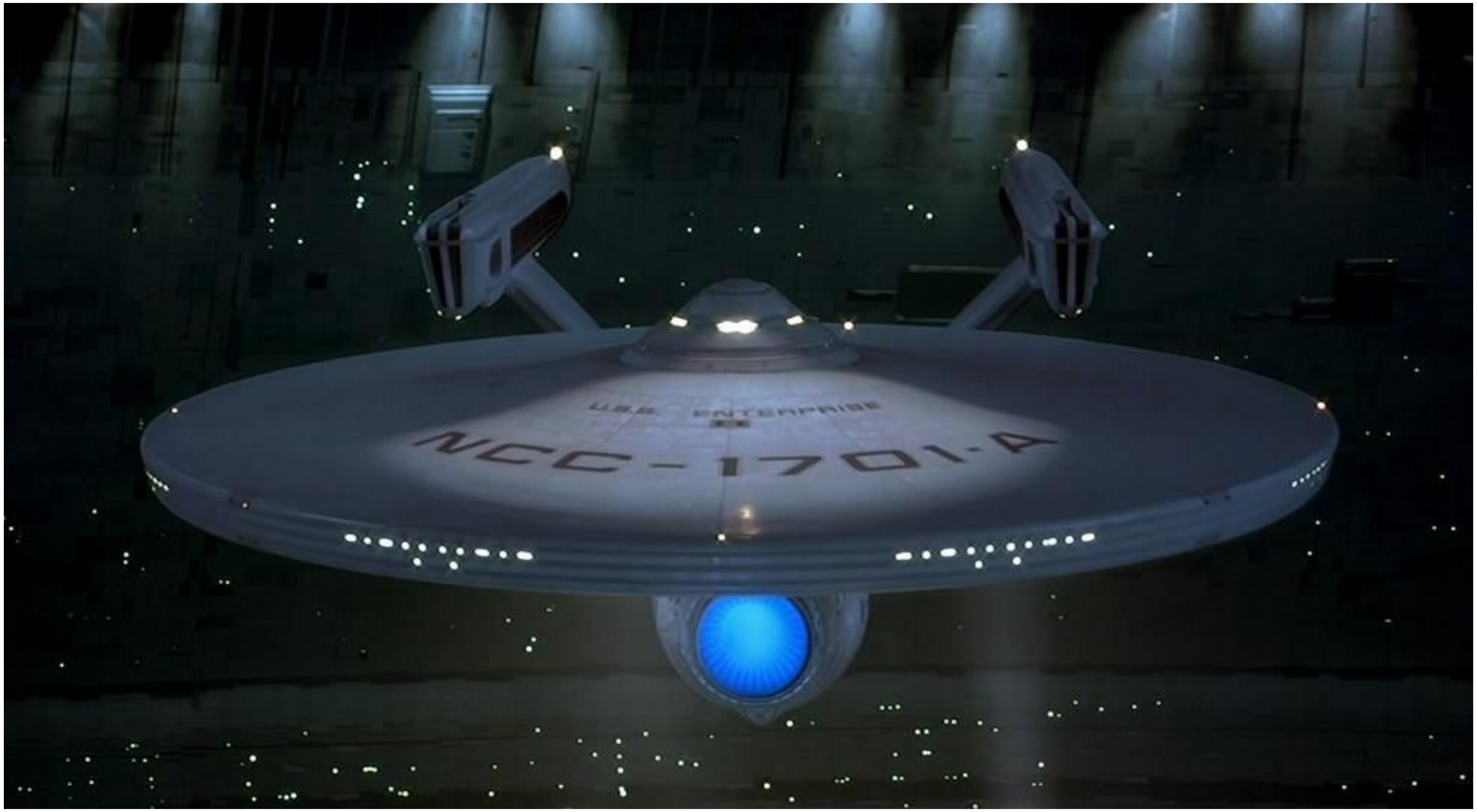
2. Test readability

Spock tests read like English sentences

English sentences

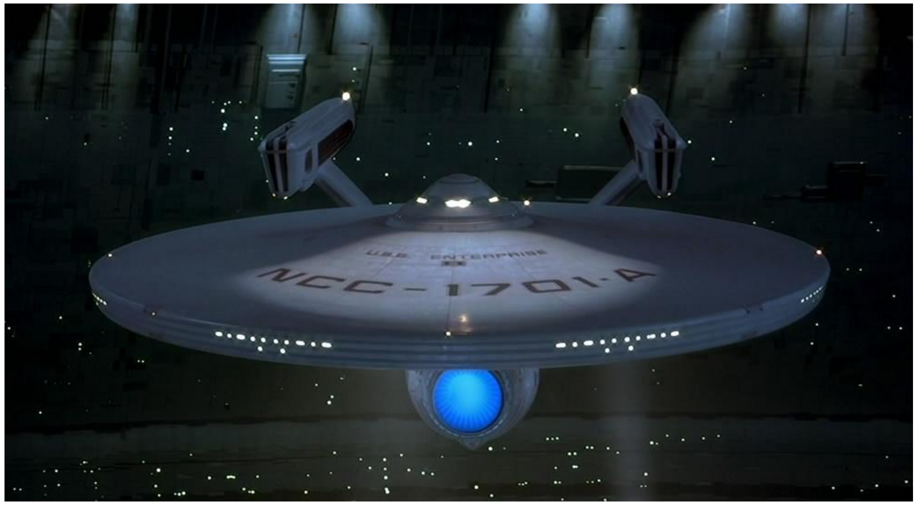
```
def "If one sensor is active the alarm should sound
    as a precaution"() {
        given: "that only one fire sensor is active"
         [...code here...]
        when: "we ask the status of fire control"
         [...code here...]
        then: "only the alarm should be triggered"
        [...code here...]
    }
```

Enterprise applications



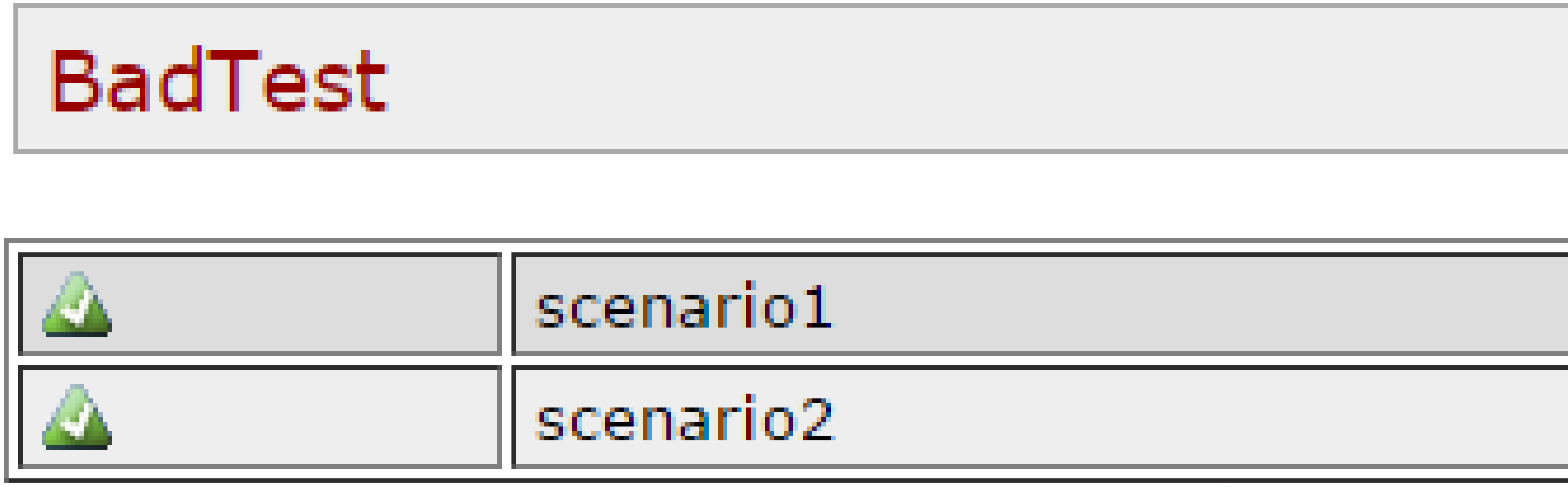
Enterprise applications

- Big codebase (200k+ LOC)
- No developer knows all parts
- Original authors are not in the team
- In development for 2+ years
- In production for 3+ years



Unit tests are specifications

JUnit reports – usual case



BadTest

✓	scenario1
✓	scenario2

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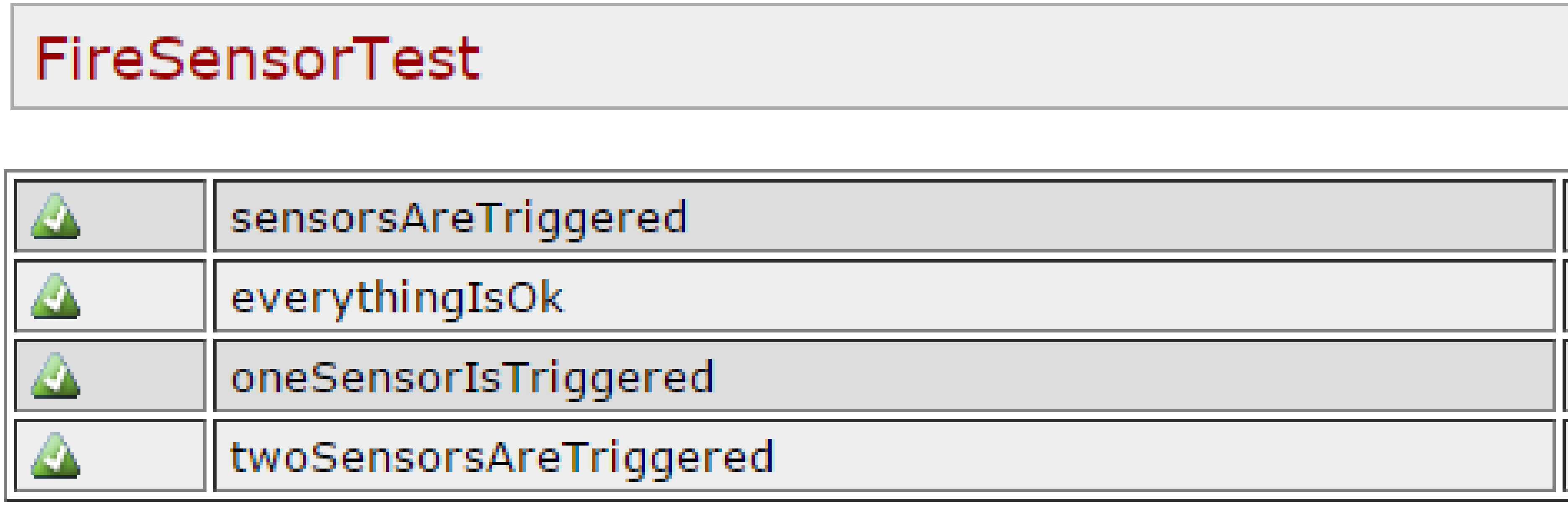
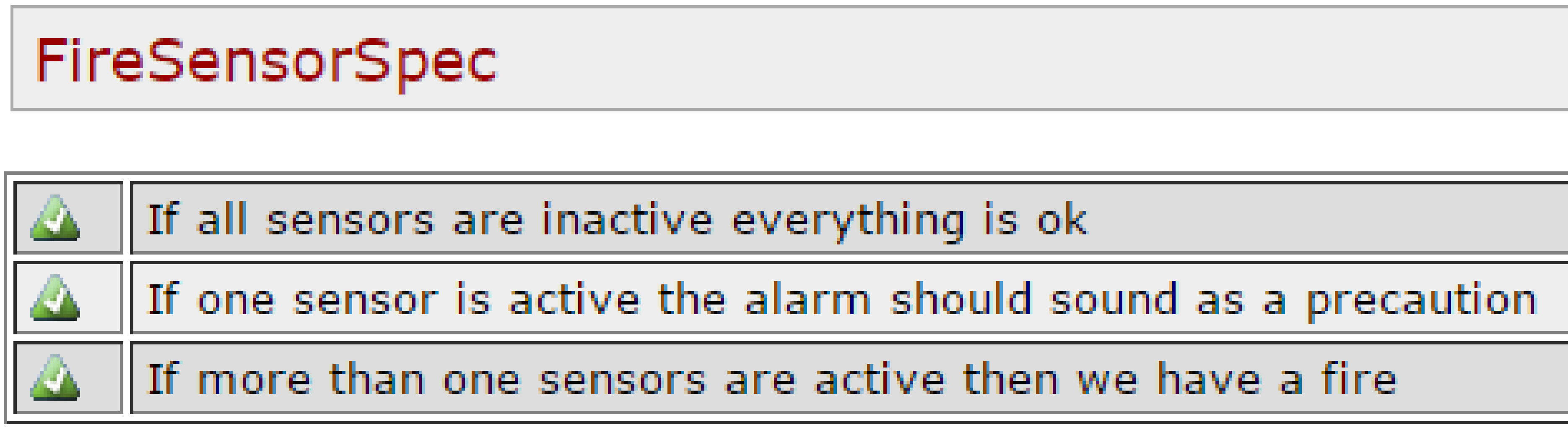
JUnit reports - boring



FireSensorTest

✓	sensorsAreTriggered
✓	everythingIsOk
✓	oneSensorIsTriggered
✓	twoSensorsAreTriggered

Spock surefire reports

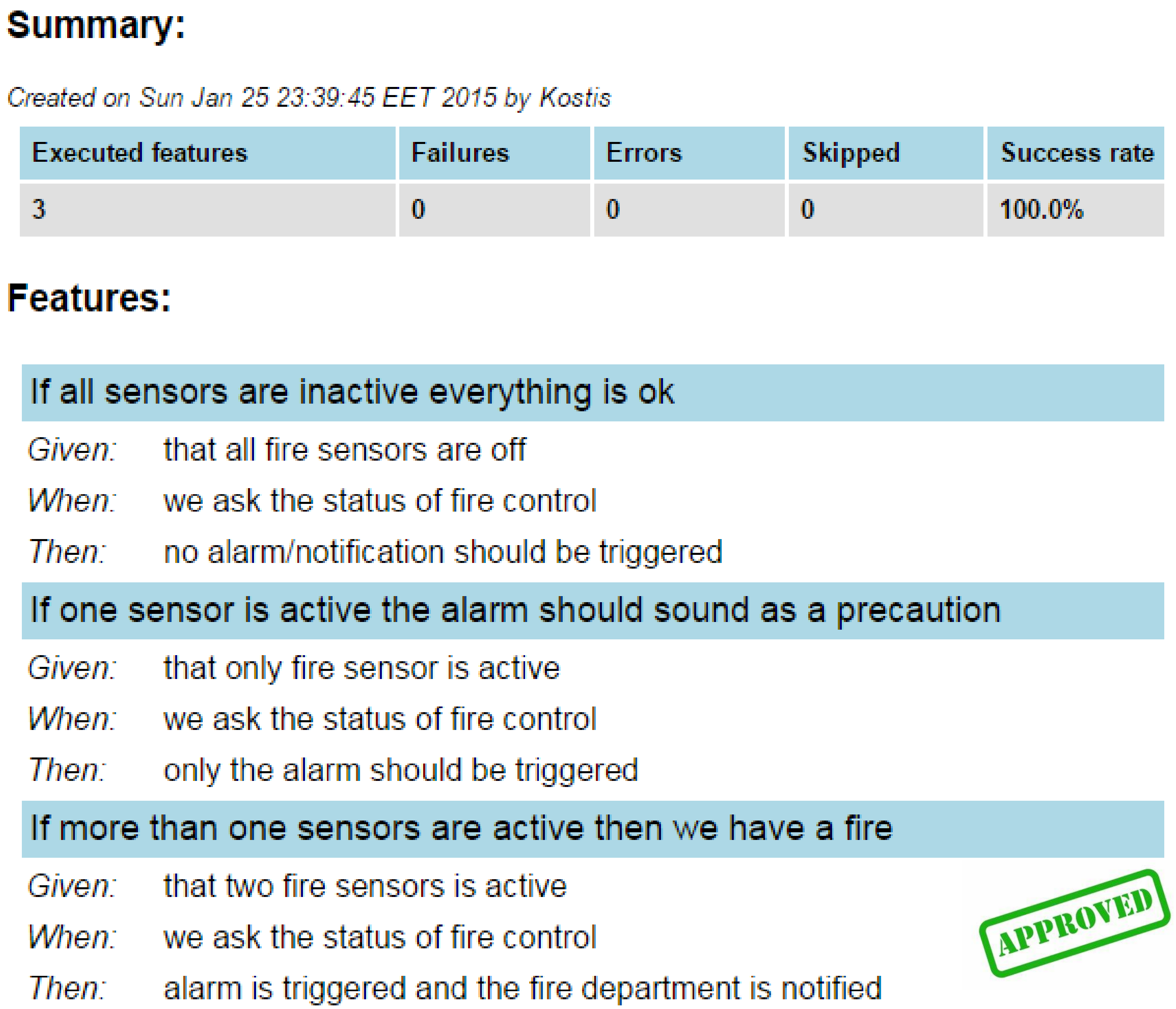


FireSensorSpec

✓	If all sensors are inactive everything is ok
✓	If one sensor is active the alarm should sound as a precaution
✓	If more than one sensors are active then we have a fire

Supercharge your test reports

Spock native reports



Summary:

Created on Sun Jan 25 23:39:45 EET 2015 by Kostis

Executed features	Failures	Errors	Skipped	Success rate
3	0	0	0	100.0%

Features:

If all sensors are inactive everything is ok

Given: that all fire sensors are off
When: we ask the status of fire control
Then: no alarm/notification should be triggered

If one sensor is active the alarm should sound as a precaution

Given: that only fire sensor is active
When: we ask the status of fire control
Then: only the alarm should be triggered

If more than one sensors are active then we have a fire

Given: that two fire sensors is active
When: we ask the status of fire control
Then: alarm is triggered and the fire department is notified

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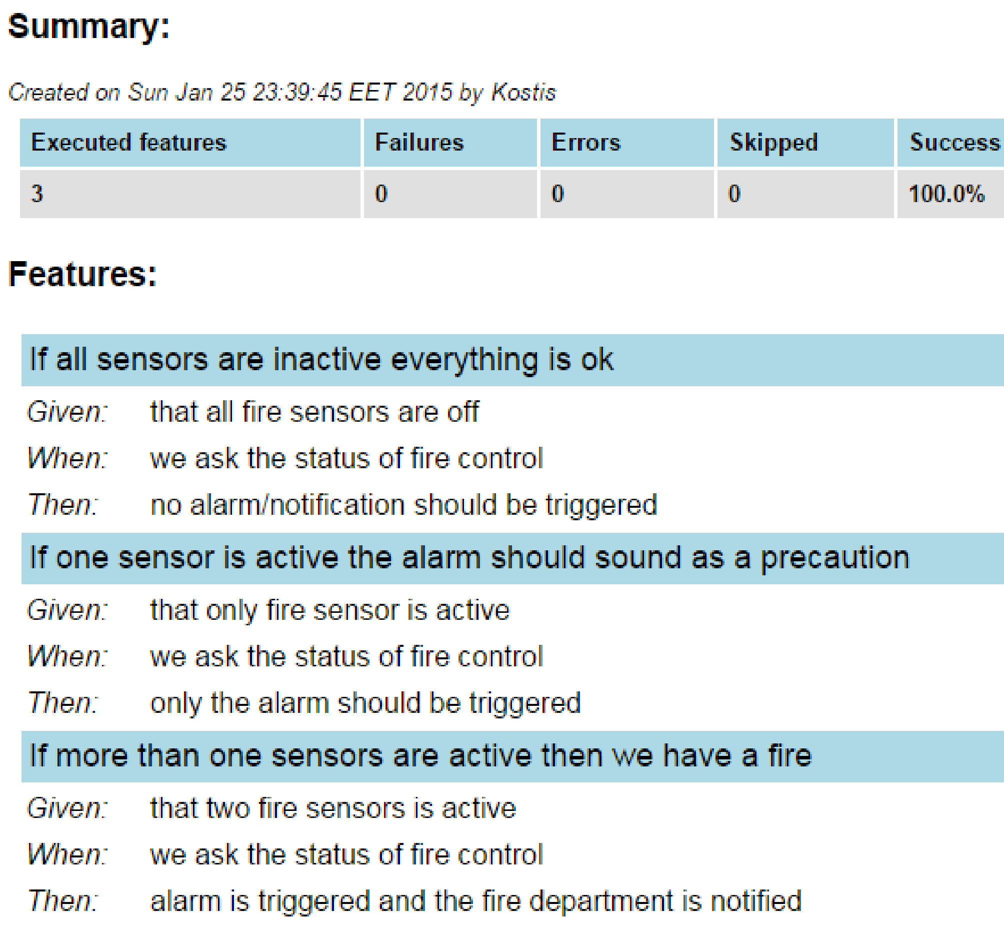
Work with non-developers

Reports readable by Testers



Summary:

Created on Sun Jan 25 23:39:45 EET 2015 by Kostis

Executed features	Failures	Errors	Skipped	Success
3	0	0	0	100.0%

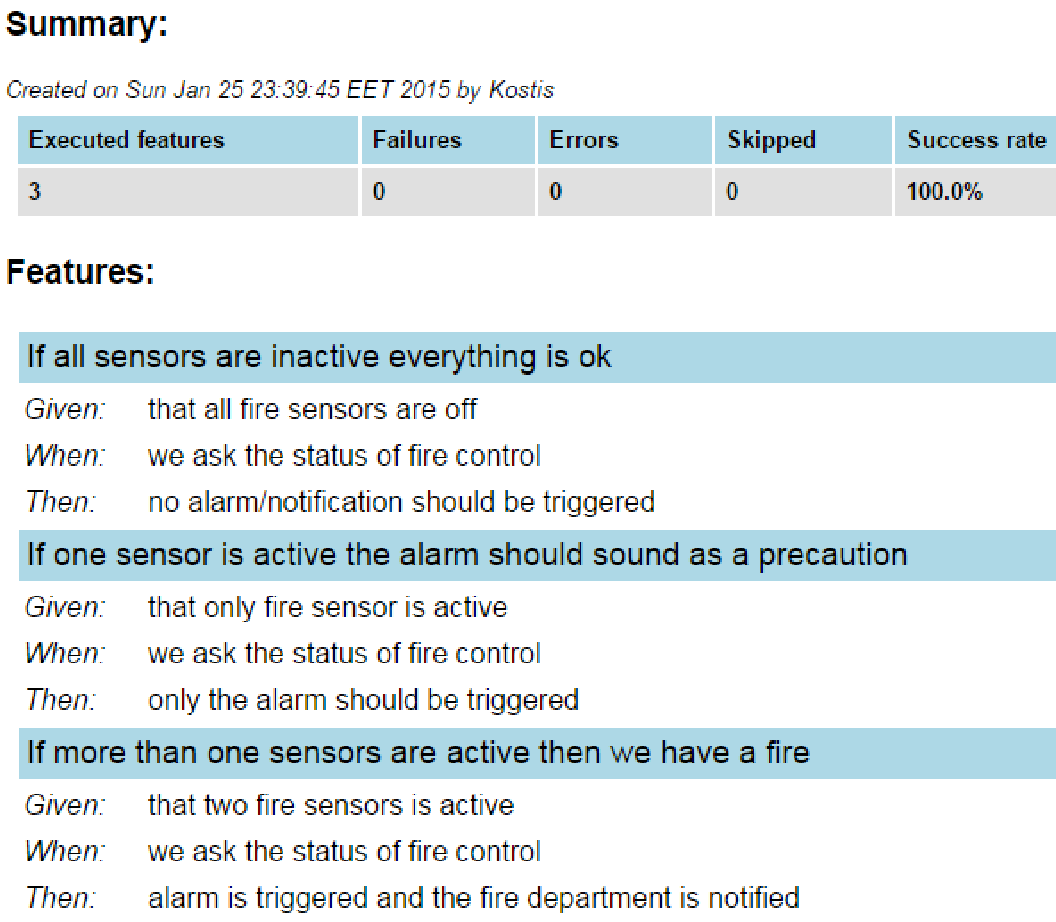
Features:

If all sensors are inactive everything is ok	
Given:	that all fire sensors are off
When:	we ask the status of fire control
Then:	no alarm/notification should be triggered

If one sensor is active the alarm should sound as a precaution	
Given:	that only fire sensor is active
When:	we ask the status of fire control
Then:	only the alarm should be triggered

If more than one sensors are active then we have a fire	
Given:	that two fire sensors is active
When:	we ask the status of fire control
Then:	alarm is triggered and the fire department is notified

Tests readable by Business Analysts



Summary:

Created on Sun Jan 25 23:39:45 EET 2015 by Kostis

Executed features	Failures	Errors	Skipped	Success rate
3	0	0	0	100.0%

Features:

If all sensors are inactive everything is ok	
Given:	that all fire sensors are off
When:	we ask the status of fire control
Then:	no alarm/notification should be triggered

If one sensor is active the alarm should sound as a precaution	
Given:	that only fire sensor is active
When:	we ask the status of fire control
Then:	only the alarm should be triggered

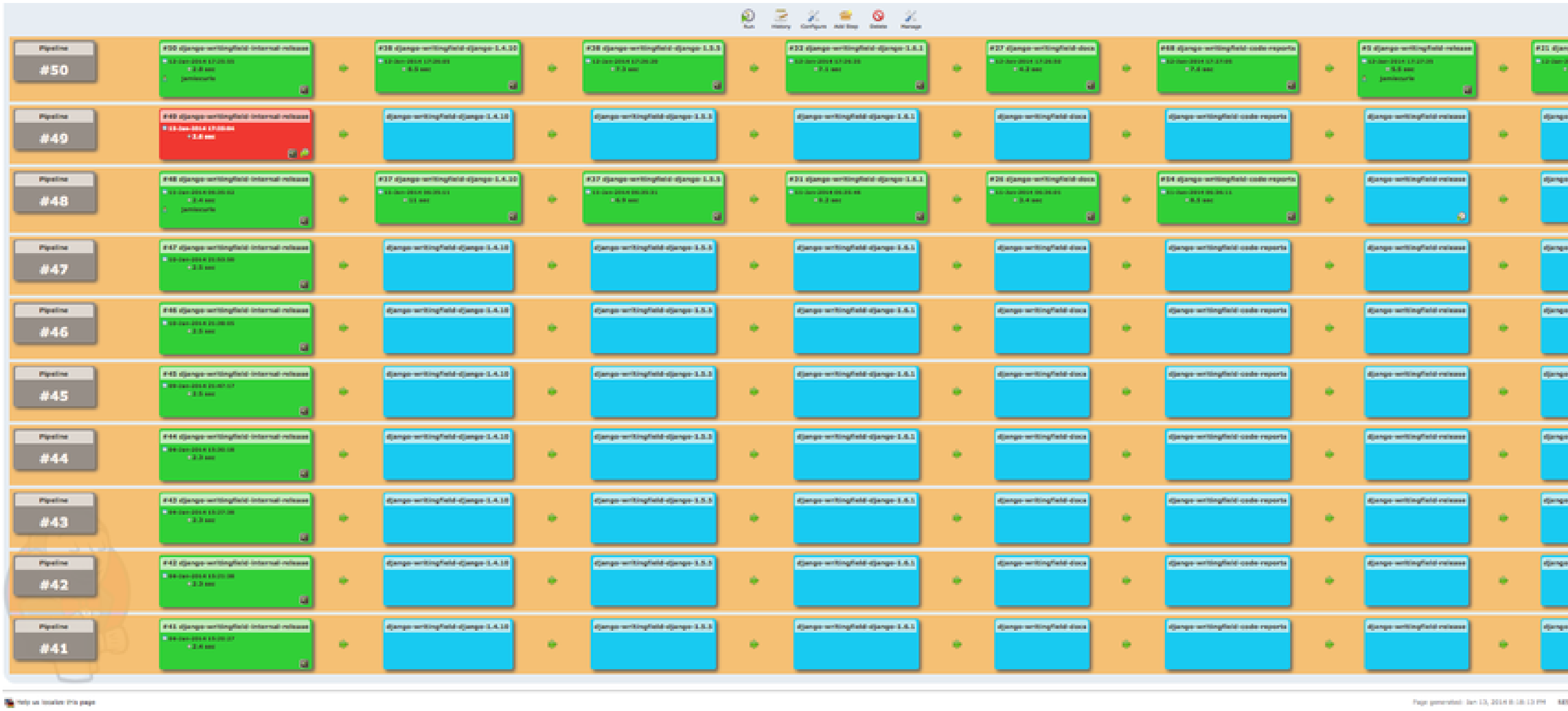
If more than one sensors are active then we have a fire	
Given:	that two fire sensors is active
When:	we ask the status of fire control
Then:	alarm is triggered and the fire department is notified

3. Failed tests

Spock knows the context of failed tests

This is a killer feature

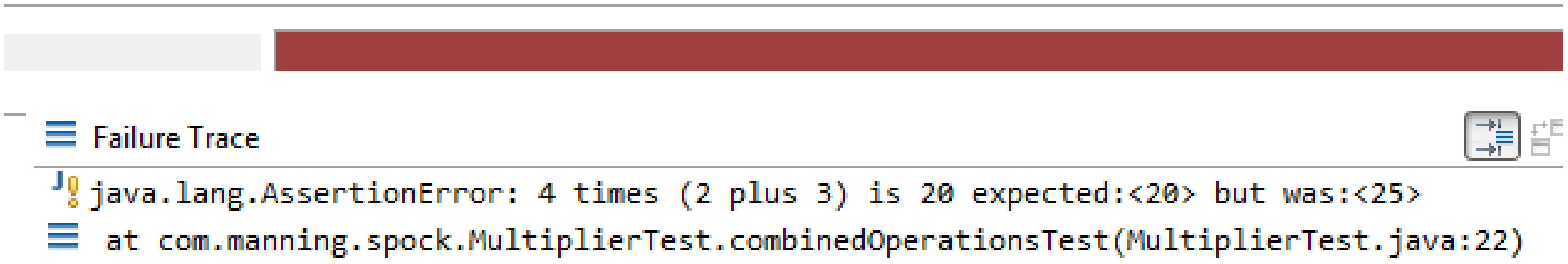
A build fails – now what?



Run
History
Configure
Add Step
Delete
Manage
Pipeline #50
Pipeline #49
Pipeline #48
Pipeline #47
Pipeline #46
Pipeline #45
Pipeline #44
Pipeline #43
Pipeline #42
Pipeline #41
django-writingfield-internal-release
django-writingfield-django-1.4.10
django-writingfield-django-1.5.5
django-writingfield-django-1.6.1
django-writingfield-docs
django-writingfield-code-reports
django-writingfield-release

JUnit knows only actual result

JUnit knows only actual result

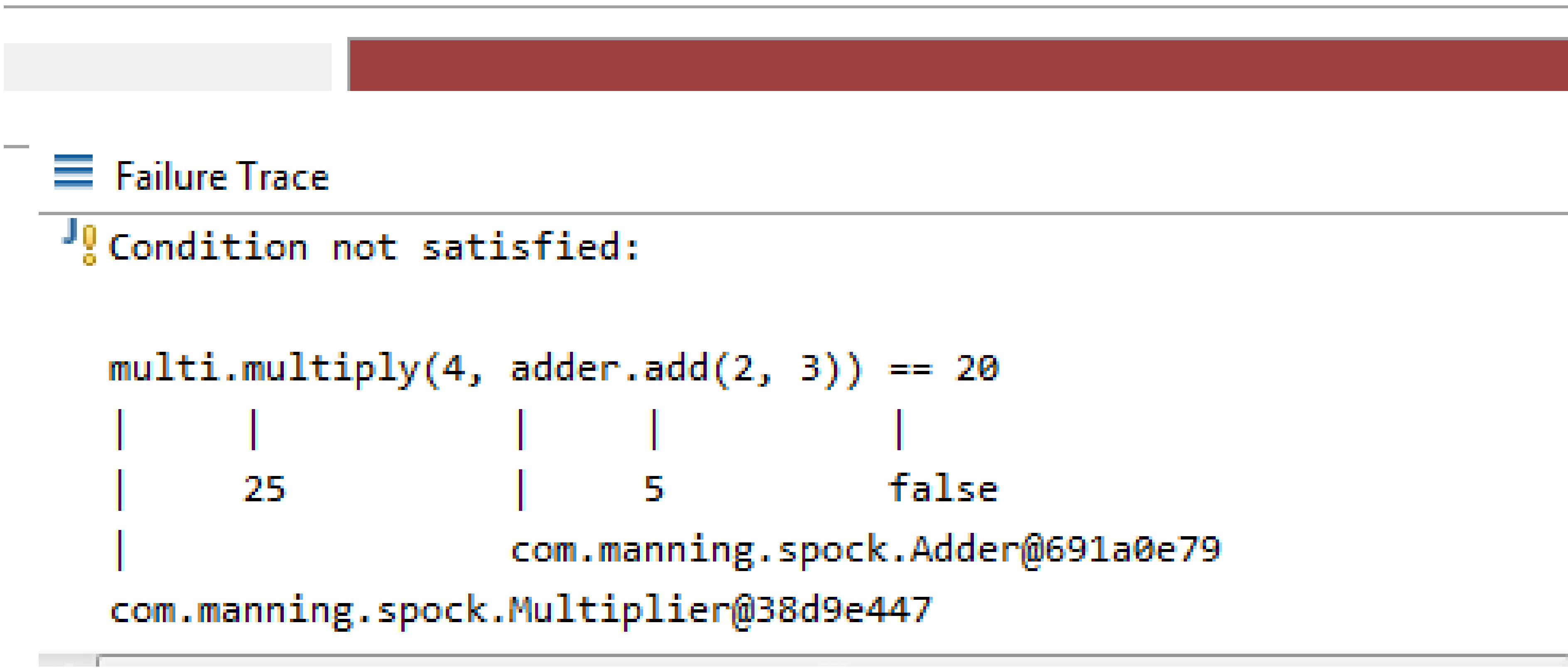


Failure Trace

```
java.lang.AssertionError: 4 times (2 plus 3) is 20 expected:<20> but was:<25>
 at com.manning.spock.MultiplierTest.combinedOperationsTest(MultiplierTest.java:22)
```

Spock knows the context

Spock knows the context



Failure Trace

```
Condition not satisfied:

multi.multiply(4, adder.add(2, 3)) == 20
|     |              |     |            |
|     25             |     5            false
|                    com.manning.spock.Adder@691a0e79
com.manning.spock.Multiplier@38d9e447
```

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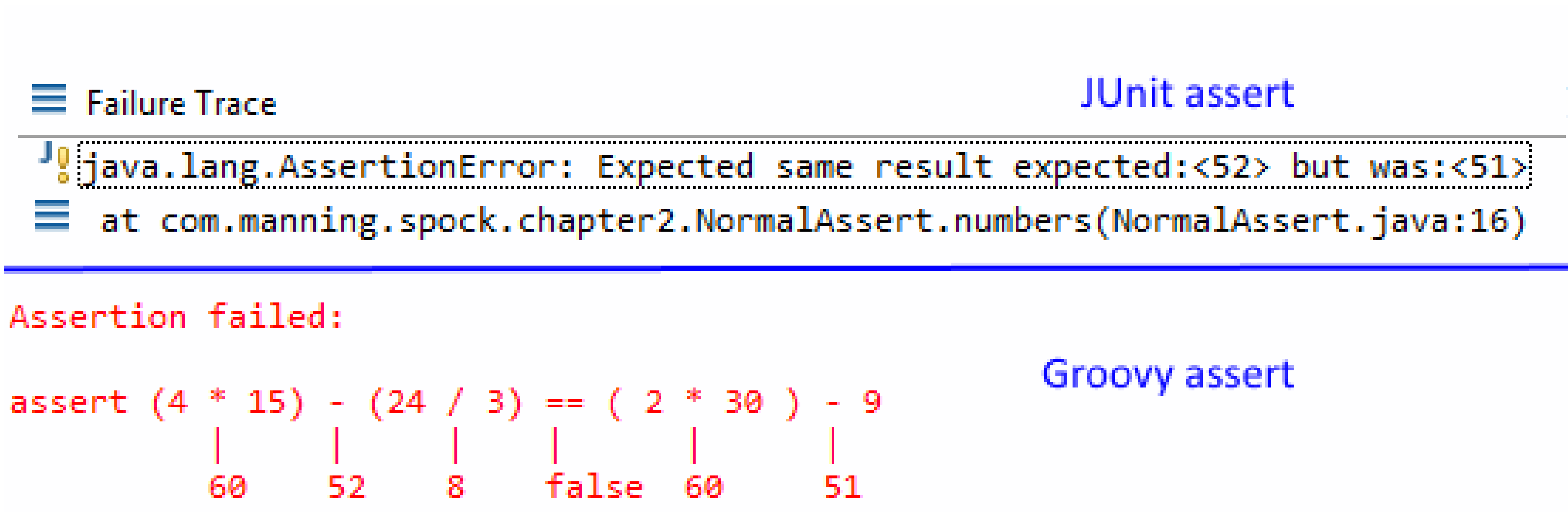
Both sides of assert are analyzed



Failure Trace

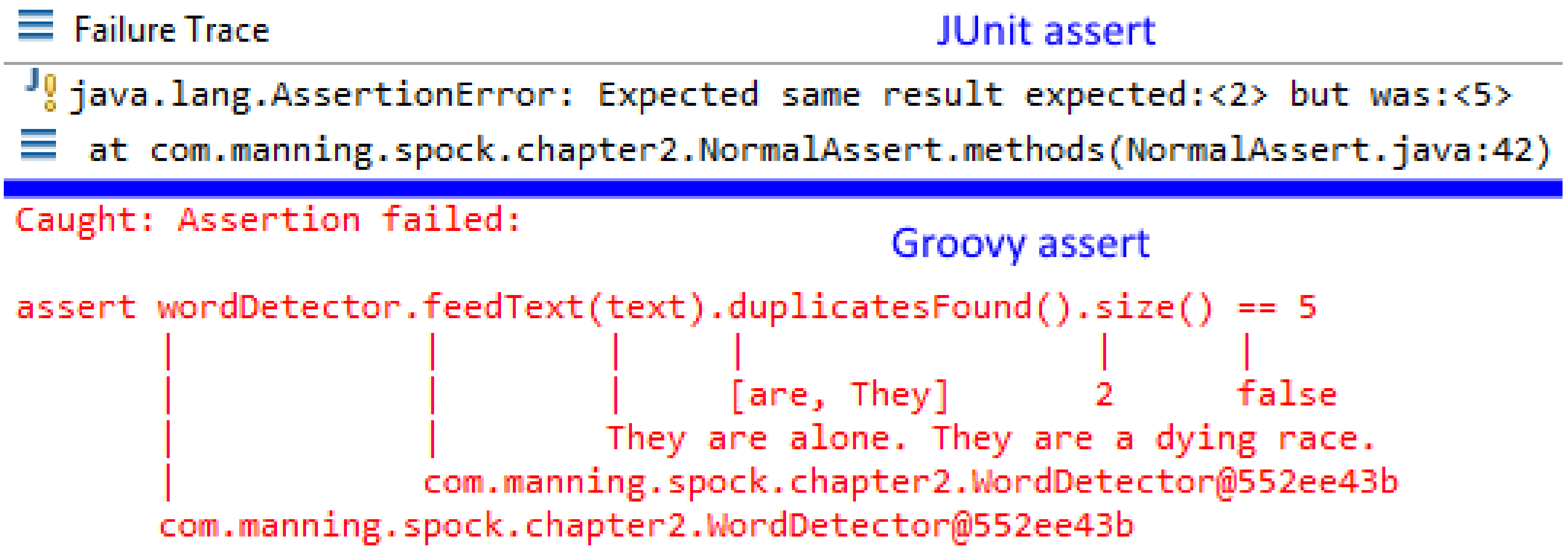
JUnit assert

```
java.lang.AssertionError: Expected same result expected:<52> but was:<51>
  at com.manning.spock.chapter2.NormalAssert.numbers(NormalAssert.java:16)
```

Groovy assert

```
Assertion failed:

assert (4 * 15) - (24 / 3) == ( 2 * 30 ) - 9
          |     |     |    |      |      |
          60    52    8    false  60     51
```

A realistic example



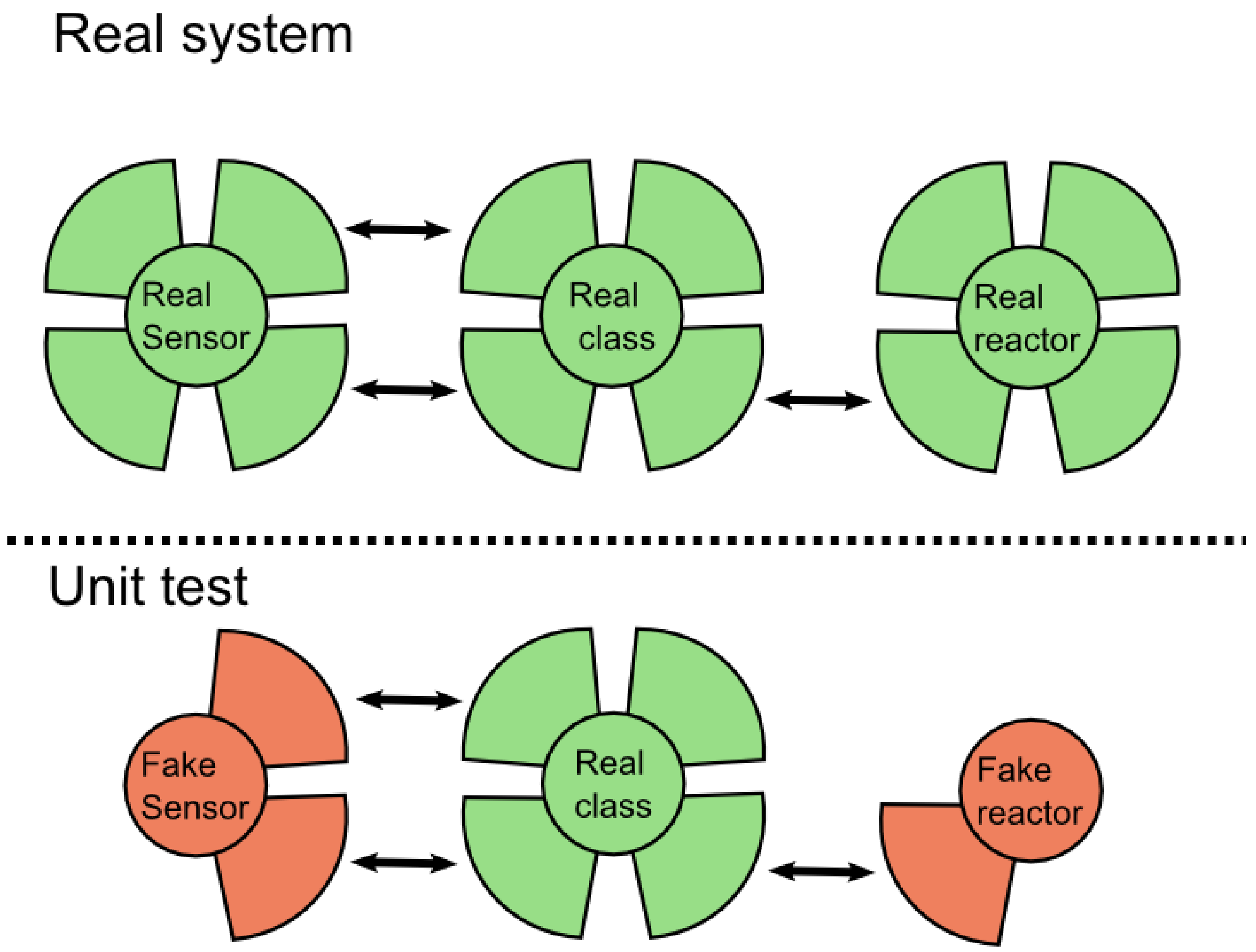
```
java.lang.AssertionError: Expected same result expected:<2> but was:<5>
 at com.manning.spock.chapter2.NormalAssert.methods(NormalAssert.java:42)
```

```
Caught: Assertion failed:

assert wordDetector.feedText(text).duplicatesFound().size() == 5
       |            |        |     |                 |      |
       |            |        |     [are, They]       2      false
       |            |        They are alone. They are a dying race.
       |            com.manning.spock.chapter2.WordDetector@552ee43b
       com.manning.spock.chapter2.WordDetector@552ee43b
```

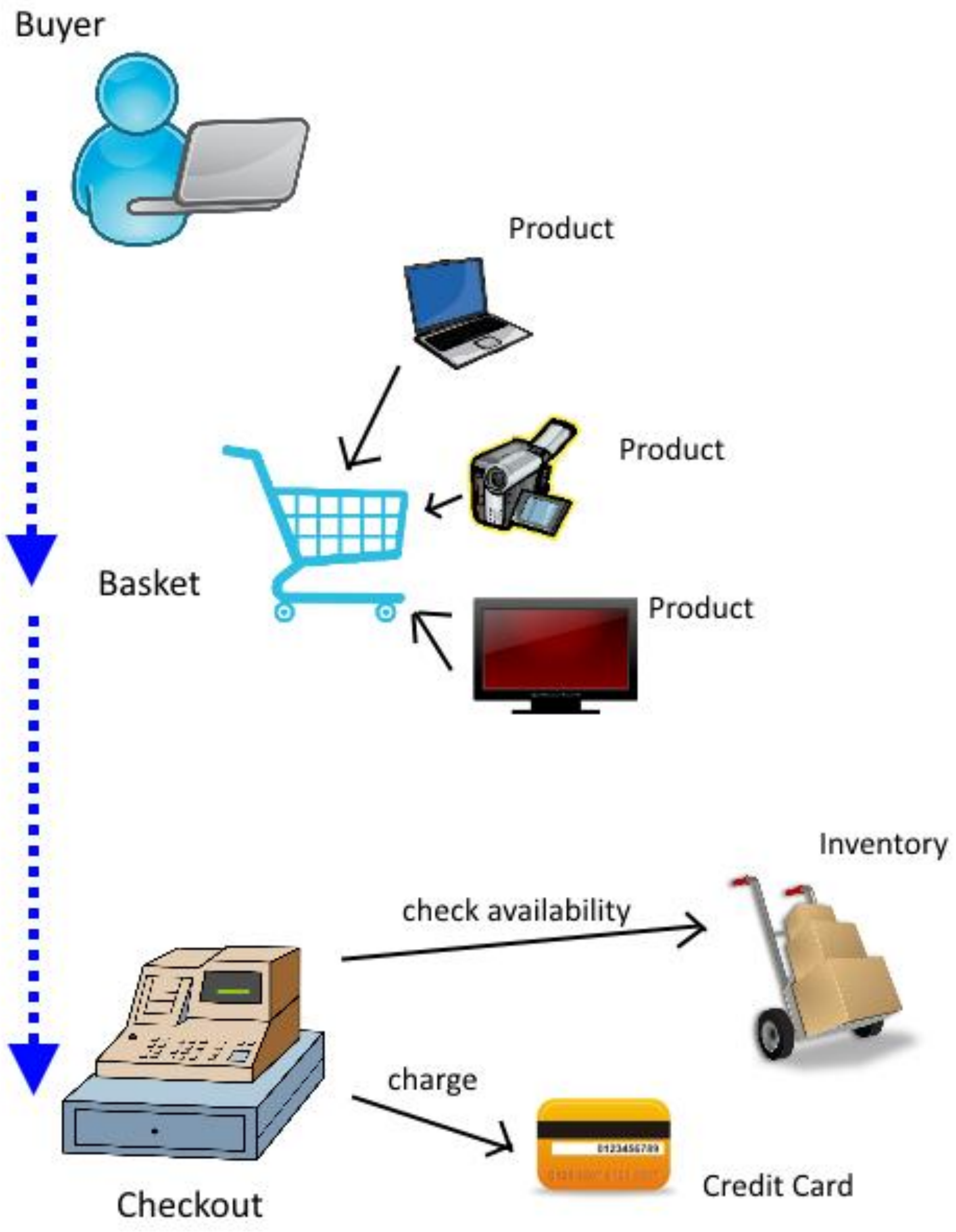
4. Built-in mocking

JUnit needs Mockito so no JUnit example to compare

Why we need Stubs and Mocks



Our Scenario



Simple Stubbing

```
given: “ a shopping basket”
Basket basket = new Basket()
and:"an empty warehouse"
WarehouseInventory inventory =
   Stub(WarehouseInventory)
inventory.isEmpty() >> true
basket.setWarehouseInventory(inventory)
```

```
inventory.isEmpty() >> true
```

"When the method isEmpty() is called, ignore the real object and return true" given: "a basket, a TV and a camera"

```
Product tv = new
    Product(name:"bravia",price:1200,weight:18)
Product camera = new
    Product(name:"panasonic",price:350,weight:2)
Basket basket = new Basket()
```

and:"a warehouse with partial availability"

```
WarehouseInventory inventory =
    Stub(WarehouseInventory) {
        isProductAvailable("bravia",1) >> true
        isProductAvailable("panasonic",1) >> false
        isEmpty() >> false
}
```

```
isProductAvailable("bravia",1) >> true
```

"When the method isProductAvailable() is called with these arguments, return true"

Argument Matchers

```
WarehouseInventory inventory =
    Stub(WarehouseInventory)
inventory.isProductAvailable( _, 1) >> true
basket.setWarehouseInventory(inventory)
```

(Mockito does not support partial matchers)

```
isProductAvailable(_,1) >> true
```

"When the method isProductAvailable() is called with any first argument and 1 as second argument then return true"

Method call count

```
and:"a warehouse with fluctuating stock levels"
WarehouseInventory inventory =
    Stub(WarehouseInventory)
inventory.isProductAvailable( "bravia", _) >>>
    true >> false
inventory.isEmpty() >>> [false, true]
basket.setWarehouseInventory(inventory)
```

inventory.isEmpty() >>> [false, true]

“When the method isEmpty() is called the first time return false. The second time it is called return true”

Groovy Closures

```
Basket basket = new Basket()

and: "a fully stocked warehouse"
WarehouseInventory inventory = Stub(WarehouseInventory)
inventory.isProductAvailable( _ , _) >> true
basket.setWarehouseInventory(inventory)

and: "a shipping calculator that charges 10 dollars for each product"
ShippingCalculator shippingCalculator = Stub(ShippingCalculator)
        shippingCalculator.findShippingCostFor( _, _) >> { Product
   product, int count ->  10 * count}
        basket.setShippingCalculator(shippingCalculator)
```

shippingCalculator.findShippingCostFor(_, _) >> { Product product, int count -> 10 * count}

“When the method is called with any two arguments, ignore the first argument, multiply the second with 10 and return the result”

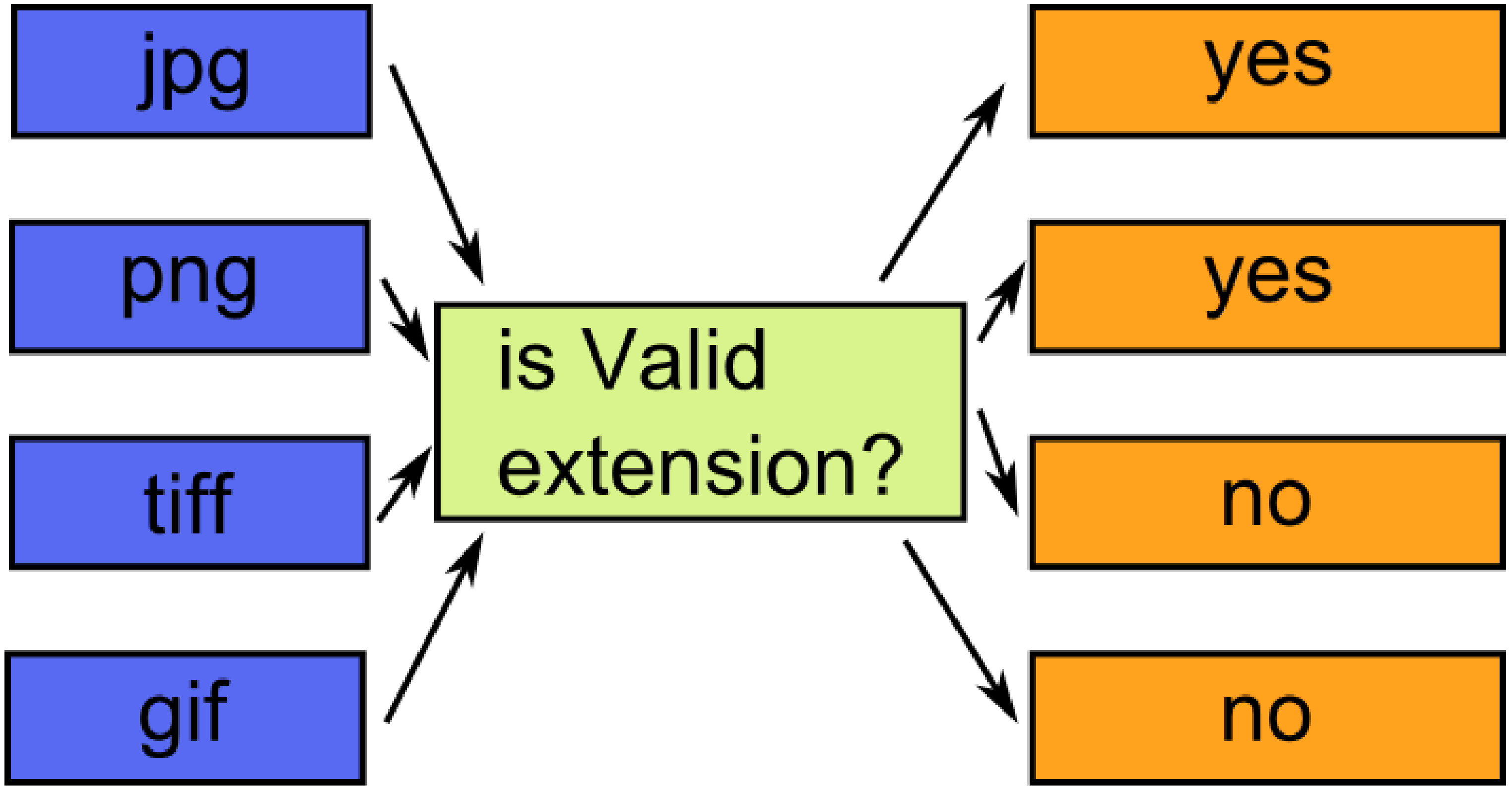
5. Parameterized tests

Common in big enterprise applications

The need for parameterized tests

```
def "Valid images are JPG"() {
	given: "an image extension checker and a jpg file"
	ImageNameValidator validator = new ImageNameValidator()
	String pictureFile = "scenery.jpg"

	expect: "that the filename is valid"
	validator.isValidImageExtension(pictureFile)
}

def "Valid images are JPEG"() {
	given: "an image extension checker and a jpeg file"
	ImageNameValidator validator = new ImageNameValidator()
	String pictureFile = "house.jpg"

	expect: "that the filename is valid"
	validator.isValidImageExtension(pictureFile)
}

def "Valid images are PNG"() {
	given: "an image extension checker and a png file"
	ImageNameValidator validator = new ImageNameValidator()
	String pictureFile = "car.png"

	expect: "that the filename is valid"
	validator.isValidImageExtension(pictureFile)
}
```

Understanding parameterized tests



```
def "Valid images are PNG and JPEG files"() {
        given: "an image extension checker"
        ImageNameValidator validator = new ImageNameValidator()

        expect: "that only valid filenames are accepted"
        validator.isValidImageExtension(pictureFile) == validPicture

        where: "sample image names are"
        pictureFile            || validPicture
        "scenery.jpg"          || true
        "house.jpeg"           || true
        "car.png"              || true
        "sky.tiff"             || false
        "dance_bunny.gif"      || false
   }
```

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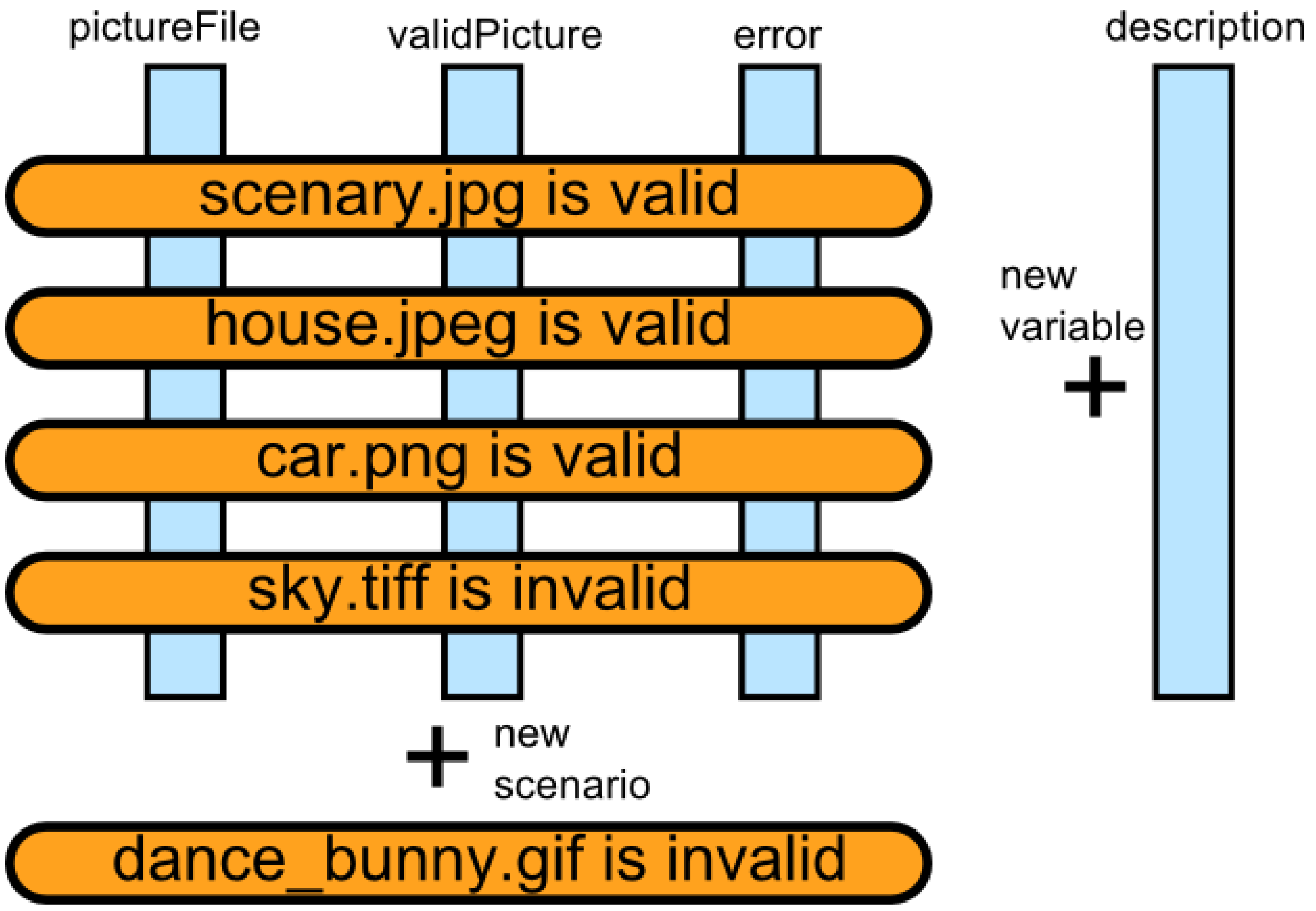
Tabular design



The JUnit approach

```
@RunWith(Parameterized.class)
public class FibonacciTest {
   @Parameters
   public static Collection<Object[]> data() {
      return Arrays.asList(new Object[][] {
              { 0, 0 }, { 1, 1 }, { 2, 1 }, { 3, 2 }, { 4, 3 }, { 5, 5 }, { 6, 8 }
         });
   }

   private int fInput;

   private int fExpected;

   public FibonacciTest(int input, int expected) {
      fInput= input;
      fExpected= expected;
   }

   @Test
   public void test() {
      assertEquals(fExpected, Fibonacci.compute(fInput));
   }
}
```

REJECTED

JUnit limitations 1/2

- The test class must be polluted with fields that represent inputs.
- The test class must be polluted with fields that represent outputs.
- A special constructor is needed for all inputs and outputs.

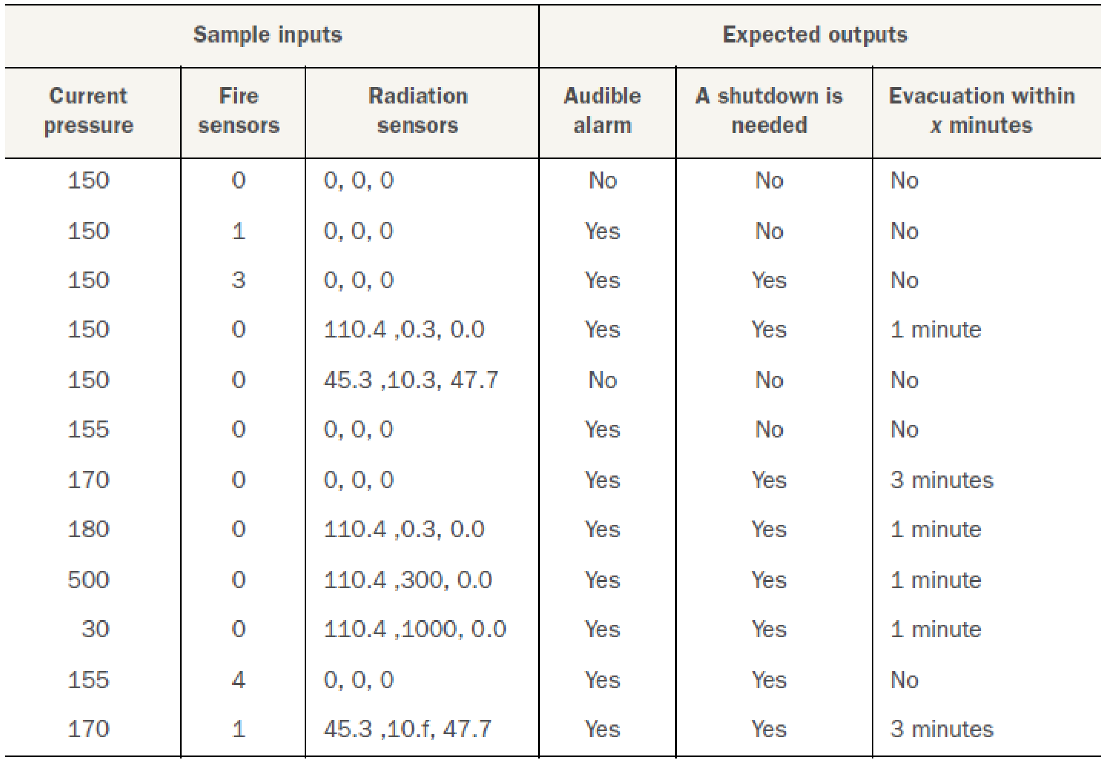
JUnit limitations 2/2

- Test data comes into a two-dimensional object array (which is converted to a list).
- Test data and test descriptions are in different places
- Cannot easily use two tests in the same class

Alternatives

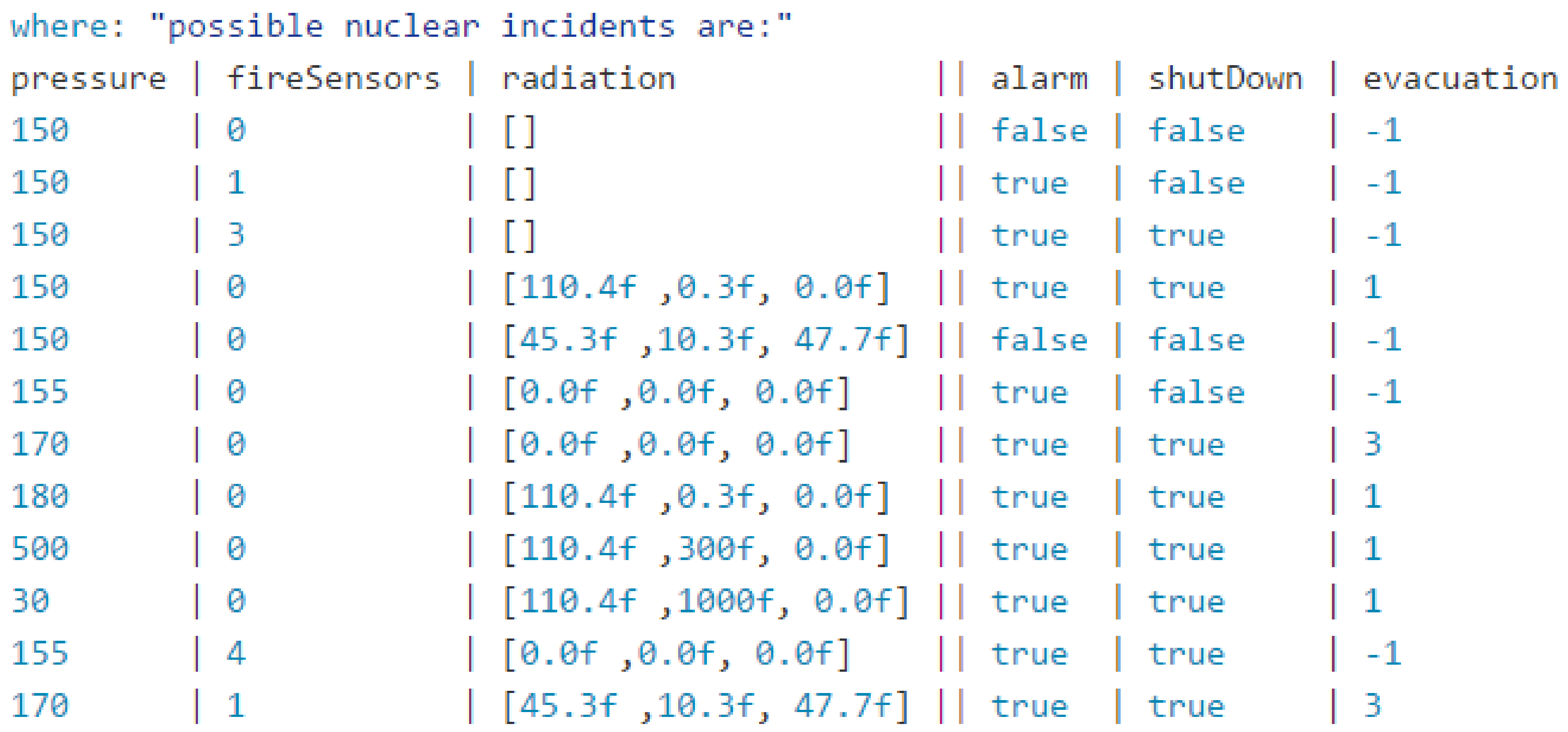
- TestNG addresses some of these limitations
- https://github.com/TNG/junit-dataprovider
- https://github.com/Pragmatists/junitparams
- https://github.com/piotrturski/zohhak
- Developers avoid using parameterized tests and keep copying-pasting the same code

Business Analysts love tables



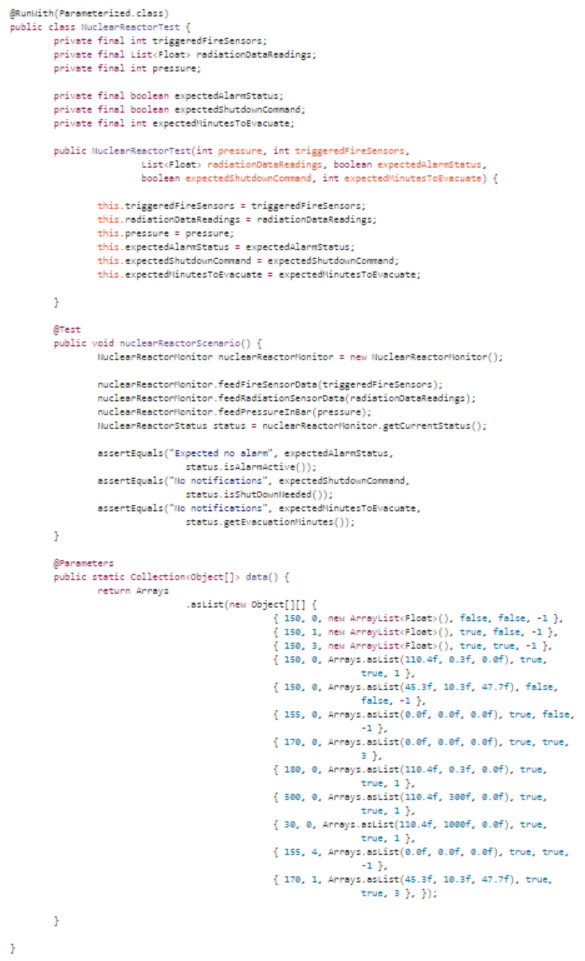
Sample inputs			Expected outputs		
Current pressure	Fire sensors	Radiation sensors	Audible alarm	A shutdown is needed	Evacuation within *x* minutes
150	0	0, 0, 0	No	No	No
150	1	0, 0, 0	Yes	No	No
150	3	0, 0, 0	Yes	Yes	No
150	0	110.4 ,0.3, 0.0	Yes	Yes	1 minute
150	0	45.3 ,10.3, 47.7	No	No	No
155	0	0, 0, 0	Yes	No	No
170	0	0, 0, 0	Yes	Yes	3 minutes
180	0	110.4 ,0.3, 0.0	Yes	Yes	1 minute
500	0	110.4 ,300, 0.0	Yes	Yes	1 minute
30	0	110.4 ,1000, 0.0	Yes	Yes	1 minute
155	4	0, 0, 0	Yes	Yes	No
170	1	45.3 ,10.f, 47.7	Yes	Yes	3 minutes

Convert Specs directly into code

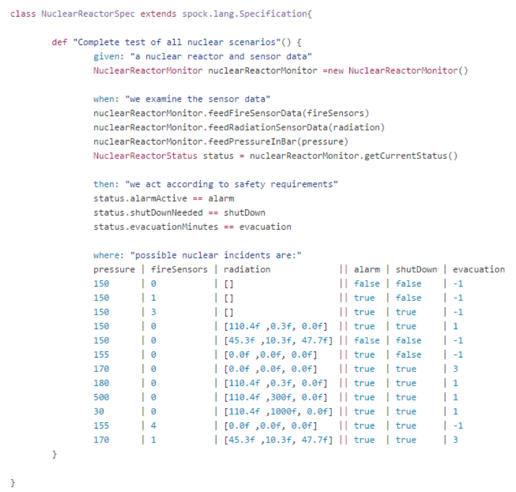


```
where: "possible nuclear incidents are:"
pressure | fireSensors | radiation                || alarm | shutDown | evacuation
150      | 0           | []                       || false | false    | -1
150      | 1           | []                       || true  | false    | -1
150      | 3           | []                       || true  | true     | -1
150      | 0           | [110.4f ,0.3f, 0.0f]     || true  | true     | 1
150      | 0           | [45.3f ,10.3f, 47.7f]    || false | false    | -1
155      | 0           | [0.0f ,0.0f, 0.0f]       || true  | false    | -1
170      | 0           | [0.0f ,0.0f, 0.0f]       || true  | true     | 3
180      | 0           | [110.4f ,0.3f, 0.0f]     || true  | true     | 1
500      | 0           | [110.4f ,300f, 0.0f]     || true  | true     | 1
30       | 0           | [110.4f ,1000f, 0.0f]    || true  | true     | 1
155      | 4           | [0.0f ,0.0f, 0.0f]       || true  | true     | -1
170      | 1           | [45.3f ,10.3f, 47.7f]    || true  | true     | 3
```

JUnit and Spock LOC (same test)



```java
@RunWith(Parameterized.class)
public class NuclearReactorTest {
        private final int triggeredFireSensors;
        private final List<Float> radiationDataReadings;
        private final int pressure;

        private final boolean expectedAlarmStatus;
        private final boolean expectedShutdownCommand;
        private final int expectedMinutesToEvacuate;

        public NuclearReactorTest(int pressure, int triggeredFireSensors,
                        List<Float> radiationDataReadings, boolean expectedAlarmStatus,
                        boolean expectedShutdownCommand, int expectedMinutesToEvacuate) {

                this.triggeredFireSensors = triggeredFireSensors;
                this.radiationDataReadings = radiationDataReadings;
                this.pressure = pressure;
                this.expectedAlarmStatus = expectedAlarmStatus;
                this.expectedShutdownCommand = expectedShutdownCommand;
                this.expectedMinutesToEvacuate = expectedMinutesToEvacuate;

        }

        @Test
        public void nuclearReactorScenario() {
                NuclearReactorMonitor nuclearReactorMonitor = new NuclearReactorMonitor();

                nuclearReactorMonitor.feedFireSensorData(triggeredFireSensors);
                nuclearReactorMonitor.feedRadiationSensorData(radiationDataReadings);
                nuclearReactorMonitor.feedPressureInBar(pressure);
                NuclearReactorStatus status = nuclearReactorMonitor.getCurrentStatus();

                assertEquals("Expected no alarm", expectedAlarmStatus,
                                status.isAlarmActive());
                assertEquals("No notifications", expectedShutdownCommand,
                                status.isShutDownNeeded());
                assertEquals("No notifications", expectedMinutesToEvacuate,
                                status.getEvacuationMinutes());
        }

        @Parameters
        public static Collection<Object[]> data() {
                return Arrays
                                .asList(new Object[][] {
                                                { 150, 0, new ArrayList<Float>(), false, false, -1 },
                                                { 150, 1, new ArrayList<Float>(), true, false, -1 },
                                                { 150, 3, new ArrayList<Float>(), true, true, -1 },
                                                { 150, 0, Arrays.asList(110.4f, 0.3f, 0.0f), true,
                                                                true, 1 },
                                                { 150, 0, Arrays.asList(45.3f, 10.3f, 47.7f), false,
                                                                false, -1 },
                                                { 155, 0, Arrays.asList(0.0f, 0.0f, 0.0f), true, false,
                                                                -1 },
                                                { 170, 0, Arrays.asList(0.0f, 0.0f, 0.0f), true, true,
                                                                3 },
                                                { 180, 0, Arrays.asList(110.4f, 0.3f, 0.0f), true,
                                                                true, 1 },
                                                { 500, 0, Arrays.asList(110.4f, 300f, 0.0f), true,
                                                                true, 1 },
                                                { 30, 0, Arrays.asList(110.4f, 1000f, 0.0f), true,
                                                                true, 1 },
                                                { 155, 4, Arrays.asList(0.0f, 0.0f, 0.0f), true, true,
                                                                -1 },
                                                { 170, 1, Arrays.asList(45.3f, 10.3f, 47.7f), true,
                                                                true, 3 }, });

        }

}
```



```groovy
class NuclearReactorSpec extends spock.lang.Specification{

        def "Complete test of all nuclear scenarios"() {
                given: "a nuclear reactor and sensor data"
                NuclearReactorMonitor nuclearReactorMonitor =new NuclearReactorMonitor()

                when: "we examine the sensor data"
                nuclearReactorMonitor.feedFireSensorData(fireSensors)
                nuclearReactorMonitor.feedRadiationSensorData(radiation)
                nuclearReactorMonitor.feedPressureInBar(pressure)
                NuclearReactorStatus status = nuclearReactorMonitor.getCurrentStatus()

                then: "we act according to safety requirements"
                status.alarmActive == alarm
                status.shutDownNeeded == shutDown
                status.evacuationMinutes == evacuation

                where: "possible nuclear incidents are:"
                pressure | fireSensors | radiation              || alarm | shutDown | evacuation
                150      | 0           | []                     || false | false    | -1
                150      | 1           | []                     || true  | false    | -1
                150      | 3           | []                     || true  | true     | -1
                150      | 0           | [110.4f ,0.3f, 0.0f]   || true  | true     | 1
                150      | 0           | [45.3f ,10.3f, 47.7f]  || false | false    | -1
                155      | 0           | [0.0f ,0.0f, 0.0f]     || true  | false    | -1
                170      | 0           | [0.0f ,0.0f, 0.0f]     || true  | true     | 3
                180      | 0           | [110.4f ,0.3f, 0.0f]   || true  | true     | 1
                500      | 0           | [110.4f ,300f, 0.0f]   || true  | true     | 1
                30       | 0           | [110.4f ,1000f, 0.0f]  || true  | true     | 1
                155      | 4           | [0.0f ,0.0f, 0.0f]     || true  | true     | -1
                170      | 1           | [45.3f ,10.3f, 47.7f]  || true  | true     | 3
        }

}
```

6. Extra Enterprise features

Spock is ready for the Enterprise.

Classic scenario

```
public class SampleTest {
    @Test
    void login()

    @Test
    void createOrder()

    @Test
    void viewOrder()
}
```

Tests should run in order

- If login fails no need to continue

Tests should be isolated

But that is true only for pure unit tests. Functional tests have sometimes different needs.

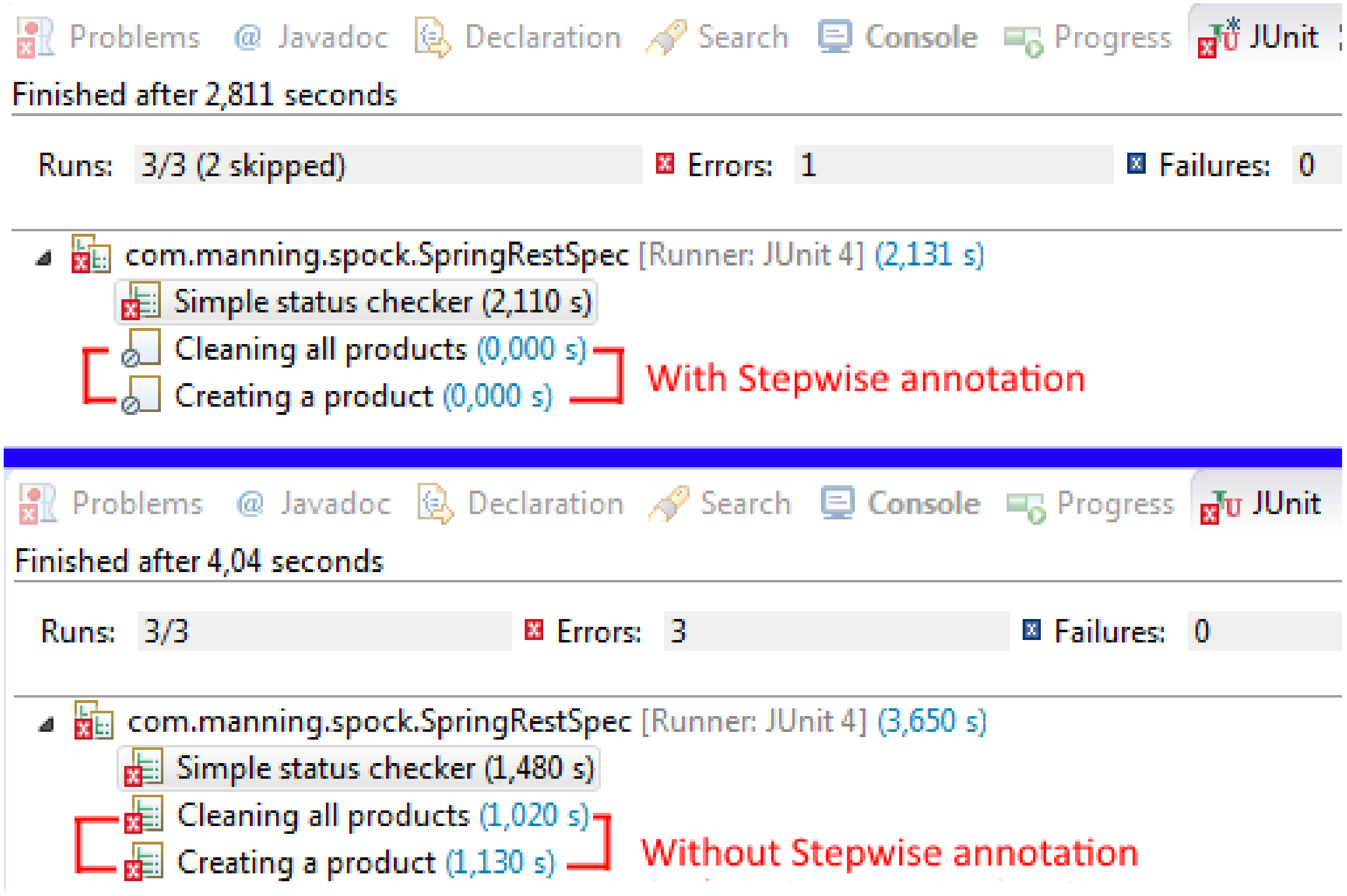
Spock @Stepwise

Used on class. If a test fails all other methods are ignored

Using Stepwise

```
@Stepwise
class SpringRestSpec extends Specification {

    def "Simple status checker"() {
            [...code here...]
    }

    def "Cleaning all products"() {
            [...code here...]
    }

    def "Creating a product"() {
            [...code here...]
    }
}
```

Using Stepwise



Finished after 2,811 seconds

Runs: 3/3 (2 skipped) Errors: 1 Failures: 0

com.manning.spock.SpringRestSpec [Runner: JUnit 4] (2,131 s)
Simple status checker (2,110 s)
Cleaning all products (0,000 s)
Creating a product (0,000 s)

With Stepwise annotation

Finished after 4,04 seconds

Runs: 3/3 Errors: 3 Failures: 0

com.manning.spock.SpringRestSpec [Runner: JUnit 4] (3,650 s)
Simple status checker (1,480 s)
Cleaning all products (1,020 s)
Creating a product (1,130 s)

Without Stepwise annotation

JUnit @Ignore

Very simple. On/Off switch to enable/disable tests

Supercharged @Ignored

@IgnoreIf({ os.windows })

This test will run on Linux/Mac but not Win

```
@IgnoreIf({
env.containsKey("SKIP_SPOCK_TESTS") })
```

This test will not run if this system variable is present

Spock @Ignore

Use any condition that returns a boolean

```
@IgnoreIf({ new
CreditCardProcessor().online() })
```

This test will not run if a staging server is down

More Spock features

- Mocking/Interaction testing
- Lifecycle methods
- Timeouts
- Data pipes/ Data generators
- Exception catching
- Functional tests with Geb
- Documentation annotations
- Spy Objects
- Spock extensions

Summary – Why Spock

Cut your unit test code size by 50%

Groovy itself if very concise and not as verbose as Java

Enforce a clear structure in your tests

Using Spock blocks
given,when, then etc.

Make your tests readable by business analysts

Spock allows you to adopt an English like flow in your tests

Embrace (and not fear) parameterized tests

Spock has a DSL for data tables mapping directly program specifications

Use tests as specifications

- Spock reports explain fully the test case

Use built-in mocking/stubbing

Spock can mock classes and interfaces (Groovy and Java)

Instant insight on failed builds

Spock gives you the full context when a test fails

Cover unit, integration and functional tests

Spock has explicit facilities for all types of testing

Bring Spock in your Enterprise

The end

www.codepipes.com