Going into testing rehab

Using BDD with Cucumber
in tests at PublicRelay

With backup on drums by other Quoin folks

Our test cases are too brittle

- Sample test case (hey, we're not proud)

```java
/**
 * Test search articles service with search string.
 *
 * @throws Exception
 */
@Test
public void testSearchArticlesServiceWithSearchStringEscapeChar() throws Exception {
    final String searchString = EASY + " Sam! rocks!";
    final Outlet outlet1 = super.createOutlet("New post", POWER_ONE, 70L);
    final Outlet outlet2 = super.createOutlet("Washington post", POWER_TWO, 350L);
    final Person person1 = super.createPerson(A, B);

    final Article articleEsc1 = super.createArticle(outlet1, person1, null, null, today, searchString);
    final Article articleEsc2 = super.createArticle(outlet2, person1, null, null, yesterday, searchString);

    elasticReindexReleasedArticle(articleEsc1);
    elasticReindexReleasedArticle(articleEsc2);

    // sleep to allow elastic search to index
    try {
        Thread.sleep(1000);
    } catch (InterruptedException e) {
        this.getPRLogger().error("Error calling sleep", e);
    }

    final JsonObject params =
            createLiveQueryAndParamsWithSearchString(new JsonString(searchString), EASY);
    assertSearchArticleService(params, 2);
}
```

Spot the problems

- This is more like an integration test (is actually persisting data, and dealing with 3rd party entities such as ElasticSearch, Mongo, Database, etc)

- If this is a unit test, it is supposed to run fast (and fail fast, so that we can get initial gut check)

- What the hell is it testing??? Bad header comments means that we're fairly blind.
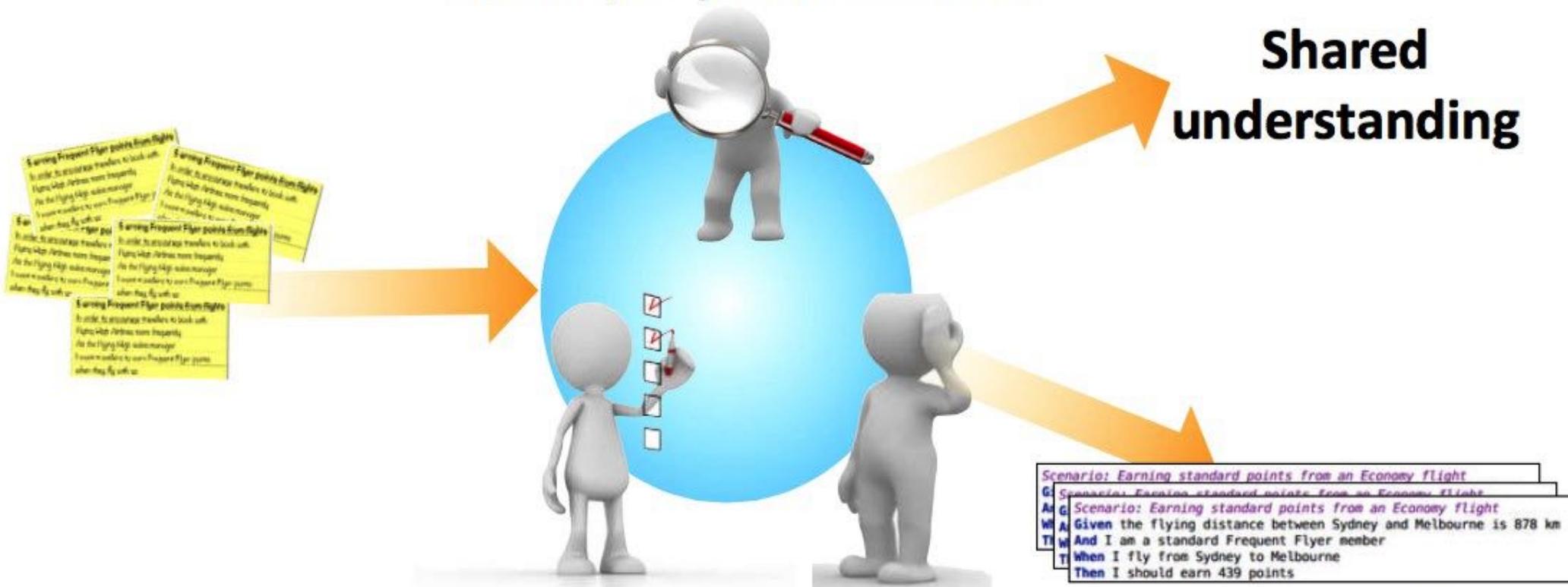
Enter the BDD spectre

- Behaviour-Driven Design
- Some nice references
    - http://dannorth.net/introducing-bdd/
    - http://guide.agilealliance.org/guide/bdd.html
    -

"a shared understanding"

We call this "The Three Amigos"

BA and/or product owner

Shared understanding

Tester

Developer

```
Scenario: Earning standard points from an Economy flight
Scenario: Earning standard points from an Economy flight
Scenario: Earning standard points from an Economy flight
Given the flying distance between Sydney and Melbourne is 878 km
And I am a standard Frequent Flyer member
When I fly from Sydney to Melbourne
Then I should earn 439 points
```

Automatable Acceptance Criteria

The BDD approach

- Describe the **Behaviour** that you want the system to exhibit:

Feature: Scenario2 `AN-03 blocks changing outlet (NEW)`

    Given `an Analyst goes to AN-03 for an article in an article group`

    And `the analysis for that group has been released for any client`

    When `the Analyst tries to change the outlet`

    Then `the system should give error code`

    And `the error message should match that given on AN-05`

The BDD approach

preconditions

Set up mocked data

Triggered event

The consequences, testable outcomes

```
Feature: Scenario2 AN-03 blocks changing outlet (NEW)

    Given an Analyst goes to AN-03 for an article in an article group

    And the analysis for that group has been released for any client

    When the Analyst tries to change the outlet

    Then the system should give error code

    And the error message should match
    that given on AN-05
```
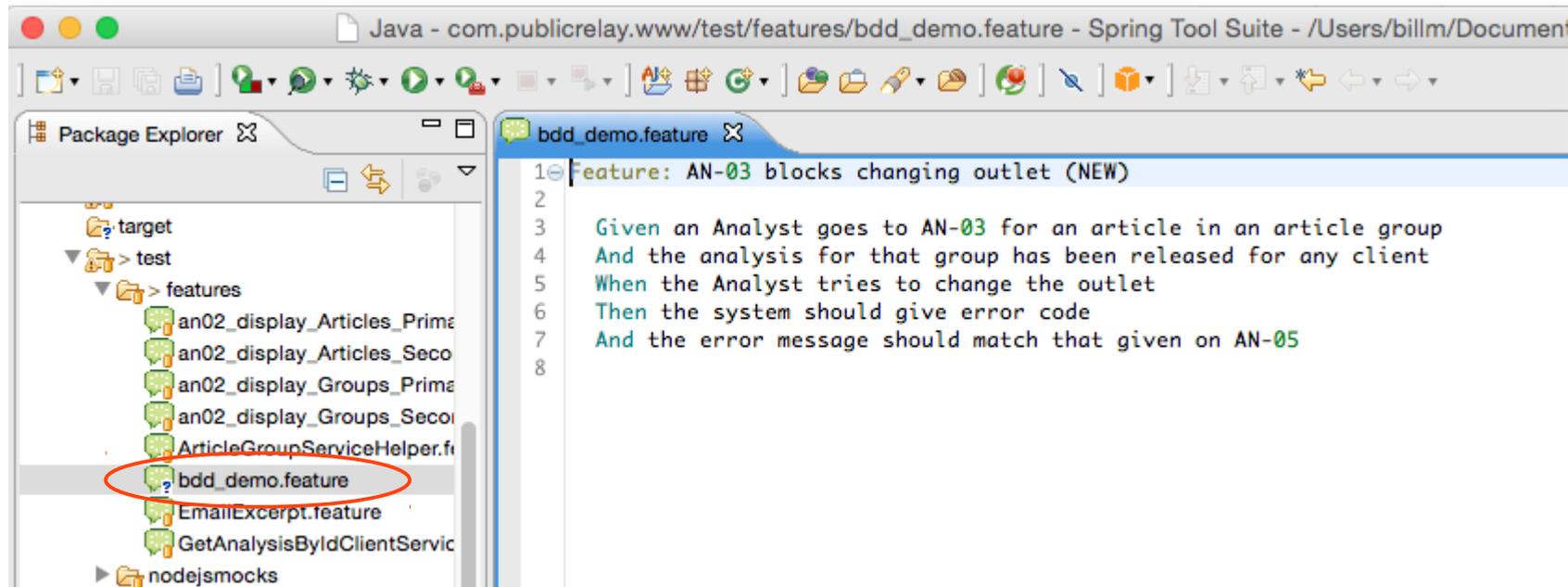
All right, who's selling me now?

- So this **looks** good – but how easy is it to actually get this @#$#%@'ing thing to work?

DEMO TIME!!

Make new file: bdd.feature and copy/paste this into it

Feature: Scenario2 `AN-03 blocks changing outlet (NEW)`

Given `an Analyst goes to AN-03 for an article in an article group`

And `the analysis for that group has been released for any client`

When `the Analyst tries to change the outlet`

Then `the system should give error code`

And `the error message should match that given on AN-05`

Syntax highlighting

And run the feature..
hint: it will fail

But the output tells you what you need to stub in...

```
Feature: AN-03 blocks changing outlet (NEW)


  Scenario: Analysis has an excerpt, it should appear in model        #
/Users/billm/code/com.publicrelay.www/test/features/bdd_demo.feature:3

    Given an Analyst goes to AN-03 for an article in an article group

    And the analysis for that group has been released for any client

    When the Analyst tries to change the outlet

    Then the system should give error code

    And the error message should match that given on AN-05


1 Scenarios (1 undefined)

5 Steps (5 undefined)

0m0.000s



You can implement missing steps with the snippets below:
```
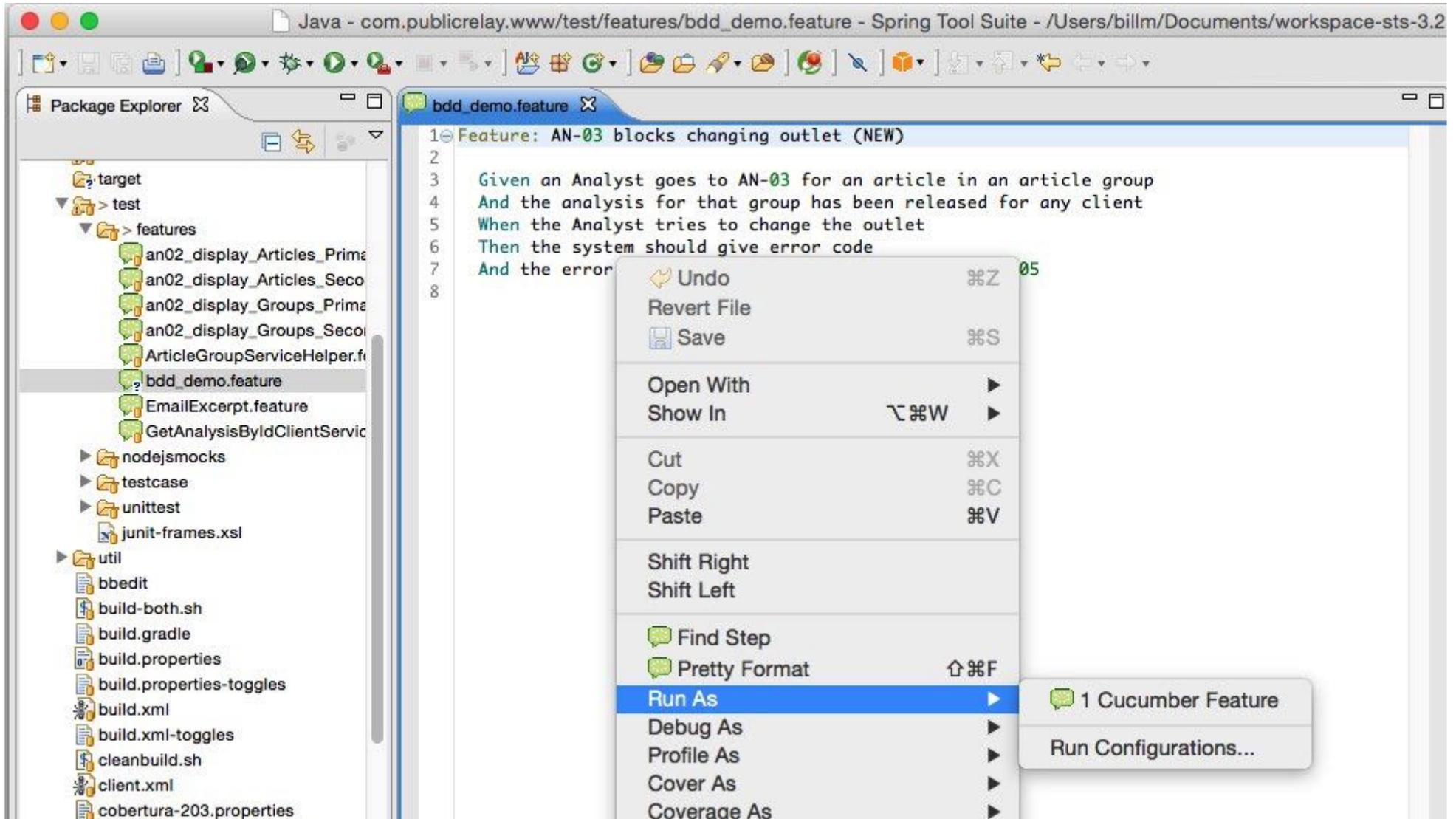
And the stub code

```java
@Given("^an Analyst goes to AN-(\\d+) for an article in an article group$")
public void an_Analyst_goes_to_AN_for_an_article_in_an_article_group(int arg1) throws Throwable {
    // Write code here that turns the phrase above into concrete actions
    throw new PendingException();
}

@Given("^the analysis for that group has been released for any client$")
public void the_analysis_for_that_group_has_been_released_for_any_client() throws Throwable {
    // Write code here that turns the phrase above into concrete actions
    throw new PendingException();
}

@When("^the Analyst tries to change the outlet$")
public void the_Analyst_tries_to_change_the_outlet() throws Throwable {
    // Write code here that turns the phrase above into concrete actions
    throw new PendingException();
}

@Then("^the system should give error code$")
public void the_system_should_give_error_code() throws Throwable {
    // Write code here that turns the phrase above into concrete actions
    throw new PendingException();
}

@Then("^the error message should match that given on AN-(\\d+)$")
public void the_error_message_should_match_that_given_on_AN(int arg1) throws Throwable {
    // Write code here that turns the phrase above into concrete actions
    throw new PendingException();
}
```

And, voila – tests pass

WARNING: Cucumber-JVM's --format option is deprecated. Please use --plugin instead.

Feature: AN-03 blocks changing outlet (NEW)

  Scenario: Analysis has an excerpt, it should appear in model   #
/Users/billm/code/com.publicrelay.www/test/features/bdd_demo.feature:3

    Given an Analyst goes to AN-03 for an article in an article group #
BDDSupport.an_Analyst_goes_to_AN_for_an_article_in_an_article_group(int)

    And the analysis for that group has been released for any client #
BDDSupport.the_analysis_for_that_group_has_been_released_for_any_client()

    When the Analyst tries to change the outlet   # BDDSupport.the_Analyst_tries_to_change_the_outlet()

    Then the system should give error code   # BDDSupport.the_system_should_give_error_code()

    And the error message should match that given on AN-05   #
BDDSupport.the_error_message_should_match_that_given_on_AN(int)

1 Scenarios (1 passed)

5 Steps (5 passed)

0m0.250s

For all the maven fans out there

- cd /Users/billm/code/incubator/cucumber

```
Scenario Outline: No primary articles matching feed source, outlet and intake date  # an02_display_Articles_PrimaryOnly.feature:20
    Given Feeds Filter toggle set to "Articles (Old)"                                # AN02DisplayStepDefs.feeds_Filter_toggle_set_to(Str
    And the Topics AN-02 is set to "Show Primary Only" is "true" on AN-14            # AN02DisplayStepDefs.the_Topics_AN14_Primary_is_set
    And the topic has the "Factiva" feed enabled                                    # AN02DisplayStepDefs.the_topic_has_the_feed_enabled
    And the topic has the following included outlets:                               # AN02DisplayStepDefs.the_topic_has_the_following_in
ts(String>)
    And the date widget is set From "1/4/2015" To "1/10/2015"                       # AN02DisplayStepDefs.the_date_widget_is_set_From_To
    And the article has feed_source of Moreover                                     # AN02DisplayStepDefs.the_article_has_feed_source_of
    And the article has outlet of NYT                                               # AN02DisplayStepDefs.the_article_has_outlet_of(Stri
    And the article has intake_date of 1/2/2015                                     # AN02DisplayStepDefs.the_article_has_intake_date_of
    And the article has is_primary of true                                          # AN02DisplayStepDefs.the_article_has_is_primary_of(
    When AN-02 is loaded                                                            # AN02DisplayStepDefs.an_is_loaded()
    Then display on AN-02 should be false                                           # AN02DisplayStepDefs.primary_and_secondary_articles
n(boolean)
```

Ben Keith

- ~/Desktop/int-testing