



outside

Development  
Cucumber      Rspec

**Why are you here?**

# Why are you here?

In order to ...

# Why are you here?

In order to ...

As a Scotland on Rails attendee

# Why are you here?

In order to ...

As a Scotland on Rails attendee

I want ...

What is your  
Acceptance Criteria?

**Scenario:** Happy SoR attendees

**Given** people turned up

**When** Joseph talks

**Then** everyone should acquire some new knowledge

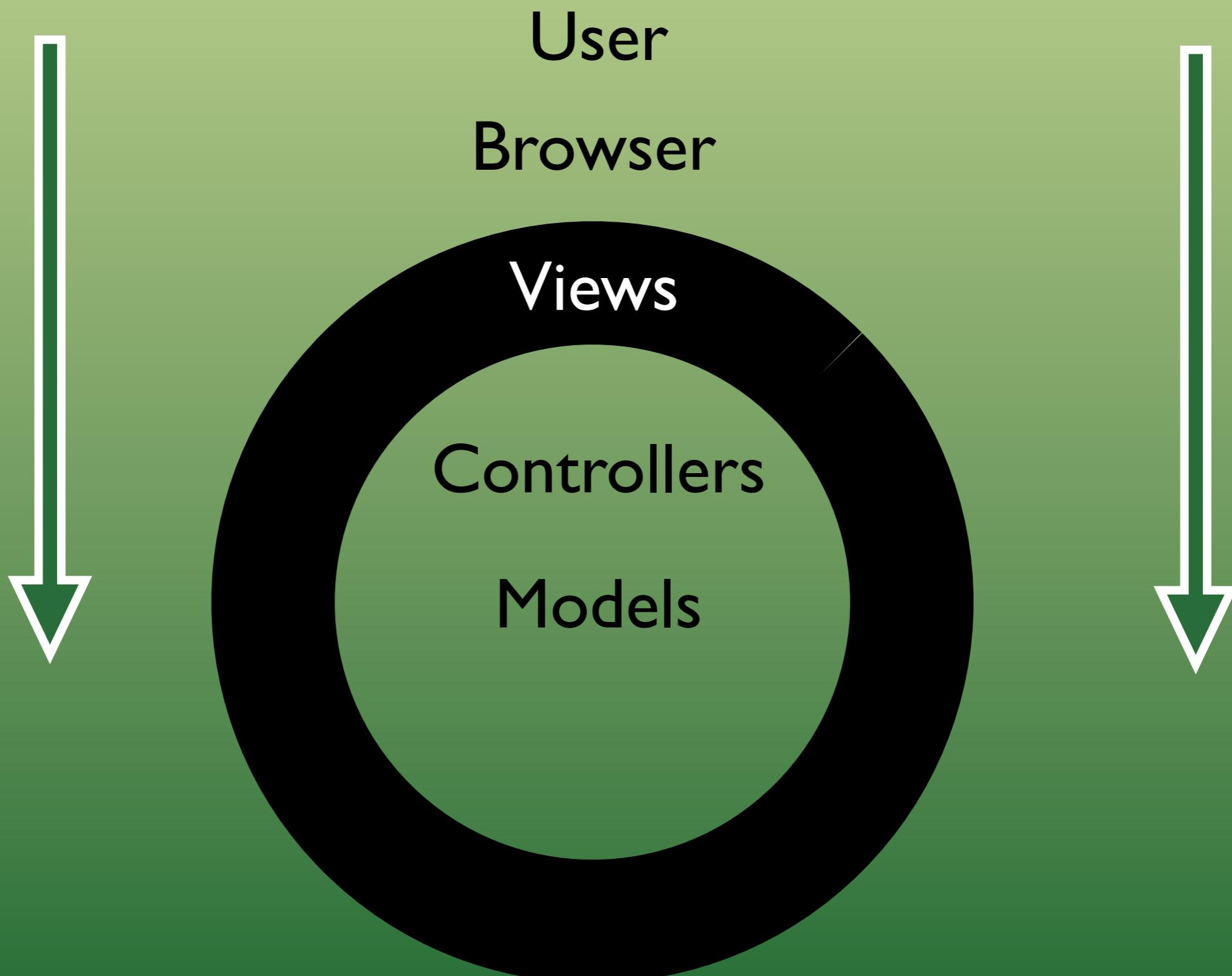
**And** no-one should fall asleep

**And** no rotten food should be thrown

**Pass**

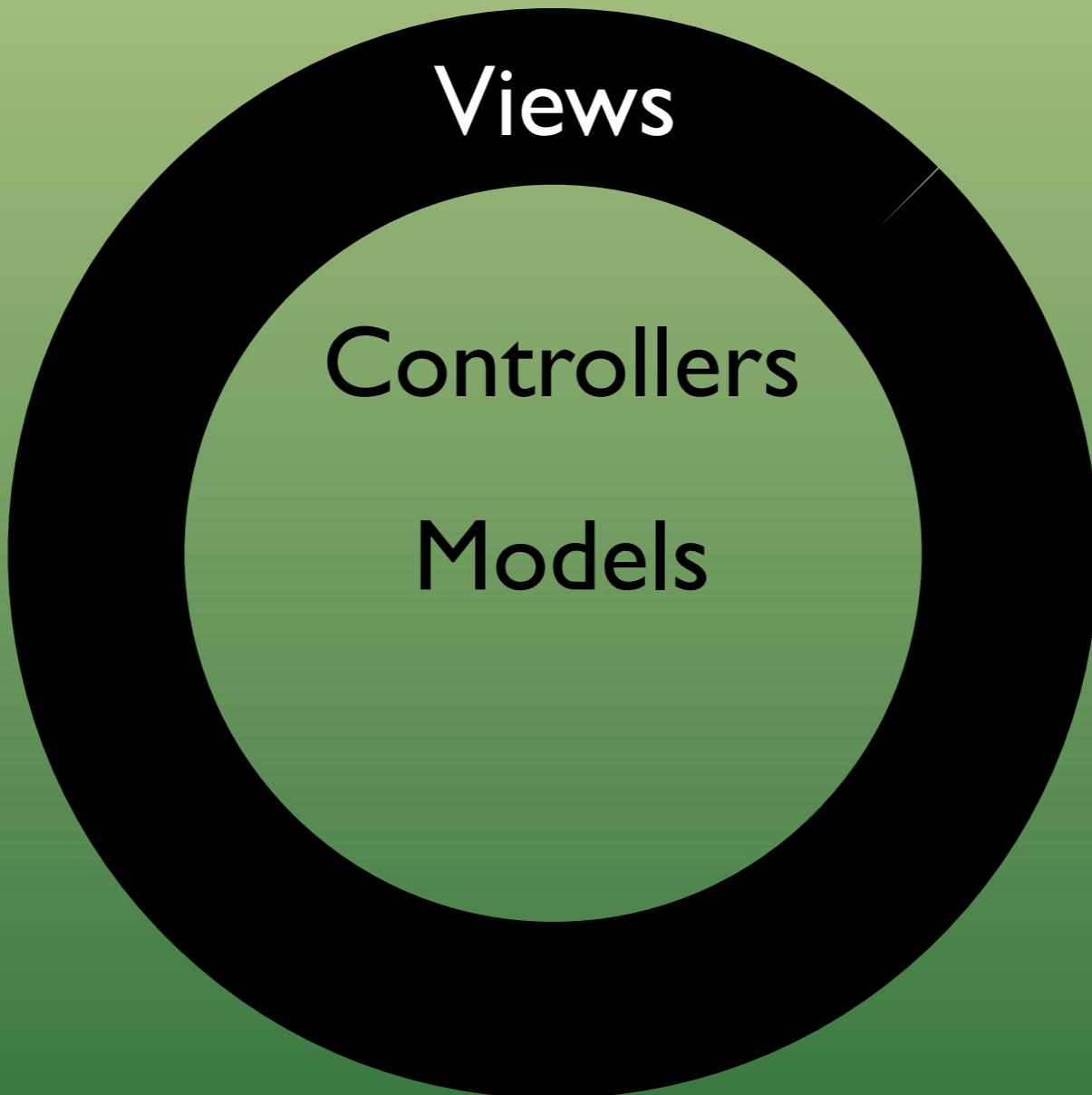
**Fail**

# Outside-in



# Cucumber

“*The **feature**  
you wished you  
had*”

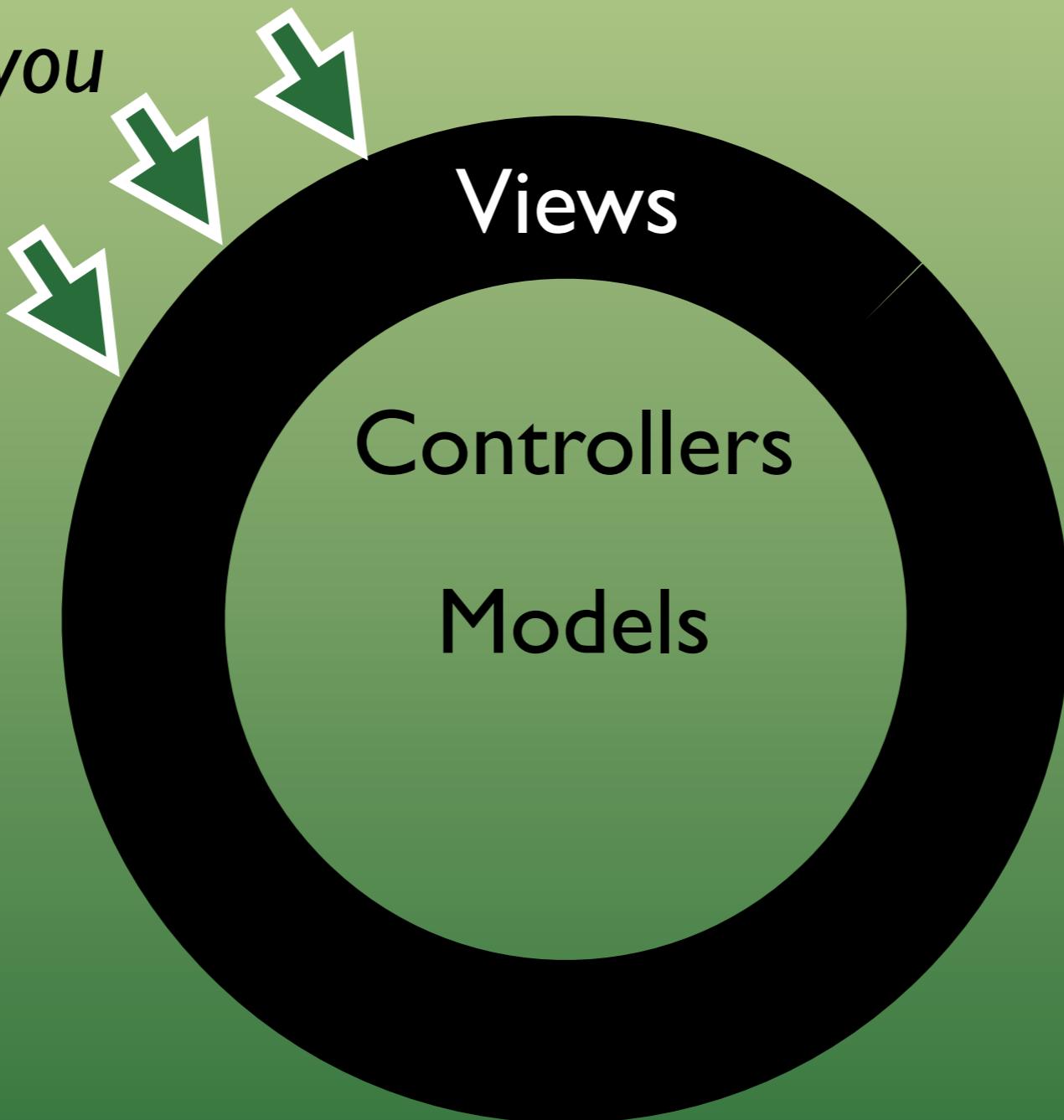


Rspec

“*The  
**components**  
and the  
**interactions**  
you wish you  
had*”

# Cucumber

“**The *feature***  
you wished you  
had”

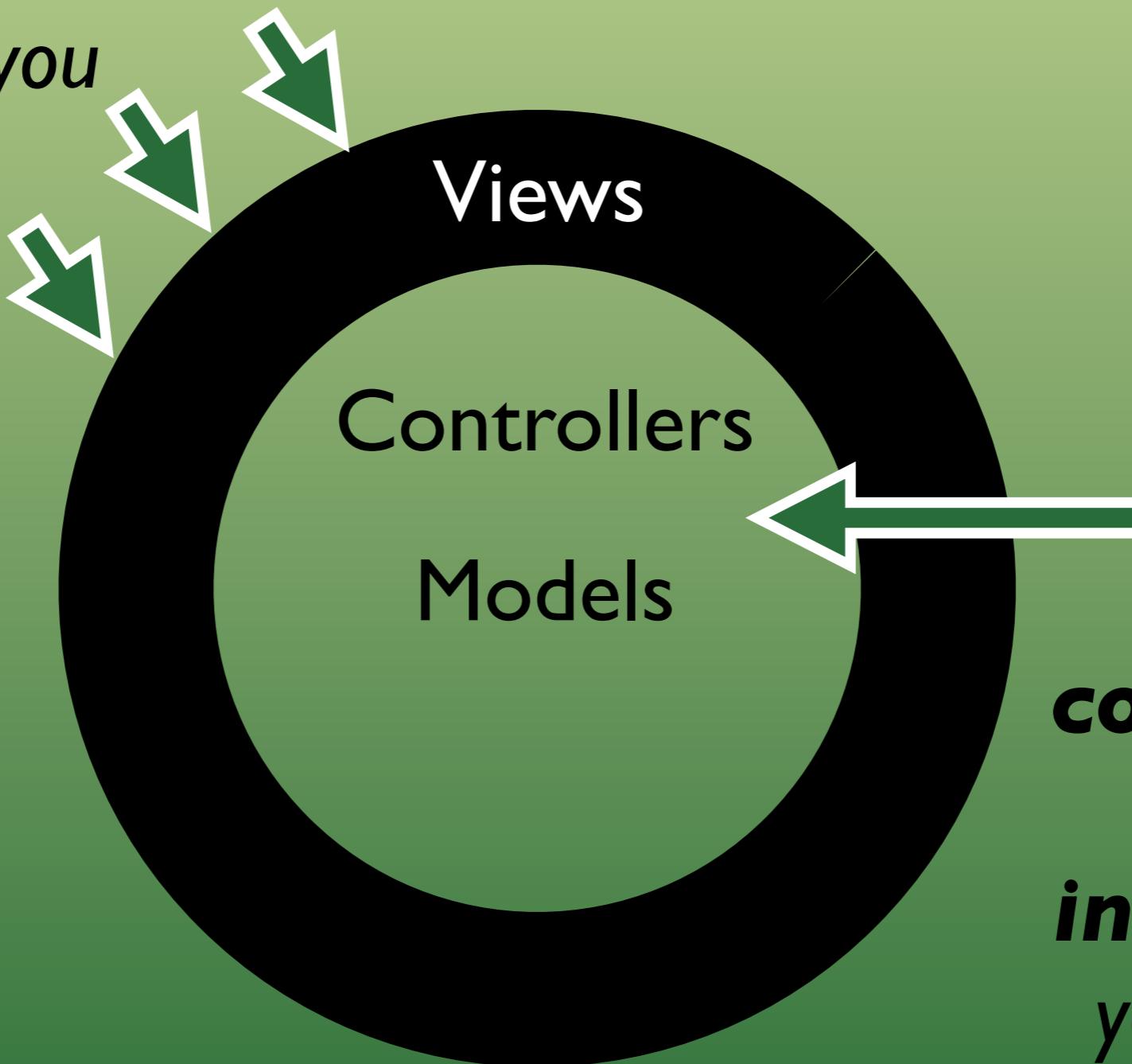


# Rspec

“The  
**components**  
and the  
**interactions**  
you wish you  
had”

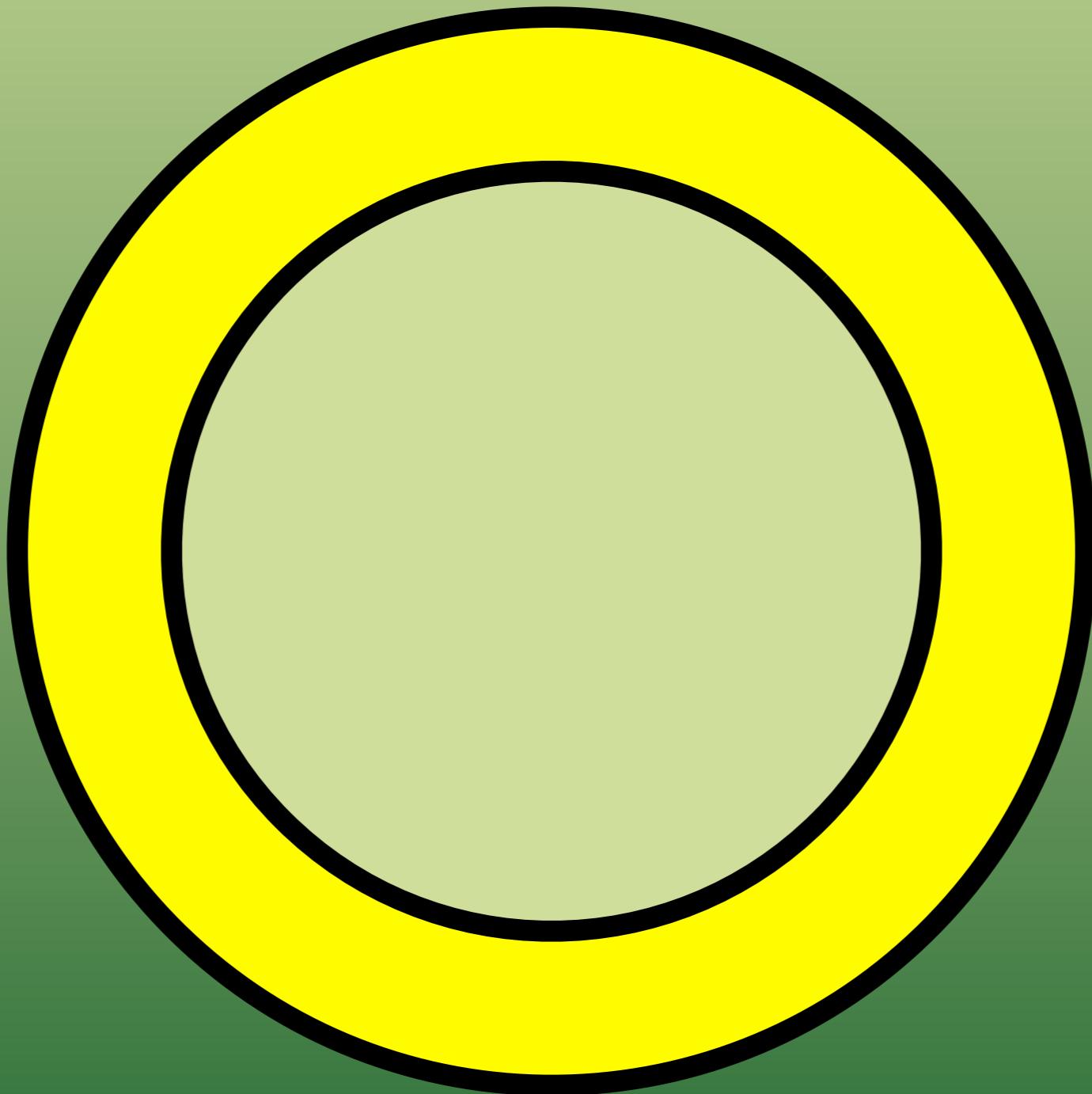
# Cucumber

“**The *feature***  
you wished you  
had”

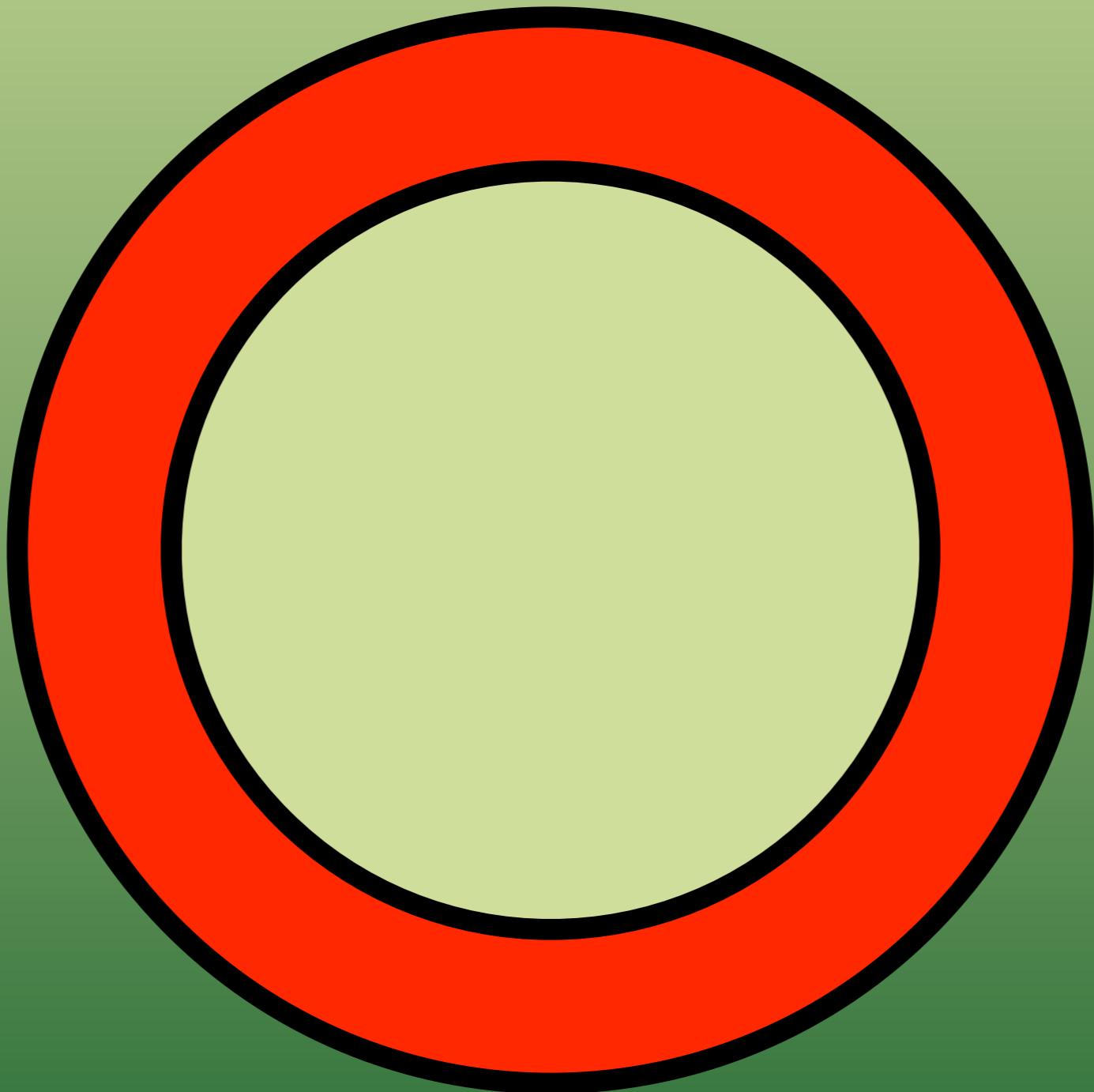


RSpec  
“**The  
components  
and the  
interactions  
you wish you  
had”**

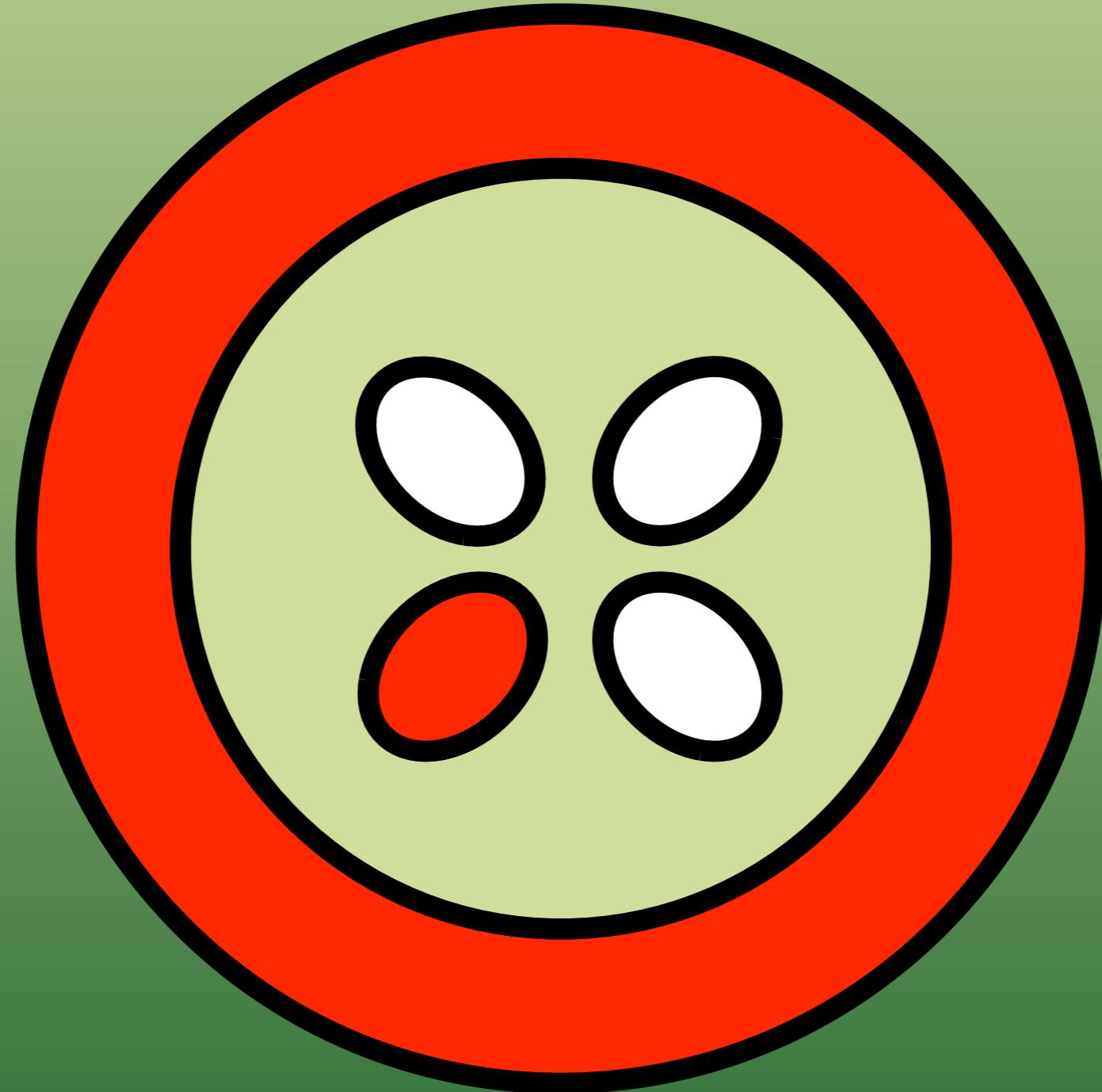
# Cucumber / Scenario



# Cucumber / Scenario

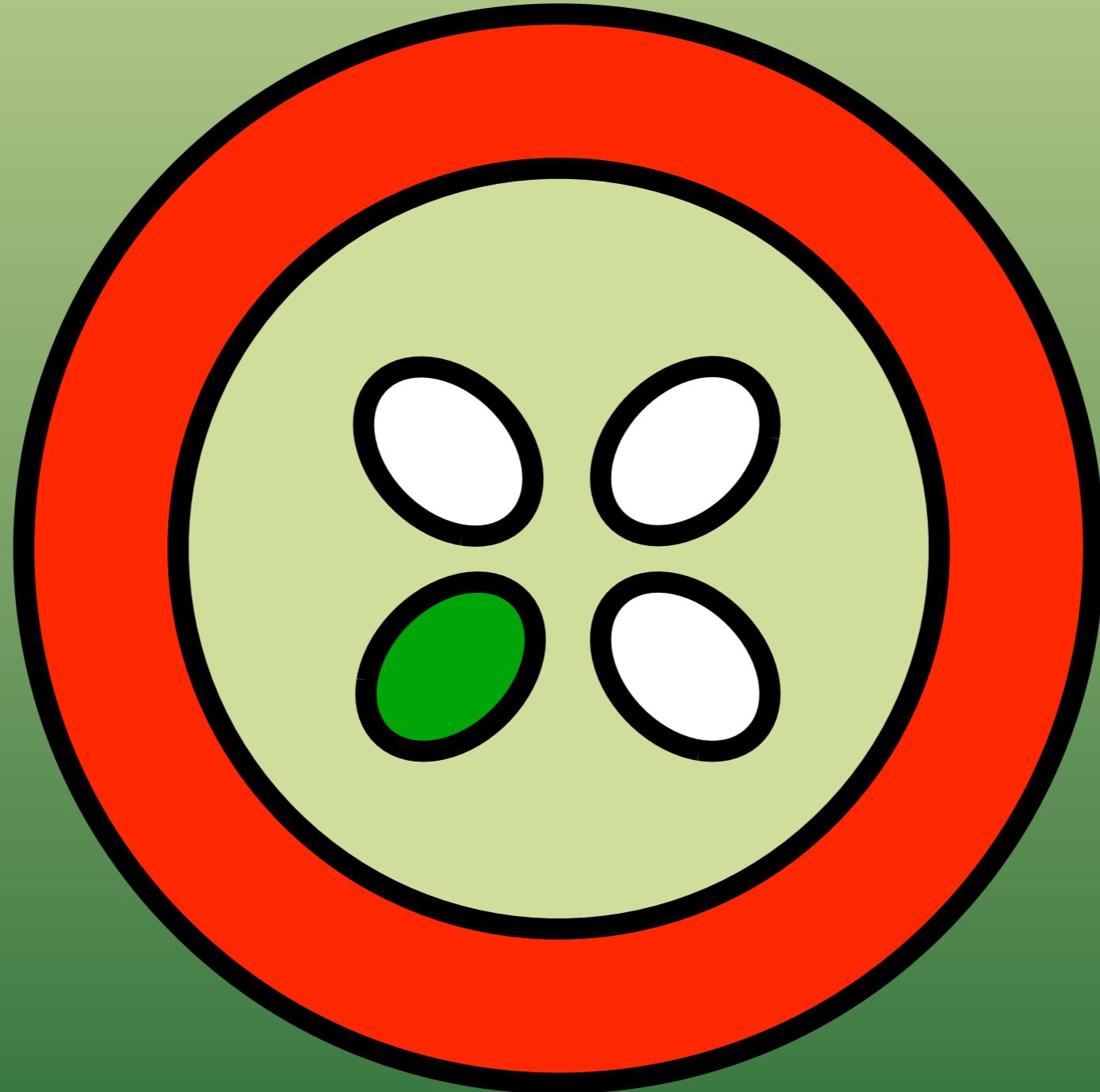


# Cucumber / Scenario



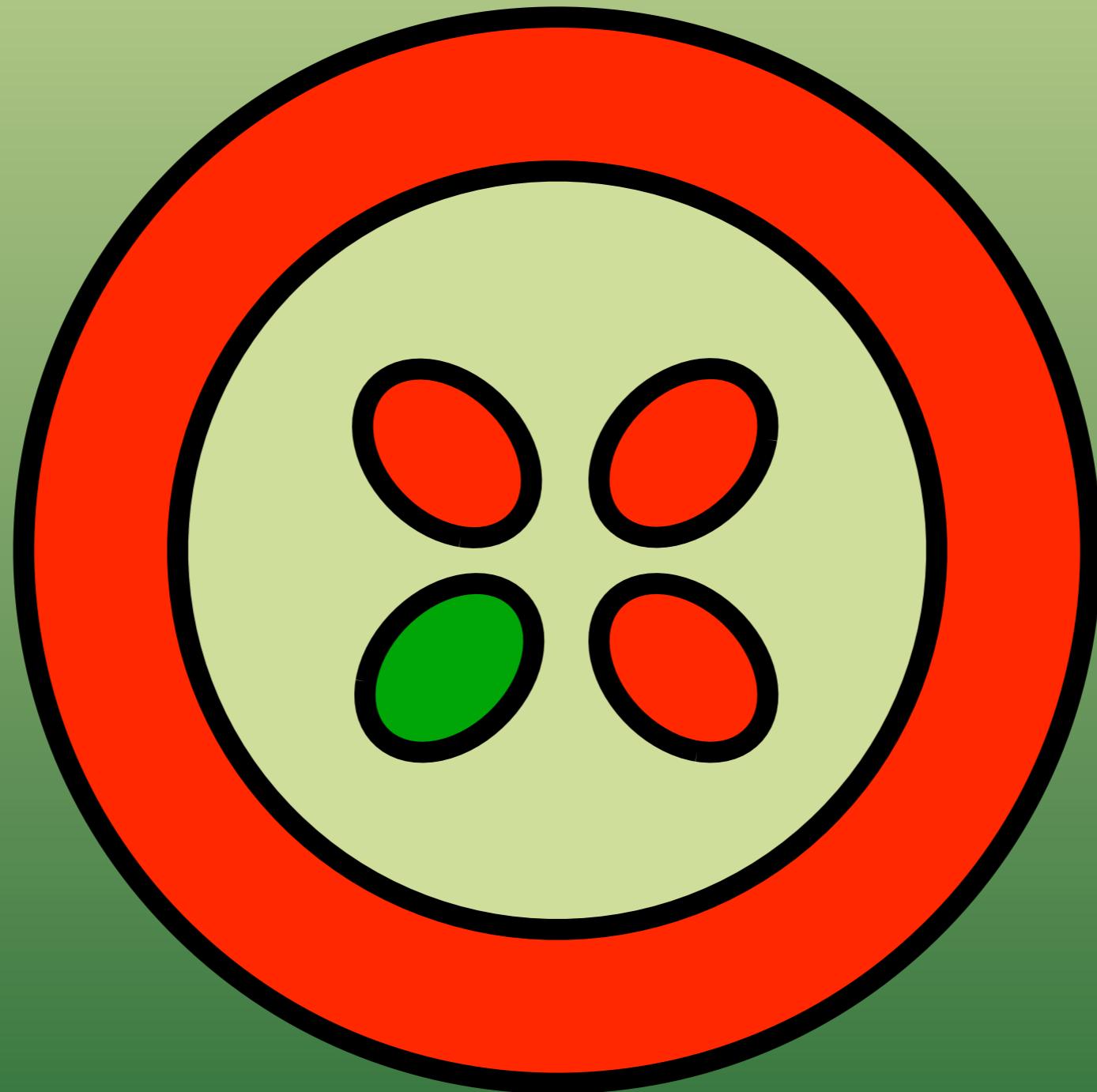
Rspec / code  
examples

# Cucumber / Scenario



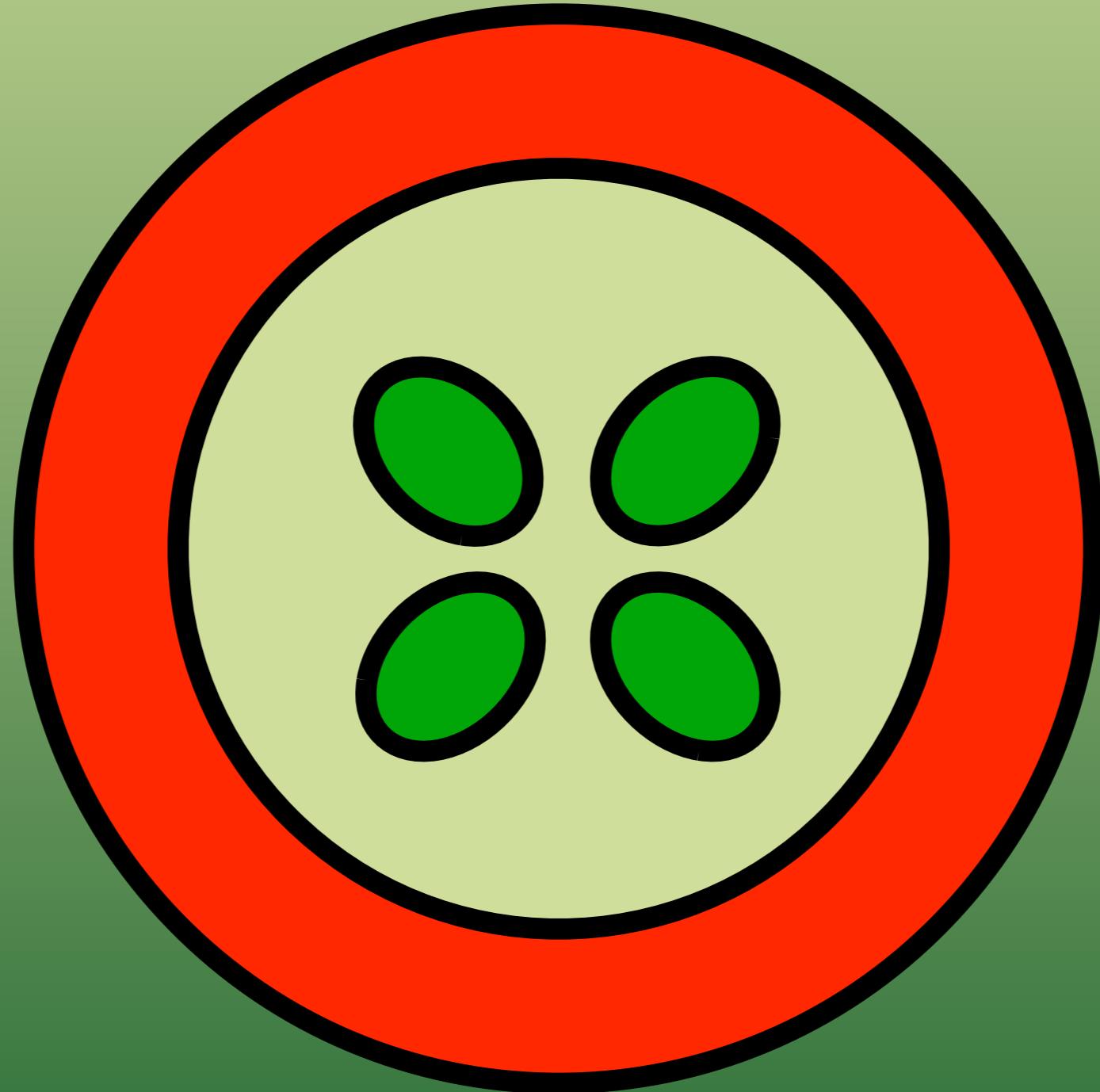
Rspec / code  
examples

# Cucumber / Scenario



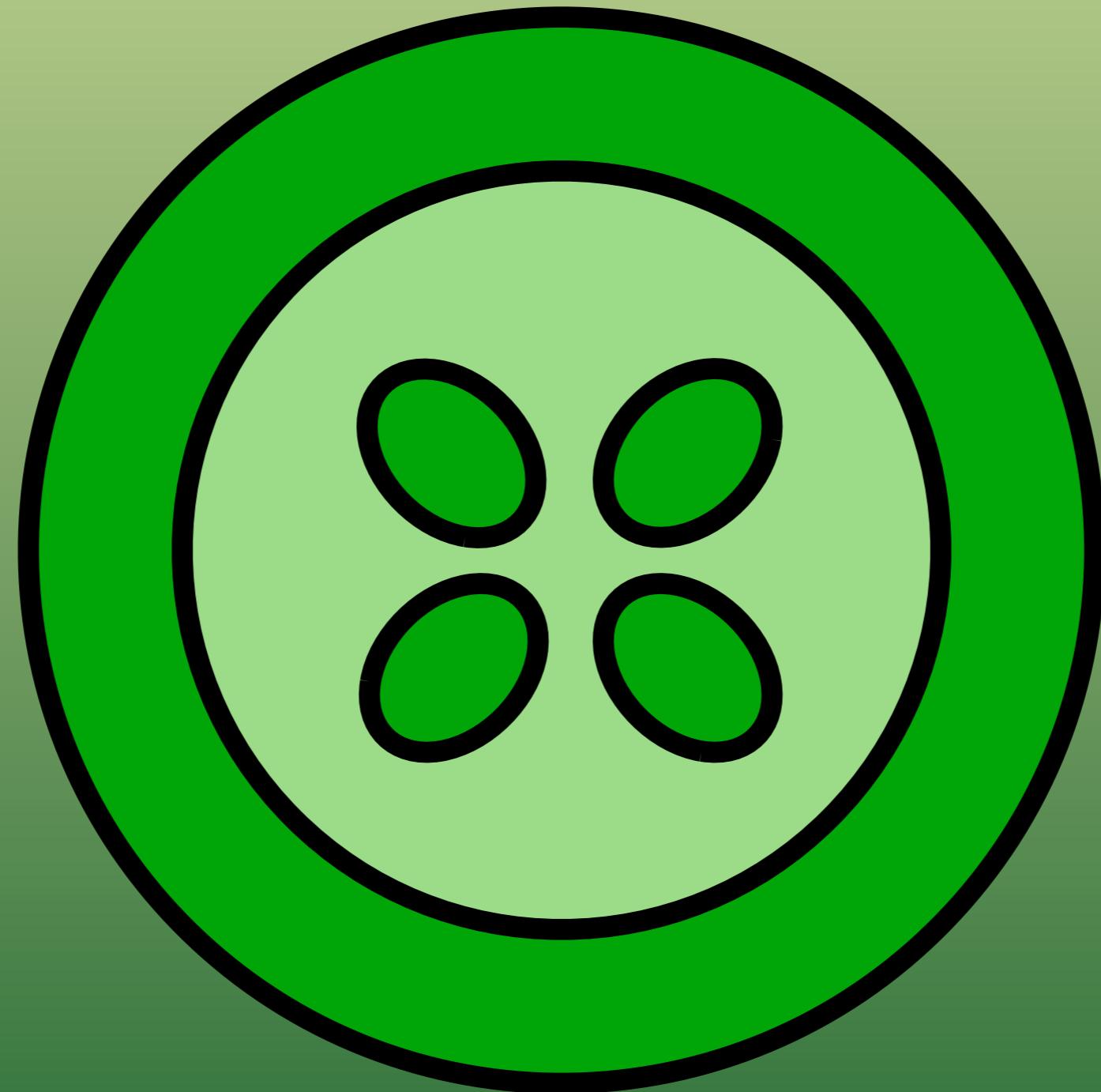
Rspec / code  
examples

# Cucumber / Scenario



Rspec / code  
examples

# Cucumber / Scenario



Rspec / code  
examples

**:rspec => route finder**  
**:cucumber => destination**

London



Edinburgh



# Cucumber



Behaviour Driven Development  
with elegance and joy

# Cucumber



Behaviour Driven Development  
with elegance and joy

Just Cuke it!

Plaintext  
Features

Ruby  
step definitions

# Cucumber Feature

Feature: Be awesome

Narrative

Scenario: title

Given <some context>

And <yet more context>

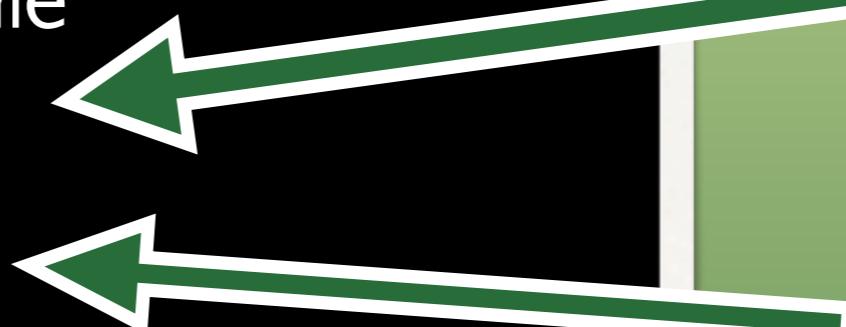
When <some action>

And <more actions>

Then <some outcome>

And <more outcomes>

Not  
executed



Example of  
behaviour

# Step definition

Ruby tests

Plaintext

Feature

regexp match

```
Given /we like (.*)$/i do |fruit|
  fruit.should == 'cukes'
  #assert_equal(fruit, 'cukes')
end
```

```
Given we like cukes
```

Cucumber

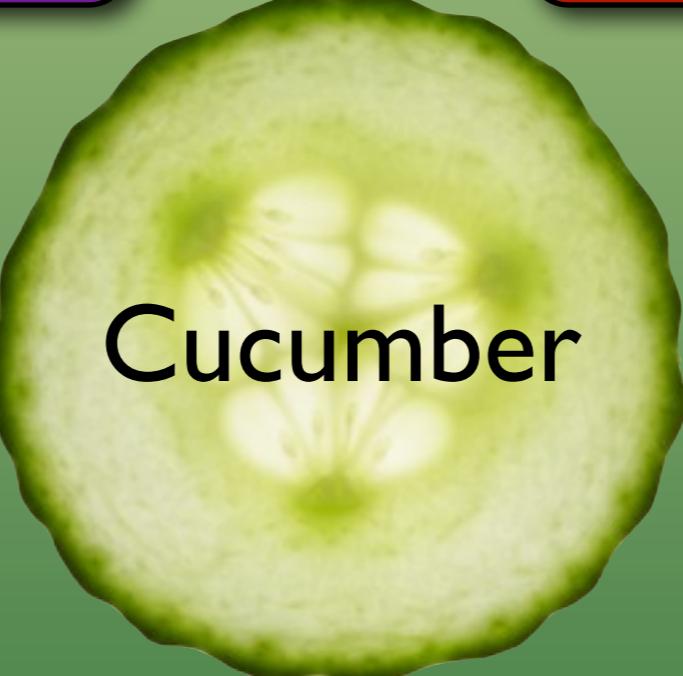
# Plug and Pray

Plaintext

Ruby tests

Rspec

TestUnit



Cucumber

Ruby-Gnome2

Cucumber

Rails

Merb

Sinatra

iPhone

Cucumber English

огурец

Russian

黃瓜

Chinese

concombre

French

오이

Korean

キュウリ

Japanese

gurka

Swedish

Gurke

German

castravete

Romanian

Cucumber

English

ogórek

Polish

pepino

Spanish

cetriolo

Italian

agurk

Danish

الخيار

Arabic

ketimun

Indonisean

огурец

Russian

黃瓜

Chinese

concombre

French

오이

Korean

キュウリ

Japanese

gurka

Swedish

Gurke

German

castravete

Romanian

Cucumber

English

ogórek

Polish

pepino

Spanish

cetriolo

Italian

agurk

Danish

الخيار

Arabic

ketimun

Indonisean

Treetop Rocks

ANTLR

could rock

harder

# Webrat Love

visit home\_path

click\_link "Web"

fill\_in "Email", :with => "Rat"

click\_button "Love"



# **Return On Investment**

# **Cucumber Feature**

# Return On Investment Cucumber Feature

- Token Conversation

# Return On Investment Cucumber Feature

- Token Conversation
- Acceptance Criteria

# Return On Investment Cucumber Feature

- Token Conversation
- Acceptance Criteria
- Design

# Return On Investment Cucumber Feature

- Token Conversation
- Acceptance Criteria
- Design
- Documentation

# Return On Investment Cucumber Feature

- Token Conversation
- Acceptance Criteria
- Design
- Documentation
- Functional test

# Return On Investment Cucumber Feature

- Token Conversation
- Acceptance Criteria
- Design
- Documentation
- Functional test
- Integration test

# Token for Conversation





Find the films you want to watch

**Ex-Rental DVDs  
from under £3**

Welcome Guest. [Register here](#) or [Sign in](#) to your account.[My Account](#) | [Help](#) | [Checkout](#)[£](#) [€](#)
[Home](#) [Film](#) [Games](#) [Learn more](#) [Magazine](#) [Gifts](#) **Shop**


Search

[DVD](#) [Blu-ray](#) [Games](#) [CDs](#) [Books](#) [Audio Visual](#) [Ex Rental](#) [Best Selling](#) | [Coming Soon](#) | [Chart](#) | [Latest Releases](#) | [DVD Offers](#)
**Browse DVDs**
[Best Selling DVDs](#)  
[Coming Soon DVDs](#)  
[DVD Charts](#)  
[DVD Latest Releases](#)  
[Ex Rental](#)  
[DVD Offers](#)  
[Blu-ray](#)  
[HD-DVD](#)
**Top Charts**
[UK top 100 weekly chart](#)  
[TV top 20 weekly chart](#)  
[All-time top 200](#)  
[AFI top 100](#)   
[BFI top 100](#)   
[LOVEFiLM Recommends](#)
**DVD Charts**
[Family Chart](#)  
[TV Chart](#)  
[Value Chart](#)
**15****Casshern [Special Edition]**

Average Rating:



**Price:** £5.73  
**RRP:** £19.99 You Save: £14.26

**Format:** DVD  
**Starring:** Kumiko, Aso | Tatsuya Mihashi | Kanako Higuchi | Yusuke Iseya | Susumu Terajima | Akira Terao | Jun Kaname | Toshiaki Karasawa | Fumiyo Kohinata | Hiroyuki Miyasako | Hidetoshi Nishijima | Mitsuhiro Oikawa | Hideji Otaki | Mayumi Sada

**Director:** Kazuaki Kiriya  
**Screen:** Aspect Ratio 16:9  
**Subtitles:** English  
**No. of Disks:** 2  
**Region:** Region 2  
**Release Date:** 25 April 2005  
**Availability:** Usually despatched within 4 working days. [What does this mean...](#)

**BUY** >**RENT** >**Shopping Basket**

Your basket is empty

This week's big DVD releases  
Save over 30%

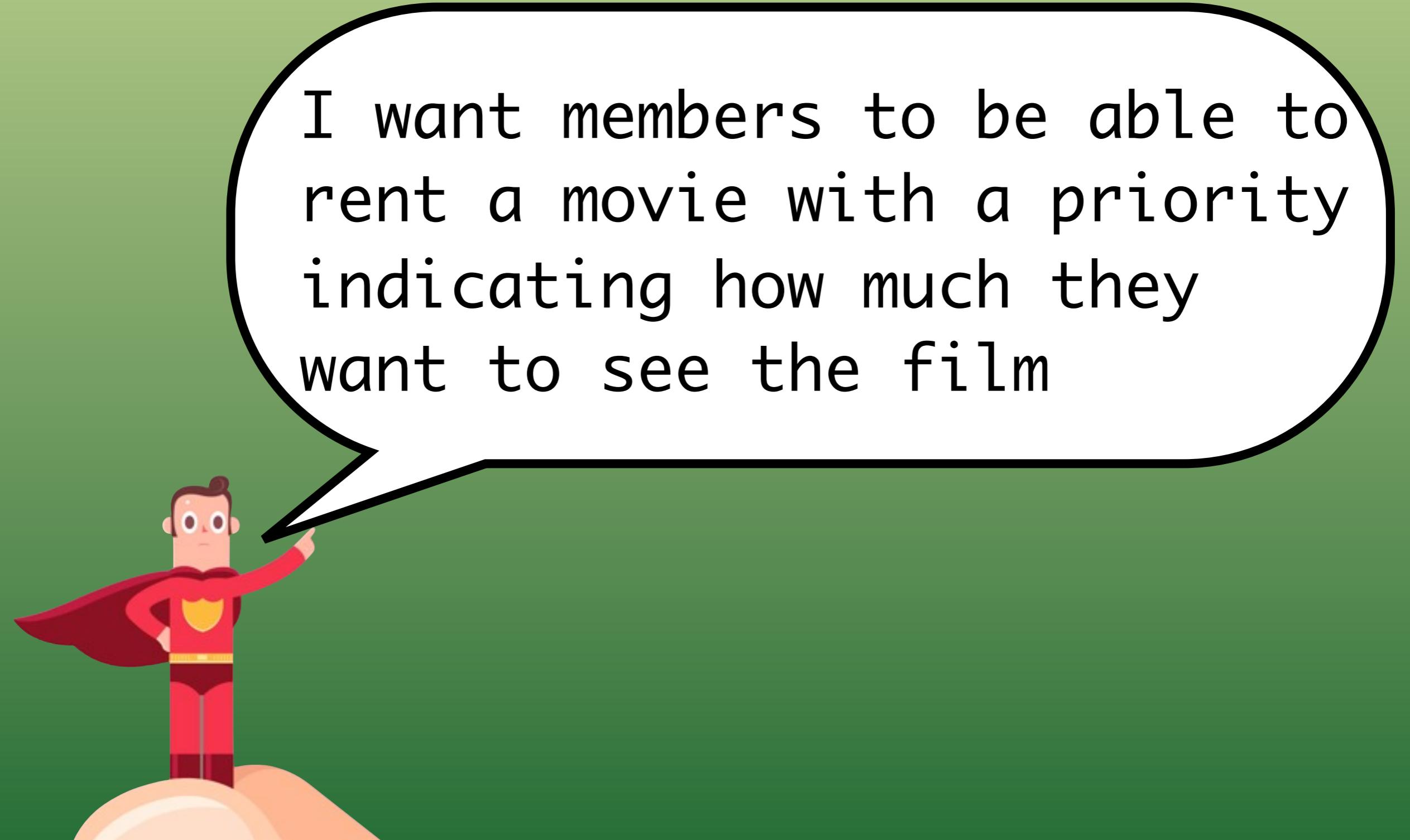
**Click Here****DVDs all under £5****Click Here**

Hot Movies, Hotter Price  
DVDs from £2.93

It is late in the 21st century. After 50 years of devastating war between Europa and the Eastern Federation, the latter has emerged victorious, and the new federation of Eurasia is formed. There can be no glorious peace, however, as the planet has been ravaged by chemical, biological and even nuclear weapons and the entire human race is dispirited and exhausted by half a century of war.

The only hope for long term survival lies with geneticist Dr. Azuma and his breakthrough

# Feature Request



I want members to be able to rent a movie with a priority indicating how much they want to see the film



Show me the

— — — — —



Show me the **VALUE**

# Root Cause Analysis

# Root Cause Analysis

Why?

So we can maximise allocation of films

# Root Cause Analysis

Why?

Why?

Keep customers happy

So we can maximise allocation of films

# Root Cause Analysis

Why?

So they continue with their subscriptions

Why?

Keep customers happy

Why?

So we can maximise allocation of films

# Root Cause Analysis



Lets write our  
Cucumber feature

# Feature (terrible)

Feature: select a movie to rent with priority  
In order to maximise allocation of films  
The website user  
Needs to be able to add movies to their rental list with a priority

Role

Value

Feature

# Feature (terrible)

Feature: select a movie to rent with priority  
In order to maximise allocation of films  
The website user  
Needs to be able to add movies to their rental list with a priority

**Narrative**

Role

Value

Feature

# Feature (terrible)

Feature: select a movie to rent with priority  
In order to maximise allocation of films  
The website user  
Needs to be able to add movies to their rental list with a priority



Role



Value



Feature

# Feature (terrible)

Feature: select a movie to rent with priority

In order to maximise allocation of films

The website user

Needs to be able to add movies to their rental list with a priority

# Feature (terrible)

Feature: select a movie to rent with priority

In order to maximise allocation of films

The website user

Needs to ~~be able to~~ add movies to their rental list with a priority



Noise

# Feature (terrible)

Feature: select a movie to rent with priority

In order to maximise allocation of films

The ~~website user~~

Needs ~~to~~ ~~be able to~~ add movies to their rental list with a priority

Too generic  
role



# Feature (terrible)

Feature: select a movie to rent with priority

In order to maximise allocation of films

The ~~website user~~ Film member

Needs ~~to be able to~~ add movies to their rental list with a priority

Too generic  
role

# Feature (terrible)

Role can change  
feature

Feature: ~~select a movie to rent with priority~~

In order to maximise allocation of films

The ~~website user~~ Film member

Needs to ~~be able to~~ add movies to their rental list with a priority

# Feature (terrible)

Role can change  
feature

Film Member selects a movie to rent with priority  
Feature: ~~select a movie to rent with priority~~

In order to maximise allocation of films

The ~~website user~~ Film member

Needs to ~~be able to~~ add movies to their rental list with a priority

# Nice Feature (~~terrible~~)

Film Member selects a movie to rent with priority  
Feature: ~~select a movie to rent with priority~~  
In order to maximise allocation of films  
The ~~website user~~ Film member  
Needs to ~~be able to~~ add movies to their rental list with a priority

**Acceptance  
Definition of Done.**



# Scenarios

Feature: Film Member selects a movie to rent with priority  
In order to maximise allocation of films  
The Film member  
Needs to add movies to their rental list with a priority

Scenario: High priority

# Scenarios

Feature: Film Member selects a movie to rent with priority  
In order to maximise allocation of films  
The Film member  
Needs to add movies to their rental list with a priority

Scenario: High priority

Then I should see "My rental list"  
And I should see "Casshern" in my rental list  
And "Casshern" should be marked as "High priority"

# Scenarios

Feature: Film Member selects a movie to rent with priority  
In order to maximise allocation of films  
The Film member  
Needs to add movies to their rental list with a priority

Scenario: High priority

When I choose "High priority"  
And I press "Rent"  
Then I should see "My rental list"  
And I should see "Casshern" in my rental list  
And "Casshern" should be marked as "High priority"

# Scenarios

Feature: Film Member selects a movie to rent with priority  
In order to maximise allocation of films  
The Film member  
Needs to add movies to their rental list with a priority

Scenario: High priority  
Given I'm logged in  
And I am viewing the movie "Casshern"  
When I choose "High priority"  
And I press "Rent"  
Then I should see "My rental list"  
And I should see "Casshern" in my rental list  
And "Casshern" should be marked as "High priority"

Balsamiq Mockups For Desktop - \* New Mockup

Quick Add: Search UI Library

All Big Buttons Common Containers Layout Markup Media Text iPhone

ComboBox Data Grid / Table Icon and Text Label Label / String of Text Link Link Bar

ComboBox / PullDown Data Grid / Table Icon and Text Label Label / String of Text Link Link Bar

Icon Name

select an icon

Some text

a link

Home | Proc

Movie name

Movie text with lots of information in it  
Amazing movie. Great. Fab.  
Really

High  Medium  Low

Rent

\* New Mockup

**Let there be Cuking**



## Demo

High Resolution:

<http://www.screencast.com/t/aGIsE4N3Zq>

Low Resolution:

<http://www.vimeo.com/3910617>



Here's one I  
Cuked earlier

```
esw008:cukeitfresh joseph$ cucumber features/film_member_add_movie_with_priority.feature
```

```
Feature: Film Member selects a movie to rent with priority
```

```
  In order to get value for money from my membership
```

```
  As a Film member
```

```
  I want to add movies to my rental list with a priority
```

```
Scenario: High priority
```

```
  Given I'm logged in
```

```
  And I am viewing the movie "Casshern"
```

```
  When I choose "High priority"
```

```
  And I press "Rent"
```

```
  Then I should see "My rental list"
```

```
  And I should see "Casshern" in my rental list
```

```
  And "Casshern" should be marked as "High priority"
```

```
  # features/film_member_add_movie_with_priority.feature:6  
  # features/step_definitions/user_steps.rb:1  
  # features/step_definitions/movie_steps.rb:1  
  # features/step_definitions/webrat_steps.rb:85  
  # features/step_definitions/webrat_steps.rb:14  
  # features/step_definitions/webrat_steps.rb:93  
  # features/step_definitions/rental_request_steps.rb:1  
  # features/step_definitions/rental_request_steps.rb:5
```

```
1 scenario
```

```
7 passed steps
```

```
esw008:cukeitfresh joseph$
```

## Demo

### High Resolution:

<http://www.screencast.com/t/tIBYxkKci>

### Low Resolution

<http://www.vimeo.com/3911104>

# Installing Cucumber

```
$ sudo gem install cucumber  
$ script/plugin install git://github.com/aslakhellesoy/  
cucumber.git  
  
$ gem sources -a http://gems.github.com  
$ sudo gem install aslakhellesoy-cucumber
```

# Fixtures

Scenario: search results found

Given the Movies

title
The colour white
The colour red
Casshern

When I search for "colour"

Then I will see 2 results

```
Given /^the Movies$/ do |movie_hash|
  #{:title => "The colour white"},  

  #{:title => "The colour red"},  

  #{:title => "Casshern"}  

  movies.hashes.each do |values|  

    Movie.create!(values)  

  end  

end
```

Scenario: search results found

Given 2 films with "colour" in the title

When I search for "colour"

Then I will see 2 results

# Stick it to the World

```
module NavigationHelpers
  def path_to(page_name)
    case page_name
    when /the homepage/
      root_path
    else
      raise "Can't find mapping from \"#{page_name}\" to a path."
    end
  end
end

World do |world|
  world.extend NavigationHelpers
  world
end
```

# Hooks

Hooks are GLOBAL!

```
Before do
  # do something before each scenario.
end
```

```
After do
  #do something after each scenario
end
```

# How many scenarios is enough?

- Given/When/Then
  - “Finite state machine” Uncle Bob
- What’s the Return on Investment?



# Cowcumbers (Bad smells)

*“fit only for consumption by cows”*

# Cowcumbers

Relying on state (too much)

```
Given /^dirty state$/ do
  @movie = Movie.create!
end
Given /^coupled by state$/ do
  @movie.title = "yucky"
end
```

Tests without user value

```
Given /^does a user care$/ do
  response.current_url == 'silly'
end
Given /^checking the db$/ do
  Movie.find(1).should_not == nil
end
```



# Building your DSL

# Concrete vs Abstract Scenarios

```
Given I go to the login page  
And I fill in "username" with "joseph"  
And I fill in "password" with "cuker"  
And I click "login"
```

```
Given I'm logged in
```

Concrete

Abstract

Domain understanding

# Calling steps from steps

```
Given /I'm logged in/ do
  User.create!(:user => 'josephwilk', :password => "pass")
  Given 'I fill in "password" with "josephwilk"'
  Given 'I fill in "password" with "pass"'
  Given 'I click "login"'
end
```

# Feature Request



Can you add some of that  
funky AJAX stuff for the  
rent button



# JavaScript kills Webrat

# Watir, Selenium & Celerity

Browser based

- Watir
- Selenium

Headless Browser

- Celerity
- Culerity - <http://github.com/langalex/culerity/tree/master>

# Webrat / Selenium

```
# Sets up the Rails environment for Cucumber
ENV["RAILS_ENV"] ||= "selenium"
require File.expand_path(File.dirname(__FILE__) + '/../../config/environment')
require 'cucumber/rails/world'
require 'cucumber/formatters/unicode'
#Cucumber::Rails.use_transactional_fixtures ← Turn off
require 'webrat'

Webrat.configure do |config|
  config.mode = :selenium ← Switch to Selenium
end
require 'cucumber/rails/rspec'
require 'webrat/core/matchers'

Before do
  Movie.delete_all ← Manually cleanup
  RentalRequest.delete_all
end
```

# Organising

Tag

@in-progress

Feature: Verify billing

@js

Scenario: Missing product description

Scenario: Several products

```
cucumber --profile rails --tags ~@js
```

```
cucumber --profile browser --tags @js
```

joseph-wilks-mac-pro:bakedcuke josephwilk\$

Terminal — bash — 125x43

# Demo

High Resolution:

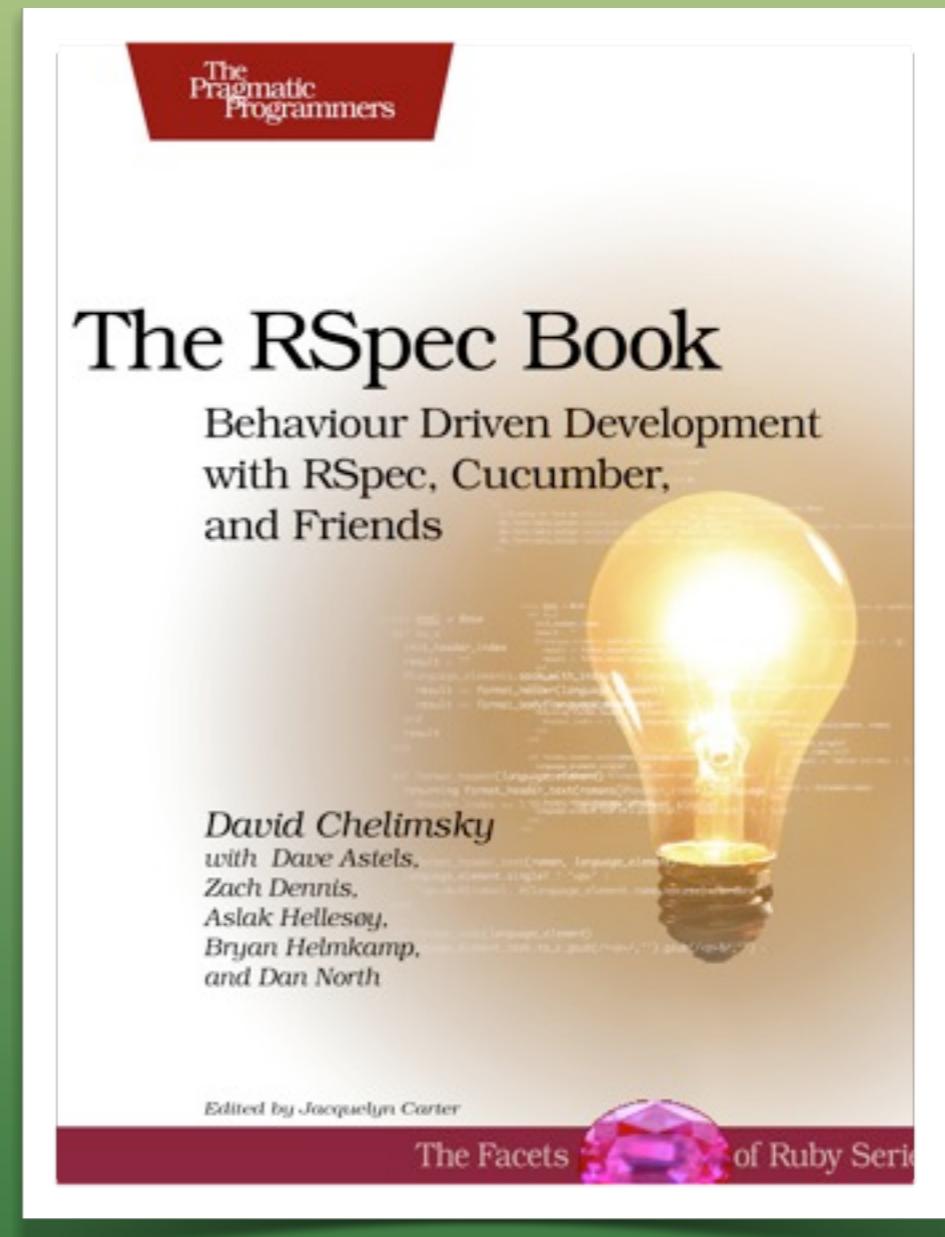
<http://www.screencast.com/t/IjRSI6TvXWu>

Low Resolution:

<http://www.vimeo.com/3911241>

# Further reading

- <http://cukes.info>
- <http://wiki.github.com/aslakhellesoy/cucumber>
- <http://rspec.info/>
- <http://blog.josephwilk.net>





call me  
cucumber...

Thanks

[joe@josephwilk.net](mailto:joe@josephwilk.net)

<http://github.com/josephwilk>