

SmartLunch: Automating acceptance tests

... and burning Word documents thanks to Cucumber

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What is Cucumber?

Plain English Test language

Describe all tests using 7 simple sentences

Readable by everybody -- business resources too :)

Can replace most word docs previously used for testing

Has rapidly gained momentum among developers



Cucumber overview

Feature: <name>

In order to <purpose>

As a <role>

I want to <feature benefits>

Scenario: <name>

Given <preconditions>

When <action>

Then <outcome>



Example: virk.dk testcase

Feature: Overview of the virk portal

In order to verify that pages work before and after an upgrade

As a responsible project administrator

I want to see that the most important features are running

Scenario: frontpage

When I go to the homepage

Then I should see "Forside"

And I should see "Log ind med digital signatur"

1 scenario (1 passed)

3 steps (3 passed)

0m0.357s

Run the command: `cucumber --no-source features/overblik.feature:6`



Word documents

Virk.dk test specs written in word. Examples:

Gå til portalens forside.	Et af hovedet elementerne, i toppen af forsiden er en søgeboks.
Skriv ordet <i>start</i> i søgeboksen og tryk enter.	Flere sider med søge resultater vises.
Zero søgning Søg efter ordet <u>sommerlandskab</u>	Ingen søgeresultater fundet.
Zero søgning Søg efter ordet <u>Afdelingsarkitekt</u>	Ingen søgeresultater fundet.
Zero søgning Søg efter ordet <u>skumgummiged</u>	Ingen søgeresultater fundet.
Zero søgning Søg efter ordet <u>Marilia</u>	Ingen søgeresultater fundet.



Example: virk.dk testcase

Feature: Search (testcase 005)

In order to find documents and indberetninger

As an ordinary employee

I want a big search field that helps and guides me...

Scenario: Frontpage must have search field

When I go to the homepage

Then I should see the search box

Scenario: 001 Search for popular word

Given I search for "start" in all content

Then I should see thousands of results

Run the command: cucumber --no-source features/search.feature:6:10:14



Example: virk.dk testcase

Scenario Outline: 002-006 Zero result search

Given I search for "<word>" in all content

Then I should see something like "Din søgning på '<word>' gav 0 resultater"

Examples:

```
| word |
| sommerlandskab |
| Afdelingsarkitekt |
| skumgummiged |
| Marilia |
```

6 scenarios (6 passed)

12 steps (12 passed)

0m6.408s

Run the command: cucumber --no-source features/search.feature:6:10:14



Technical setup of frameworks:

Ruby (or JRuby)

Cucumber (the test language)

Webrat (predefined step definitions)

Mechanize (for http access to webpages)



Getting started

1. Install JRuby: <http://www.jruby.org/getting-started>
2. Install Cucumber and related packages with command:

```
jruby -S gem install cucumber webrat mechanize
```

(there is no step 3)



Predefined steps for web applications

#predefined web_steps file:

Given I am on <page name>

Given I am on <page name>

Given I go to <page name>

When I follow <link text>

When I follow <link text>

When I follow <link text> within <element>

When I fill in <field> with <content>

When I follow <link text> within <element>

When I fill in <content> for <field>

When I fill in the following <value>

When I fill in <field> with <content>

When I select <value> from <field>

When I check <checkbox>

When I select <value> from <field>

When I uncheck <checkbox>

When I choose <field>

When I attach the file at <path>

Then I should see <content>

Then I should see <content>

Then I should see <content> within <element>

Then I should not see <content> within <element>

Then I should not see <content>

Then I should not see <content> within <element>

Then the <named> field should contain <content>

Then the <named> field should contain <content>

Then the <named> field not contain <content>

Then I should be on <page name>

Then the <named> checkbox should be checked

Then the <named> checkbox should not be checked

Then I should be on <page name>

Then show me the page



Together. Free your energies



Example from Internal CTE project

Cucumber tests added for describing requirements

Example: workflow descriptions



Cucumber PDF generation

- PDF files can generate requirements specs:
`cucumber --profile pdf --out test_result.pdf`
(picks up logo from features/support/logo.png)

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Cucumber features

Generated: 2010-04-27 15:15
Command: cucumber --profile pdf --out test_result.pdf

Legend
passed
failed
pending
skipped

Feature
Overview for administrator
In order to ensure correct payment of employees expenses
As an administrator (business controller)
I want to easily find and register information the expense report

Background
Given the following users:

name	role
charlotte	consultant
sylvia	administrator

And I log in as "sylvia"
And I am on the administrator overview page

Scenarios:
Overview

Given the following users:

name	role
charlotte	consultant
sylvia	administrator

And I log in as "sylvia"
And I am on the administrator overview page
Given I am on the administrator overview page
When I am there
Then I should see "Search for expense report"
And I should see "Update exchange rates"
And I should see "Update currency list"
And I should see "Update expense types"

Scenario:
View details on pending reports

Given the following users:

name	role
charlotte	consultant
sylvia	administrator

And I log in as "sylvia"
And I am on the administrator overview page
Given there are 2 expense reports pending my approval
When I go to pending_expense_reports
Then I should see "pending", "Show", "Edit"



Benefits using Cucumber as automated test framework

- Avoid too much manual acceptance testing
- Release more often: testing work before release goes down
- Refactor complex code to be simpler
- Avoid discussions on delivery quality



Value for clients

- Applications
- Release control
- Status reports
- Requirements specs
- Test specs



Our work for clients

- Virk.dk (Erhvervs- og Selskabsstyrelsen)
- Thompson Reuters
- Letpension
- Industriens pension



www.cukes.info

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Cucumber

 Behaviour Driven Development with elegance and joy

 1: Describe behaviour in plain text


```

Feature: Addition
  In order to avoid silly mistakes
  As a math student
  I want to be told the sum of two numbers

Scenario: Add two numbers
  Given I have entered 50 into the calculator
  And I have entered 70 into the calculator
  When I press add
  Then the result should be 120 on the screen
  
```

 2: Write a step definition in Ruby


```

Given /^I have entered (.*) into the calculator/ do |n|
  calculator = Calculator.new
  calculator.push(n.to_i)
end
  
```

 3: Run and watch it fail


```

I cucumber Features/addition.Feature
Features: Addition # Features/addition.Feature
In order to avoid silly mistakes
As a math student
I want to be told the sum of two numbers
Scenario: Add two numbers # Features/addition.Feature
Given I have entered 50 into the calculator # Features/step_1
And I have entered 70 into the calculator # Features/step_2
When I press add # Features/step_3
Then the result should be 120 on the screen # Features/step_4
  
```

 4. Write code to make the step pass


```

class Calculator
  def push(n)
    @n += n
  end
end
  
```

 5. Run again and see the step pass


```

I cucumber Features/addition.Feature
Features: Addition # Features/addition.Feature
In order to avoid silly mistakes
As a math student
I want to be told the sum of two numbers
Scenario: Add two numbers # Features/addition.Feature
Given I have entered 50 into the calculator # Features/step_1
And I have entered 70 into the calculator # Features/step_2
When I press add # Features/step_3
Then the result should be 120 on the screen # Features/step_4
  
```

 6. Repeat 2-5 until green like a cucumber


```

I cucumber Features/addition.Feature
Features: Addition # Features/addition.Feature
In order to avoid silly mistakes
As a math student
I want to be told the sum of two numbers
Scenario: Add two numbers # Features/addition.Feature
Given I have entered 50 into the calculator # Features/step_1
And I have entered 70 into the calculator # Features/step_2
When I press add # Features/step_3
Then the result should be 120 on the screen # Features/step_4
  
```