RubyOnRails ile

Test Temelli Programlama

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YeniHayat
Bilişim Teknolojileri A.Ş.

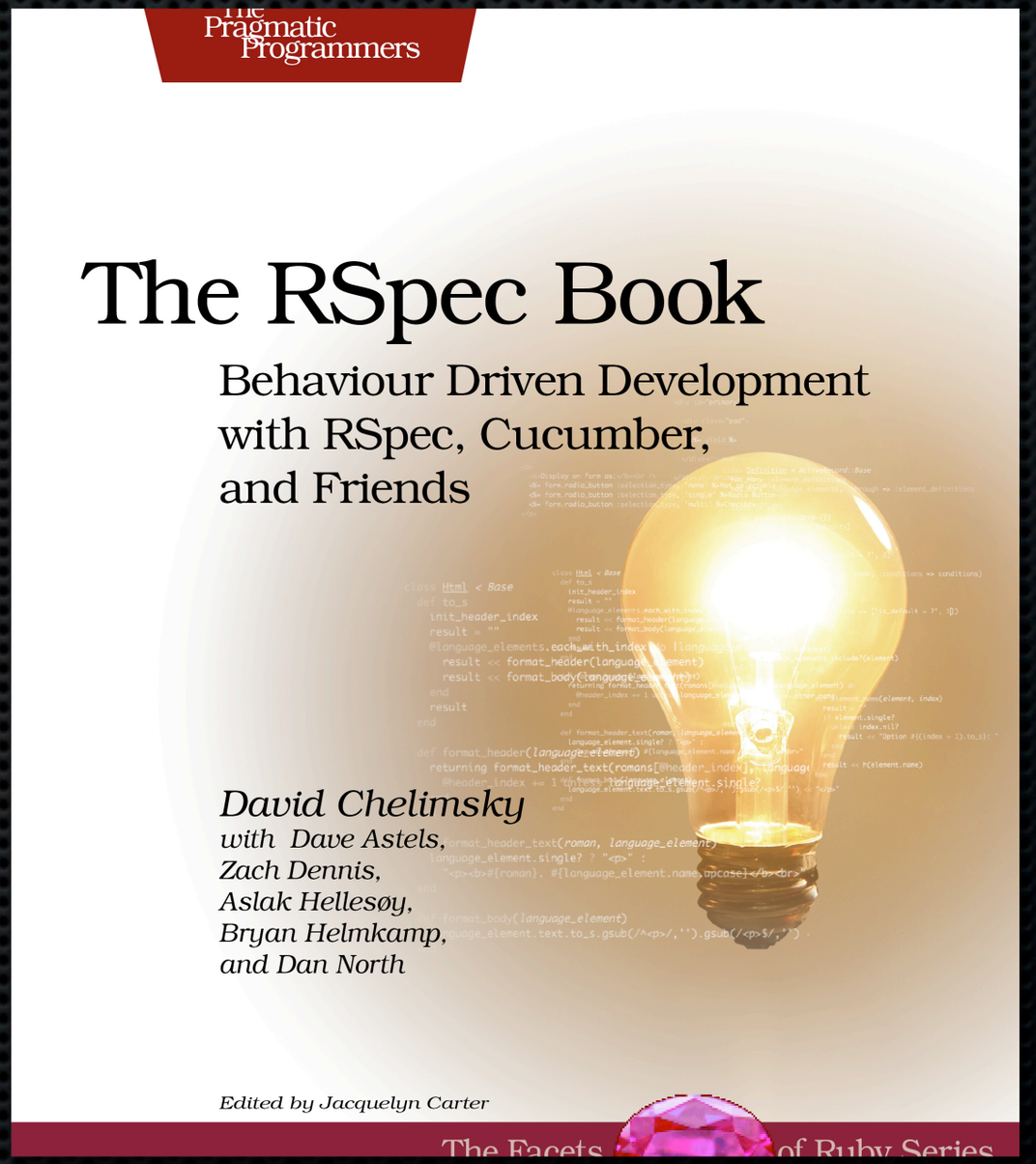
Sunum İçeriği

- Agile Development
- Test Driven Development
- Rspec
- Cucumber

The RSpec Book

David Chelimsky

pragprog.com



Agile Development

- Çok hızlı tamamlanan ilk sürüm
- İlk sürümden itibaren “çalışan” uygulama

- Özelliklere (feature) dayalı sürümler
- Kısa aralıklarla, ardışıl sürümler

Her şeyi kapsayan
“mükemmel” ilk dizayn
yerine,

Gelişen ve değişen dizayn

Test kodu yazılmayan kod kırılgandır

Test Temelli Uygulama Geliştirme

’60 lar,
Mercury Projesi ...

... önce test etmişler.

Üç Temel Aşama

- **Red**
- **Green**
- **Refactor**

Rails ...

Rails ...

... MVC pattern

Rails ...

... MVC pattern

Rspec ...

Üç Konfigürasyon

- Development
- Test
- Production

Test Ortamı

- Test gemleri
- Test konfigürasyonu
- Test DB

RSpec

Rspec ve Unit Testleri

```
class Article < ActiveRecord::Base
end
```

```
class CreateArticles < ActiveRecord::Migration
  def self.up
    create_table :articles do |t|
      t.string :title
      t.text :content

      t.timestamps
    end
  end

  def self.down
    drop_table :articles
  end
end
```

Rspec ve Unit Testleri

```
class Article < ActiveRecord::Base
end
```

```
require 'spec_helper'

describe Article do
    it "is valid with valid attributes"

    it "is not valid without title"

    it "is not valid without content"
end
```

Rspec ve Unit Testleri

```
class Article < ActiveRecord::Base
end
```

Rspec ve Unit Testleri

```
class Article < ActiveRecord::Base
end
```

```
Pending:
  Article is valid with valid attributes
    # Not Yet Implemented
    # ./spec/models/article_spec.rb:4
  Article is not valid without title
    # Not Yet Implemented
    # ./spec/models/article_spec.rb:6
  Article is not valid without content
    # Not Yet Implemented
    # ./spec/models/article_spec.rb:8
```

Rspec ve Unit Testleri

```ruby
require 'spec_helper'

describe Article do
  before(:each) do
    @article = Article.new(:title => "foo", :content => "bar")
  end

  it "is valid with valid attributes" do
    @article.should be_valid
  end

  it "is not valid without title" do
    @article.title = nil
    @article.should_not be_valid
  end

  it "is not valid without content" do
    @article.content = nil
    @article.should_not be_valid
  end
end
```

Rspec ve Unit Testleri

```
Article
  is valid with valid attributes
  is not valid without title (FAILED - 1)
  is not valid without content (FAILED - 2)
```

Rspec ve Unit Testleri

```
Article
  is valid with valid attributes
  is not valid without title (FAILED - 1)
  is not valid without content (FAILED - 2)

Failures:
  1) Article is not valid without title
     Failure/Error: @article.should_not be_valid
     expected valid? to return false, got true
     # ./spec/models/article_spec.rb:14
     # /Users/alper/.rvm/gems/ruby-1.8.7-p174/gems/activ

  2) Article is not valid without content
     Failure/Error: @article.should_not be_valid
     expected valid? to return false, got true
     # ./spec/models/article_spec.rb:19
     # /Users/alper/.rvm/gems/ruby-1.8.7-p174/gems/activ
```

Rspec ve Unit Testleri

```
class Article < ActiveRecord::Base
  validates :title, :presence => true
  validates :content, :presence => true
end
```

Rspec ve Unit Testleri

```ruby
class Article < ActiveRecord::Base
  validates :title, :presence => true
  validates :content, :presence => true
end
```

```
Article
  is valid with valid attributes
  is not valid without title
  is not valid without content
```

Unit Testlerinde Neler Test Edilmeli?

- Validasyonlar
- Business Logic

published_at

```
it "should have published_at field" do
  @article.should respond_to :published_at
end
```

```
class AddPublishedAtToArticles < ActiveRecord::Migration
  def self.up
    add_column :articles, :published_at, :datetime
  end

  def self.down
    remove_column :articles, :published_at
  end
end
```

published?

```
it "should have published? method" do
  @article.should respond_to :published?
end
```

```
class Article < ActiveRecord::Base
  validates :title, :presence => true
  validates :content, :presence => true

  def published?
  end
end
```

#published? specs

```
describe "#published?" do
  it "should be true when published_at is in past"

  it "should be false when published_at is in future"

  it "should be false when if published_at is not set"
end
```

#published? specs

```
describe "#published?" do
  it "should be true when published_at is in past" do
    @article.published_at = 2.days.ago
    @article.published?.should be_true
  end

  it "should be false when published_at is in future" do
    @article.published_at = 2.days.from_now
    @article.published?.should be_false
  end

  it "should be false when if published_at is not set" do
    @article.published_at = nil
    @article.published?.should be_false
  end
end
```

Red ...

```
bundle exec /Users/alper/.rvm/gems/ruby-1.8.7-p174/gems/rspec-core-2.0.0.rc
.....F..

Failures:
  1) Article#published? should be true when published_at is in past
     Failure/Error: @article.published?.should be_true
     expected nil to be true
     # ./spec/models/article_spec.rb:33
     # /Users/alper/.rvm/gems/ruby-1.8.7-p174/gems/activesupport-3.0.0/lib/

Finished in 0.03771 seconds
8 examples, 1 failure
```

```ruby
class Article < ActiveRecord::Base
  validates :title, :presence => true
  validates :content, :presence => true

  def published?
    !published_at.nil? and published_at.past?
  end
end
```

Green ..

```
bundle exec /Users/alper/.rvm/gems/ruby-1.8.7
........

Finished in 0.03604 seconds
8 examples, 0 failures
```

Green ..

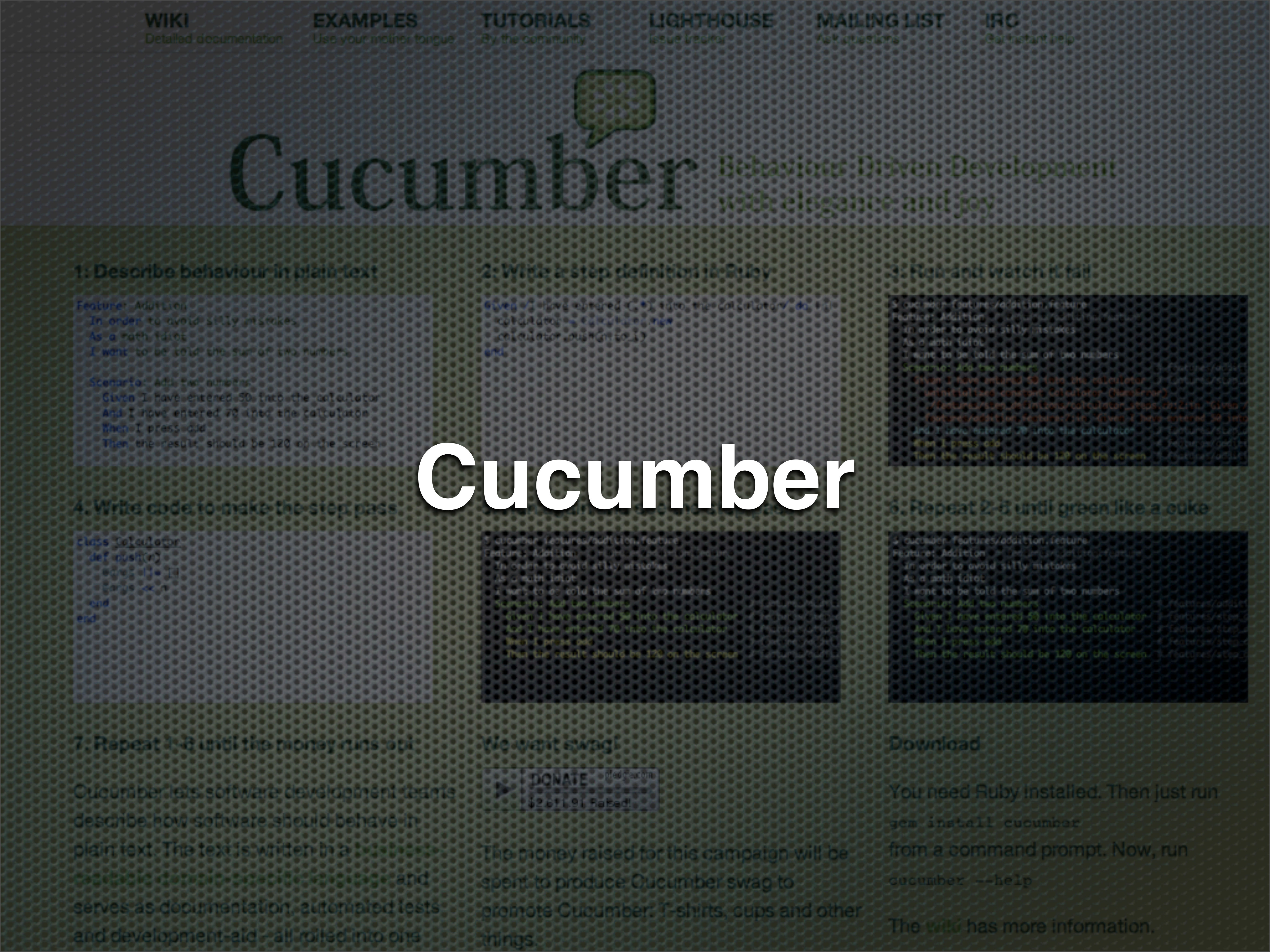
```
bundle exec /Users/alper/.rvm/gems/ruby-1.8.7
........

Finished in 0.03604 seconds
8 examples, 0 failures
```

```
Article
  is valid with valid attributes
  is not valid without title
  is not valid without content
  should have published_at field
  should have published? method
  #published?
    should be true when published_at is in past
    should be false when published_at is in future
    should be false when if published_at is not set
```

Fonksiyonel Testlerde Neler Test Edilmeli?

- Request başarılı mı?
- Kullanıcı doğru sayfaya yönlendirildi mi?
- Kullanıcı başarılı şekilde giriş yaptı mı?
- Gerekli değişkenler doğru şekilde atandı mı?
- Kullanıcıya doğru mesaj iletildi mi?


WIKI
EXAMPLES
TUTORIALS
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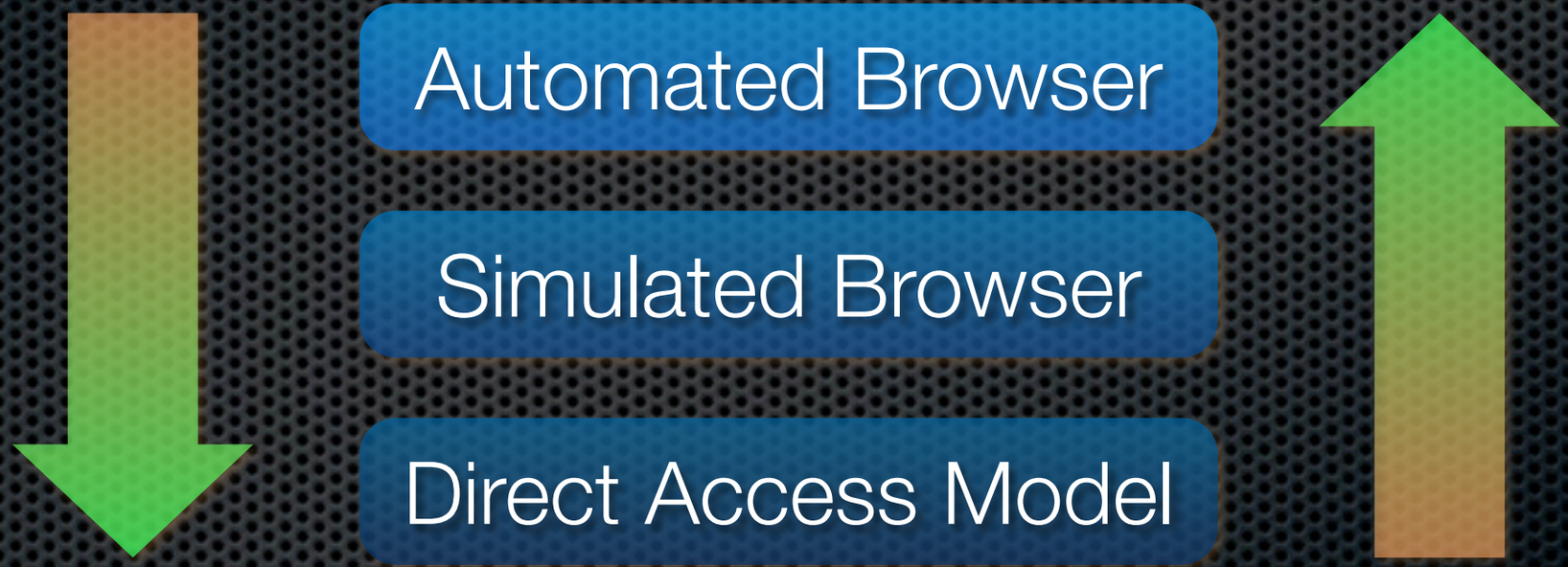
MAILING LIST
IRC
Cucumber
1: Describe behaviour in plain text
Download
You need Ruby installed. Then just run
gem install cucumber
from a command prompt. Now, run
cucumber --help

Cucumber

Entegrasyon Testleri

Yavaş

Entegre



Hızlı

İzole

Ana sayfa:

Normal bir kullanıcı anasayfada yalnızca yayınlanmış makaleleri görebilmeli

Mesela,

- “İstanbul” isimli yayınlanmış bir makalem ve
- “Ankara” isimli yayınlanmamış bir makelem olsun,
- kullanıcı anasayfaya geldiğinde
- “İstanbul” isimli makaleyi görebilmeli,
- “Ankara” isimli makaleyi görememeli

Cucumber Features

```
Feature: Home page contents

  As a visitor
  I should only see published articles in homepage

  Scenario: Show only published articles
    Given I have a published article titled "Recent Article"
    And I have an unpublished article titled "Planned Article"
    When I go to the home page
    Then I should see "Recent Article"
    And I should not see "Planned Article"
```

Steps

```
Given /^I have a published article titled "([^"]*)"$/ do |title|
  Article.create!(
    :title => title,
    :content => "some content",
    :published_at => 2.days.ago)
end

Given /^I have an unpublished article titled "([^"]*)"$/ do |title|
  Article.create!(
    :title => title,
    :content => "some content",
    :published_at => 2.days.from_now)
end
```

HTML Output

Cucumber Features

Feature: Home page contents

As a visitor
I should only see published articles in homepage

Scenario: Show only published articles

- Given I have a published article titled "**Recent Article**"
- And I have an unpublished article titled "**Planned Article**"
- When I go to **the home page**
- Then I should see "**Recent Article**"
- And I should not see "**Planned Article**"

i18n

```
# language: tr
Özellik: Toplama
  Gülünç hatalardan sakınmak için
  Matematikten anlamayan bir ahmak olarak
  Hesap makinasının bana iki sayının toplamını bulmasını istiyorum

Senaryo taslağı: İki sayıyı topla
  Diyelim ki hesap makinesine <girdi_1> girdim
  Ve hesap makinesine <girdi_2> girdim
  Eğer ki <düğme> tuşuna basarsam
  O zaman ekrandaki sonuç <çıktı> olmalı

Örnekler:
  | girdi_1 | girdi_2 | düğme | çıktı |
  | 20      | 30      | topla | 50    |
  | 2       | 5       | topla | 7     |
  | 0       | 40      | topla | 40    |
```

Test Ortamında Veri Yönetimi

- Test Database
- Fixtures
- Mocks

Fixtures

```
# products.yml

kanepe:
  name: Kanepe
  price: 399
  manufacturer: minimalist
  categories: mobilya

tv_sehpasi:
  name: TV Sehpası
  price: 149
  manufacturer: futurist
  categories: mobilya, elektronik
```

```
# manufacturers.yml

minimalist:
  name: MinimalistMobilya

futurist:
  name: FuturistElektronik
```

```
# categories.yml

mobilya:
  name: Mobilya

elektronik:
  name: Elektronik
```

Fixture Replacements

- Machinist
- FactoryGirl

FactoryGirl

Lazy attributes

```
factory :user do
  # ...
  activation_code { User.generate_activation_code }
end
```

FactoryGirl

Dependent attributes

```
factory :user do
  first_name 'Ahmet'
  last_name  'Sarı'
  email { "#{first_name}.#{last_name}@example.com".downcase }
end

Factory(:user, :last_name => 'Kara').email
# => "ahmet.kara@example.com"
```

FactoryGirl

Inheritance

```
factory :article do
  title 'title'
  content 'content'
end

factory :removed_article, :parent => :post do
  removed true
  association :approver, :factory => :user
end
```

Diğer Araçlar

- Autotest
- Rcov
- Watir

Learning Ruby

WITH THE EDGECASE RUBY KOANS

The Koans walk you along the path to enlightenment in order to learn Ruby. The goal is to teach the Ruby language, syntax, structure, and some common functions and libraries. We also teach you culture. Testing is not just something we pay lip service to, but something we live. It is essential to your quest to learn and do great things in this language.

DOWNLOAD THE KOANS

*NIX WINDOWS

1. INTRODUCTION
2. PREREQUISITES
3. INSTALLING RUBY
4. WHAT EDITORS CAN I USE?
5. THE PATH TO ENLIGHTENMENT
6. AUTHORS
7. INSPIRATION
8. ENLIGHTENED RESOURCES

rubykoans.com

The Structure

about_array_assignment.rb
about_arrays.rb
about_asserts.rb
about_blocks.rb
about_class_methods.rb
about_classes.rb
about_constants.rb
about_control_statements.rb

The koans are broken out into areas by file, hashes are covered in about_hashes.rb, modules are introduced in about_modules.rb, etc. They are presented in order in the path_to_enlightenment.rb file.