Day three

June, Wednesday 24th

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- Intro to unit testing with RSpec
- The marvelous world of TDD

Why do I need testing?


POLICE

Overview

- Yeah, it's code that checks that your code works fine

- Think of it as code police

- Automated testing is the key to balance good testing with implementation speed

More overview

- It's the way to know that what we wrote is correct, basically
- Guarantees robustness and a specific behavior
- It allows you to sleep at night

Purposes

- Assure that what we are implementing now works
- Act as a guard for the future, whistle blowing if something breaks it

Testing types

- There are many types of testing
  - unit
  - integration
  - acceptance
  - … and more

- We'll mainly treat unit testing

How does it work?

- Prepare the scenario
- Do whatever it takes to prove that feature
- Check that everything behaved as expected

An example

Testing that an instance method only returns the positive numbers attached to that instance.

- Prepare build an instance with both positive, zeros and negative numbers
- Do call that instance method
- Check that the result of the method call only includes the positive numbers

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First testing example

LET'S GET READY TO RUMBLE

Exercise SL8

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Our friend RSpec

Motivation

Abstract the testing software and just write the tests we want done.

Let's add another tool to our toolbelt!

Install!

```
gem install rspec
```

Color is fun

```
echo “--color -f documentation” > .rspec
```

OMG our first RSpec

```ruby
describe "God" do
  it "should work with booleans" do
    expect(true).to be_truthy
  end

  it "should count properly" do
    expect(1+3).to eq(4)
  end

  it "should find stuff" do
    expect(%w{ September October }).to include('September')
  end
end
```

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YEAH IT WORKS

```
 rspec god.rb

God
  should work with booleans
  should count properly
  should find stuff

Finished in 0.00351 seconds
3 examples, 0 failures
```

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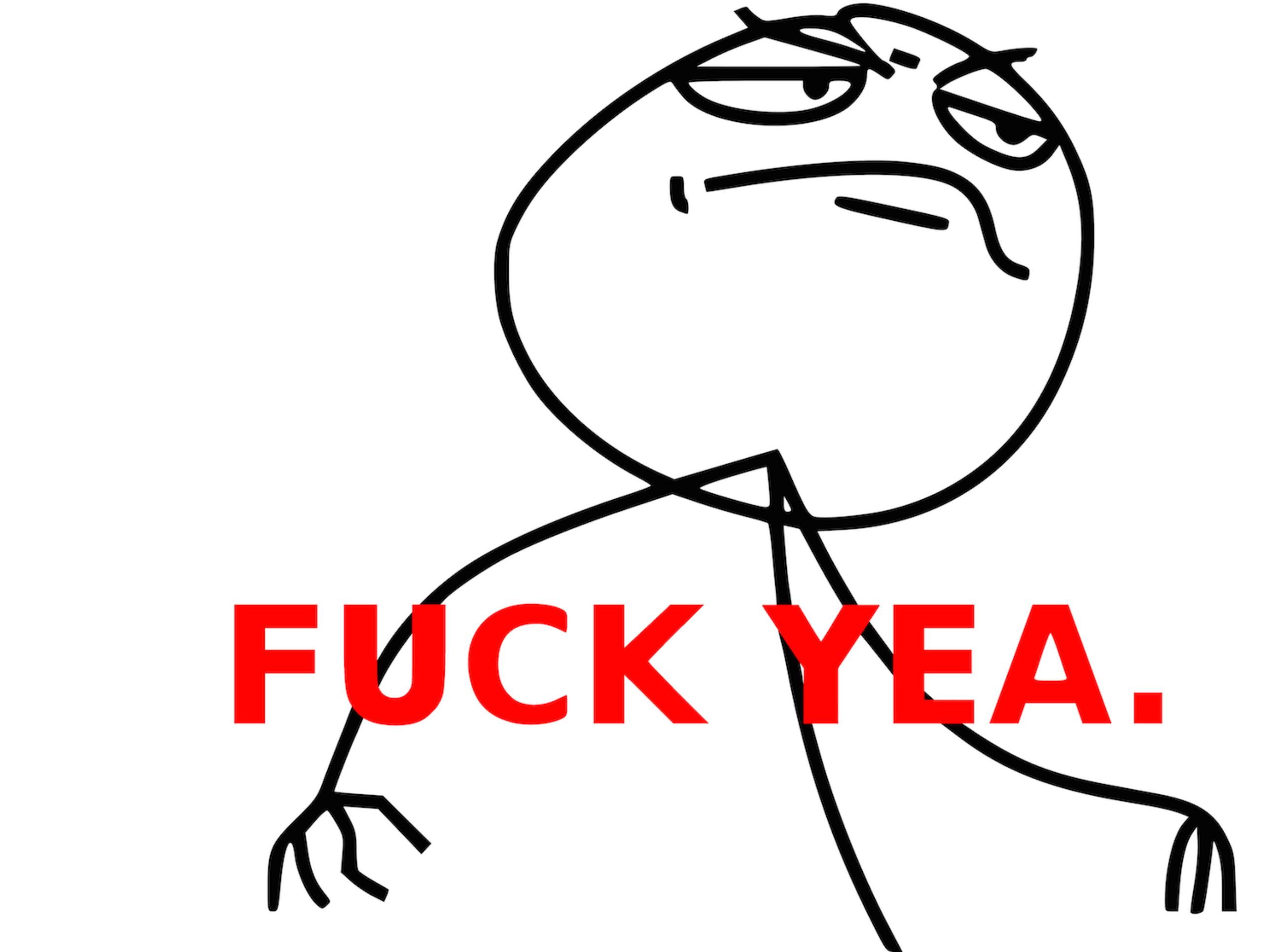
FUCK YEA.

Let’s breathe

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Using RSpec

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Exercise SL9

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Using RSpec right

- Use RSpec syntax accordingly
  - describe: for same semantic group e.g. a method, an attribute, a specific behaviour
  - context: for a situation where there is some specific data or information
  - before: for abstracting a common change of context between one or more specs

Writing good specs

- Explore all the different scenarios: leave nothing out of being tested!

- You're still writing code! Clear, simple…

- Writing too much specs is better than writing too few

An example, in RSpec

```ruby
class Numerifier
  attr_accessor :numbers

  def positive_numbers
    numbers.select { |number| number > 0 }
  end
end

describe Numerifier do
  before do
    @numerifier = Numerifier.new
  end

  describe "#positive_numbers" do
    it "should work with an empty array" do
      @numerifier.numbers = []
      expect(@numerifier.positive_numbers).to eq([])
    end

    it "should work with some numbers" do
      @numerifier.numbers = [1, 4, -5, 0, 3]
      expect(@numerifier.positive_numbers).to eq([1,4,3])
    end
  end
end
```

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TDD and BDD

Overview

- We used test-last mostly before (you remember, today morning?)

- But testing first helps us by thinking what we want, instead of how is it done

- Ask what you want to happen, then implement it!

TDD and BDD

- Two main approaches: TDD and BDD

- TDD is more focused on the tests

- BDD is more focused on the domain and OO design instead

On using it…

- Either TDD or BDD are possibilities, nothing is compulsory
- Extremes are bad
- Fundamentalist TDD/BDD != productive

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On using it…

- Take the best of both worlds
- Go for what is more needed at every moment
- Adapt it to your own taste!

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TDD and BDD

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LET'S GET READY TO RUMBLE

Exercises SL10 & SL11

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