Automation for iOS

Target !!

Pyramid testing

Pyramid testing

Ideal Test Pyramid

Functional Tests (GUI)
- Developers & / QA team

API Tests
- Developers & / QA team

Integration tests
- Developers

Component tests
- Developers

Unit Tests
- Developers

Cost / Effort

Time
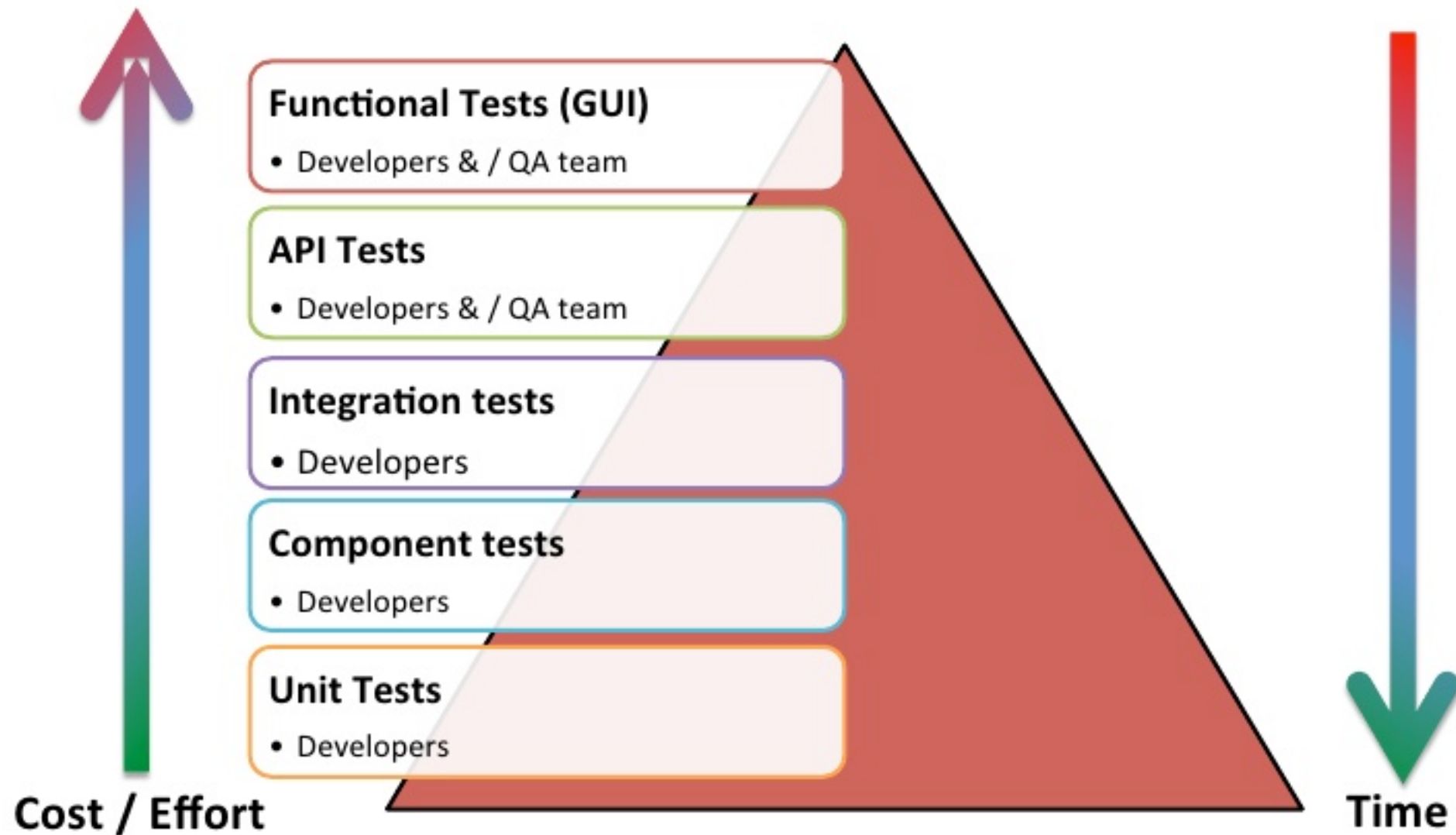
Cycle of Automation test

1. Setup data

2. Run tests

3. Validation

Software requirement

1. Ruby + Gem

2. Xcode

Siam Chamnankit Co., Ltd., Odd-e (Thailand) Co., Ltd. and Alliance
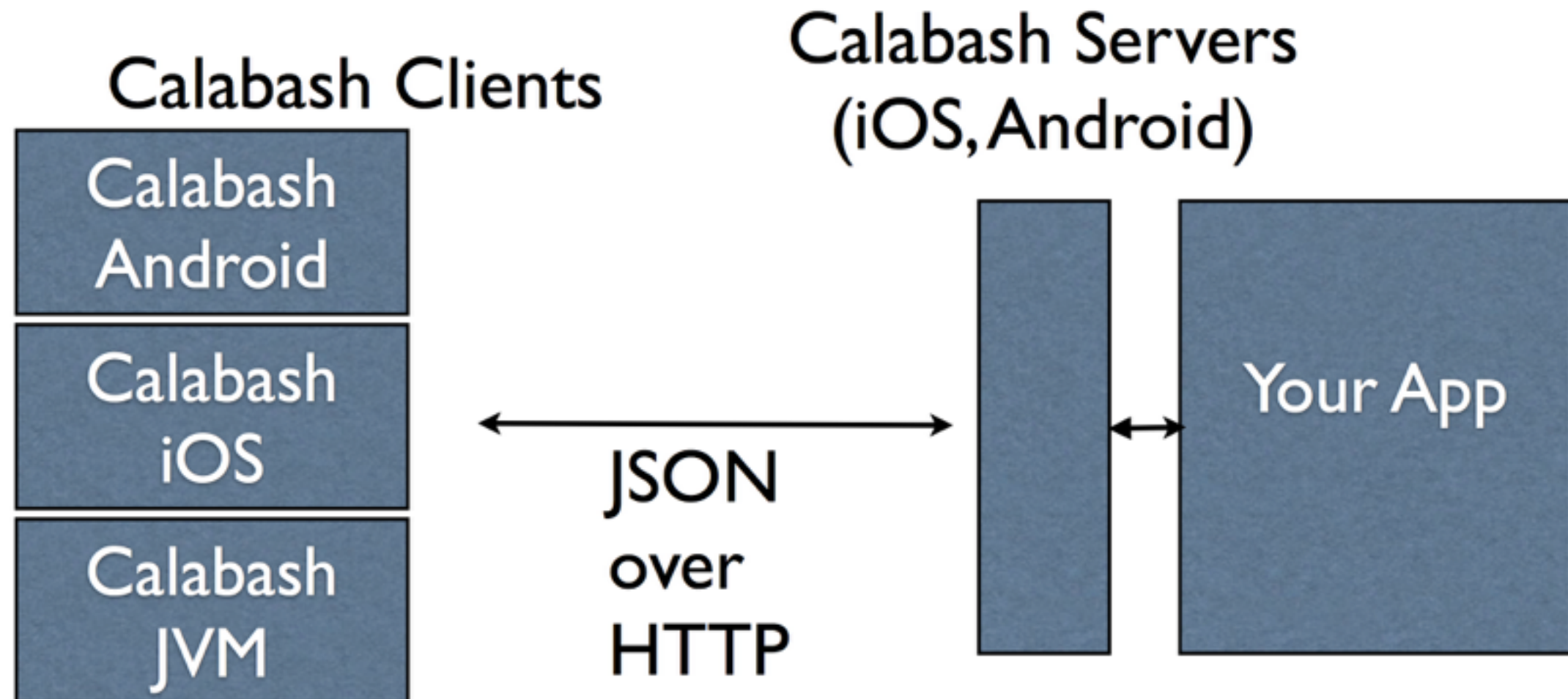
Installation

$ gem install calabash-cucumber

Generate project
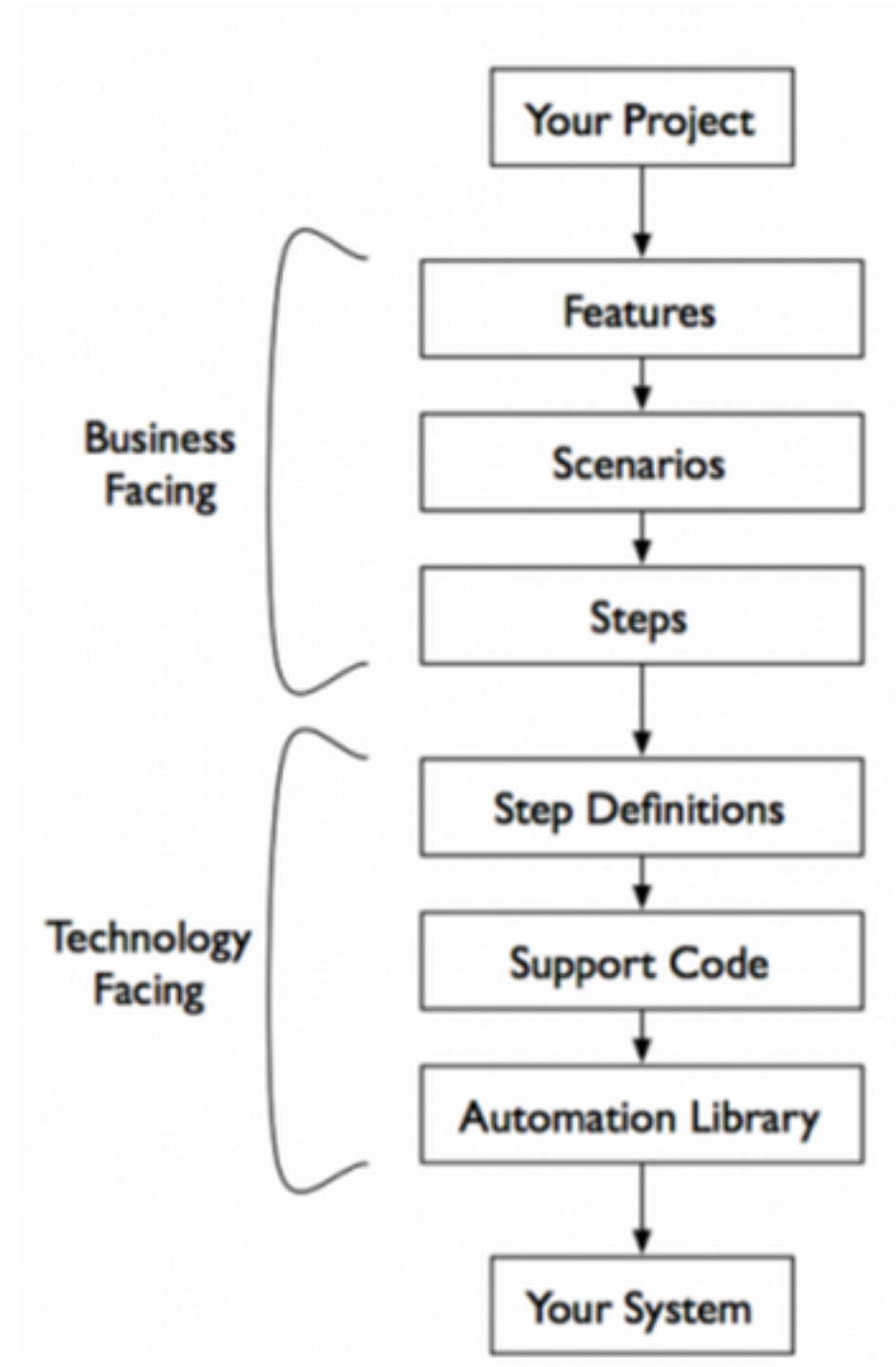
$ calabash-ios gen

```
features/
├── my_first.feature
├── step_definitions
│   ├── calabash_steps.rb
│   └── my_first_steps.rb
└── support
    ├── 01_launch.rb
    ├── 02_pre_stop_hooks.rb
    └── env.rb
```

Architecture

Calabash Clients

Calabash Android

Calabash iOS

Calabash JVM

JSON over HTTP

Calabash Servers (iOS, Android)

Your App

Cucumber stack

Feature


```
my_first.feature                    •

1   Feature: Login feature
2
3   Scenario: As a valid user I can log into my app
4      When I press "Login"
5      Then I see "Welcome to coolest app ever"
```

Given When Then

Given -> to put system in known state
When -> to describe the action
Then -> to observe outcomes

And, But

https://github.com/cucumber/cucumber/wiki/Given-When-Then

Step Definitions

Define in **features/step_definitions/*_steps.rb**
Write in Ruby language

Cucumber

Write in **Gherkin**
Domain Specific Language (DSL)
Business readable
Support 40 languages

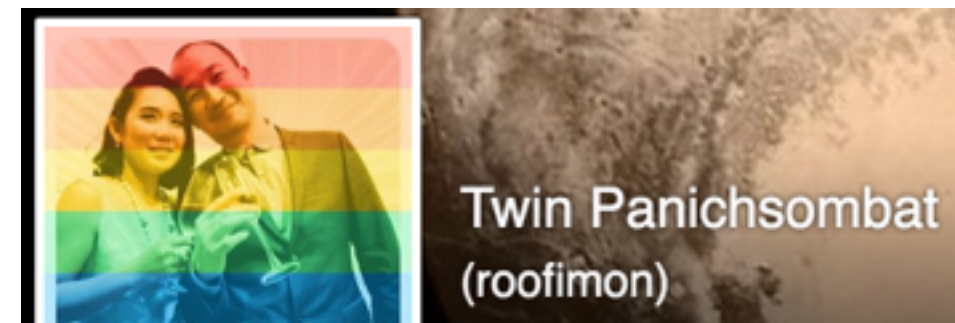https://github.com/cucumber/cucumber/wiki/Gherkin

English

```
"en": {
  "but": "*|But",
  "and": "*|And",
  "then": "*|Then",
  "when": "*|When",
  "name": "English",
  "native": "English",
  "feature": "Feature|Business Need|Ability",
  "background": "Background",
  "scenario": "Scenario",
  "scenario_outline": "Scenario Outline|Scenario Template",
  "examples": "Examples|Scenarios",
  "given": "*|Given"
},
```
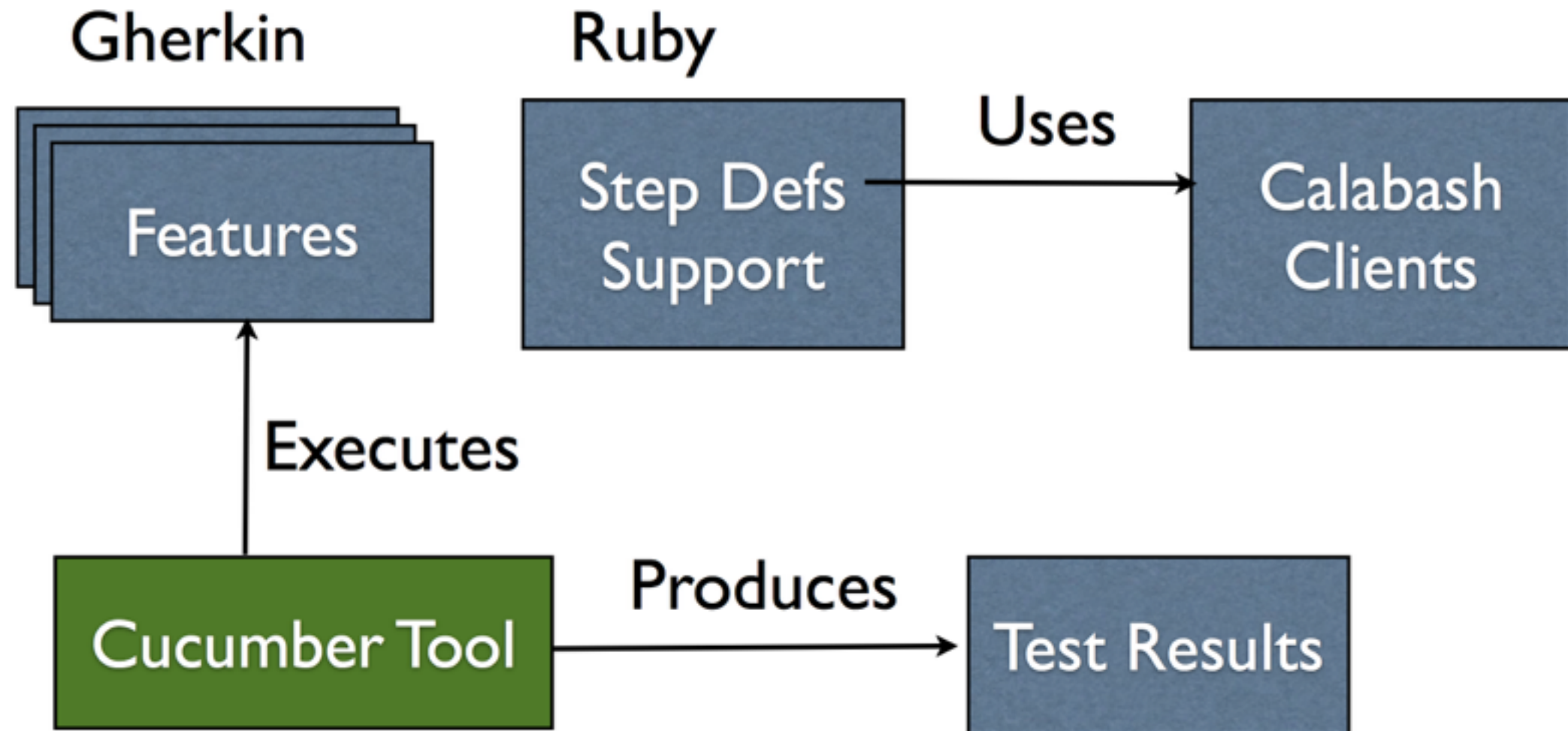
Support Thai

```
"th": {
  "but": "*|แต่",
  "and": "*|และ",
  "then": "*|ดังนั้น",
  "when": "*|เมื่อ",
  "name": "Thai",
  "native": "ไทย",
  "feature": "โครงหลัก|ความต้องการทางธุรกิจ|ความสามารถ",
  "background": "แนวคิด",
  "scenario": "เหตุการณ์",
  "scenario_outline": "สรุปเหตุการณ์|โครงสร้างของเหตุการณ์",
  "examples": "ชุดของตัวอย่าง|ชุดของเหตุการณ์",
  "given": "*|กำหนดให้"
},
```

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(roofimon)

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Cucumber + Calabash

Layer of cucumber

Features (Gherkin)

Step Definitions (Ruby)

Your App
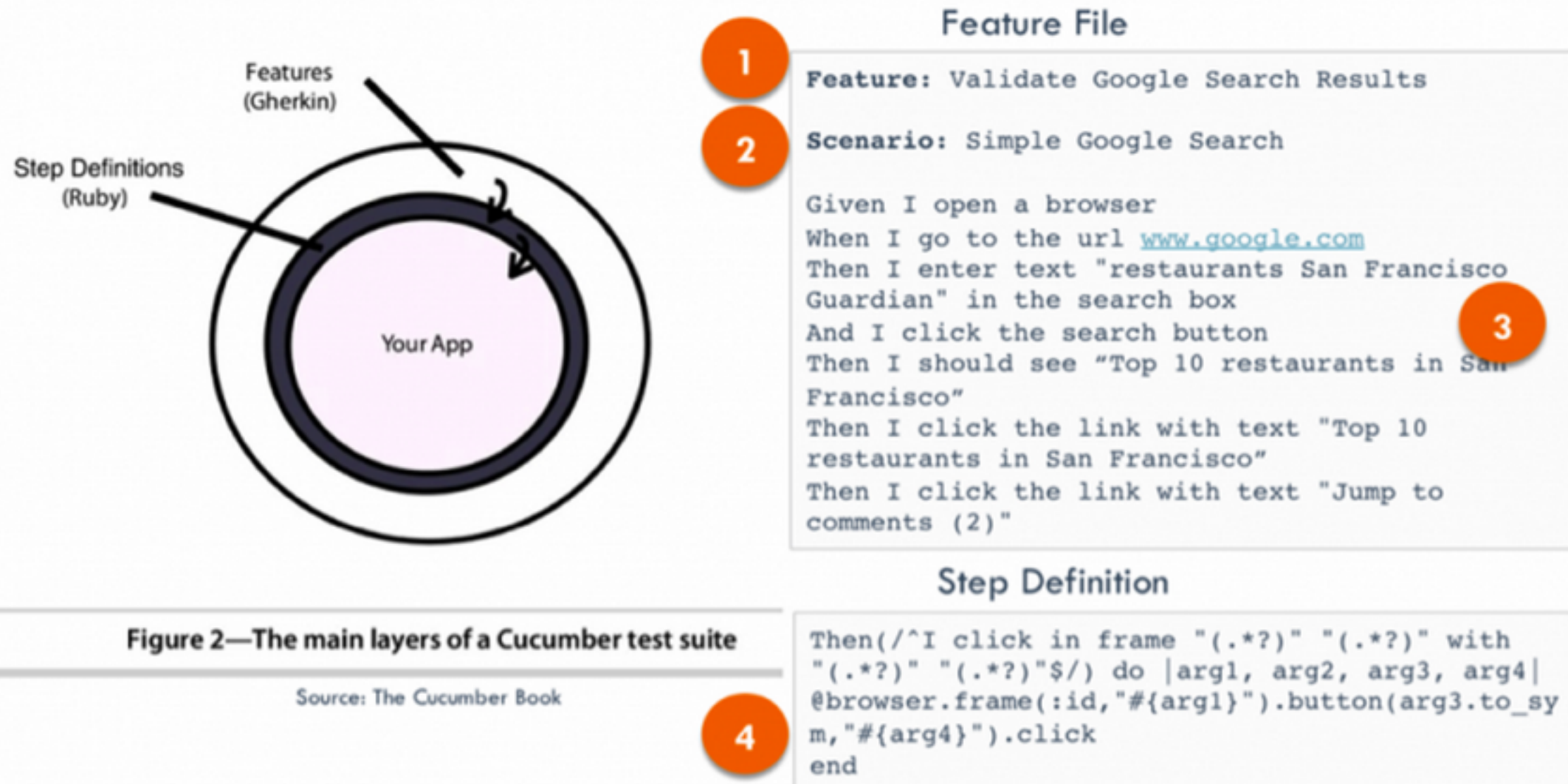
Figure 2—The main layers of a Cucumber test suite

Source: The Cucumber Book

Feature File

1 **Feature:** Validate Google Search Results

2 **Scenario:** Simple Google Search

Given I open a browser
When I go to the url www.google.com
Then I enter text "restaurants San Francisco Guardian" in the search box
And I click the search button
Then I should see "Top 10 restaurants in San Francisco"
Then I click the link with text "Top 10 restaurants in San Francisco"
Then I click the link with text "Jump to comments (2)"

3

Step Definition

```
Then(/^I click in frame "(.*?)" "(.*?)" with
"(.*?)" "(.*?)"$/) do |arg1, arg2, arg3, arg4|
@browser.frame(:id,"#{arg1}").button(arg3.to_sy
m,"#{arg4}").click
end
```

4

Write first feature

Before start

Create or Open your project in Xcode

Download calabash framework

$ calabash-ios download

Setup calabash

$ calabash-ios setup

Create features

$ calabash-ios gen

Run calabash

$ cucumber

Problem

Not set APP_BUNDLE_PATH

Solve

APP_BUNDLE_PATH=/Users/<name>/Library/ Developer/Xcode/DerivedData/<project>- belsuhpuqthqjvgbweiiutbbdwej/Build/Products/ Debug-iphonesimulator/<project>-cal.app

Problem

Device not found

List of your device

$xcrun instruments -s devices

```
Known Devices:
MacBook Pro [13CA0FB5-F6C7-5FC4-B3CF-E0572816CA3B]
Resizable iPad (8.4 Simulator) [CC45715E-95D1-4EA6-990B-70E824BFBADC]
Resizable iPhone (8.4 Simulator) [15ADCBC2-B7BB-4A0A-A290-AD41B13DC467]
iPad 2 (8.4 Simulator) [D58351DC-CD9A-48F2-98FF-4FBC8F87D9A3]
iPad Air (8.4 Simulator) [DBD36BA6-ACEC-47A1-BBC5-66852FEDF13E]
iPad Retina (8.4 Simulator) [8FCE4BF3-68B3-40C2-84F7-893158A2C1E8]
iPhone 4s (8.4 Simulator) [DB8C76A8-5B83-4F5E-81E0-5BE94C53C84F]
iPhone 5 (8.4 Simulator) [524AD57A-66A5-48F0-A891-8C668C4EBF2B]
iPhone 5s (8.4 Simulator) [C343C0EC-B348-4AF3-B6F1-EC41D4004F8A]
iPhone 6 (8.4 Simulator) [772B27A1-6A34-415A-8941-EDEA0D1581BF]
iPhone 6 Plus (8.4 Simulator) [261E9E51-D7A5-447A-A413-68F59EE01575]
```

Problem

Device not found

Solve

$DEVICE_TARGET="iPhone 6 (8.4 Simulator)"

Problem

App launch every second in a loop

Solve :: support/01_launch.rb

```ruby
Before do |scenario|
  RunLoop::SimControl.new.reset_sim_content_and_settings
  @calabash_launcher = Calabash::Cucumber::Launcher.new
  unless @calabash_launcher.calabash_no_launch?
    @calabash_launcher.relaunch
    @calabash_launcher.calabash_notify(self)
  end
end
```

Generate HTML report

$ cucumber

--format **html** --out report.html --format pretty

Generate JSON report

$ cucumber

--format **json** --out report.json --format pretty

Predefined steps

- Assertion
- Input
- Button
- Swipes
- Scroll
- Playback of touch event

- Touching (tapping)
- Waiting
- Screenshot
- Pinch (for zoom)
- Device orientation

https://github.com/calabash/calabash-ios/wiki/02-Predefined-steps

Tags


```
1   Feature: Welcome to drivebot app
2
3   @test
4   Scenario: User see all detail of application
5       Given First time to open app
6       When I see detail at next page
7       And I see detail at next page
8       And I see detail at next page
9       And I see detail at next page
10      And I see detail at next page
11      And I see detail at next page
12      And I see detail at next page
13      And I see detail at next page
14      Then I see verify your device
```

https://github.com/cucumber/cucumber/wiki/Tags

Use Tags

- Feature
- Scenario
- Scenario Outline
- Example

https://github.com/cucumber/cucumber/wiki/Tags

Tags

$cucumber --tags @a,@b

$cucumber --tags @a --tags @b

https://github.com/cucumber/cucumber/wiki/Tags

Calling steps from Step definitions

```ruby
Then(/^Logout from app$/) do
  steps %Q{
    And I see "Logout"
    And I press "Logout"
    And I press "lo_cfm_logout"
  }
end
```

https://github.com/cucumber/cucumber/wiki/Calling-Steps-from-Step-Definitions

Scenario outline

```
 2   Scenario Outline: eating
 3     Given there are <start> cucumbers
 4     When I eat <eat> cucumbers
 5     Then I should have <left> cucumbers
 6
 7     Examples:
 8       | start | eat | left |
 9       |  12   |  5  |  7   |
10       |  20   |  5  |  15  |
```

https://github.com/cucumber/cucumber/wiki/Scenario-Outlines

Calabash iOS console

$calabash-ios **console**

Let's try ...

Calabash console

>start_test_server_in_background

Let's try ...

Calabash console

>query("*")

>query("UITextField")

>query("* id:'xxxxx'")

Let's try ...

https://github.com/calabash/calabash-ios/wiki/05-Query-syntax