

Automation for Android

Calaba.sh

Target !!

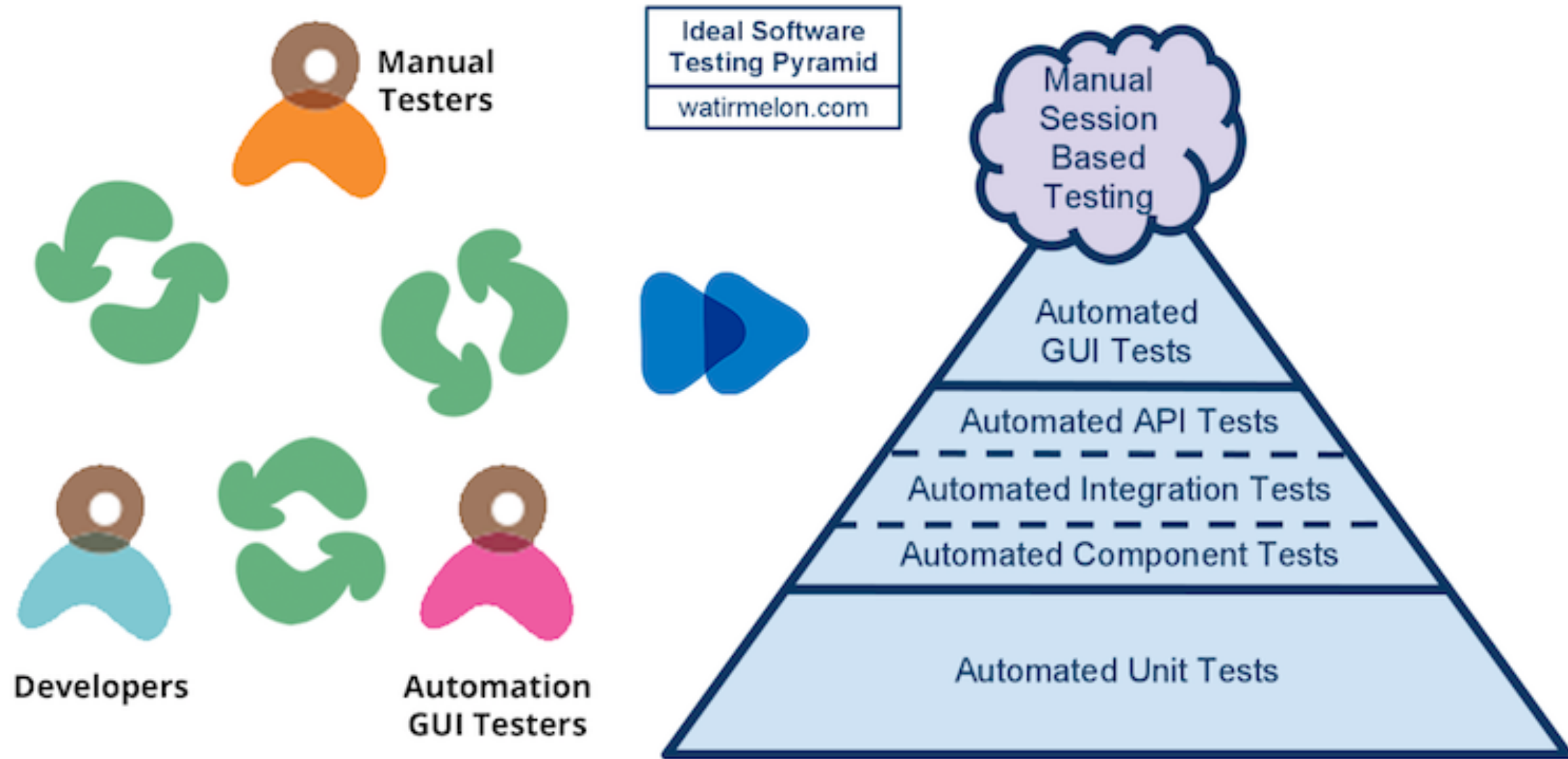
Calaba.sh



Jenkins

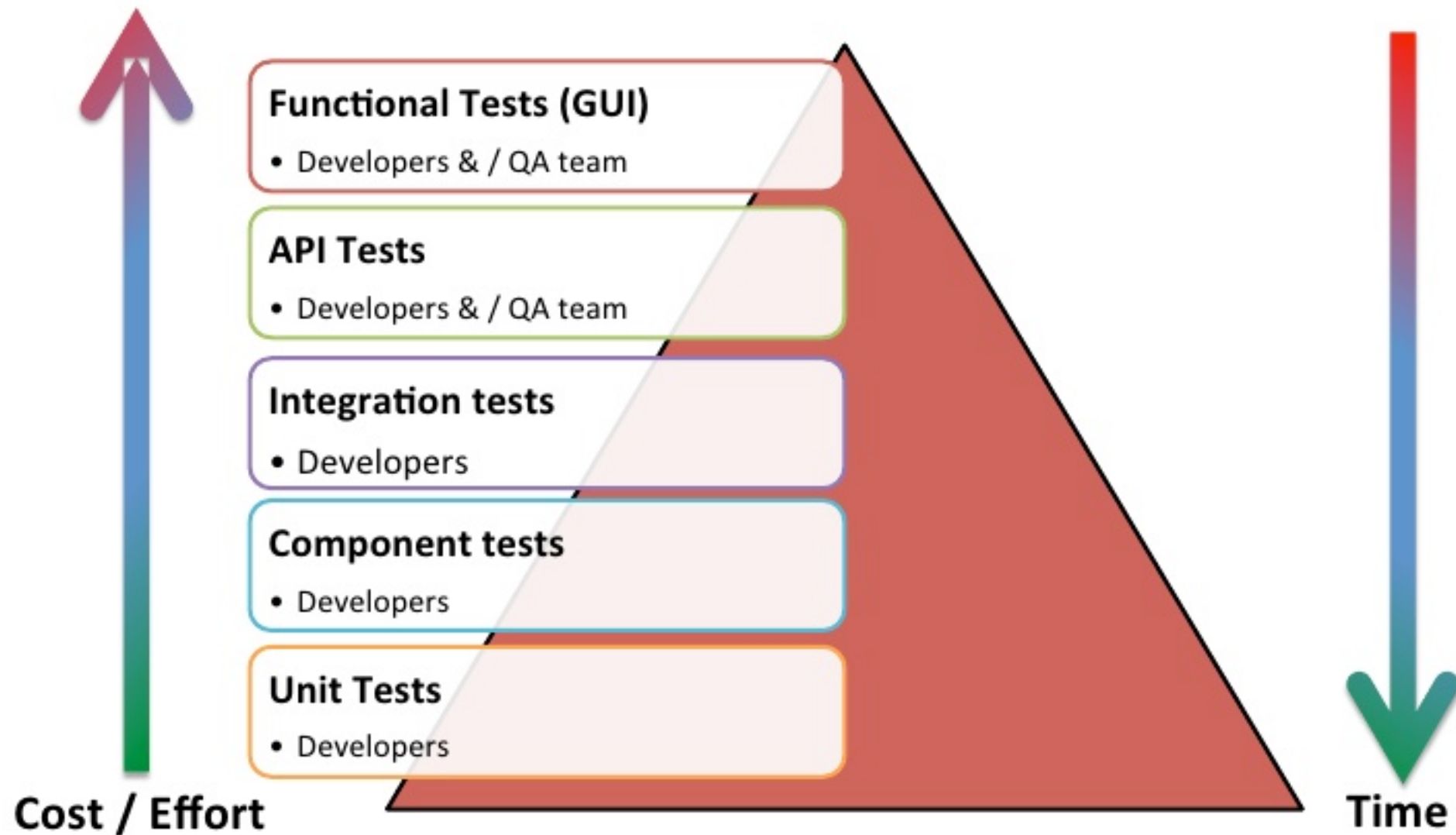


Pyramid testing



Pyramid testing

Ideal Test Pyramid



Cycle of Automation test

1. Setup data
2. Run tests
3. Validation

Software requirement

1. Ruby + Gem
2. Android SDK

Installation

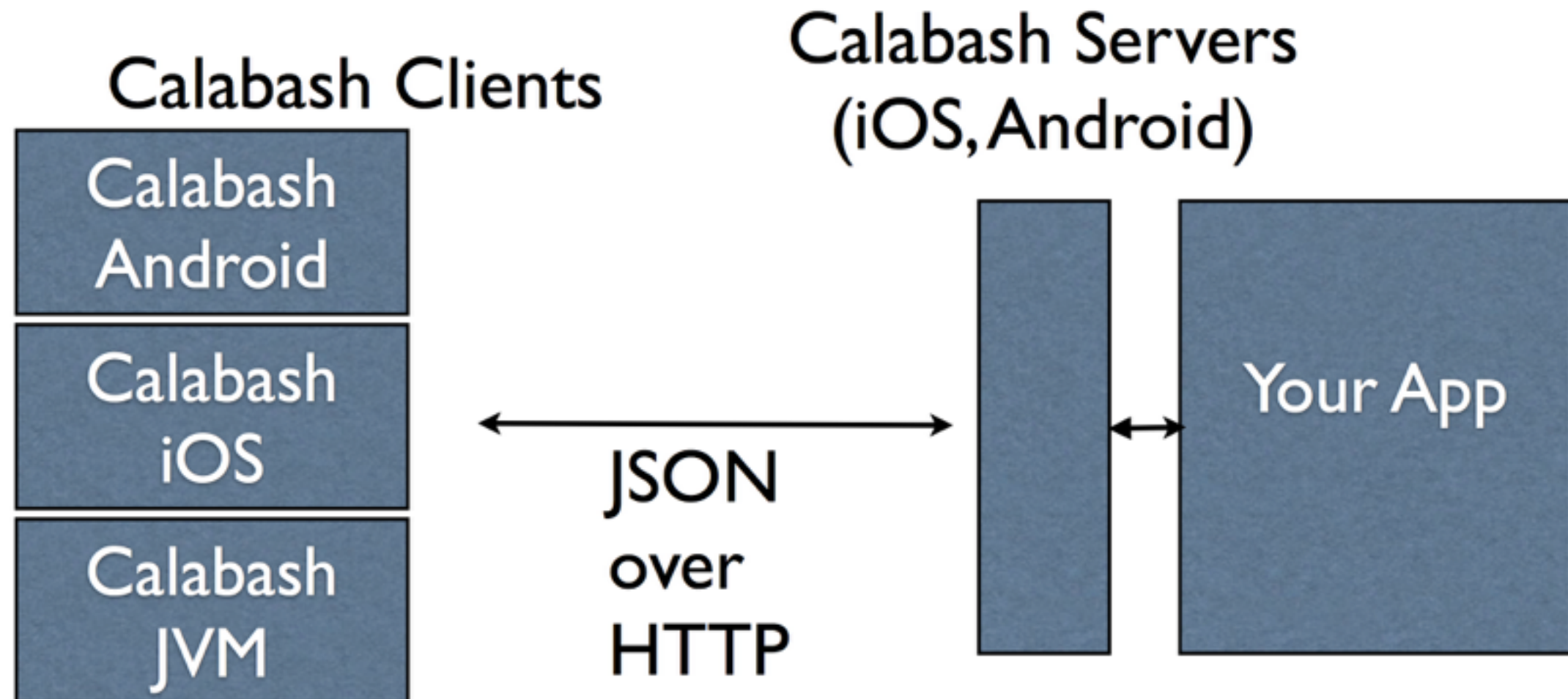
```
$ gem install calabash-android
```

Generate project

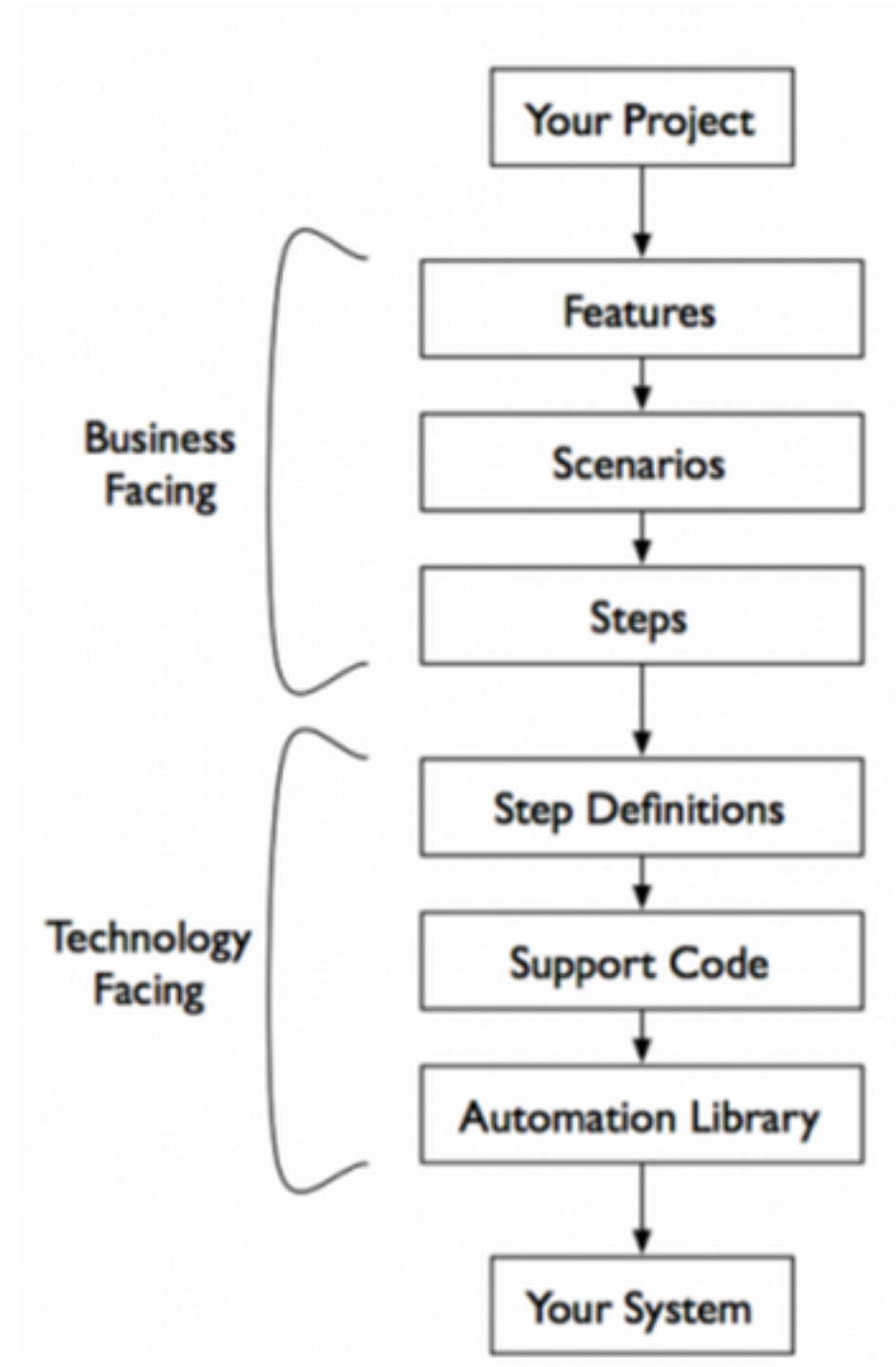
\$ calabash-android gen

```
├── features
│   ├── my_first.feature
│   ├── step_definitions
│   │   └── calabash_steps.rb
│   └── support
│       ├── app_installation_hooks.rb
│       ├── app_life_cycle_hooks.rb
│       ├── env.rb
│       └── hooks.rb
```


Architecture



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

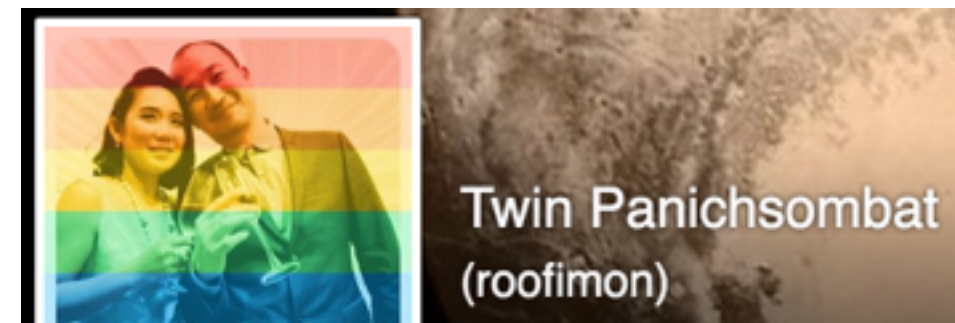
<https://github.com/cucumber/cucumber/wiki/Gherkin>

English

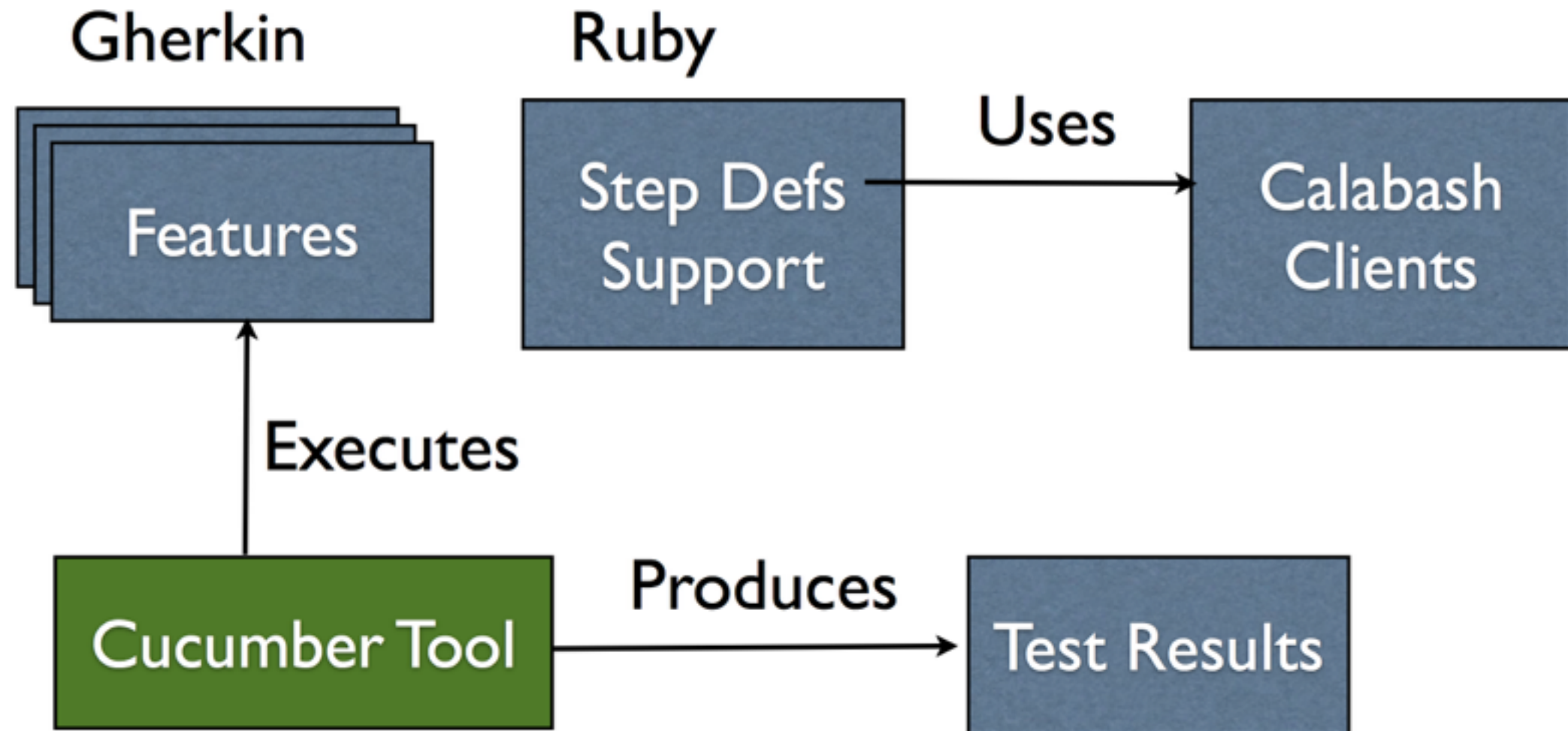
```
"en": {  
  "but": "*|But",  
  "and": "*|And",  
  "then": "*|Then",  
  "when": "*|When",  
  "name": "English",  
  "native": "English",  
  "feature": "Feature|Business Need|Ability",  
  "background": "Background",  
  "scenario": "Scenario",  
  "scenario_outline": "Scenario Outline|Scenario 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",  
},
```



Cucumber + Calabash



Layer of cucumber

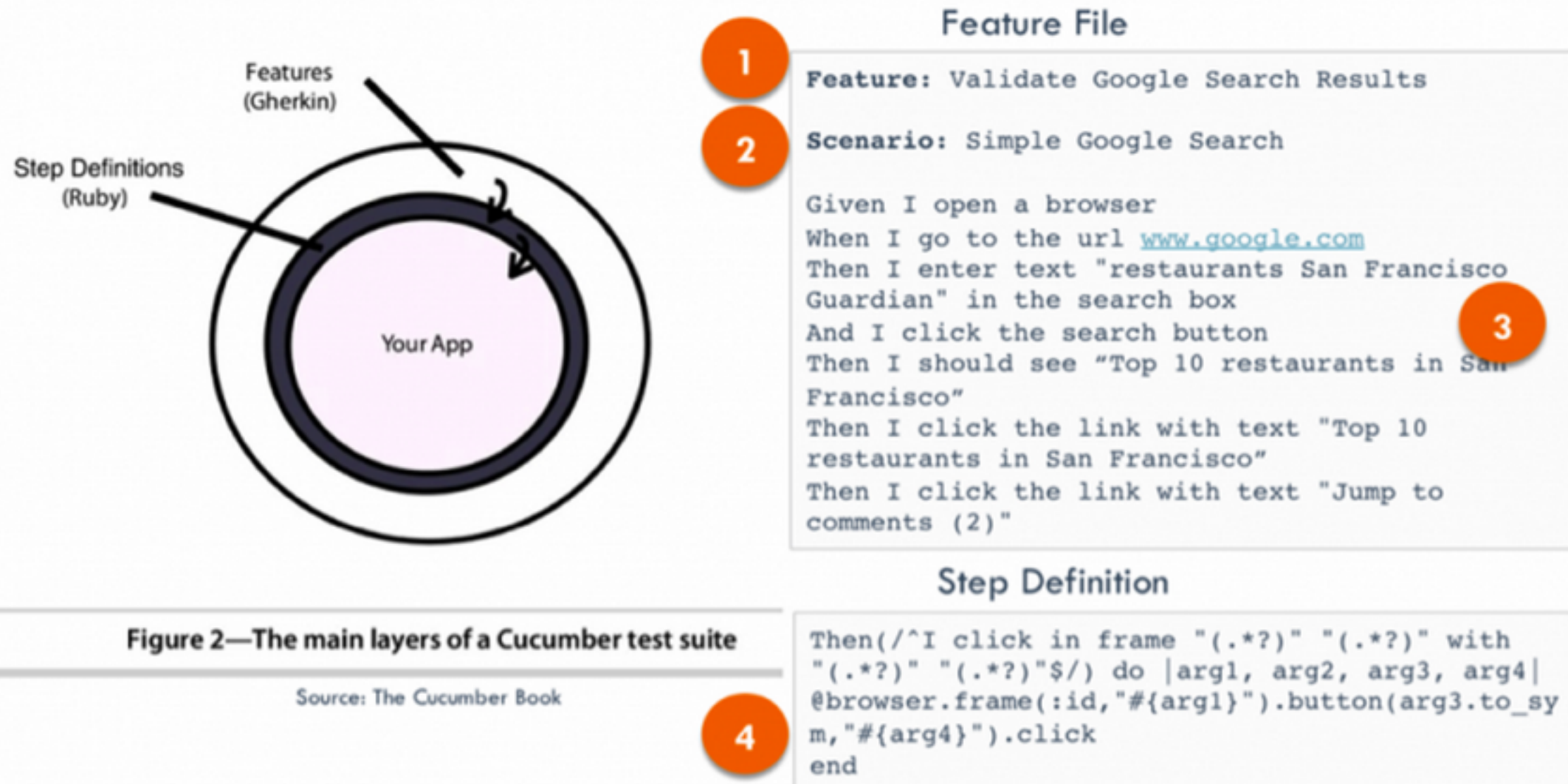


Figure 2—The main layers of a Cucumber test suite

Source: The Cucumber Book

Write first feature



Run calabash

```
$ calabash-android run <APK file>
```

Generate HTML report

\$ calabash-android run <APK file>

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

Cucumber Features

Feature: Login feature

Scenario: As a valid user I can log into my app

Timeout waiting for elements: * marked:'Login'

When I press "Login"

Timeout waiting for elements: * marked:'Login' (Calabash::Android::WaitHelpers::WaitError)

features/my_first.feature:4:in `When I press "Login"'

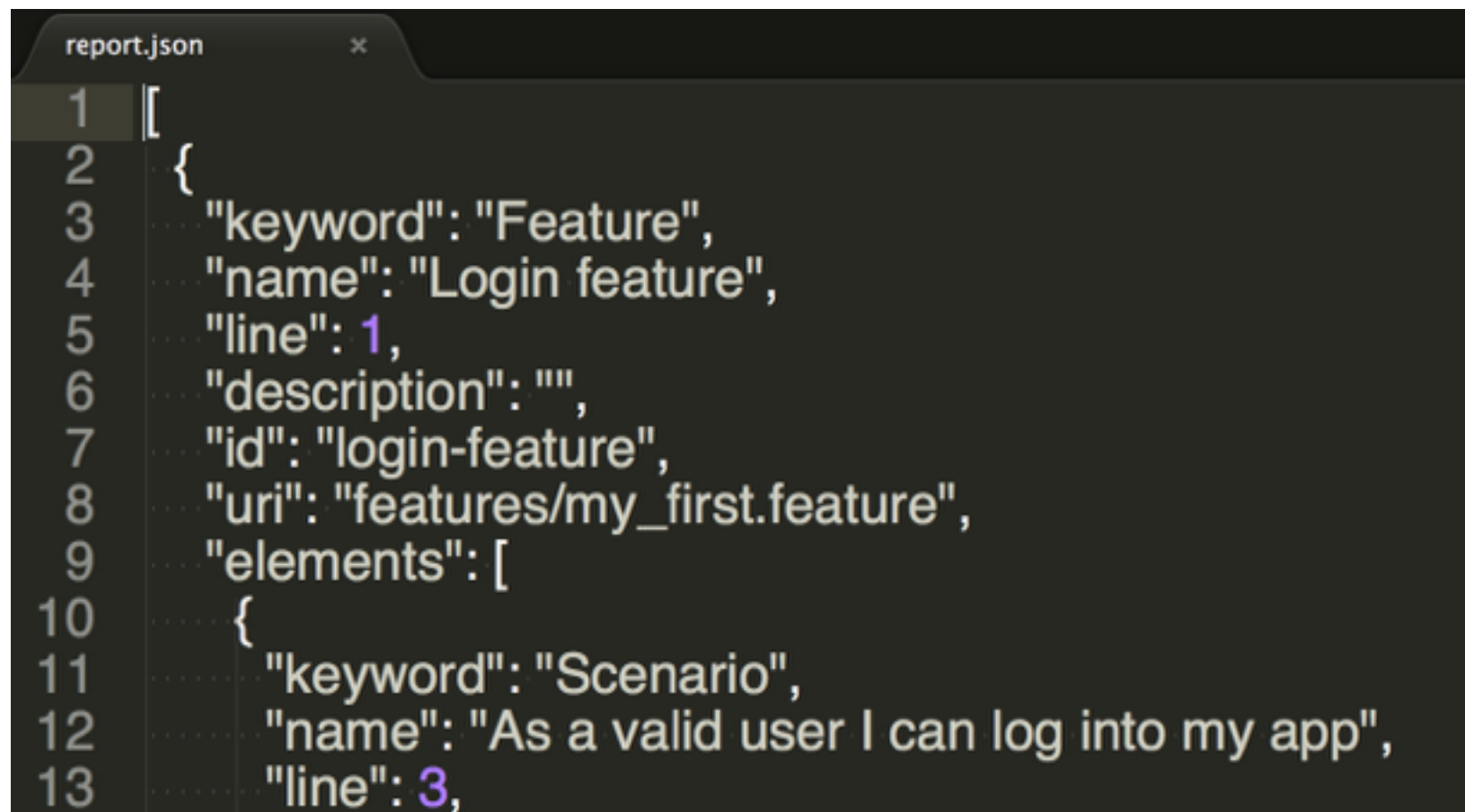
```
2
3   Scenario: As a valid user I can log into my app
4     When I press "Login"
5     Then I see "Welcome to coolest app ever"
6     # gem install syntax to get syntax highlighting
```

Then I see "Welcome to coolest app ever"

Generate JSON report

\$ calabash-android run <APK file>

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



```
1  [
2    {
3      "keyword": "Feature",
4      "name": "Login feature",
5      "line": 1,
6      "description": "",
7      "id": "login-feature",
8      "uri": "features/my_first.feature",
9      "elements": [
10     {
11       "keyword": "Scenario",
12       "name": "As a valid user I can log into my app",
13       "line": 3,
```

Predefined steps

- Assertion
- Input
- Button
- Gesture
- Internationalization
- Touching
- Waiting
- Screenshot
- Location

[https://github.com/calabash/calabash-android/blob/master/ruby-gem/lib/
calabash-android/canned_steps.md](https://github.com/calabash/calabash-android/blob/master/ruby-gem/lib/calabash-android/canned_steps.md)

Screenshot

Default is current working directory

SCREENSHOT_PATH=/your/path/

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

`$scalabash-android --tags @a,@b`

`$scalabash-android --tags @a --tags @b`

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

Calling steps from Step definitions

```
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 console

\$calabash-android **console** <apk>

Let's try ...

Calabash console

>reinstall_app

>start_test_server_in_background

Let's try ...

Calabash console

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

Let's try ...

<https://github.com/calabash/calabash-android/wiki/05-Query-Syntax>

UIAutomator Viewer

```
$cd ANDROID_HOME/tools
```

```
$./uiautomatorviewer
```

MyMo

