

Reinventing the Wheel

QA Meetup 2024



Disclaimer

This is not about bragging

About me

- Benjamin Bischoff
- Test Automation Engineer @ trivago N.V.
- 23 years in IT
- Last 8 years in testing



trivago in 2016

- Central test automation team
- Reorganize and align all automated testing (mainly e2e)
- Started a new internal Selenium/Cucumber framework

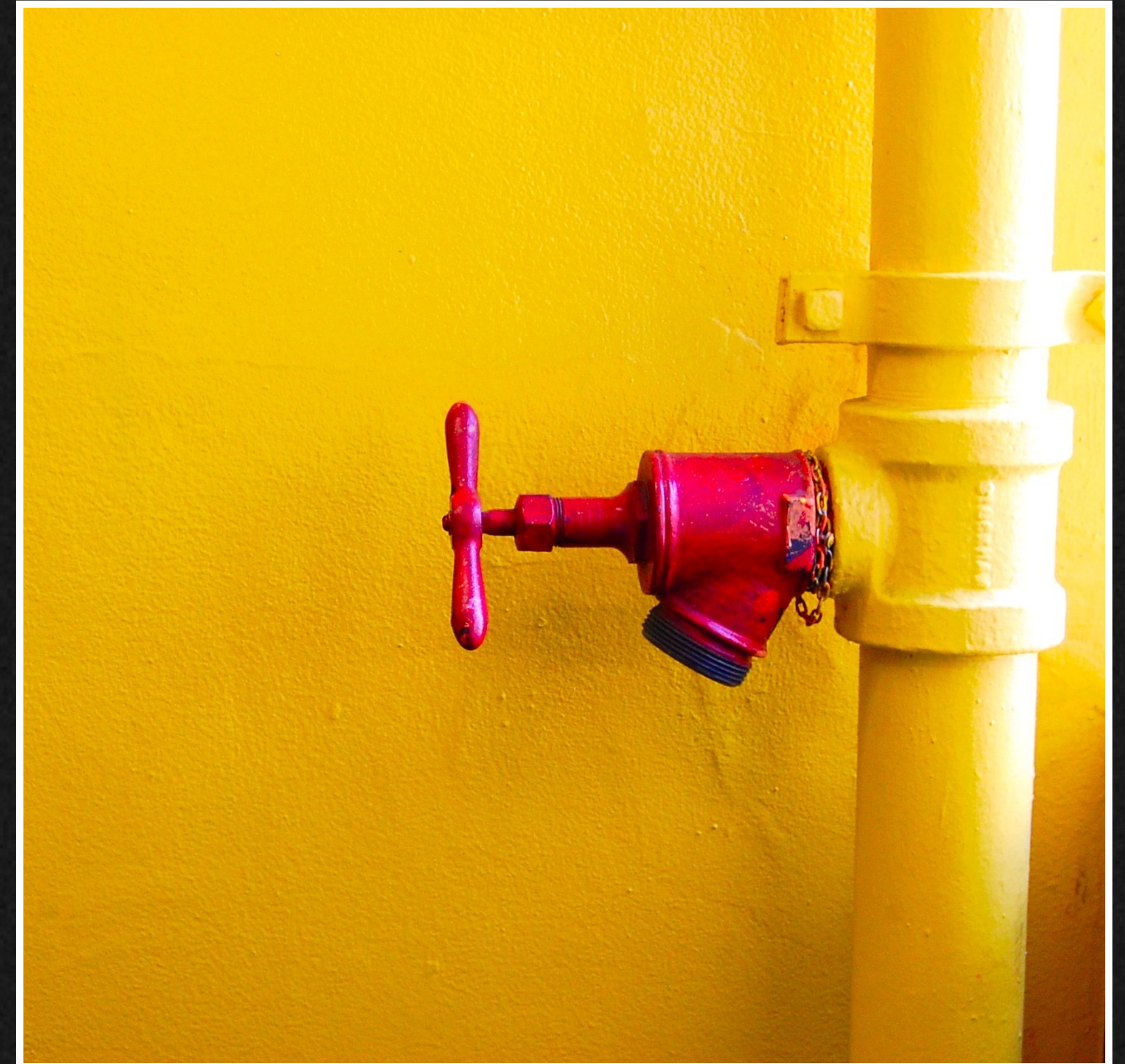
The screenshot displays the Trivago website interface for a hotel search in Kolkata. The search parameters are: Location: Kolkata, Check in: --/--/----, Check out: --/--/----, 1 Room, 2 Guests. The results are sorted by 'Our recommendations' and show three hotel listings:

Hotel Name	Rating	Distance to City Centre	Price / Night	Lowest Price
Ethnotel	7.6 Good (834 reviews)	11.5 km	₹3,053	₹2,860
Treebo Trend Hotel Orion West Will...	8.8 Excellent (2401 reviews)	0.0 km	₹2,184	₹2,184
Treebo Trend Hoops	9.4 Excellent (8884 reviews)	9.6 km	₹1,929	₹1,903

The right side of the page features a map of Kolkata with price markers for various locations, including Baranagar, Khardaha, and Barasat. The map shows prices ranging from ₹1,659 to ₹7,448.

Test Frameworks & Pipelines

- Adding features
- Increase resilience
- Working with/around SUT
- Documentation



Why Cucumber?

- We wanted to keep tests readable
- Easy to implement
- Lots of documentation
- Likable community



Cucumber scenario

Feature: QA Meetup

Scenario: Ticket distribution

Given we have 49 registered people

When I go through the registration process

Then there should be 50 registered people

- BDD Tool
- owned by Smartbear but open source
- Gherkin language
- Each step is connected to test code

Reporting in 2016

- We used cucumber-reporting first
- Better than no reports
- Too much irrelevant information

Project	Number	Date
Damian - project with Cucumber	10	11 gru 2016, 00:16

Branch	release/1.0
Browser	Firefox
Platform	Windows

Features Statistics

The following graphs show passing and failing statistics for features

Steps

Feature	Steps					Total	Scenarios			Features	
	Passed	Failed	Skipped	Pending	Undefined		Passed	Failed	Total	Duration	Status
1st feature	10	0	0	0	0	10	1	0	1	1m 39s 263ms	Passed
Second feature	5	1	2	1	2	11	1	1	2	092ms	Failed
2	15	1	2	1	2	21	2	1	3	1m 39s 355ms	
	71.43%	4.76%	9.52%	4.76%	9.52%		66.67%	33.33%			50.00%

Steps						Scenarios			Features	
Passed	Failed	Skipped	Pending	Undefined	Total	Passed	Failed	Total	Duration	Status
10	0	0	0	0	10	1	0	1	1:39.263	Passed
5	1	2	1	3	12	1	2	3	0.092	Failed
15	1	2	1	3	22	2	2	4	1:39.355	2
68.18%	4.55%	9.09%	4.55%	13.64%		50.00%	50.00%			50.00%

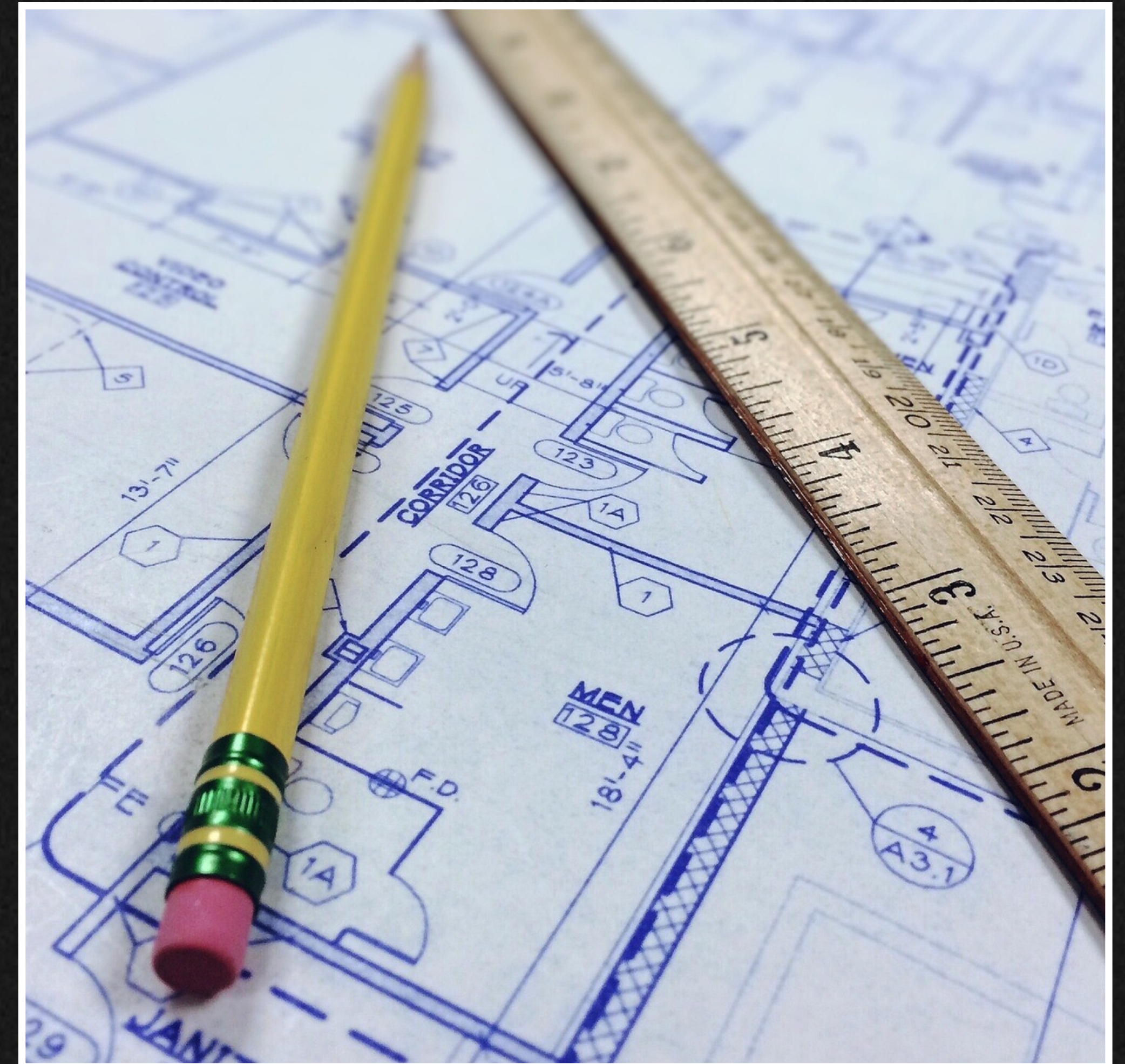


trivago Hackathon

2017

How it started

- Lots of experience with JSF
- Wanted to try Apache Freemarker
- Cucumber JSON, hurray!
- I really like Maven



„Just because you **have** all the data,
you don't have to **show** all the data.“

–Me to myself

What is Cluecumber?

- Java library or Maven plugin for Cucumber JSON reporting
- Focus on clear and concise information for testers
- First open-source release in November 2017



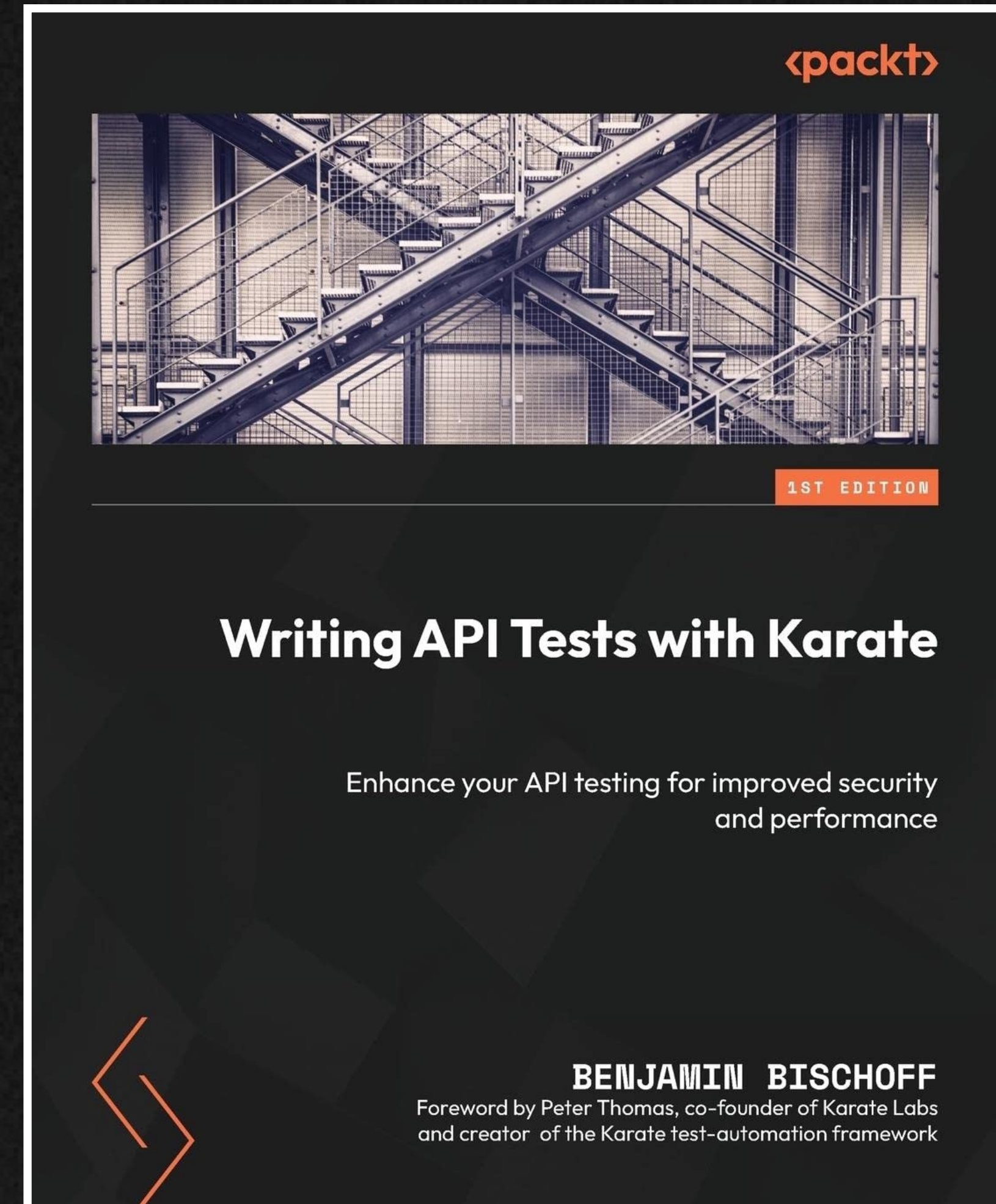
Why JSON and not messages?

- It is easy to parse
- It is ready at the end of a run
- Works with other frameworks, e.g. Karate

```
"line": 1,
"elements": [
  {
    "start_timestamp": "2024-04-12T08:02:13.843Z",
    "before": [
      {
        "result": {
          "duration": 88375000,
          "status": "passed"
        },
        "match": {
          "location": "glue.TrupiSteps.before(io.cucumber.java.Scenario)"
        }
      }
    ],
    "line": 182,
    "name": "Clickout on the green space in deals area",
    "description": "",
    "id": "clickouts;clickout-on-the-green-space-in-deals-area",
    "after": [
      {
        "embeddings": [
          {
            "data": "aHR0cHM6Ly9zdGFhZS5ocy13ZWItYXBwLnRydi5jbG91ZC9lbi1HQi9zcmw/Y3Rlc3RzPTEw",
            "mime_type": "text/plain",
            "name": "Logs: browser (Level: WARNING)"
          }
        ]
      }
    ],
    "result": {
      "duration": 131507000,
      "status": "passed"
    },
    "match": {
```

Shameless plug

- “Writing API Tests with Karate”
- Packt Publishing, May 2023



What's inside?

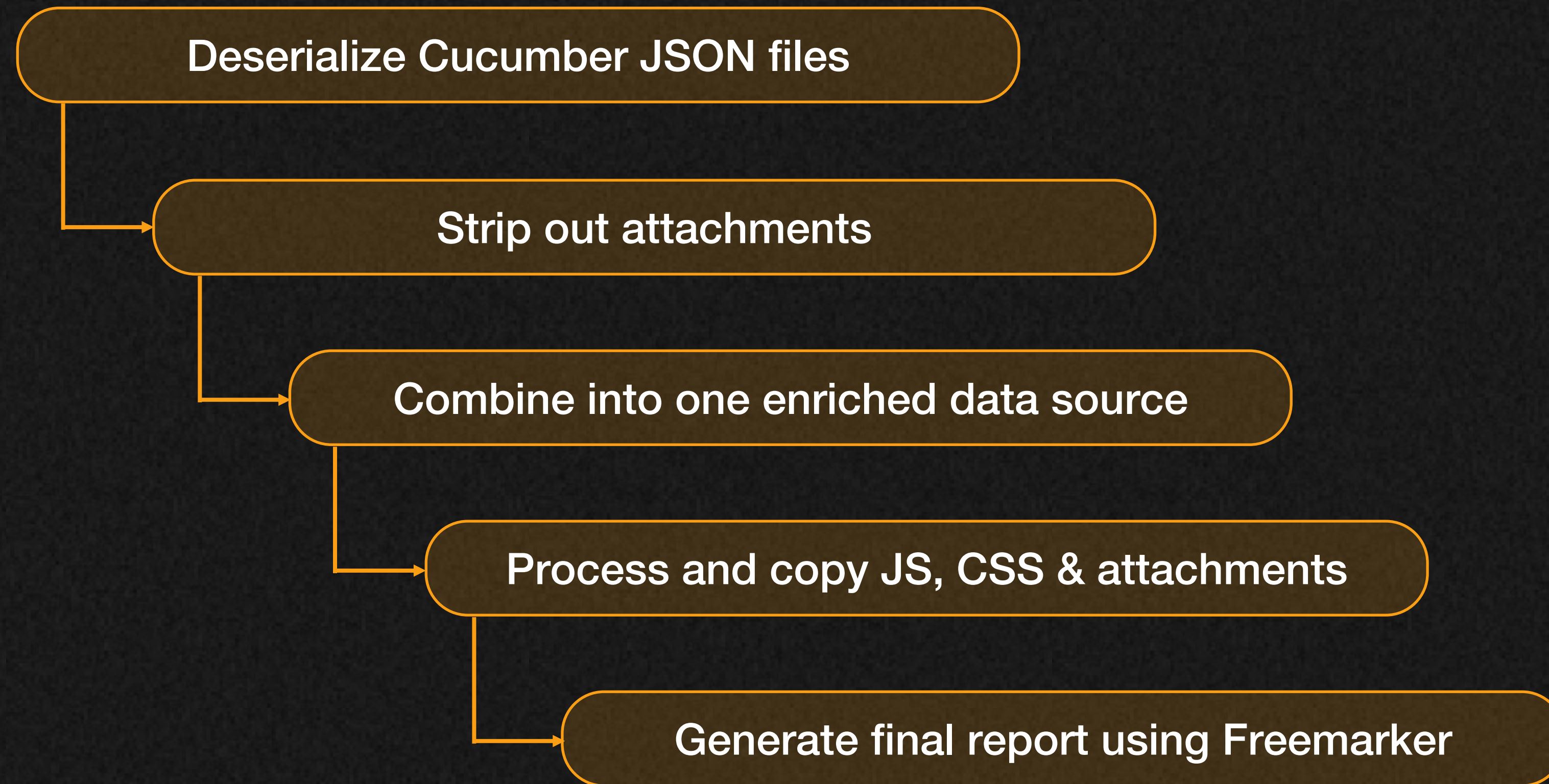
{ Gson }

Parse, aggregate and pre-process
Cucumber JSON files
and strip out
attachments

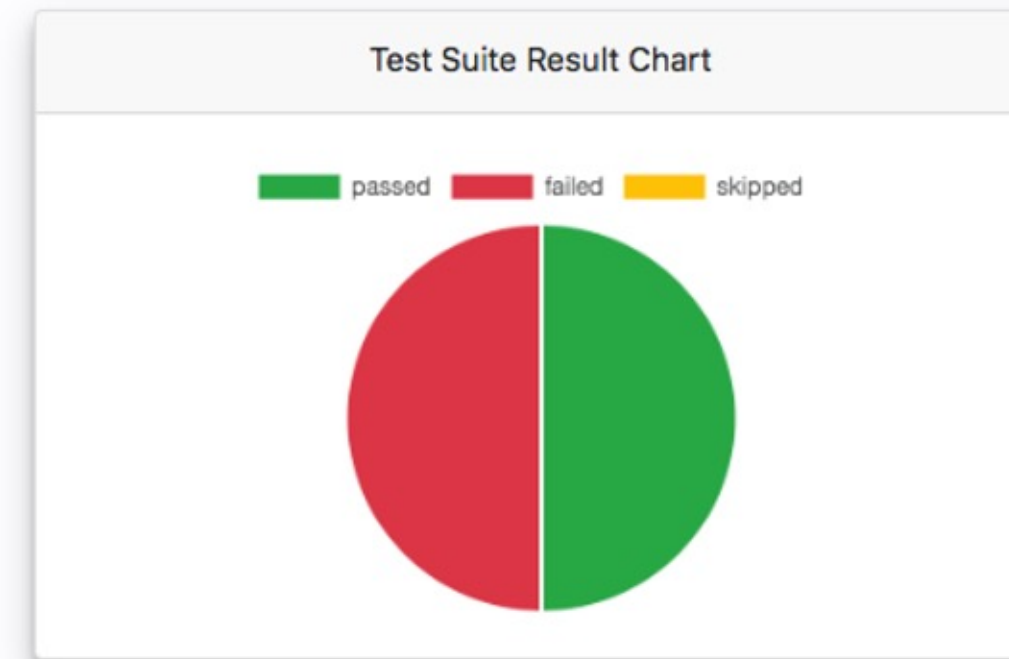
<#FREEMARKER>

Templating engine for
Java to generate
static documents from
the parsed Cucumber
JSON

Flow



Cluecumber in 2017



Test Suite Summary

4 scenarios in 2 features.
2 passed.
1 failed.
1 skipped.

Failed Scenarios

Show 10 entries Search:

Feature	Scenario
Default Search	Default Search Is Executed By Clicking The Search Button On Homepage

Showing 1 to 1 of 1 entries Previous 1 Next

Skipped Scenarios

Show 10 entries Search:

Feature	Scenario
Default Search	Skipped Search Is Executed By Clicking The Search Button On Homepage

Showing 1 to 1 of 1 entries Previous 1 Next

Passed Scenarios

Cluecumber in 2024



All Scenarios

Base URL: <https://dev-intelligence.trivago.com/dashboard>

Scenario Results

passed failed skipped

Result	Count
passed	1
failed	5
skipped	5

Test Suite Time

Started on: 2022-11-09 08:36:23
Ended on: 2022-11-09 08:38:22
Test Runtime: 1m 58s 358ms

Test Suite Summary

11 Scenarios
1 passed ✓
5 failed ✗
5 skipped ↲

5 failed Scenarios ✗

Show 25 entries Search:

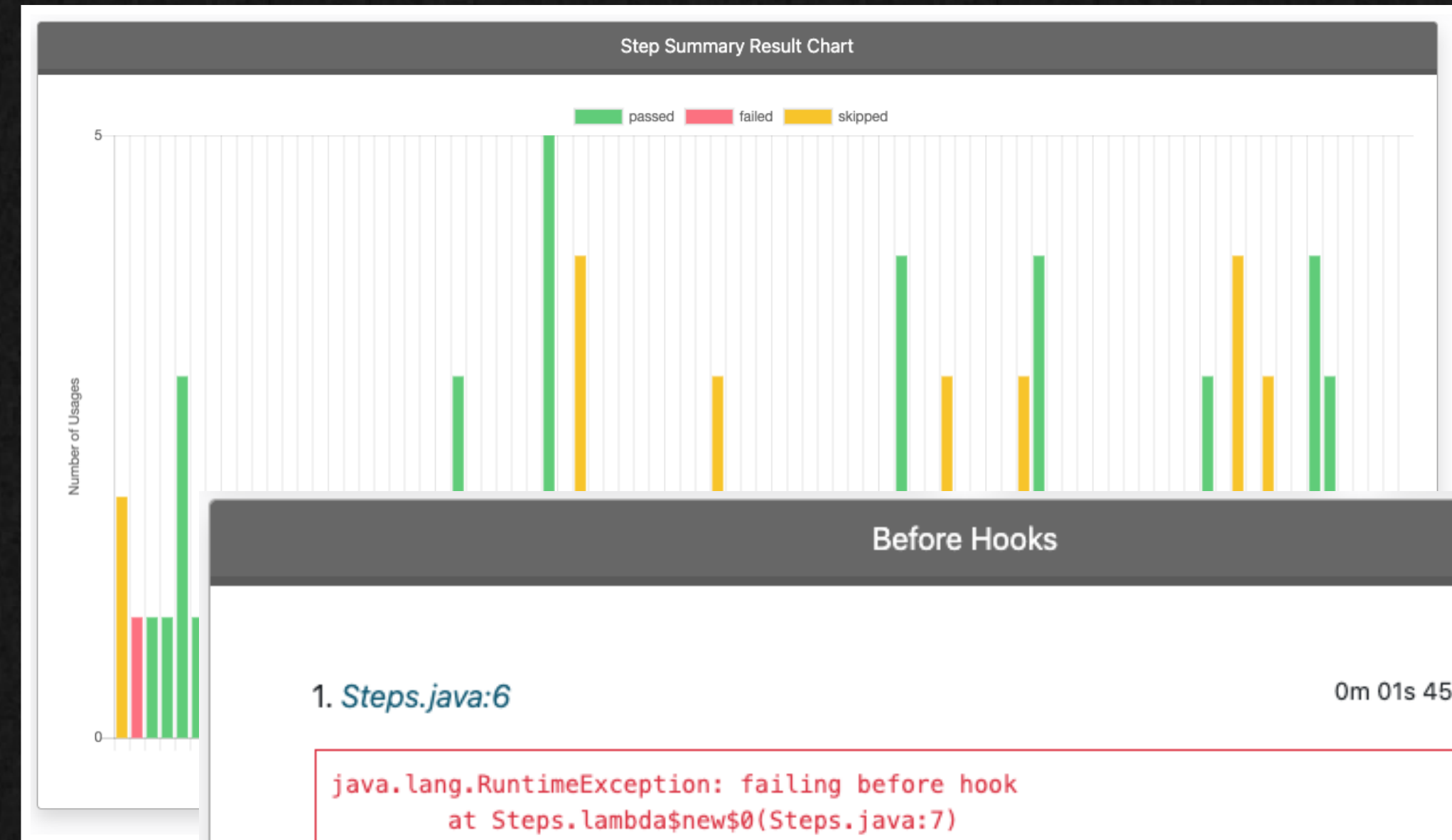
Feature	Scenario	Started	Duration
Login	Valid login with chain_with_partners_email java.lang.IllegalArgumentException: Keys to send should be a not null CharSequence	2022-11-09 08:36:23	0m 17s 687ms
Login	Login with invalid password java.lang.IllegalArgumentException: Keys to send should be a not null CharSequence	2022-11-09 08:37:38	0m 08s 210ms
Login	Valid login with ota_account_email java.lang.IllegalArgumentException: Keys to send should be a not null CharSequence	2022-11-09 08:37:09	0m 09s 042ms
Partners	Display the relevant partners java.lang.IllegalArgumentException: Keys to send should be a not null CharSequence	2022-11-09 08:38:12	0m 09s 830ms
Partners	Display the relevant partners java.lang.IllegalArgumentException: Keys to send should be a not null CharSequence	2022-11-09 08:37:53	0m 19s 042ms

Showing 1 to 5 of 5 entries

Previous 1 Next

Features

- Searchable summary of passed, failed and skipped scenarios
- Scenario sequence and tree view
- Tag, step and feature analysis
- Consolidated reruns
- Attachments, doc strings, step outputs
- Karate sub scenarios
- Various customization options



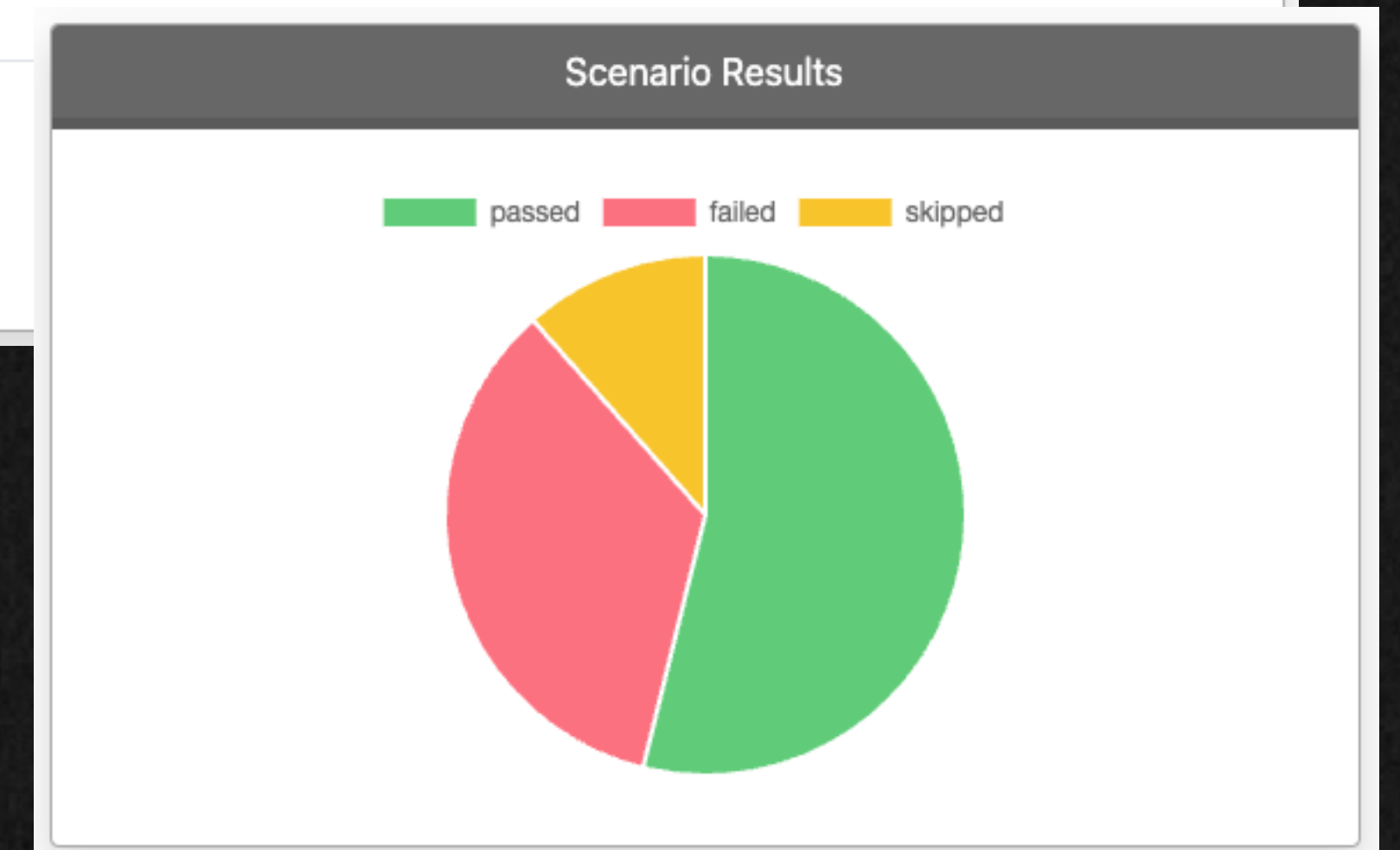
Before Hooks

1. Steps.java:6 0m 01s 452ms ✖

```
java.lang.RuntimeException: failing before hook
    at Steps.lambda$new$0(Steps.java:7)
    at
    cucumber.runtime.java8.Java8HookDefinition.lambda$execute$0(Java8HookDefinition.java:5
1)
```

[Toggle](#) | Step Output

Output 1
Output 2



Future plans

- Add more features
- Overhaul customization options
- Decrease memory usage



Current state

- Available on Maven Central
- 77 releases
- 254 stars
- 236 issues closed
- Used and supported by trivago

The screenshot shows a test report interface with a dark header containing navigation links and a timestamp '2022-09-24 11:52:28'. The main title is 'All Scenarios'. Below the title, there is a section for 'Custom Parameter' and 'Custom URL'. The 'Custom URL' is 'https://www.google.com'. A note states: 'This is a long text that is displayed without the key. This can be used to display longer texts in the report!'. The report is divided into three columns: 'Scenario Results', 'Test Suite Time', and 'Test Suite Summary'. The 'Test Suite Summary' shows: 18 Scenarios, 8 passed (green checkmark), 9 failed (red X), and 1 skipped (yellow flag). Below this is a table of failed scenarios with a header '9 failed Scenarios'. The table has columns for Feature, Scenario, Started, and Duration.

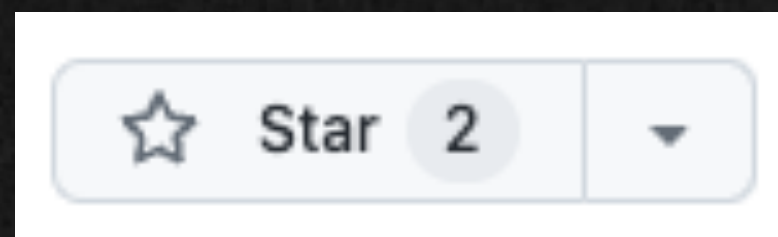
Feature	Scenario	Started	Duration
Affiliates: Check DummyUrl	Check DummyUrl org.openqa.selenium.NoSuchElementException		0m 19s 317ms
login page	Login org.openqa.selenium.NoSuchWindowException		0m 27s 548ms
Attachments	Attachment test java.lang.AssertionError		0m 48s 638ms
Vendor Shopping Cart			

Company backing

- Makes it more credible
- Improves personal and company branding
- Project durability



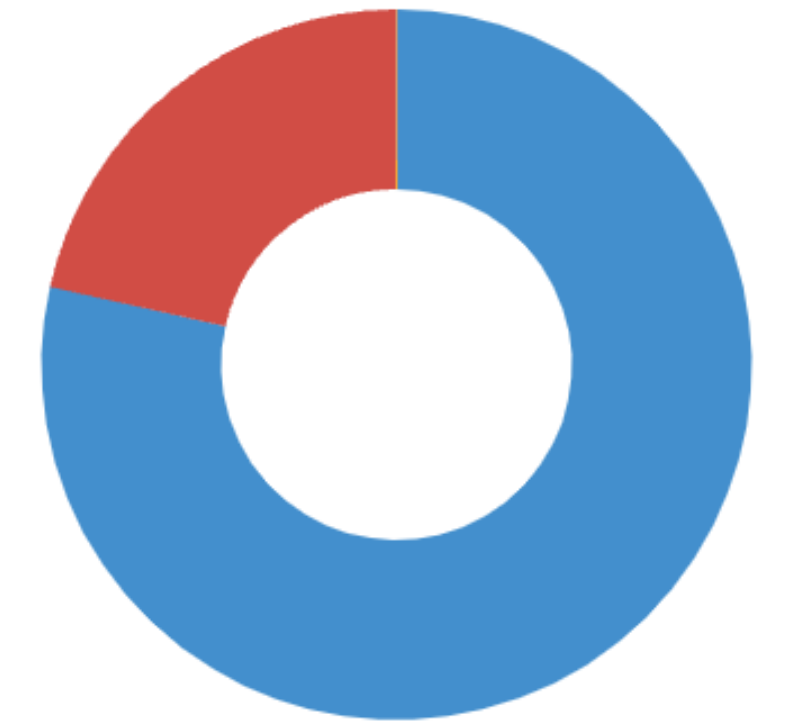
Sandboy



3 Test Suite(s) with 14 Test Case(s)

1. My Test Suite
2. Another Test Suite
3. My Test Suite 2

Passed: 11 | Failed: 3 | Skipped: 0



My Test Suite

Passed: 2 | Failed: 1 | Skipped: 0 | 28.844 seconds

Failed - 1 Test Case(s)

Testcase number 3 >

Passed - 2 Test Case(s)

Testcase number 1 >

Testcase number 2 >

[Top](#)

What I learned from open source

- Dealing with people
- Finding the balance for feature requests
- Code Craftsmanship & Clean code
- Test coverage
- Documentation



“Make it **work**, then make it **pretty** did not
work for me in an **OSS** context”

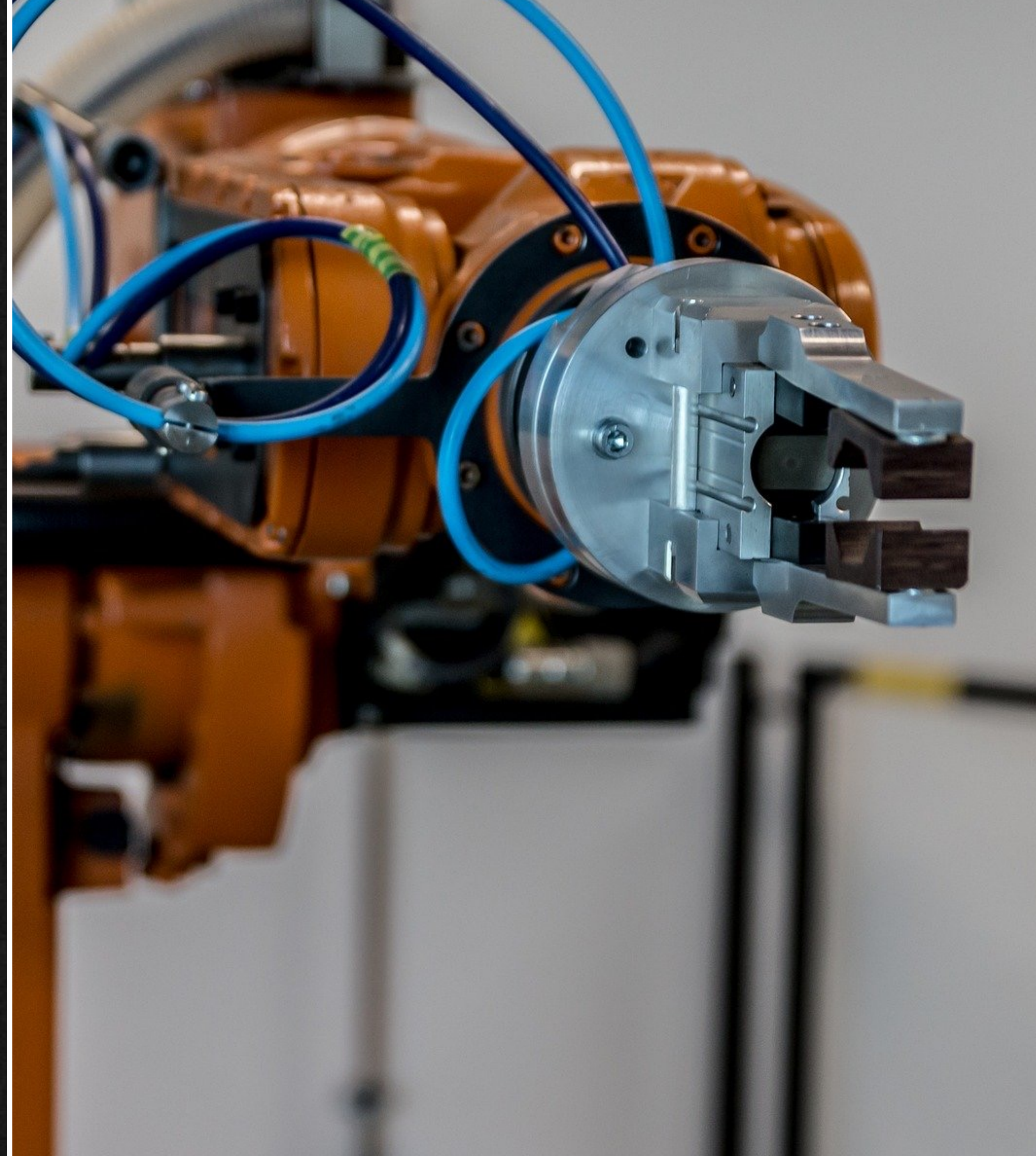
–Me to myself



Key learnings

What I picked up along the way.

Test automation is
not **the** end



Test automation is
a tool



Test automation is
a product



Listen to your users



Don't be afraid to
question things



