



FaaT

Freelance as a Team

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Motivation

There is a need for a daily use of a software development methodology as a professional software developer

Motivation

- To take advantage of the methodology
 - Having qualitative and quantitative data of current state
 - Improving productivity and result quality
 - Improving flexibility to change
 - Minimizing risks
- Tailored to **lone development**

Objectives and drawbacks

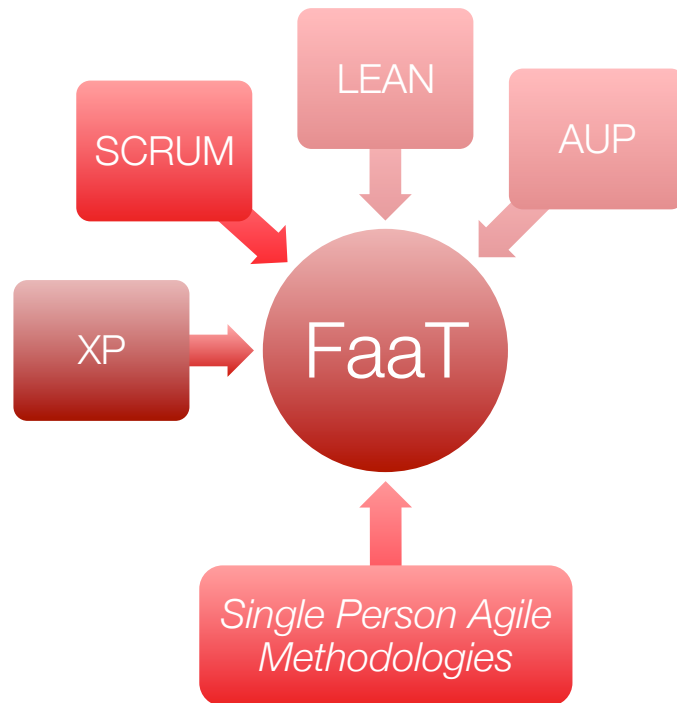
Build an *Agile Methodology*

- **Pragmatic**, for daily use
- For a **single developer**
- **Tested in real** projects

Existing methodologies drawbacks

- They require the help of a **mentor** for implementation
- Focused in **communication**
- Tasks and roles are distributed among **several people**

FaaT – Sources of Inspiration



FaaT – Components

- **Catalogue**

- Strategic practices
- Workflow practices
- Auxiliary practices

- For **each practice**

- Summary
- Description
- Guidelines
- Bad practices

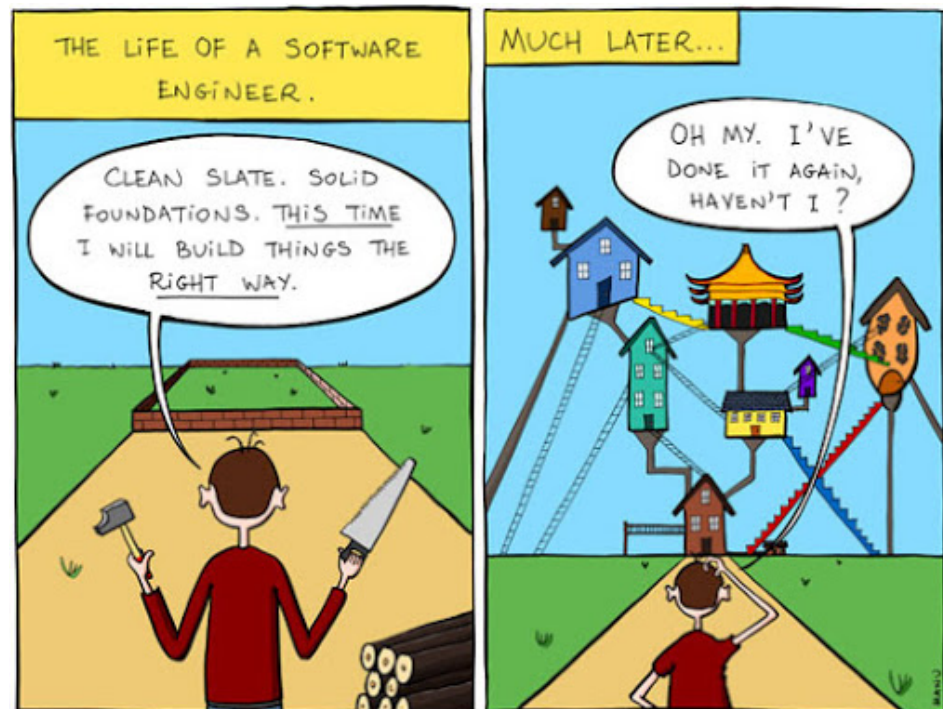
- **In practice**

- Implantation process
- Tools to be used

FaaT – Strategic practices

Guidelines to always choose an optimal decision

- Simplicity
- Embrace Change
- Make decisions



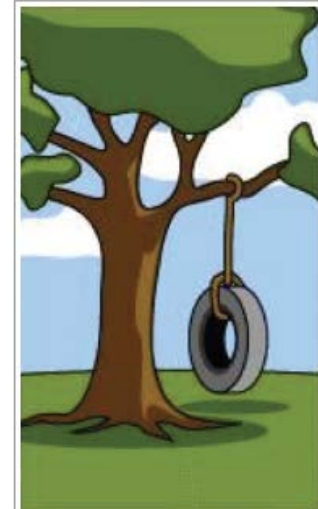
FaaT – Strategic Practices

- **Simplicity**
- Embrace Change
- Make decisions

Don't build this ...



if all you need is this.



FaaT – Strategic Practices

- Simplicity
- **Embrace Change**
- Make decisions



FaaT – Strategic Practices

- Simplicity
- **Embrace Change**
- Make decisions



FaaT – Strategic Practices

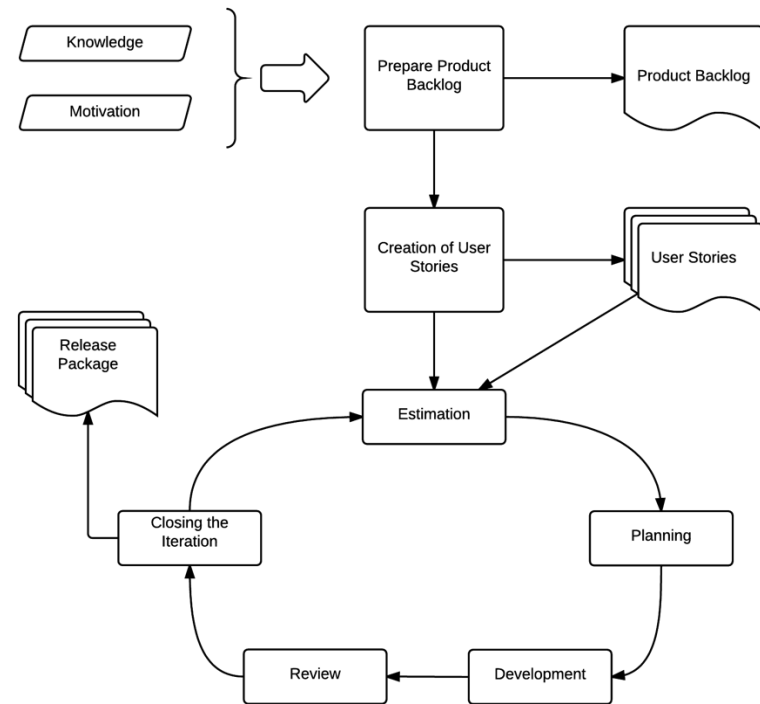
- Simplicity
- Embrace Change
- **Make decisions**



FaaT – Workflow Practices

Operational processes to be performed during product development

- User Stories
- Estimation
- Planning
- Product Backlog
- Automatic Tests
- Version Control System
- Re-evaluation



FaaT – Auxiliary practices

Other really useful practices

- Refactoring
- Limited Documentation
- Partial prototypes
- Rubber Duck
- Automation

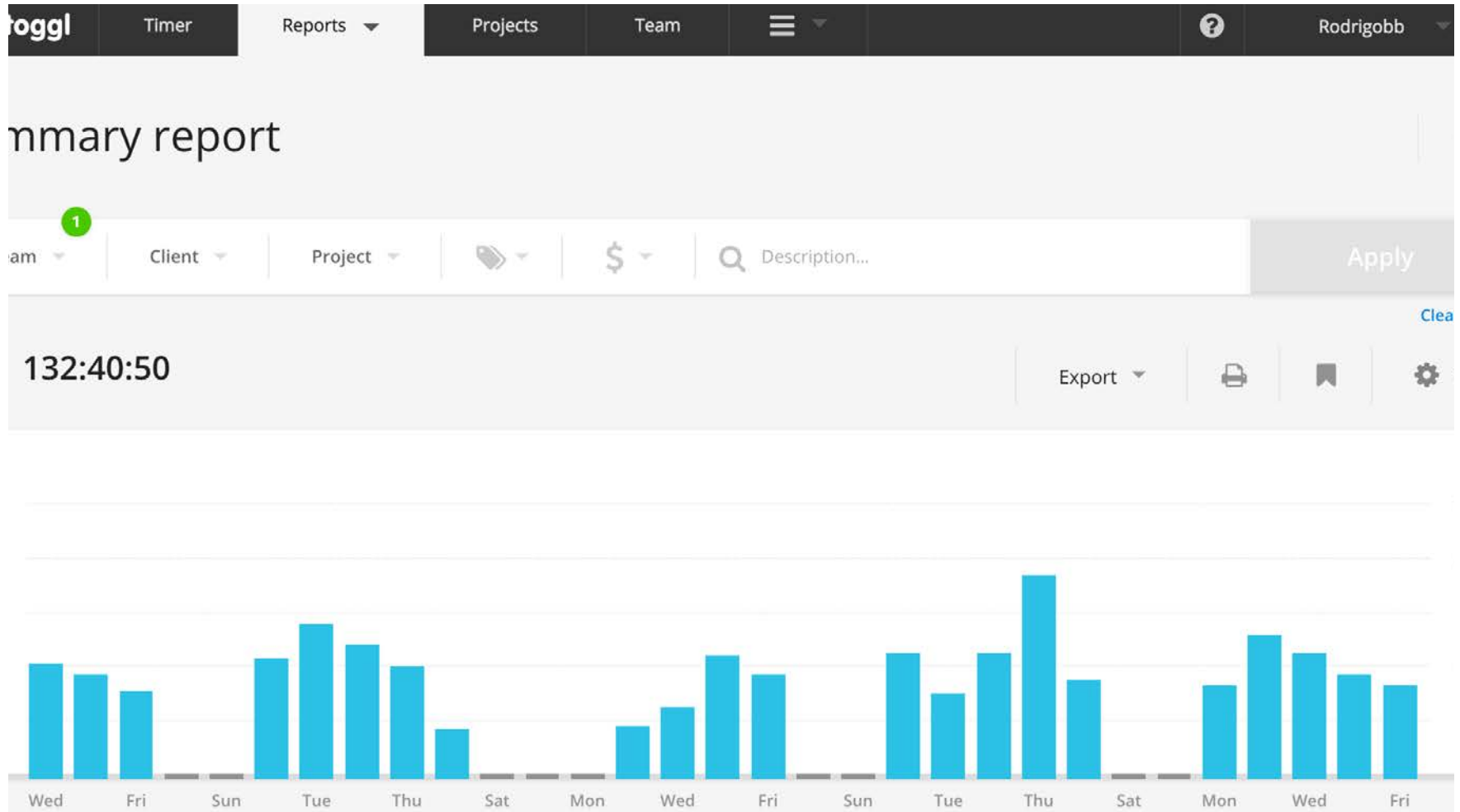


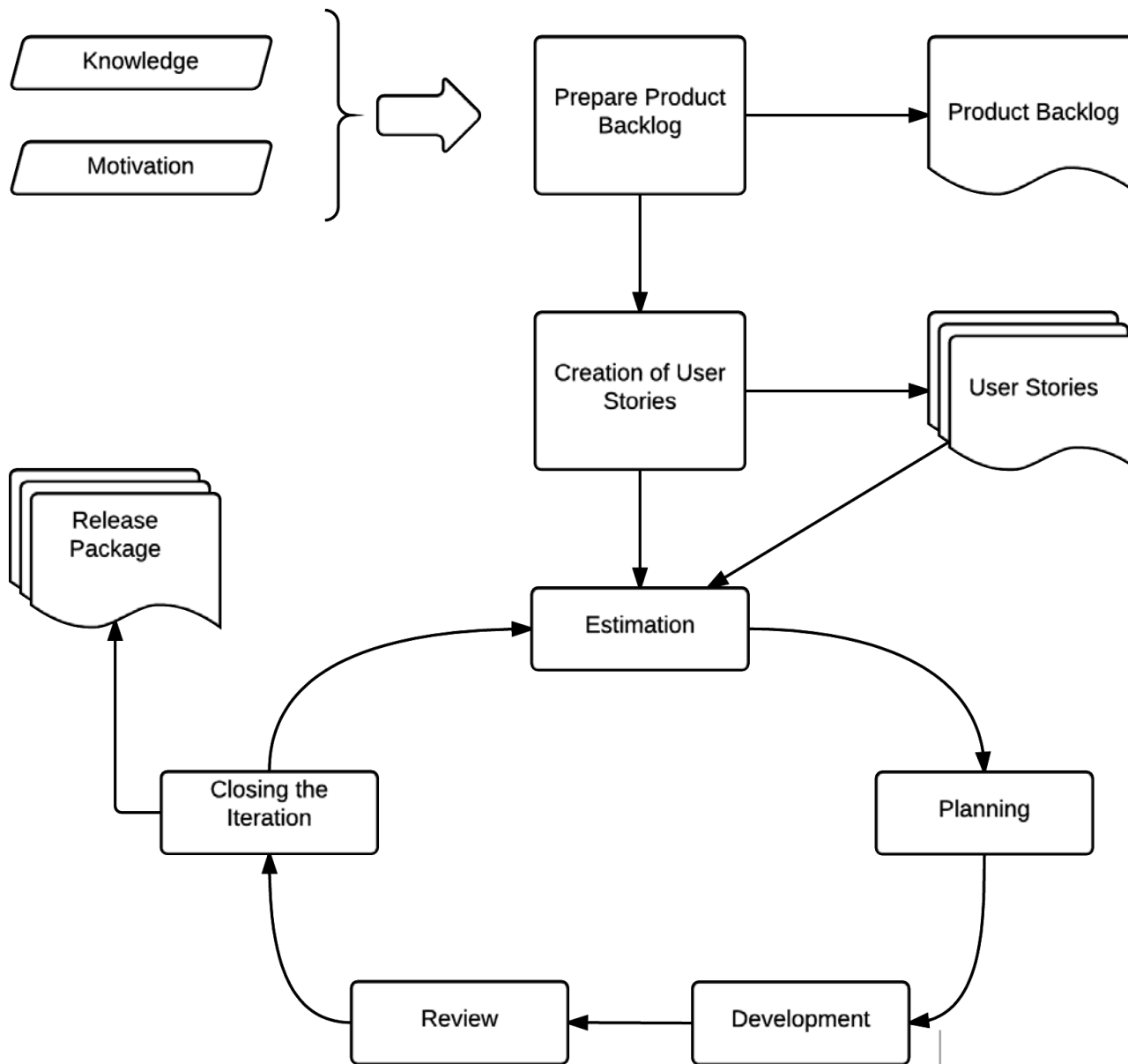
FaaT in practice

- Knowledge
- Motivation
- Implantation
- Evaluation
- Current Processes
- Tools
- People: developer and client



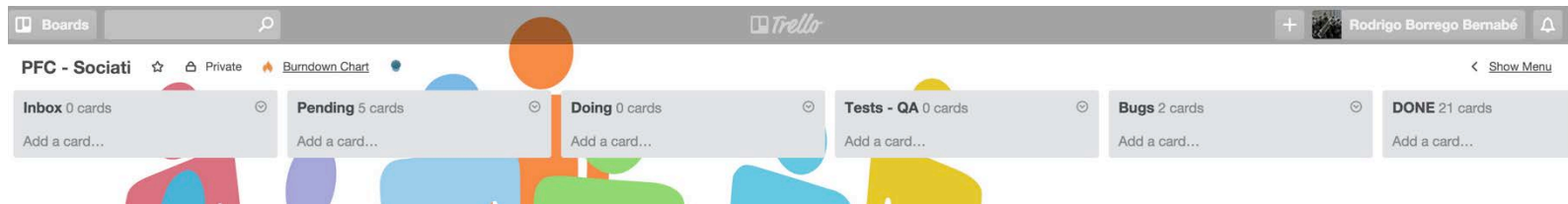
FaaS – Measure everything





FaaS – Workflow

FaaT – Product Backlog



Client - MUST

Client - Should

Client - Could

Knowledge adquisition

Task

Bug


User Story


FaaT – User Stories

Application with:

Acceptance Criteria:

- Must be able to be served up as a default home page.
- Must contain a carousel for driving users to content.
- Must display sample content to test design with.
- Basic theme and design must be displayed in the form of header colours and backgrounds.


 [Edit the card description.](#)

 **Tasks**


50%


- ☒ ~~Create Default.htm~~
- ☒ ~~Include Bootstrap template HTML~~
- ☐ Include default content
- ☐ Set default theme

[Add item](#)


 [Edit Labels...](#)


Members





 [Assign...](#)



Actions

 [Add checklist...](#)

 [Due date...](#)

 [Attach File...](#)

 [Move...](#)

 [Subscribe](#) 

FaaT – Estimation & Planning

(2) User Authentication [3]

Save

×

Estimated Points

?

0

0.5

1

2

3

5

8

13

21

Consumed Points

?

0

0.5

1

2

3

5

8

13

21

Scrum for Trello

Release 1 - Oct 3rd

331

⌵

User Authentication

☰

☑ 0/8

💡 3

💡 2


EC

Wordpres & Composer

👁

☰

💡 3



Recover legacy user accounts

💡 5

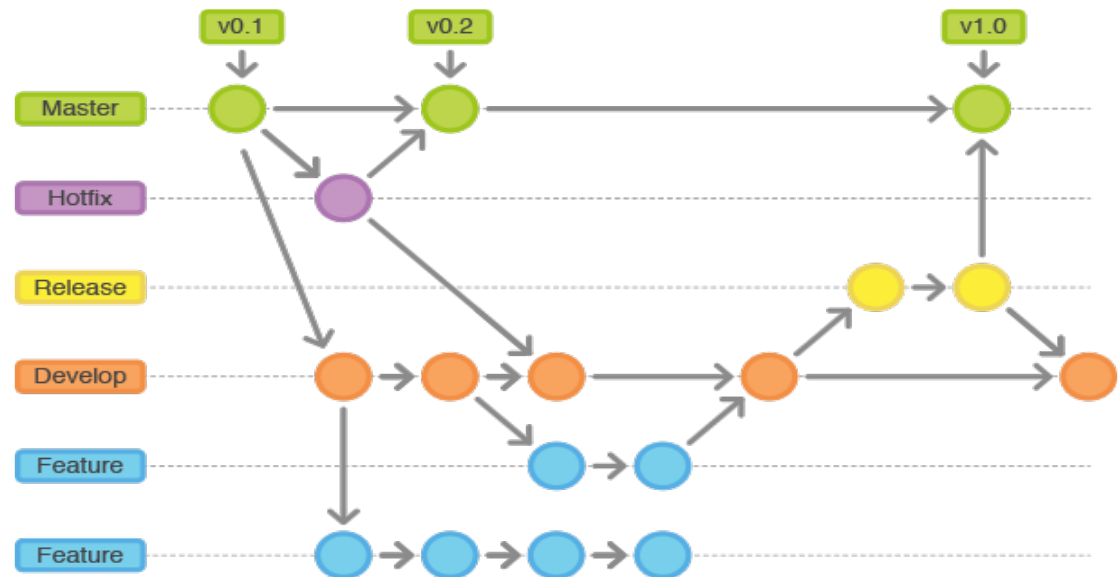
FaaT – Development

- Version Control System
 - Gitflow
- Automatic tests
 - Code coverage

FaaT – Development

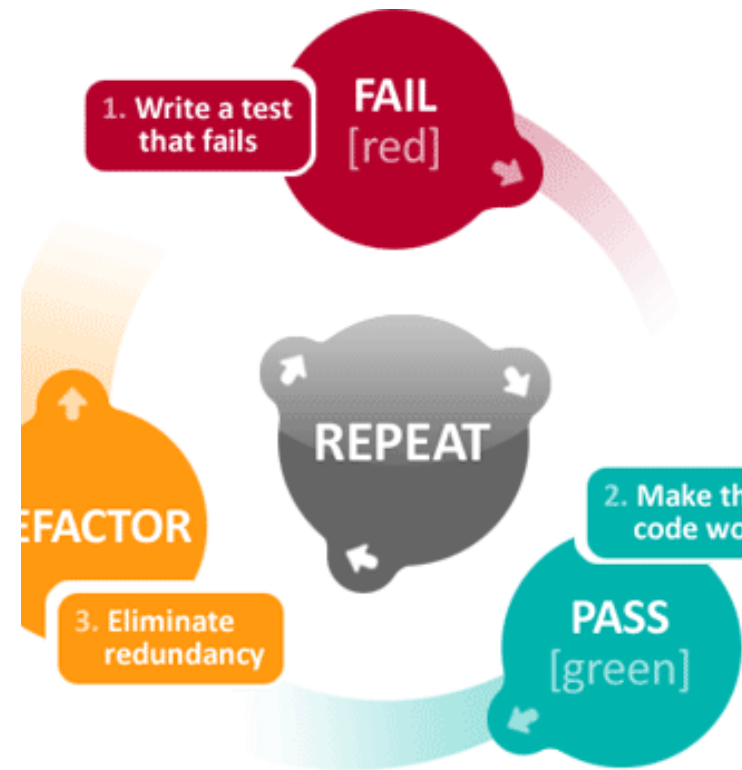
• Version Control

- Gitflow
- Automatic tests
- Code coverage













FaaT – Development

- Version Control System
 - Gitflow
- **Automatic tests**
 - Code coverage



FaaT – Development

- Version Control System
 - Gitflow
- Automatic tests
 - **Code coverage**

	Code Coverage								
		Lines			Functions and Methods		Classes and Traits		
Total	<div></div>	86.43%	312 / 361	<div></div>	88.89%	104 / 117	<div></div>	67.86%	19 / 28
 Command	<div></div>	0.00%	0 / 10	<div></div>	0.00%	0 / 1	<div></div>	0.00%	0 / 1
 Controller	<div></div>	95.08%	116 / 122	<div></div>	93.48%	43 / 46	<div></div>	75.00%	6 / 8
 DependencyInjection	<div></div>	0.00%	0 / 24	<div></div>	0.00%	0 / 2	<div></div>	0.00%	0 / 2
 Entity	<div></div>	90.79%	69 / 76	<div></div>	86.49%	32 / 37	<div></div>	50.00%	3 / 6
 Exception	<div></div>	100.00%	4 / 4	<div></div>	100.00%	2 / 2	<div></div>	100.00%	1 / 1
 Form	<div></div>	100.00%	41 / 41	<div></div>	100.00%	12 / 12	<div></div>	100.00%	4 / 4
 Handler	<div></div>	100.00%	54 / 54	<div></div>	100.00%	13 / 13	<div></div>	100.00%	2 / 2
 Listener	<div></div>	90.48%	19 / 21	<div></div>	0.00%	0 / 2	<div></div>	0.00%	0 / 1
 Model	<div></div>	100.00%	9 / 9	<div></div>	100.00%	2 / 2	<div></div>	100.00%	2 / 2
 RBBusinessSociatiBundle.php							<div></div>	100.00%	1 / 1

FaaT – Evaluation

- Iteration speed
 - Undelivered User Stories
- Delivery review
 - Qualitative
 - Quantitative



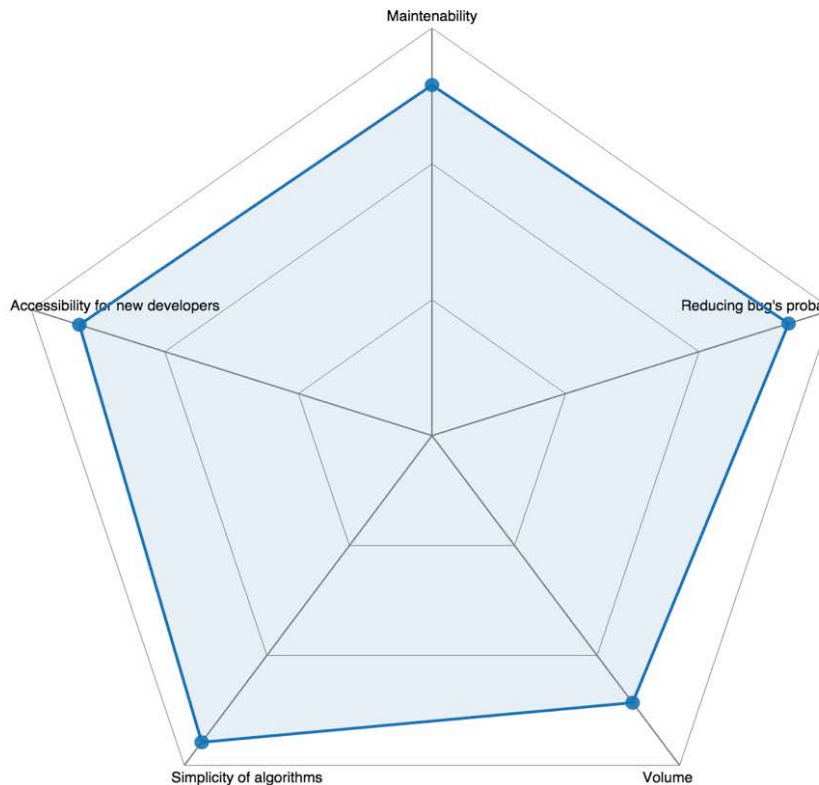
FaaT – Qualitative Evaluation

PHPmetrics report

[Overview](#)
[Evaluation](#)
[Relations map](#)
[Repartition](#)
[Explore](#)
[Help](#)

☐ I'm colorblind

Score



This score is not absolute. This chart is a comparison of your project relative to a representative average of recent PHP projects.

Each score is calculated from various criterias from 36 files in your projects. Your score is a note between 0 (poor) and 100 (excellent).

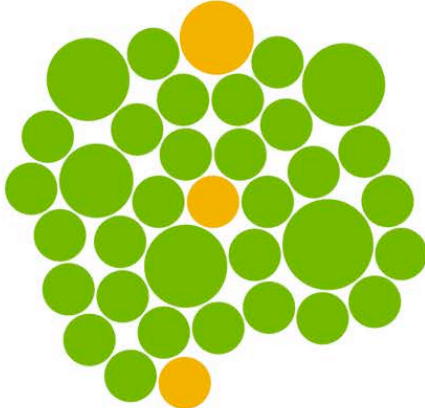
Factor	Score
Maintainability	85.98 / 100
Accessibility for new developers	87.9 / 100
Simplicity of algorithms	93.29 / 100
Volume	80.61 / 100
Reducing bug's probability	88.52 / 100

This score does not replace the judgment of an human.

FaaT – Qualitative Evaluation

[Overview](#)
[Evaluation](#)
[Relations map](#)
[Repartition](#)
[Explore](#)
[Help](#)
☐ I'm colorblind

Evaluation

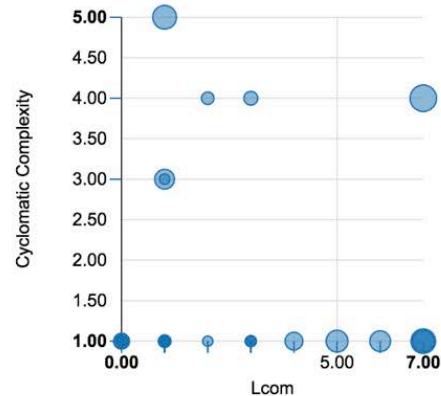
[Download \(as SVG\)](#) | [zoom](#)


Information

Each file is symbolized by a circle. Size of the circle represents the Cyclomatic complexity. Color of the circle represents the Maintainability Index.

Large red circles will be probably hard to maintain.

Lcom / Cyclomatic Complexity

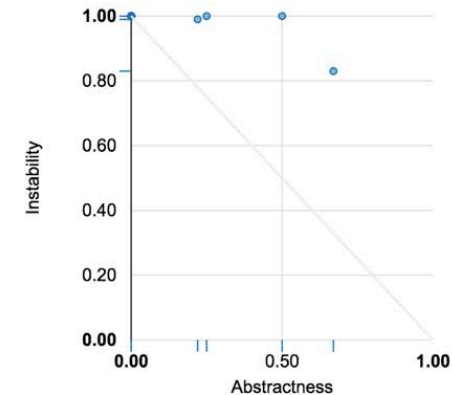
[Download \(as SVG\)](#) | [zoom](#)


Configuration

Select metrics you want to display in chart.

X Axis	Y Axis	Diameter
Lcom	Cyclom	Loc

Abstractness / Instability

[Download \(as SVG\)](#) | [zoom](#)


FaaT – Qualitative Evaluation

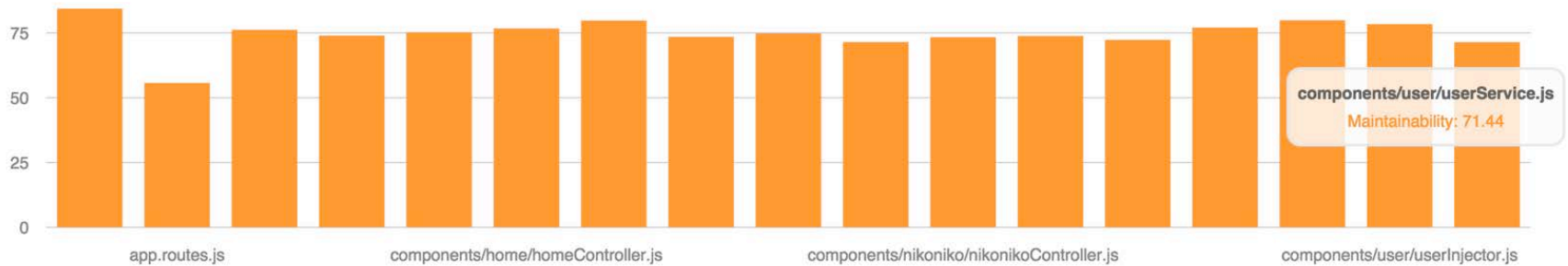
Metrics report

[w](#)
[Evaluation](#)
[Relations map](#)
[Repartition](#)
[Explore](#)
[Help](#)

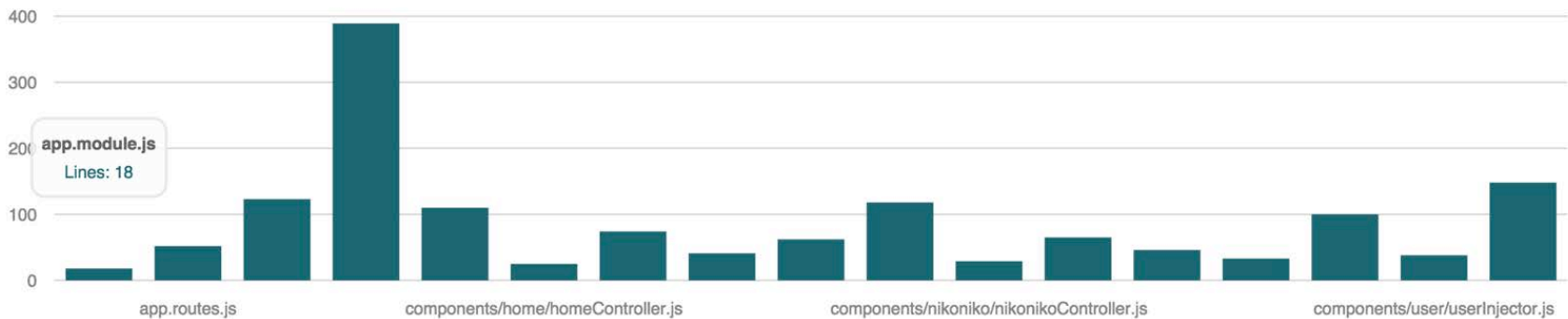
☐ I'm colorblind

	loc	lloc	CommW	Length	Volume	Vocabulary	Eff.	MI	MIwC	Diff	Bugs	IC	CC	Dist.	Oper.
iBundle (10)	3163	450	39.58	3142	473.5	32.06	4843.23	101.27	61.69	5.14	0.16	96.45	1.47	0.08	3
ciatiBundle/RBBusinessSociatiBundle.php	9	2	0	11	33	8	21.21	82.67	82.67	0.64	0.01	51.33	1	0	0
ciatiBundle/Command (1)	37	14	29.21	99	533.84	42	2452.78	84.98	55.77	4.59	0.18	116.19	1	0	0
ciatiBundle/Controller (8)	1348	150	42.13	1210	878.5	44.5	14236.75	97.49	55.36	10.11	0.29	85.08	1.88	0	0
ciatiBundle/DependencyInjection (2)	68	17	34.25	143	357.5	32	1887.42	96.11	61.87	5.31	0.12	70.98	1	0	0
ciatiBundle/Entity (8)	696	103	39.79	604	391.98	30.38	2097.15	101.93	62.14	4.05	0.13	96.12	1.25	0.13	1
ciatiBundle/Exception (1)	28	5	38.48	30	125.1	18	457.09	108.41	69.93	3.65	0.04	34.24	1	0	0
ciatiBundle/Form (4)	173	28	33.9	207	234.1	23	664.8	98.75	64.84	2.84	0.08	82.64	1	0	0
ciatiBundle/Handler (4)	433	67	45.43	520	760.65	46.25	6752.59	101.35	55.93	5.84	0.26	122.37	2.25	0.25	1
ciatiBundle/Listener (1)	61	15	33.79	116	617.34	40	5914.55	88.06	54.27	9.58	0.21	64.44	4	1	1
ciatiBundle/Model (6)	310	49	47.03	202	146.48	17.67	232.53	115.59	68.56	1.31	0.05	132.41	1	0	0

FaaT – Qualitative Evaluation



Lines of code



Estimated errors in implementation



FaaT – Qualitative Evaluation

FILES

complexity sloc est errors lint errors

[app.module.js](#)

complexity 1
sloc 18
est errors 0.04
lint errors 0

[app.routes.js](#)

complexity 1
sloc 52
est errors 0.39
lint errors 1

[shared/lib/http-auth-interceptor.js](#)

complexity 9
sloc 123
est errors 0.64
lint errors 0

[nts/association/associationController.js](#)

complexity 26
sloc 389
est errors 3.52
lint errors 14

[nts/association/associationService.js](#)

complexity 5
sloc 110
est errors 0.66
lint errors 1

[components/home/homeController.js](#)

complexity 2
sloc 25
est errors 0.09
lint errors 0

[components/home/messageController.js](#)

complexity 2
sloc 74
est errors 0.41
lint errors 0

[s/membership/membershipController.js](#)

complexity 1
sloc 41
est errors 0.35
lint errors 0

[nts/membership/membershipService.js](#)

complexity 1
sloc 62
est errors 0.40

FaaT – Closing the iteration

- Deliver a new release
 - Tagged in VCS
 - Deployment (automation)
- Methodology review
- New iteration start (from Estimation phase)



FaaT – Methodology review

- Analyze gathered and generated information
- Evaluate improvements in
 - Software development process
 - Software quality based on
 - Clients and users feedback
 - Benefits for the developer
 - Developer productivity
- Include new tools or automations
 - VCS branches logic
 - Documentation generators
 - Continuous deploy/integration

Conclusions

- It has been developed an agile methodology for software development alone
- Improved the quality of products delivered to the customer, lowering risks and increasing performance.
- Renounces to purisms to gain flexibility and applicability
- It can be applied without outside mentoring, with little interference in the freelance daily routine.
- It has been tested successfully on real projects for eLearning via web

Future improvement lines

- Keep testing and evolving **FaaT**
- Better communication with client
- Improve Risk Management
- Multiple Project Management

Thank you

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