

Testing Under the Test Pyramids

A large, dark pyramid dominates the center of the image, set against a backdrop of a hazy, light-colored sky. In the foreground, there are some low stone structures and a sandy ground.

Tech'n'Drinks Meetup (@myposterde)

Munich - 2018-02-28

Michael Haeuslmann (@michaelhaeu)

PHP Meetup (March 28th)



Developing in Symfony 4

Victoria Quirante, limenius.com



The Myth of Untestable Code

Sebastian Heuer, kartenmacherei.de

Chip, St.-Martin-Straße 66-68



We solve
hard IT problems.

Facts and Figures



Foundation in 2001



Located in Unterföhring
near Munich



99% University Degree Holder
60% with a PhD



2 Internal Training Days per Month



Approx. 275 Employees



41% with a Degree in
Physics

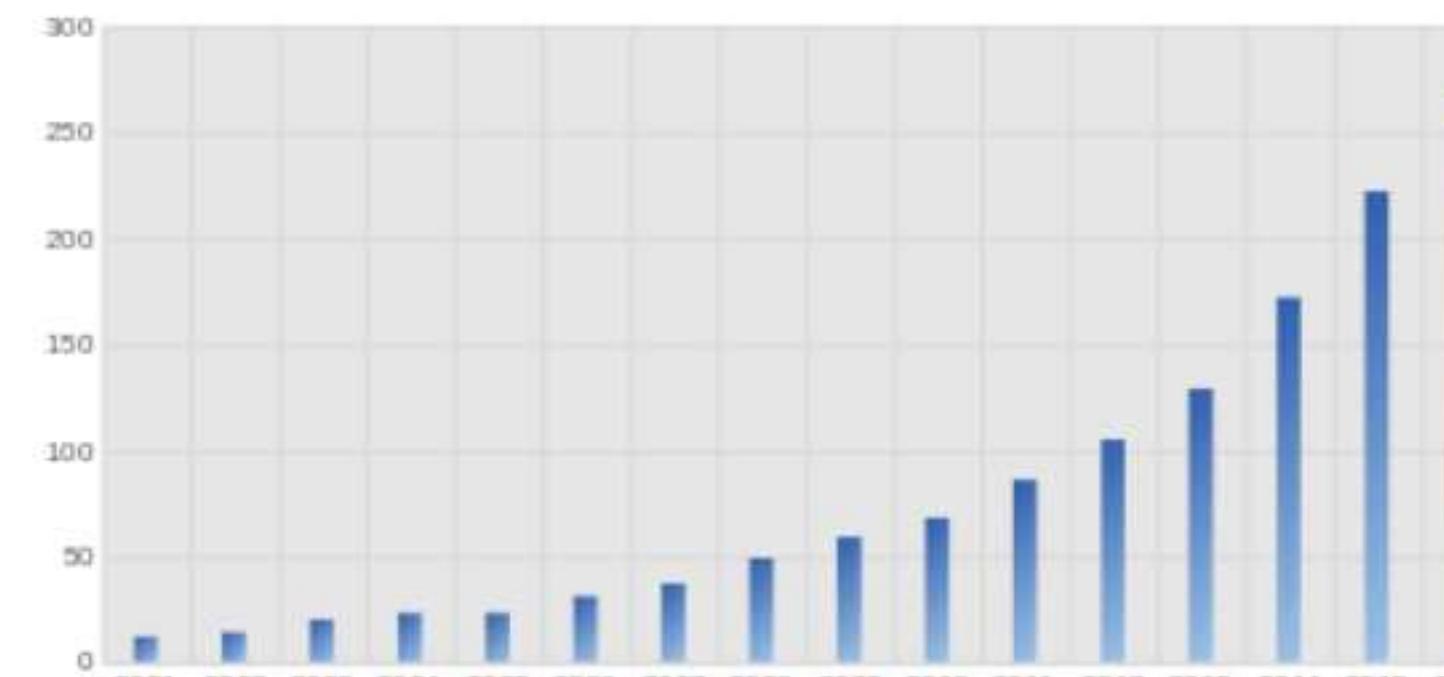


Fluctuation < 6%



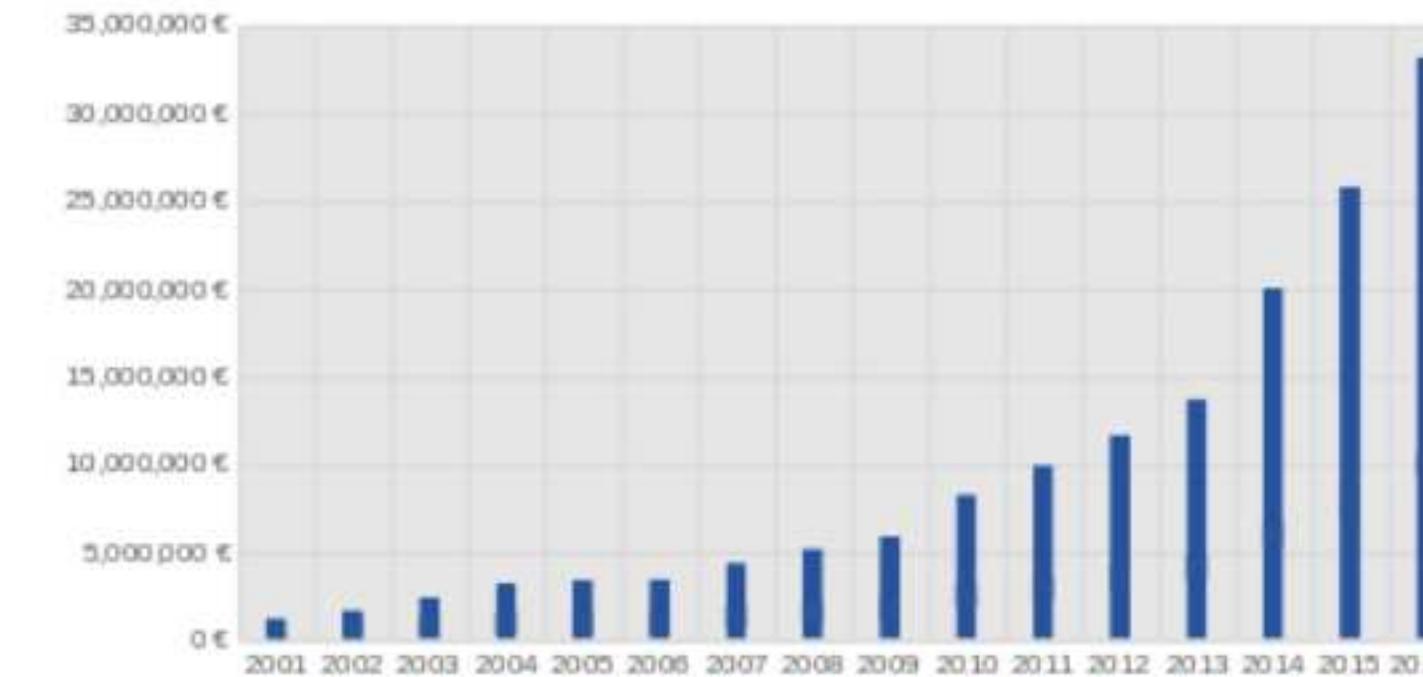
1-4 External Conferences per Year

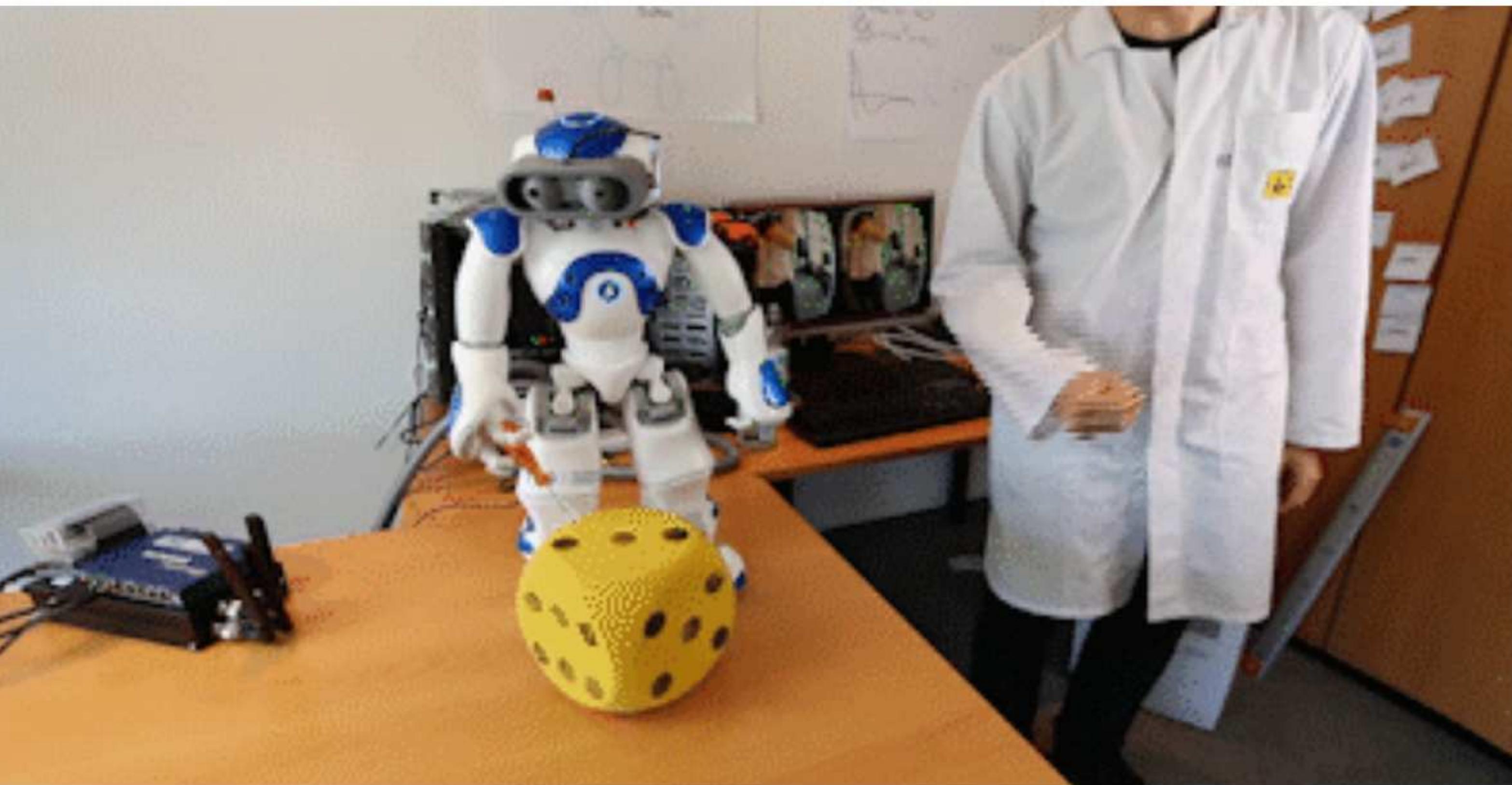
Number of Employees

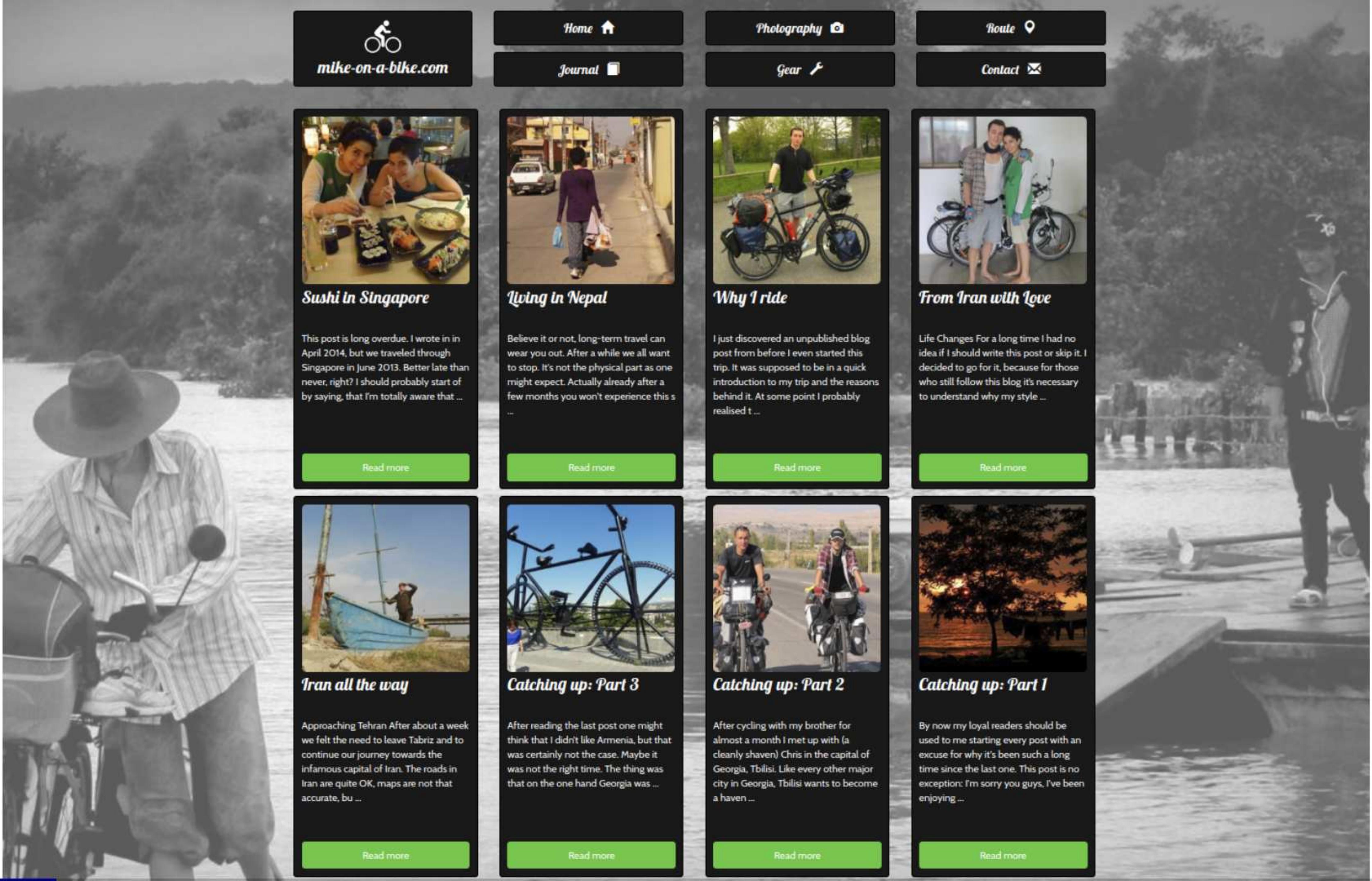


Note: The number of employees is stated as of the end of December.

Sales Growth







mike-on-a-bike.com

Home

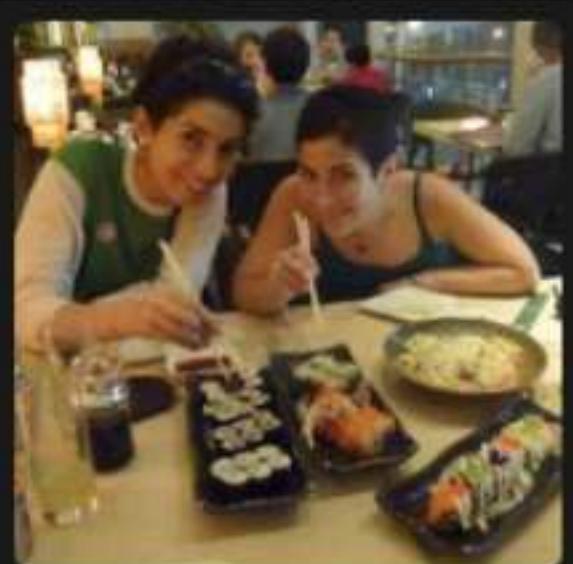
Journal

Photography

Gear

Route

Contact



Sushi in Singapore

This post is long overdue. I wrote it in April 2014, but we traveled through Singapore in June 2013. Better late than never, right? I should probably start off by saying that I'm totally aware that ...

[Read more](#)



Living in Nepal

Believe it or not, long-term travel can wear you out. After a while we all want to stop. It's not the physical part as one might expect. Actually already after a few months you won't experience this s ...

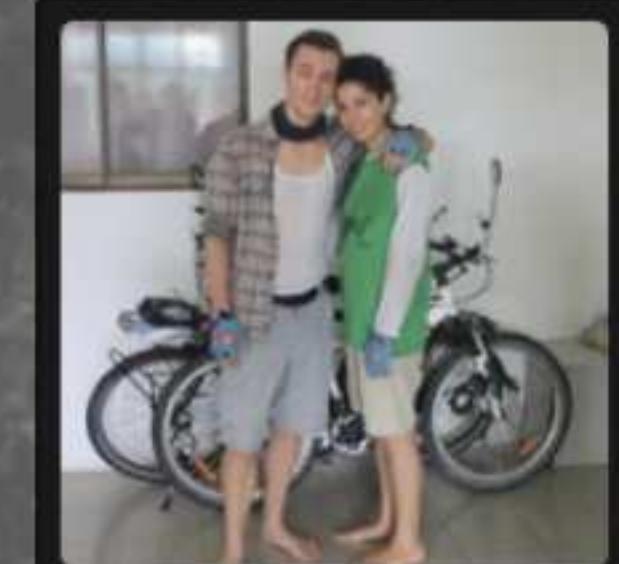
[Read more](#)



Why I ride

I just discovered an unpublished blog post from before I even started this trip. It was supposed to be in a quick introduction to my trip and the reasons behind it. At some point I probably realised t ...

[Read more](#)



From Iran with Love

Life Changes For a long time I had no idea if I should write this post or skip it. I decided to go for it, because for those who still follow this blog it's necessary to understand why my style ...

[Read more](#)



Iran all the way

Approaching Tehran After about a week we felt the need to leave Tabriz and to continue our journey towards the infamous capital of Iran. The roads in Iran are quite OK, maps are not that accurate, bu ...

[Read more](#)



Catching up: Part 3

After reading the last post one might think that I didn't like Armenia, but that was certainly not the case. Maybe it was not the right time. The thing was that on the one hand Georgia was ...

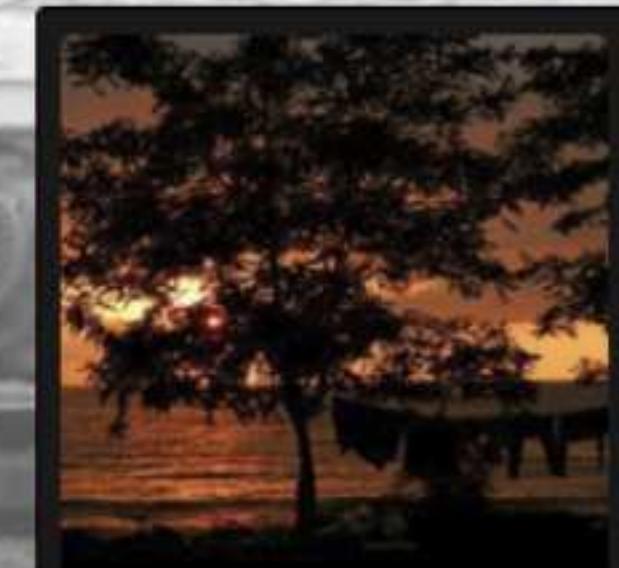
[Read more](#)



Catching up: Part 2

After cycling with my brother for almost a month I met up with (cleanly shaven) Chris in the capital of Georgia, Tbilisi. Like every other major city in Georgia, Tbilisi wants to become a haven ...

[Read more](#)



Catching up: Part 1

By now my loyal readers should be used to me starting every post with an excuse for why it's been such a long time since the last one. This post is no exception: I'm sorry you guys, I've been enjoying ...

[Read more](#)



What do we test?

Unit Tests



Integration Tests



A photograph of the Great Pyramids of Giza under a clear blue sky. A large black rectangular box is overlaid across the middle of the pyramids. Inside this box, the words "E2E Tests" are written in a bold, white, sans-serif font.

E2E Tests

Why do we test?

- input should be mapped to the correct output

Why do we test?

- input should be mapped to the correct output

Is that really it?



What else do we test?



A woman with blonde hair, wearing a light blue t-shirt, is smiling and looking towards the right. She is holding a large, brown cardboard box with both hands, which is partially visible on the left side of the frame. The background is a solid yellow color.

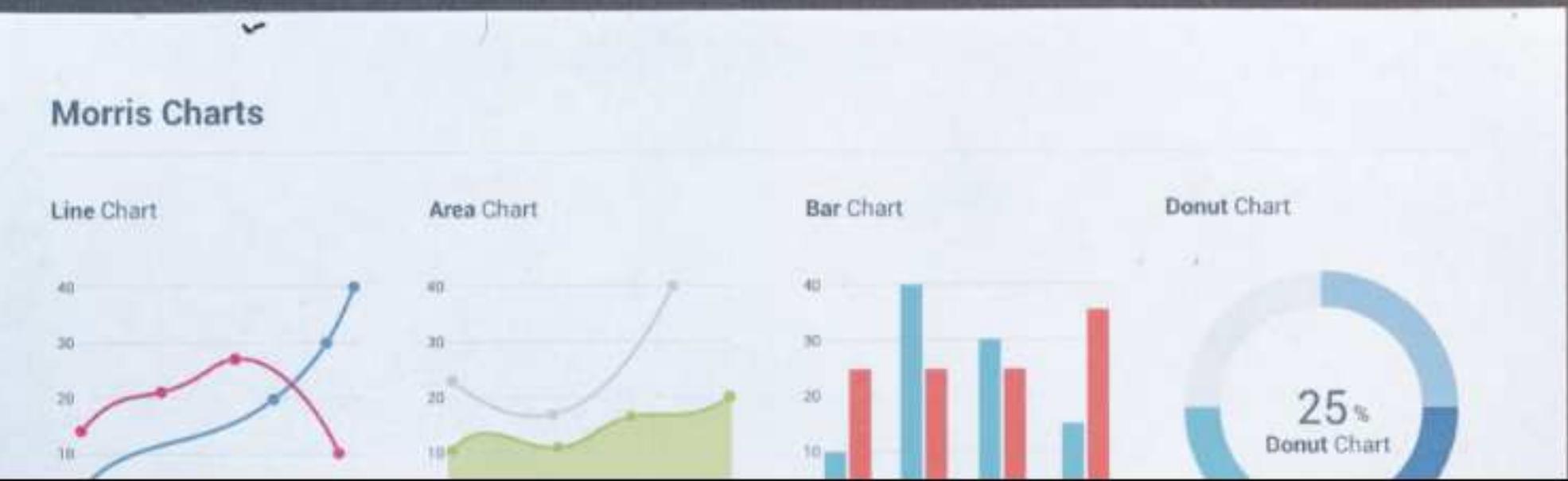
What's important to us?

A construction worker wearing an orange hard hat and safety glasses, working on a large metal structure.

Do we test how we build our
software?



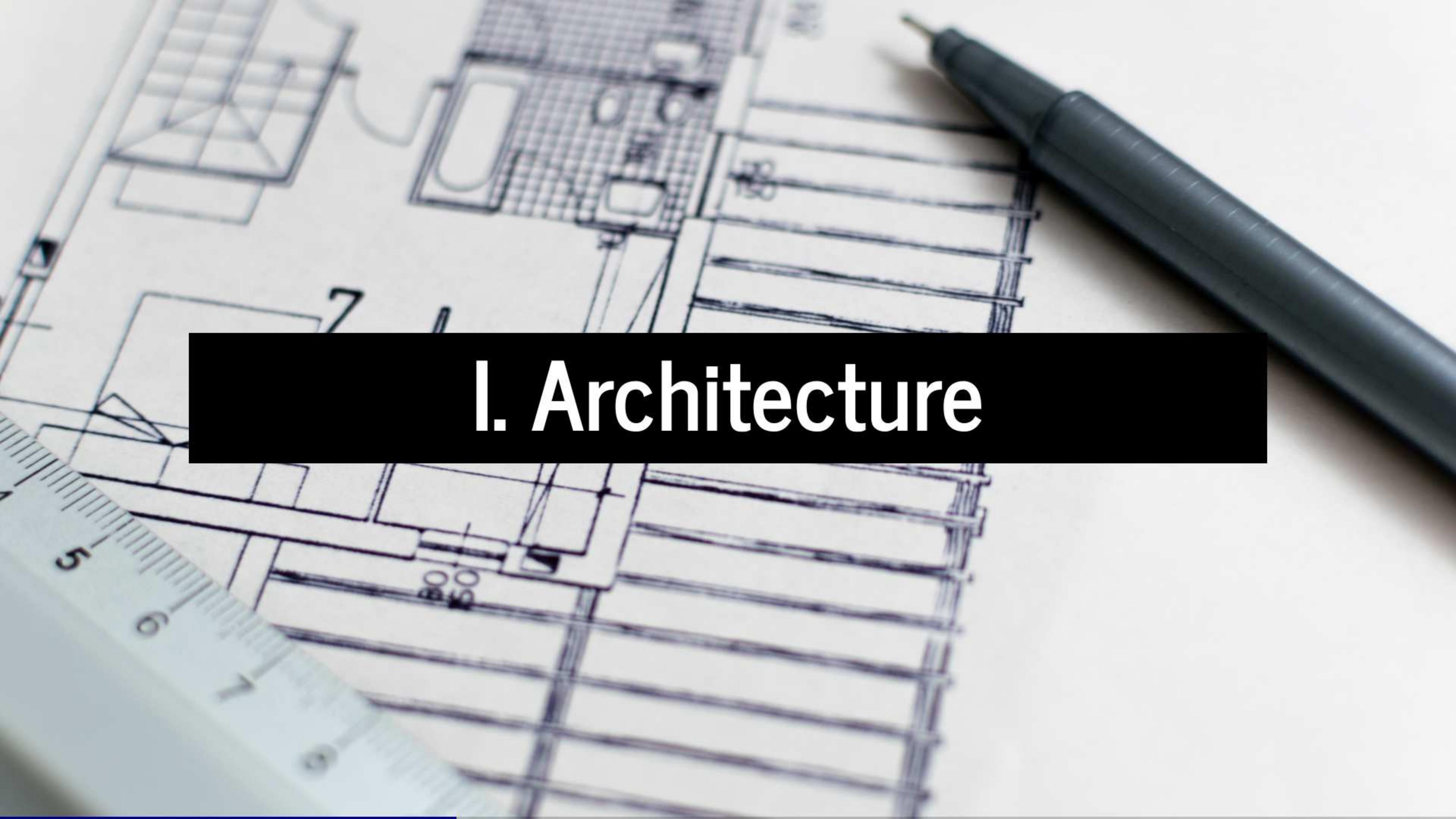
How do we document our software?





How is our software
delivered/backed-up?

I. Architecture





How software is being made

Software Evolution

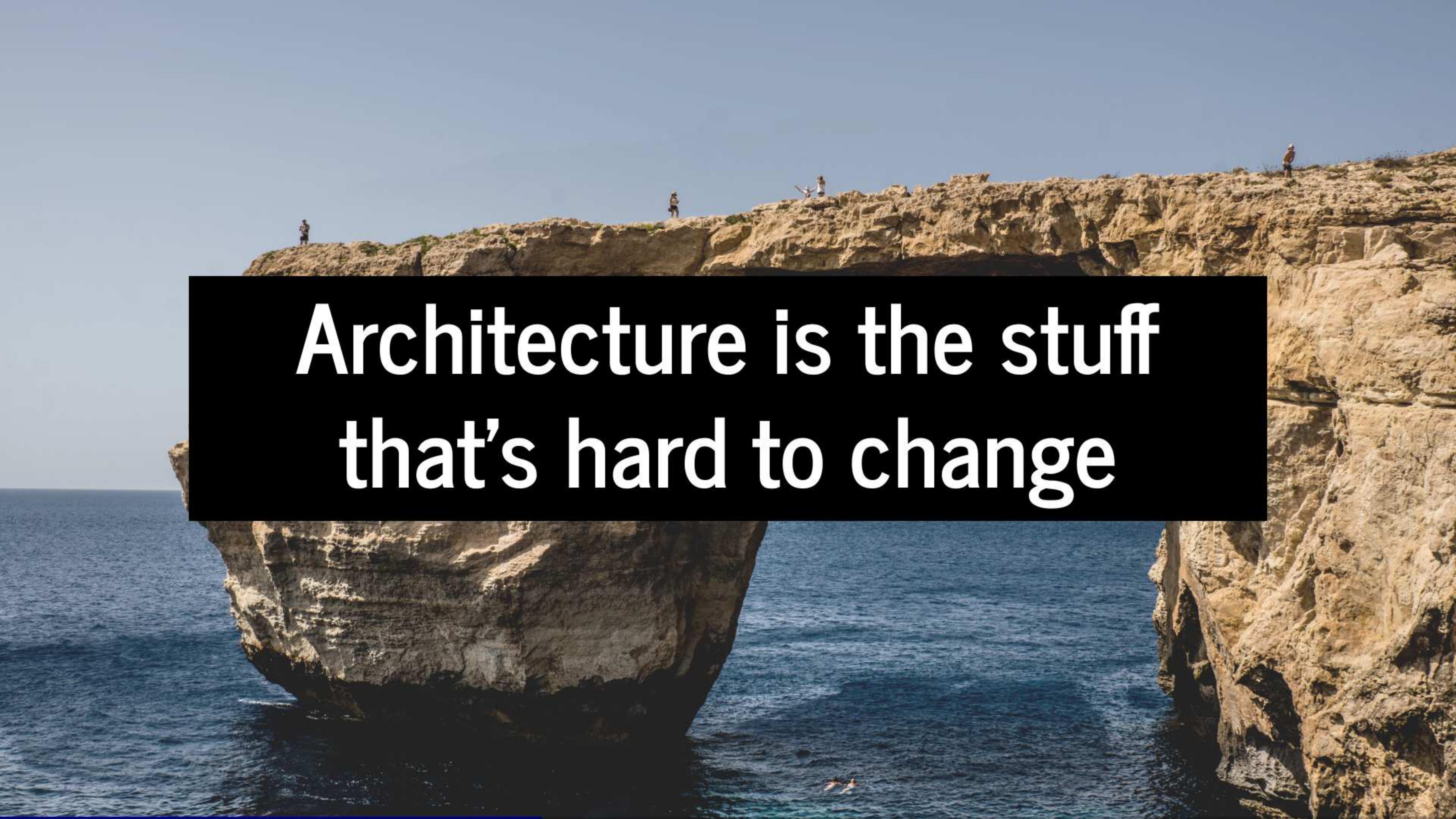
Software Evolution

(aka "historisch gewachsen")

Software Evolution

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Architecture is the stuff
that's hard to change

Architecture is about
reducing complexity

Architecture needs to be
tested



**Do it yourself?
grep, AST,?**

[\\$ Pricing](#)[Buying options](#)[More info](#)

Structure101 Studio

Licenses are per user, per language.

Available for Java and .Net — see below for other languages.

Commercial License

For companies and organizations.

License including 1-year support and upgrade subscription

US\$1190

Java

ADD TO CART

License only

US\$995

Java

ADD TO CART

1-year support and upgrade subscription

US\$195

Java

ADD TO CART

Personal License

For individual developers.

License including 1-year support and upgrade subscription

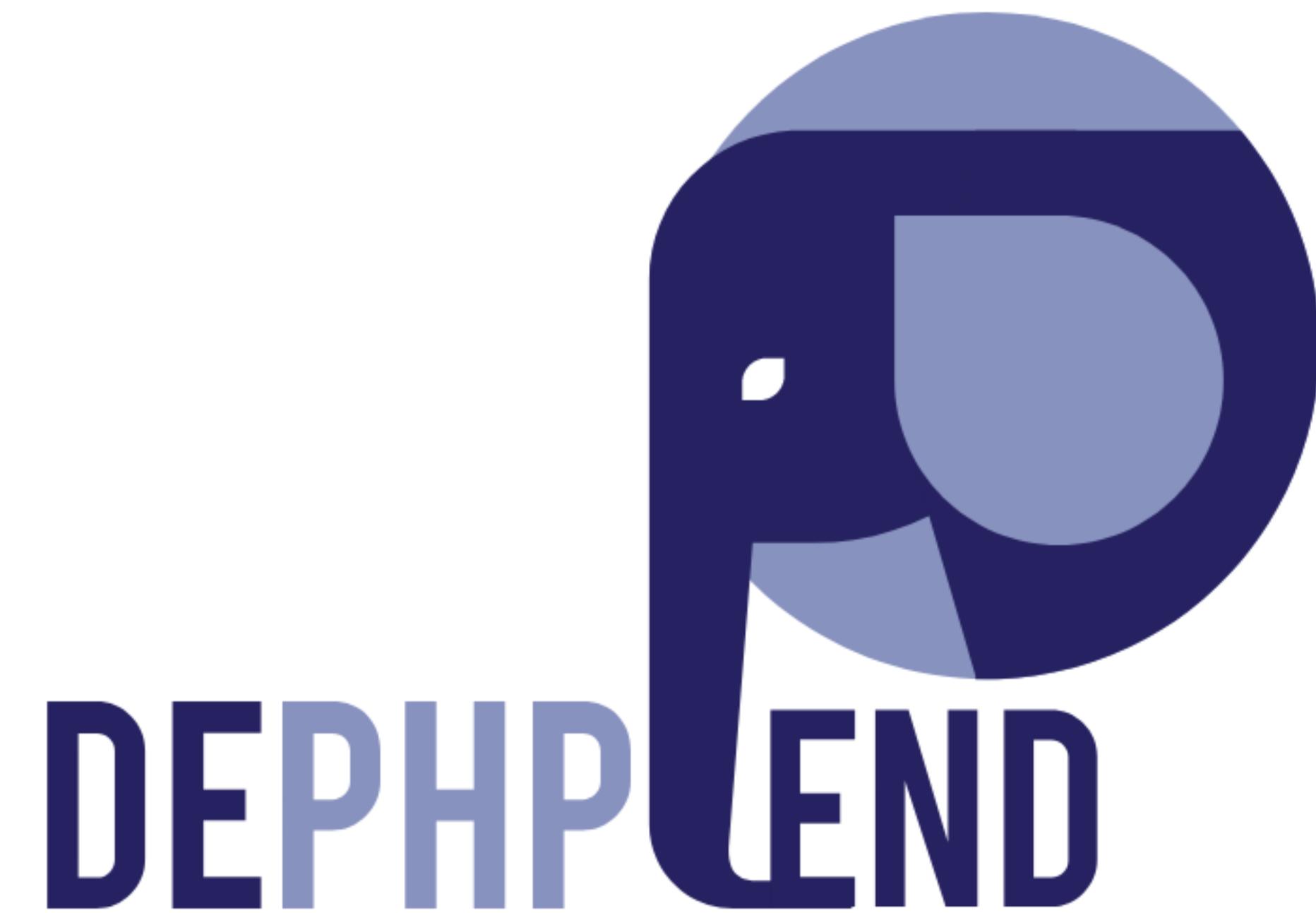
US\$395

Java



We need some
tools!

dePHPend



Visualizations & Assertions



```
λ wget http://phar.dephpend.com/dephpend.phar -O ~/bin/dephpend
λ dephpend --help

      _      ---- - - - -
     ||      | \|| | | | _ \
     _|| _|| |_) | |_|| | |_) | _ _ _ _ | |
     / _` | / _ \ _|| | _ | | _ / _ \ _ \ / _` |
     | ( _| | _/ | | | | | | | | _/ | | | ( _| |
     \|_,_| \_||_| | | | | | | | | | | \_,_| version 0.4

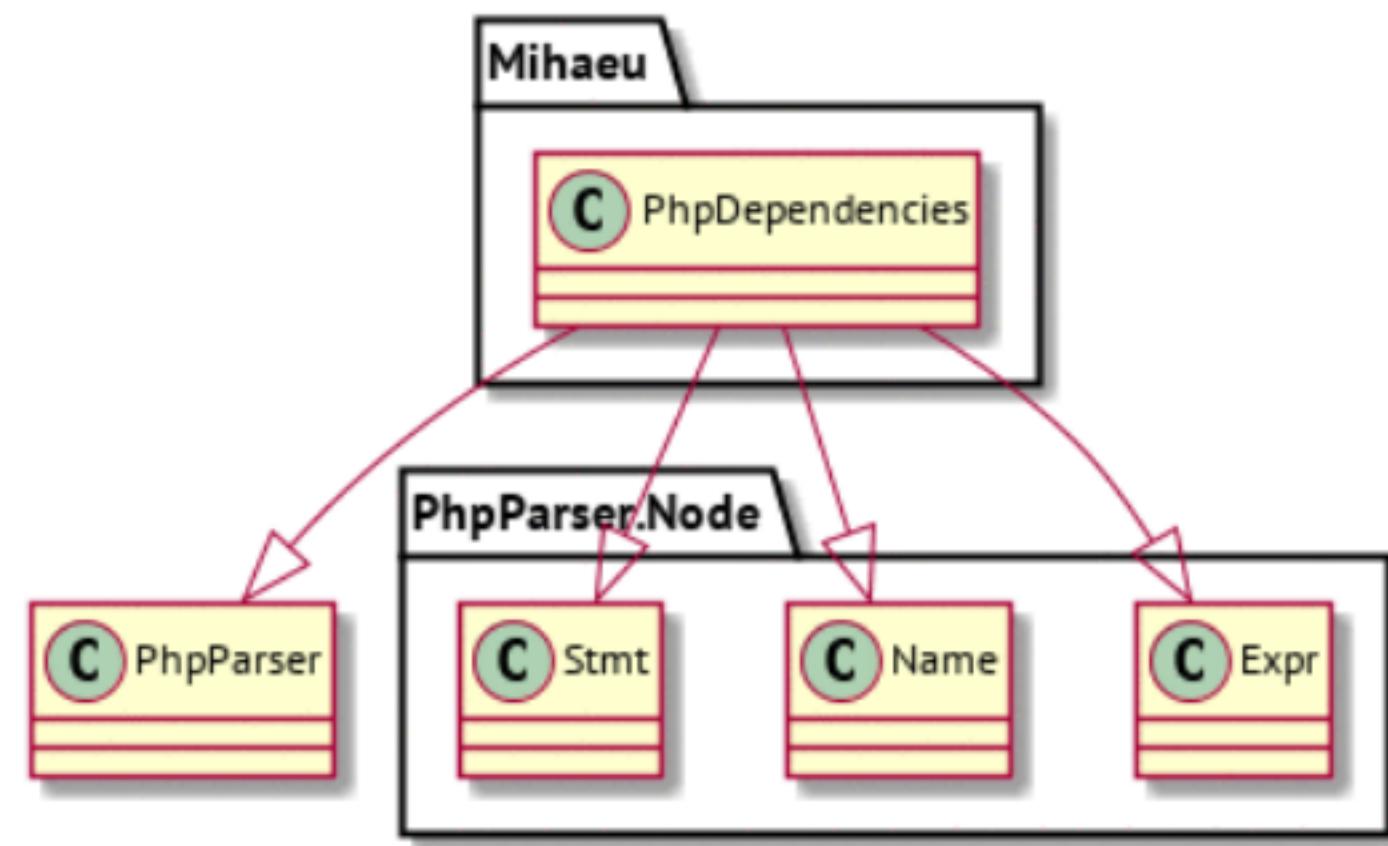
Usage: ...
λ dephpend text ~/workspace/dephpend/src
Mihaeu\PhpDependencies\Util\AbstractMap → Mihaeu\PhpDependencies\Util\Collection
Mihaeu\PhpDependencies\Util\DI → Mihaeu\PhpDependencies\Analyser\Analyser
...
...
```

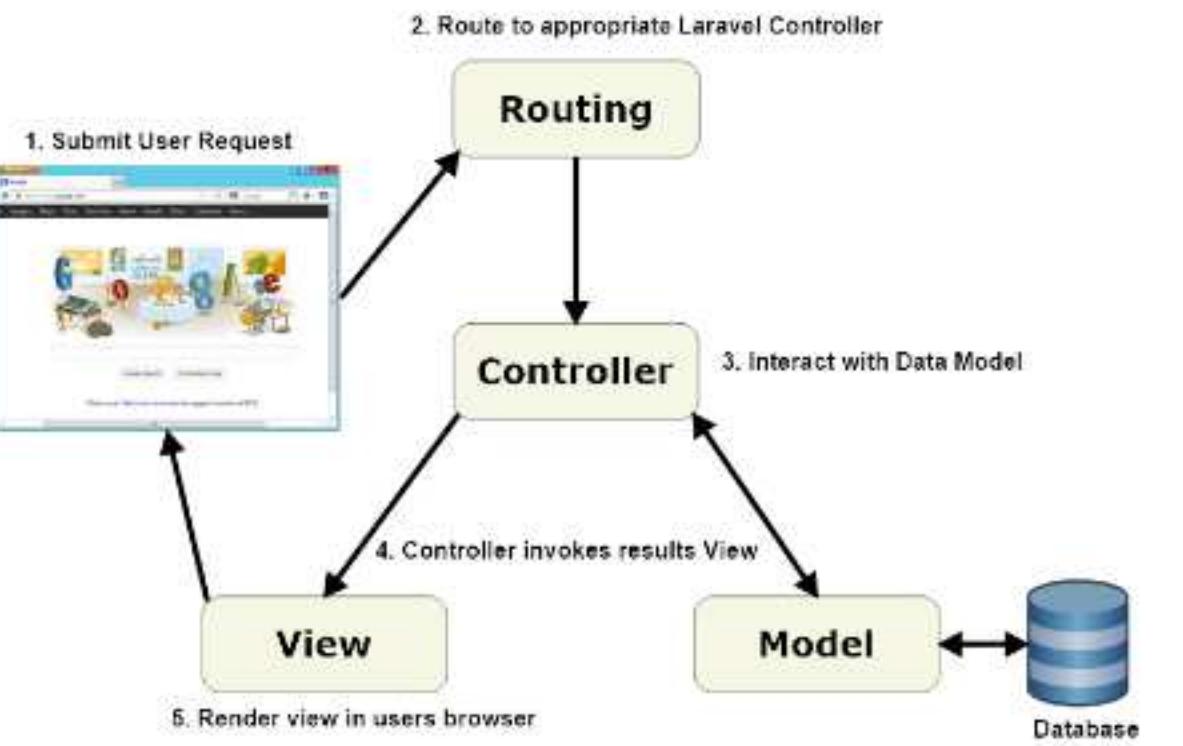


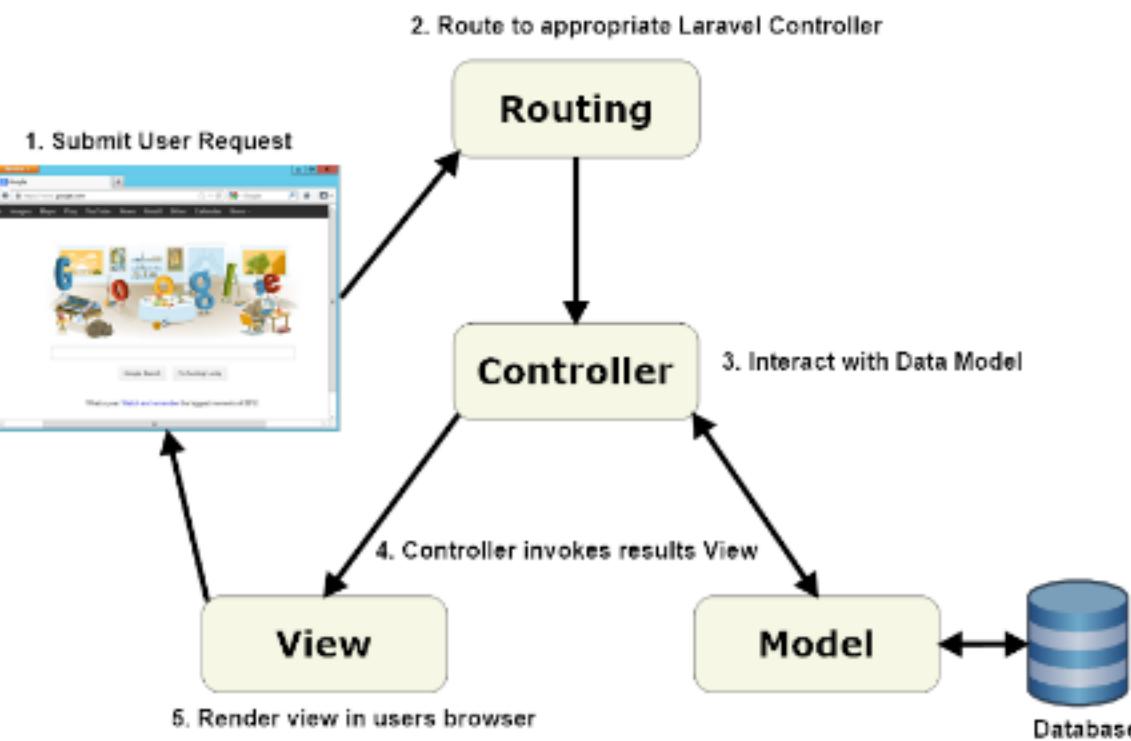




Visualizations







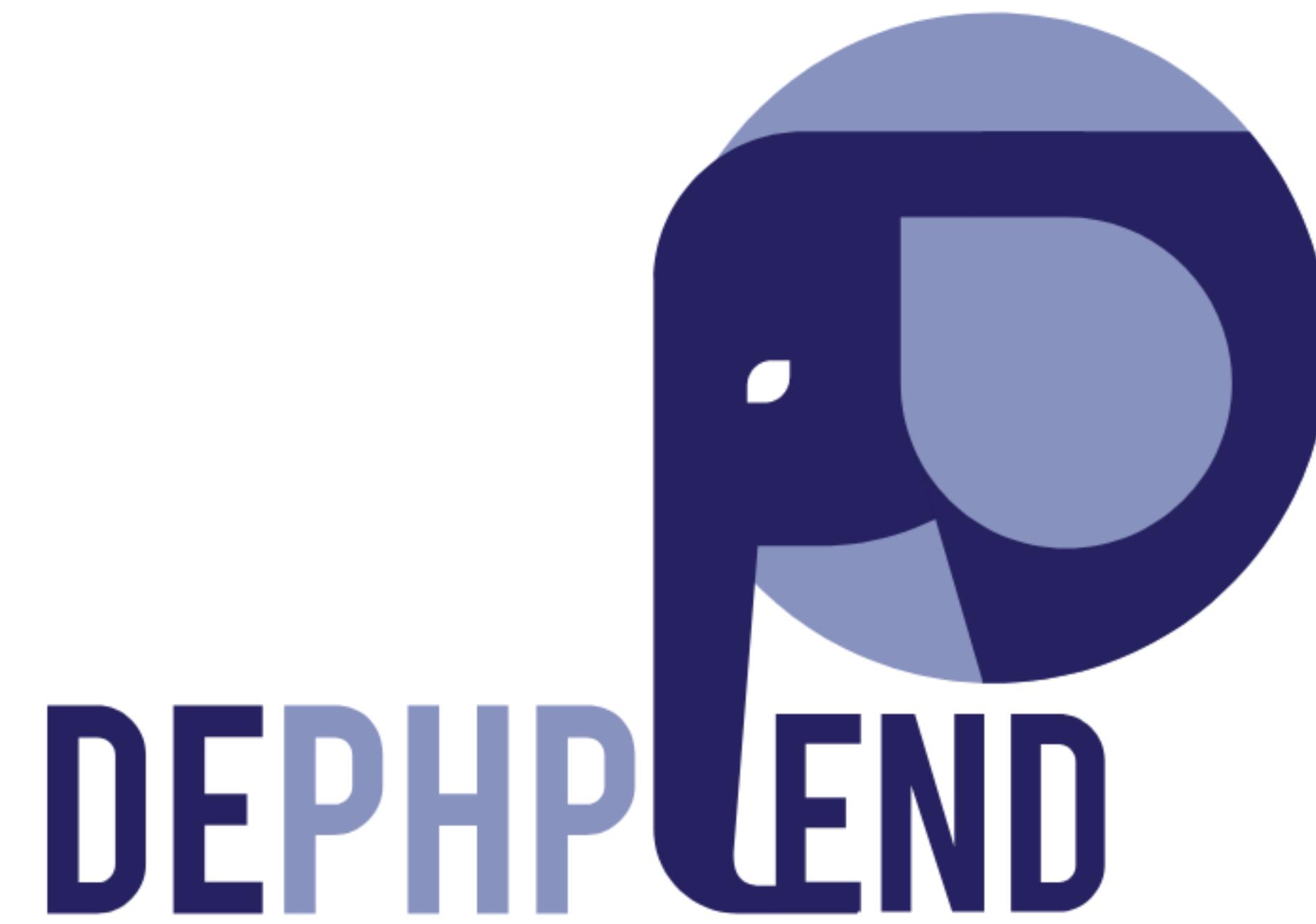
```

<?php

$cmd = shell_exec('dephpend text src --no-classes');
$constraints = [
    'Model.* → .*View',
    'View.* → .*Model',
];
$regex = '/('.implode('|', $constraints).')/x';

if (preg_match($regex, $cmd)) {
    echo 'Architecture violation'.PHP_EOL;
    exit(1);
}

```



<https://github.com/mihaeu/dephpend>

Whatever you end up using:

Test your architecture!



Metrics

- number of dependencies, dependents
- package size
- abstractness of code

pmd and PhplnpectionsEA to detect other architectural smells

- gives you hints along the way
- too many dependencies in a class
- inheritance hierarchy too deep
- static calls

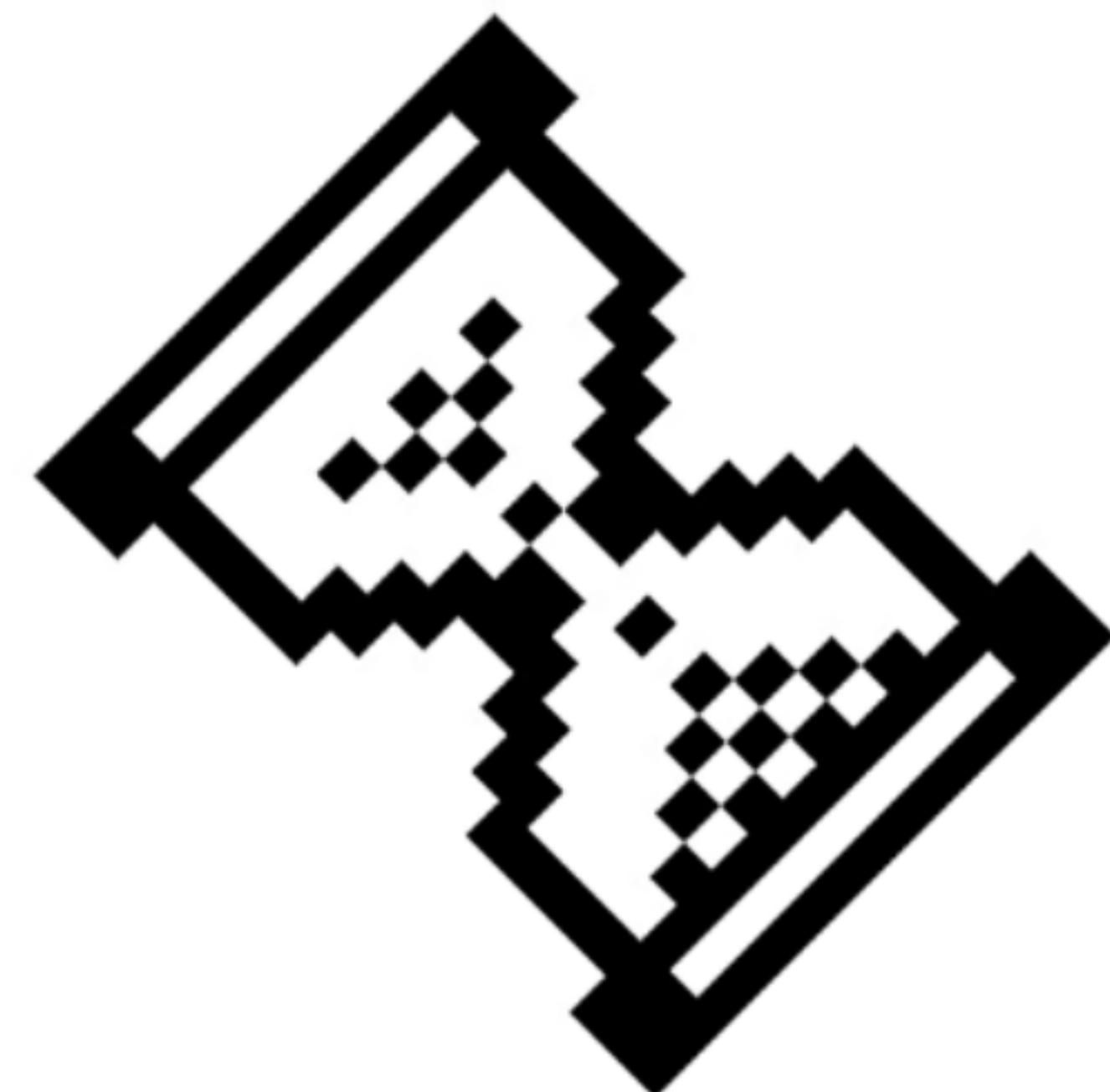






```
classes()~
```

JavaScript implementation
due in June(-ish)



II. Documentation





Auto Wiki Gardener

by Atlassian Labs

for Confluence Server 5.9.1 - 6.2.4 and [more versions](#)

★★★★★ 6
99

[UNSUPPORTED](#) [DATA CENTER](#)

[Get it now](#)

Free app

[Overview](#) [Reviews](#) [Support](#) [Versions](#) [Installation](#)

Server ▾

Encourage your users to update, archive, or remove old outdated content

The screenshot shows a Confluence page with an 'Outdated Content' panel. The panel title is 'This page is very very old'. It contains three items: 'The content of this page may be outdated', 'The content on this page has not been updated for over 6 months', and 'Edit this page to update the content'. A red arrow points from the text 'Notify your users when page content is old' to the first item in the panel.

Notify your users when page content is old

When the content has not been updated for more than 6 months, a panel is shown to inform the reader that the content is old.

The screenshot shows the 'Space Operations' section of the Auto Wiki Gardener configuration. It includes a checkbox for 'Enable auto-wiki gardener for this space' and a note 'Space editor can enable/disable for each space'. A red arrow points from the text 'The feature can be configured for each space' to the checkbox.

The feature can be configured for each space

Each space can configure the feature differently.

By default it will be inactive.

You can enable it, and optionally set an

The screenshot shows a Confluence page with an 'Outdated Content' panel. The panel title is 'This page is very very old'. It contains three items: 'The content of this page may be outdated', 'The content on this page has not been updated for over 6 months', and 'Edit this page to update the content'. A red arrow points from the text 'Options for users with relevant permissions' to the 'Edit this page' link in the panel.

Options for users with relevant permissions

If a user only has view permission, then they will be informed that the content is outdated.

If they have additional permissions, the panel will prompt them to take action, by confirming, updating, or removing/archiving.

And there's an API ...



Plaintext

Style Checks

write good build passing

Naive linter for English prose for developers who can't write good and wanna learn to do other stuff good too.

Use

```
npm install write-good
```

Important: Do not use this tool to be a jerk to other people about their writing.

API

`writeGood` is a function that takes a string and returns an array of suggestions.

```
var writeGood = require('write-good');

var suggestions = writeGood('So the cat was stolen.');

// suggestions:
//
// [
//   {
//     suggestion: "omit 'So' from the beginning of sentences",
//     index: 0, offset: 2
//   },
//   {
//     suggestion: "'was stolen' is passive voice",
//     index: 11, offset: 10
//   }
// ]
```

github.com/btford/write-good

Markdown Linters

remarklint

[build](#) [passing](#) [coverage](#) [100%](#) [chat](#) [on gitter](#)

`remark-lint` is a markdown code style linter. Another linter? Yes. Ensuring the markdown you (and contributors) write is of great quality will provide better rendering in all the different markdown parsers, and makes sure less refactoring is needed afterwards.

What is quality? That's up to you, but there are sensible [presets](#).

`remark-lint` is built on [remark](#), a powerful markdown processor powered by [plugins](#) (such as this one).

github.com/remarkjs/remark-lint

Build and Verify Glossaries

```
vi /usr/share/dict/project-glossary-english
```

III. Deployment/Backup

"If you don't test your backups properly there's an excellent chance you won't be able to recover them successfully when you need to."

- Rich Cook

48% of the test recoveries run by companies testing
disaster recovery (DR) plans fail

- The Symantec Disaster Recovery Research 2007

phpbu

IV. Misc

Stop bothering your CI (and co-workers!)

CaptainHook

CaptainHook is an easy to use and very flexible git hook library for php developers. It enables you to configure your git hook actions in a simple json file.

You can use *CaptainHook* to validate your commit messages, ensure code quality or run unit tests before you commit or push changes to git.

You can run cli commands, use some built in validators, or write your own PHP classes that get executed by *CaptainHook*.
For more information have a look at the [documentation](#).

stable 2.1.0 php >= 7.0 downloads 3k license MIT build passing Scrutinizer 10.00 coverage 100 %

github.com/sebastianfeldmann/captainhook



Editorconfig

```
# EditorConfig is awesome: http://EditorConfig.org

# top-most EditorConfig file
root = true

# Unix-style newlines with a newline ending every file
[*]
end_of_line = lf
insert_final_newline = true

# Matches multiple files with brace expansion notation
# Set default charset
[*.{js,py}]
charset = utf-8
```

<http://EditorConfig.org>

Test it!

editorconfig-checker



editorconfig-checker

build passing coverage 97% dependencies up to date devDependencies up to date Greenkeeper enabled code style XO

What?

This is a tool to check if your files consider your `.editorconfig`. Most tools - like linters for example - only test one filetype and need an extra configuration. This tool only needs your editorconfig to check all files.

```
→ editorconfig-checker.javascript (master)
$ ./dist/index.js -e 'dist'
1) Build/TestFiles/ValidationProcessor/README.md
   1: Trailing Whitespace
   2: Trailing Whitespace

2) Build/TestFiles/ValidationProcessor/noFinalNewline.js
   Wrong line endings or new final newline

3) Build/TestFiles/ValidationProcessor/wrongLineEnding.js
   Wrong line endings or new final newline

4 errors occurred! See log above and fix errors
→ editorconfig-checker.javascript (master)
$
```

github.com/editorconfig-

Thanks!!!

@michaelhaeu



Stock photos from pexels.com

PHP Meetup (March 28th)



Developing in Symfony 4

Victoria Quirante, limenius.com



The Myth of Untestable Code

Sebastian Heuer, kartenmacherei.de

Chip, St.-Martin-Straße 66-68