

Software Quality in PHP?

PHP.RUHR

Tobias Schlitt <toby@qafoo.com>
2014-10-02

About me

- ▶ Tobias Schlitt <toby@qafoo.com>
- ▶ Degree in computer science
- ▶ Professional PHP since 2000
- ▶ Consultant / Trainer at Qafoo

<http://qafoo.com>

Known as PHP

View Our Guestbook

[Sign Our Guestbook](#)

ID: 1

Name: joe blow

Email: a@a.com

Website URL: http://google.com

Date/Time: 10-12-23 08:18:43

Comment: websiteURL websiteURL websiteURL websiteURL websiteURL websiteURL
websiteURL websiteURL websiteURL websiteURL websiteURL websiteURL
websiteURL websiteURL websiteURL websiteURL websiteURL websiteURL
we

ID: 2

Name: funny

Email: a@a.com&&"":';.

Website URL: http://google.coma@a.com&&"":';.

Date/Time: 10-12-23 08:22:31

Comment: Hornaday and Hensley will look to return the team to its championship
form in 2011. Dave Fuge began 2010 as Hornaday's crew chief but was
released after just one race and replaced by Doug George. The

ID: 3

Name: Dangerous Donnie

Email: webhatchers@aglasshalfull.org

Known as PHP

```
<HTML>
<HEAD>
<META HTTP-EQUIV="Content-Type" CONTENT="text/html; charset=windows-1252">
<TITLE>PHP Guestbook Add a Guest Script</TITLE>
<META NAME="description" CONTENT="PHP Guestbook Script">
<META NAME="keywords" CONTENT="PHP Guestbook, Script, DHTML">
</HEAD>
<BODY>
<?php
include_once "config.php";
// ...
?>
<H1><?=$gaestebuch_titel; ?></H1>
<P>
<?php
$eintrag = "";
if (isset($_POST['eintrag'])) {
    $eintrag = $_POST['eintrag'];
    mysql_query('INSERT INTO eintraege VALUES(' . $eintrag . ')');
    echo "<b>Eintrag erfolgreich gespeichert!</b>";
}
?>
<FORM ID="form" NAME="form" METHOD="post" ACTION="spaghetti.php">
<INPUT NAME="eintrag" TYPE="text" SIZE="42" MAXLENGTH="42" VALUE="<?=$eintrag ?>">
<INPUT TYPE="submit" NAME="Ein&uuml;gen">
</FORM>
</P>
</BODY>
</HTML>
```

Mein Gästebuch

Warning: mysql_query(): Access denied for user '@localhost' (using password: NO) in C:\apache\spaghetti.php on line 19

Warning: mysql_query(): A link to the server could not be established in C:\apache\spaghetti.php on line 19
Eintrag erfolgreich gespeichert!

Quality Breakdown

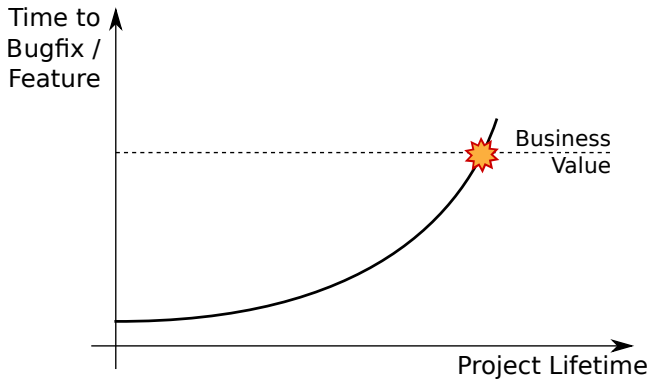


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PHP Architecture

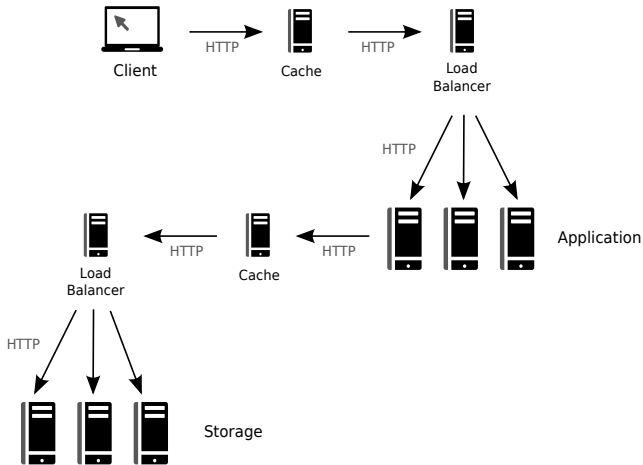
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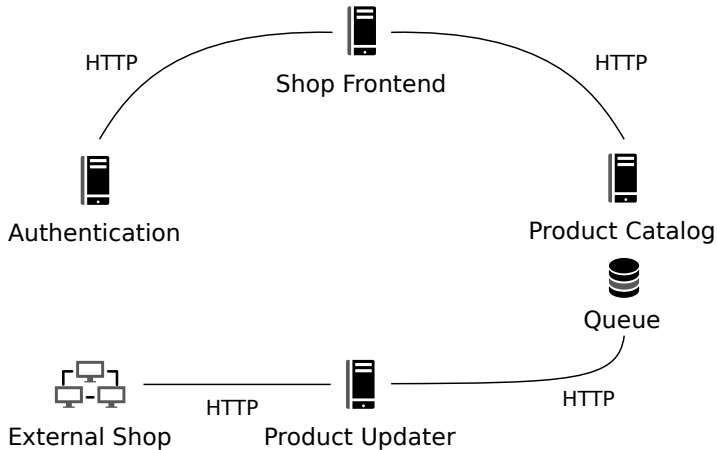
HTTP by Design



Embraces SOA Architecture

- ▶ REpresentational State Transfer (REST)
- ▶ Micro Service Architectures

Micro Service Architectures



Useful Links

- ▶ http://qafoo.com/resources/presentations/international_php_conference_se_2013/pragmatic_rest.html
- ▶ <https://www.ics.uci.edu/~fielding/pubs/dissertation/top.htm>
- ▶ <https://www.ietf.org/rfc/rfc2616.txt>

Web-scale Architecture

- ▶ MySQL bound to PHPs DNA
 - ▶ Support by Oracle for enterprise customers
- ▶ CouchDB
- ▶ Redis
- ▶ RabbitMQ
- ▶ Beanstalk
- ▶ elasticsearch
- ▶ ...

Useful Links

- ▶ <https://couchdb.apache.org/>
- ▶ <http://redis.io/>
- ▶ <http://www.rabbitmq.com/>
- ▶ <https://kr.github.io/beanstalkd/>
- ▶ <http://www.elasticsearch.org/>

Standard Components / Frameworks



Useful Links

- ▶ <http://symfony.com/>
- ▶ <http://framework.zend.com/>
- ▶ <https://getcomposer.org>

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Clean PHP Code

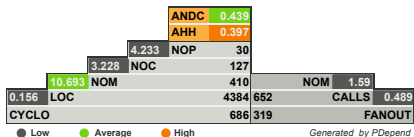


- ▶ PSR-x standardization
- ▶ Clean Code
- ▶ SOLID
- ▶ Refactoring
- ▶ Domain Driven Design
- ▶ Agility

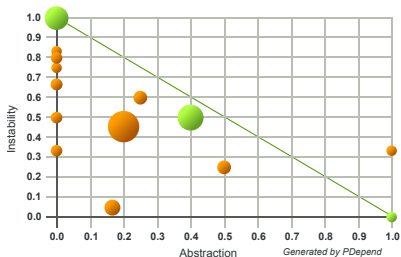
Useful Links

- ▶ http://qafoo.com/resources/presentations/phpbenelux_2014/refactoring_with_patterns.html
- ▶ http://qafoo.com/resources/presentations/symfonycon_warsaw_2013/decoupling_with_domain_events.html
- ▶ http://qafoo.com/resources/presentations/phpbenelux_2013/make_your_project_solid!.html
- ▶ http://qafoo.com/resources/presentations/confoo_ca_2013/designing_beautiful_apis.html
- ▶ <http://manifesto.softwarecraftsmanship.org/>

Software Metrics



- ▶ Measurable
- ▶ Objective
- ▶ Reproducible
- ▶ Automated



Useful Links

- ▶ http://qafoo.com/resources/presentations/confoo_ca_2013/understand_and_use_software_metrics.html
- ▶ http://qafoo.com/blog/027_code_review_tool.html
- ▶ <http://pdepend.org/>
- ▶ <http://phpmd.org/>

Outline

PHP Architecture

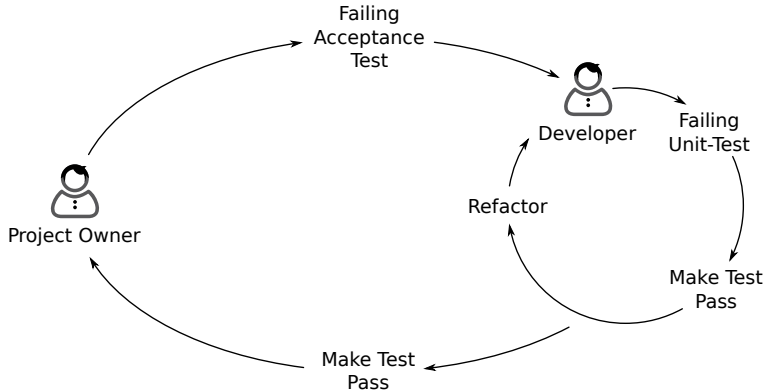
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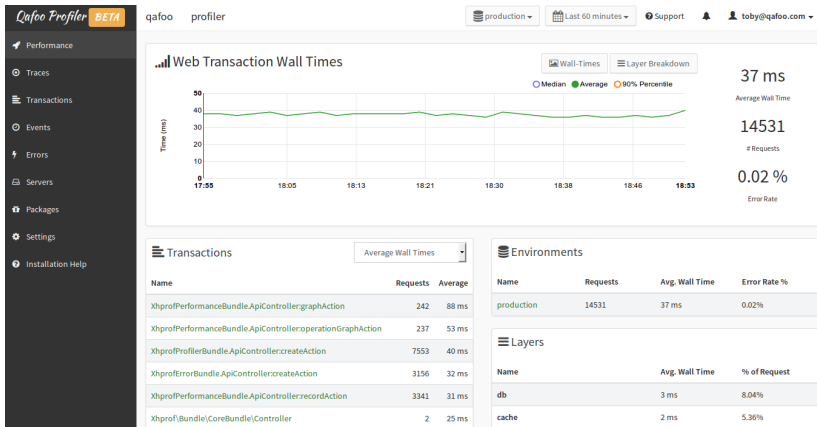
Double Feedback Test Cycle



Useful Links

- ▶ http://qafoo.com/blog/055_finding_the_right_test_mix.html
- ▶ http://qafoo.com/blog/051_testing_sweet_spot.html
- ▶ http://qafoo.com/resources/presentations/dutch_php_conference_2014/behave_behavior_driven_development.html
- ▶ http://qafoo.com/resources/presentations/confoo_ca_2013/building_testable_php_applications.html
- ▶ <https://phpunit.de/>
- ▶ <http://docs.behat.org/en/latest/>

Performance / Monitoring



Useful Links

- ▶ <http://qa.fo/profiler>
- ▶ http://qafoo.com/blog/071_testing_micro_services.html
- ▶ http://qafoo.com/resources/presentations/researchgate_developer_day_2013/continuous_performance_testing.html
- ▶ <https://metrics.librato.com/>

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**WORKED FINE IN
DEV**

OPS PROBLEM NOW

Operations

Production



Staging

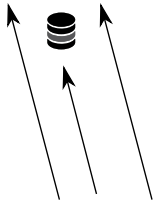


Development

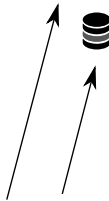


Operations

Production



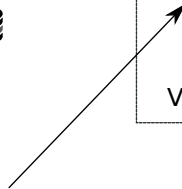
Staging



Development



Virtual Machine



Automation

Automation

- ▶ System Setup
- ▶ Orchestration
- ▶ Configuration
- ▶ Deployment
- ▶ Setup

Useful Links

- ▶ http://qafoo.com/blog/065_infrastructure_automation.html
- ▶ <http://abc.tools.qafoo.com/>
- ▶ http://qafoo.com/resources/presentations/international_php_conference_2011/vom_lokalen_build_zum_deployment.html
- ▶ <http://www.vagrantup.com/>
- ▶ <http://ansible.com/>

Outline

PHP Architecture

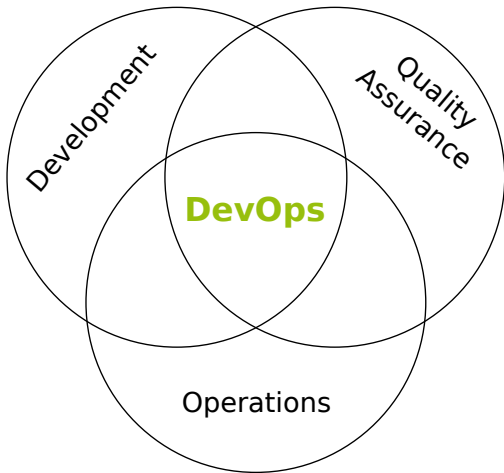
Clean PHP Code

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Dev-Ops!



Why should I care

- ▶ Scalability
- ▶ Extensibility
- ▶ Maintainability
- ▶ Reliability
- ▶ Rapidity

Questions?

- ▶ Tobias Schlitt
- ▶ <toby@qafoo.com>
- ▶ <http://qafoo.com>
- ▶ Slides already online
- ▶ <http://qa.fo/phpuhr14>
- ▶ Usefull links included