



# DRUPALCON VIENNA



## AUTOMATED TESTING 101

Ezequiel "Zequi" Vázquez





JOIN US FOR  
CONTRIBUTION SPRINT  
Friday, 29 September, 2017

Mentored  
Core Sprint

9:00-18:00  
Room: Stolz 2

First time  
Sprinter Workshop

9:00-12:00  
Room: Lehar 1 - Lehar 2

General Sprint

9:00-18:00  
Room: Mall



#drupalsprints





# AUTOMATED TESTING 101

Ezequiel “Zequi” Vázquez

DevOps track

<https://events.drupal.org/vienna2017/sessions/automated-testing-101>





## ZEQUI VÁZQUEZ

- ✦ Backend Developer
- ✦ Works @ Lullabot
- ✦ Sysadmin & DevOps
- ✦ Hacking & Security
- ✦ Testing!









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# INDEX

-  SOFTWARE QUALITY
-  TESTING TECHNIQUES
-  AUTOMATED TESTING TOOLS
-  HOW DO WE DO IT AT LULLABOT



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# SOFTWARE QUALITY





WHAT IS SOFTWARE QUALITY?

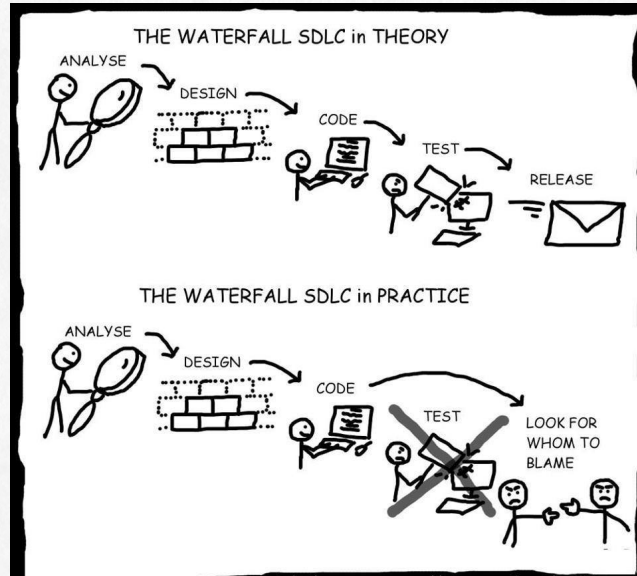
## HOW QUALITY CAN BE MEASURED?

- Metrics, framework, data...
- Functional testing
- Other aspects: non functional

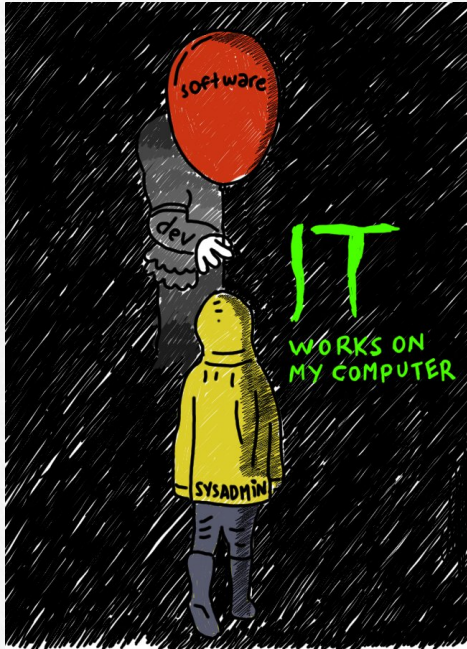




# HOW TO INTEGRATE QA ON A PROJECT



# WE DON'T WANT THIS TO HAPPEN



Coming Soon in the next deploy  
{turnoff.us}



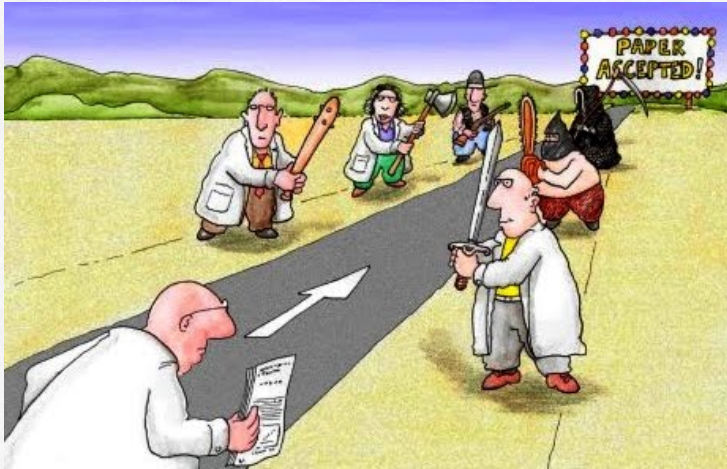
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# TESTING TECHNIQUES





# PEER REVIEWS

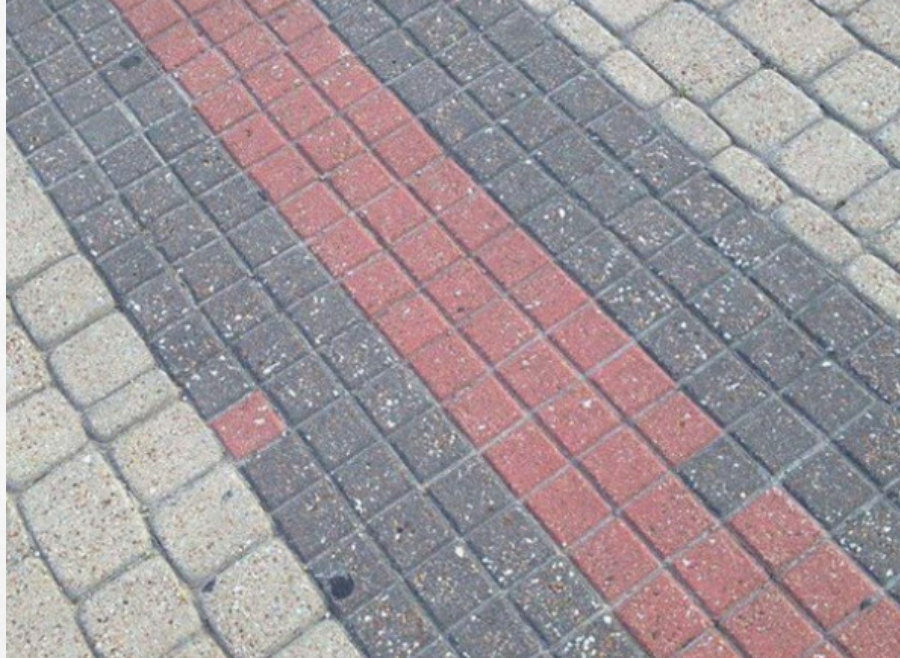


- ✦ All team members are responsible
- ✦ Solutions that you may have skipped
- ✦ Manual review before QA



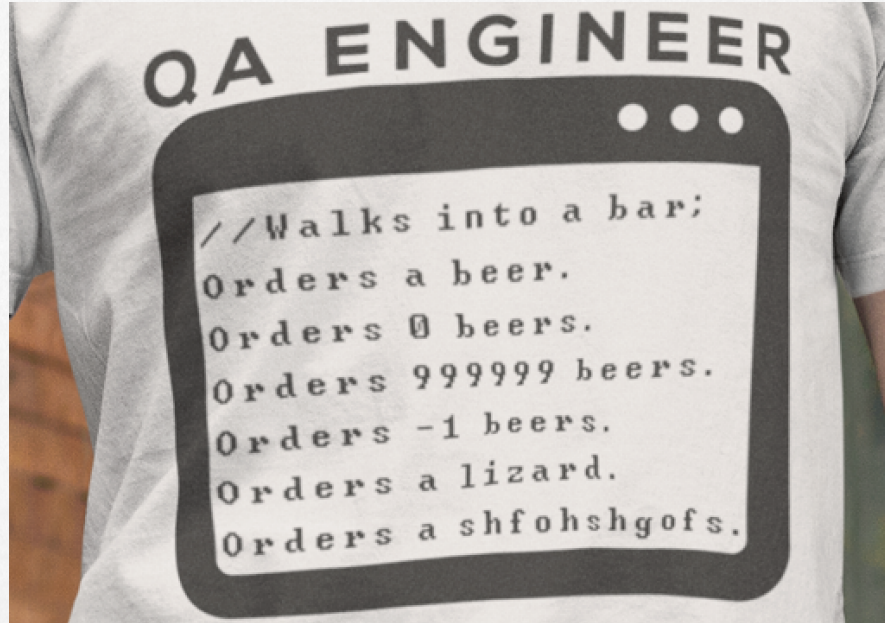


# CODE LINTING





# UNIT TESTING





# UNIT TESTING





# INTEGRATION TESTING

- Components relationships
- Makes sense on OOP
- Check implemented patterns







# END TO END TESTING





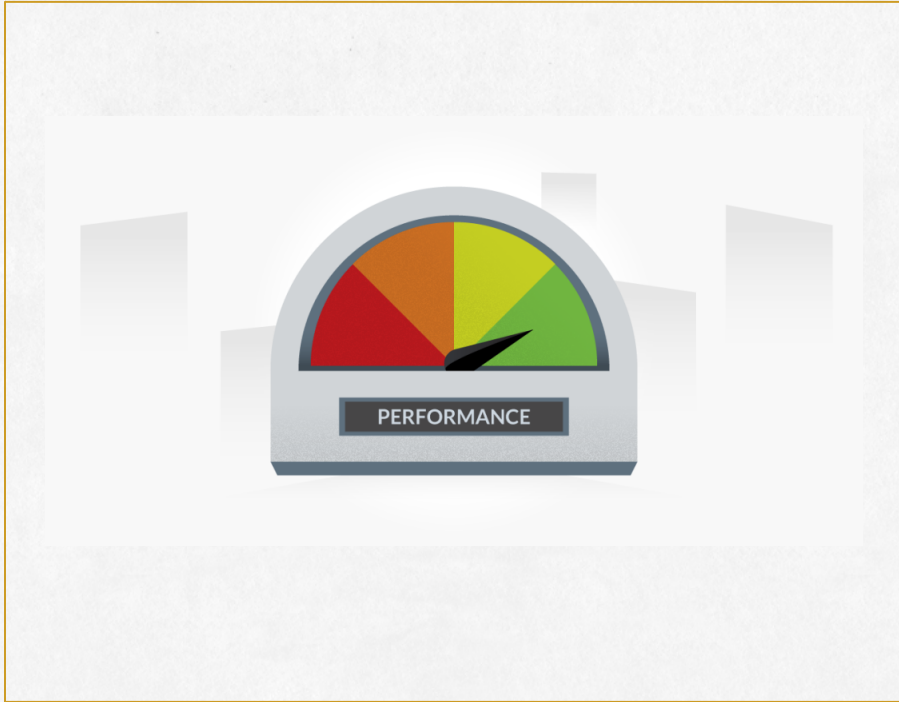
## END TO END TESTING

- ✦ Test full use cases, for all user roles
- ✦ Real third party integration: no mocks!
- ✦ Happy path and error cases
- ✦ Prevent all regression bugs!
- ✦ Remember to use test data





# PERFORMANCE TESTING



- ✦ Simpler metric: page load time
- ✦ Use real use cases
- ✦ Study impact on user experience





# SCALABILITY TESTING

- ✦ A.K.A. Load testing
- ✦ Determine maximum users
- ✦ SLA + Cloud
- ✦ Capacity planning





# SECURITY TESTING



- ✦ Apply to process, not only to code
- ✦ Code audit + Pentesting
- ✦ Relevance of training
- ✦ Bonus: Backups testing



# USABILITY AND ACCESSIBILITY TESTING

- ✦ Test with real users if possible
- ✦ Standards apply (A, AA, AAA)
- ✦ More than a checklist
- ✦ HTML checkers











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## NOT ENOUGH?

Some other types of testing techniques...

-  Regression
-  Smoke & sanity
-  Acceptance
-  Alpha/Beta
-  A/B testing
-  ...



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# AUTOMATED TESTING TOOLS







## /(PHP|JS|\*.\*) UNIT/



- Most languages have support
- Test all the things!
- ... but be smart





# NIGHTWATCH JS

- Based on Selenium/Webdriver
- Allows replication of human behaviour
- Written on JavaScript
- Powerful and easy to implement





GATLING.IO



- Real use cases for performance
- User concurrency
- Easy to implement





## SOME OTHER TOOLS

- ✦ Functional: Behat
- ✦ Performance: jMeter
- ✦ Security: Burp suite, OWASP Zap
- ✦ Accessibility: Cynthia Says
- ✦ Orchestrator: Your favourite CI tool



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HOW DID WE DO IT  
ON OUR LAST PROJECT





# OUR TESTING FRAMEWORK

- ✎ Commit -> linter
- ✎ Push to repo -> unit tests
- ✎ Branch protection -> peer review
- ✎ Travis -> Lint, unit & E2E

The screenshot displays a GitHub Pull Request interface for Pull Request #21141. The status is 'passed'. The commit message is 'Make sure an e-mail address is passed to the sign in f...'. The commit hash is 4c0f3b4. The pull request was merged from a branch. The build jobs section shows five successful jobs:

Job ID	Environment	Test Suite	Duration
# 21141.1	Node.js: 6.11.2	TEST_SUITE=unit	2 min 55 sec
# 21141.2	Node.js: 6.11.2	TEST_SUITE=nightwatch	12 min 4 sec
# 21141.3	Node.js: 6.11.2	TEST_SUITE=nightwatch_identity_facebook	11 min 53 sec
# 21141.4	Node.js: 6.11.2	TEST_SUITE=nightwatch_identity_password	2 min 38 sec
# 21141.5	Node.js: 6.11.2	TEST_SUITE=nightwatch_identity_signinup	10 min 40 sec





## IN SUMMARY

- Good testing means high quality
- Automation makes life easier
- Continuous Integration
- Cover all software aspects

Nothing can stop automation





THANK YOU FOR COMING!

AUTOMATED TESTING 101

Ezequiel “Zequi” Vázquez

*@RabbitLair*







## WHAT DID YOU THINK?

Locate this session at the DrupalCon Vienna website:

<http://vienna2017.drupal.org/schedule>

Take the survey!

<https://www.surveymonkey.com/r/drupalconvienna>



THANK YOU!

