



There's a U in bug

A talk about automated testing



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monitoring \neq testing \neq proving

No software without bugs.



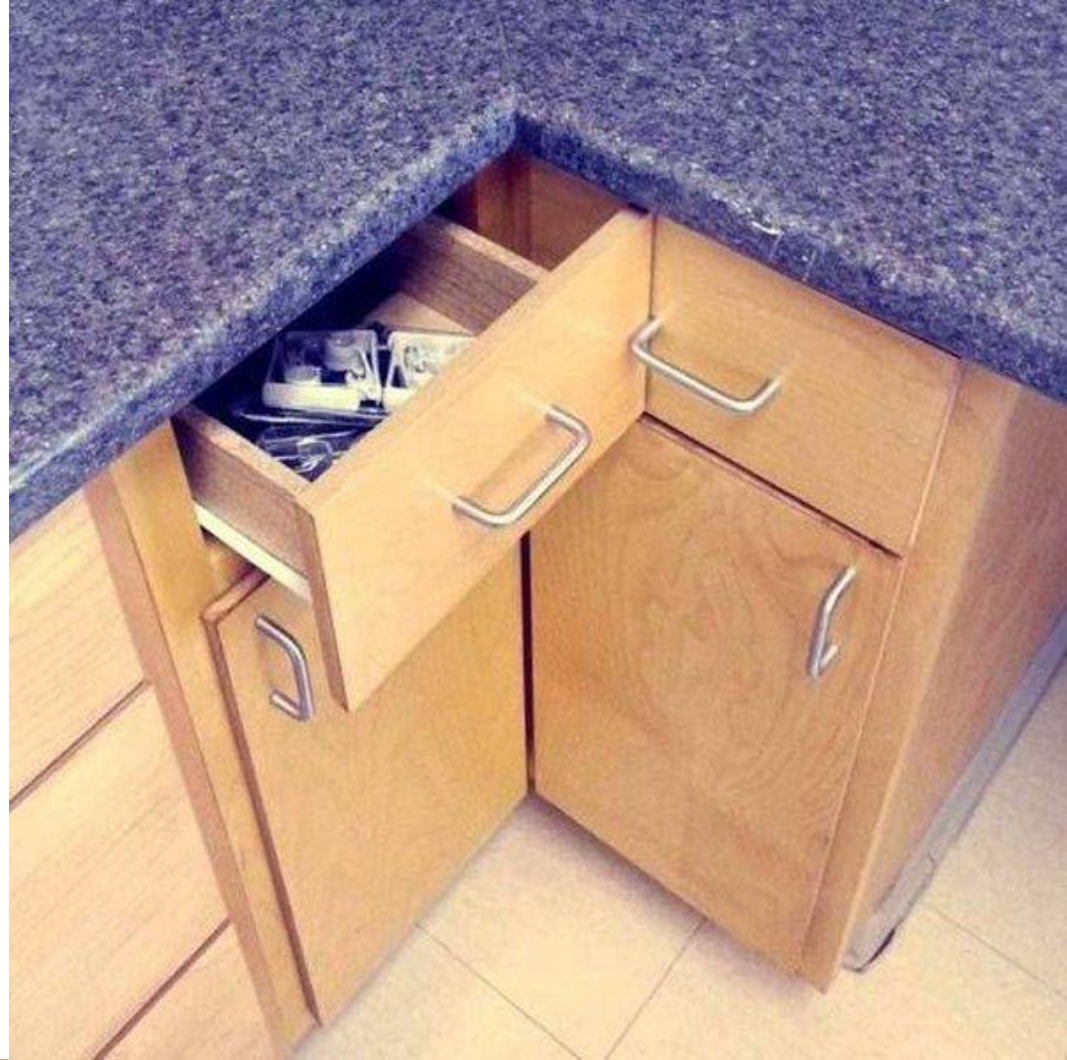
Types of tests



Unit test

```
def test_upper():  
    assert 'koko'.upper() == 'KOKO'  
    assert 'KOKO'.upper() == 'KOKO'
```

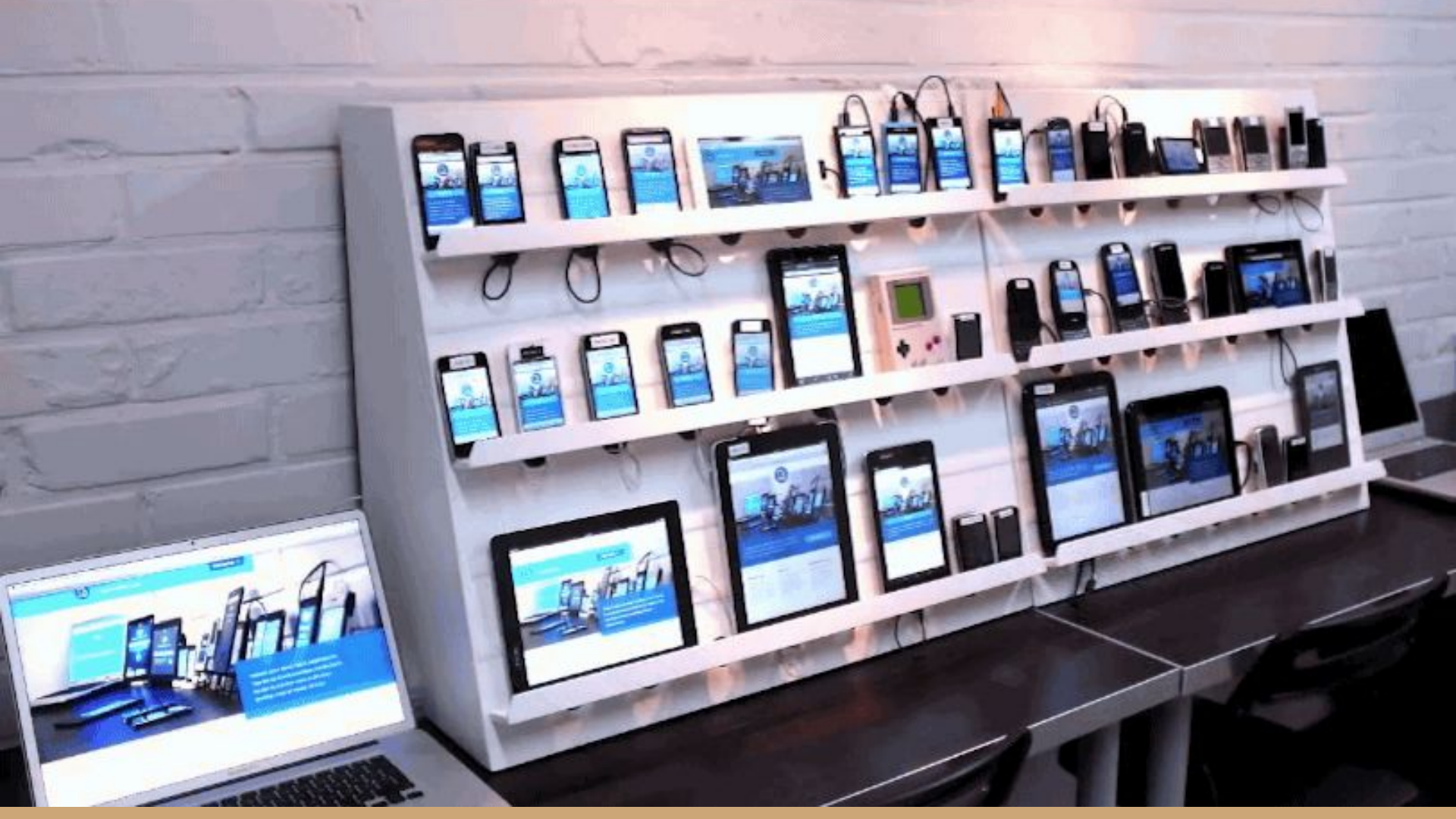

Integration tests



Black-box \cong end-to-end \cong UI tests

Gherkin

Scenario 1: Refunded items should be returned to stock
Given that a customer previously bought a black sweater from me
And I have three black sweaters in stock.
When he returns the black sweater for a refund
Then I should have four black sweaters in stock.





Why test?





Why continuous, automated testing?



“More than the act of testing, the act of designing tests is one of the best bug preventers known.”

- Boris Beizer

Design, development, maintenance

Communication efficiency

Happy users

\$\$\$

“The controversy over writing tests and TDD is over. [...] In 2013, it is simply unprofessional to eschew tests for production code.”

- David Winterbottom



The bare minimum



The bare minimum

- Continuous Integration server: run all the tests, all the time

Simplify testing infrastructure #515

[Edit](#)
[Merged](#)
[andrewgodwin](#) merged 4 commits into [django:master](#) from [maikhoepfel:test-improvements](#) on Jan 31

[Conversation](#) 1

[Commits](#) 4

[Files changed](#) 5

+29 -23



maikhoepfel commented on Jan 31

Contributor



This is the last of a round of pull requests to all Channels projects, to ensure all projects run tests with tox and Travis. Channels was mostly there, so I only had to bring it more in-line with the other projects.

This pull requests removes a layer of indirection, `tox-travis`. While it's a good and useful project, I think it makes it harder to reason about what Travis will execute, and seems to have some problems. Please see my commit message for an explanation. Furthermore, there's value in doing the same thing we do in the other four Channels projects.

Reviewers

No reviews

Assignees

No one assigned

Labels

None yet

Projects

None yet

Milestone

No milestone



maikhoepfel added some commits on Jan 30



[Mark runtests helper executable](#)

9dde9f0



[Bump required version of asgiref ...](#)

56f893f



[Simplify tox and Travis configuration ...](#)

a22a348



[Document supported versions](#)

e0974fd

Success: The Travis CI build passed





h all repositories



ositories +

ango-oscar/django-oscar-pay: # 337

uration: 29 min 29 sec

ished: a day ago

ango-oscar/django-oscar-accc: # 162

uration: 18 min 22 sec

ished: a day ago

maikhoepfel/daphne # 33

uration: 5 min 41 sec

ished: 2 days ago

maikhoepfel/channels # 7

uration: 8 min 36 sec

ished: 2 days ago

ango-oscar/django-oscar # 5436

uration: 54 min 6 sec

ished: 5 days ago

efanfoullis/django-phonenum: # 226

uration: 22 min 19 sec

ished: 5 days ago

ango-oscar/django-oscar-api # 505

uration: 54 min 39 sec

ished: 6 days ago

django / channels



build passing

Current Branches Build History Pull Requests > Build #750

More options

✓ Pull Request #515 Simplify testing infrastructure

- Commit a6a98eb
- #515: Simplify testing infrastructure
- Branch master

Maik Hoepfel authored and committed

#750 passed

- Ran for 2 min 21 sec
- Total time 7 min 48 sec
- about a month ago

Build Jobs

✓	# 750.1		</> Python: 2.7	DJANGO="Django">=1.8,<1.9"	43 sec
✓	# 750.2		</> Python: 2.7	DJANGO="Django">=1.9,<1.10"	48 sec
✓	# 750.3		</> Python: 2.7	DJANGO="Django">=1.10,<1.11"	41 sec
✓	# 750.4		</> Python: 3.4	DJANGO="Django">=1.8,<1.9"	43 sec
✓	# 750.5		</> Python: 3.4	DJANGO="Django">=1.9,<1.10"	48 sec
✓	# 750.6		</> Python: 3.4	DJANGO="Django">=1.10,<1.11"	51 sec
✓	# 750.7		</> Python: 3.5	DJANGO="Django">=1.8,<1.9"	1 min 8 sec
✓	# 750.8		</> Python: 3.5	DJANGO="Django">=1.9,<1.10"	1 min 5 sec
✓	# 750.9		</> Python: 3.5	DJANGO="Django">=1.10,<1.11"	1 min 1 sec

```
148 $ source ~/virtualenv/python3.5/bin/activate 0.80s
149
150 $ python --version
151 Python 3.5.2
152 $ pip --version
153 pip 9.0.1 from /home/travis/virtualenv/python3.5.2/lib/python3.5/site-packages (python 3.5)
154 $ pip install $DJANGO -e .[tests] install.1 21.71s
217 $ pip freeze install.2 0.47s
245 $ python runtests.py 1.43s
246 Creating test database for alias 'default'...
247 .....
248 -----
249 Ran 77 tests in 0.296s
250
251 OK
252 Destroying test database for alias 'default'...
253
254
255 The command "python runtests.py" exited with 0.
256 $ flake8 1.75s
257
258
259 The command "flake8" exited with 0.
260 $ isort --check-only --recursive channels 0.47s
261
262
263 The command "isort --check-only --recursive channels" exited with 0.
264
265 Done. Your build exited with 0.
```

The bare minimum

- Continuous Integration server: run all the tests, all the time
- 3-5 end-to-end tests for core business journeys

The bare minimum

- Continuous Integration server: run all the tests, all the time
- 3-5 end-to-end tests for core business journeys
- Tests mandatory for any new code and bugfixes

DON'T STOP



BELIEVING!!!

Thanks!