# Lessons Learned from a Re(write|design)

Diving into the world of feature-flipping, performance optimization and removing of technical debt.

# About me

## Hi, I’m Adam McKerlie.

I’m a python developer at G Adventures. I like good beer, optimizing SQL queries and making stuff run.

You can contact me at

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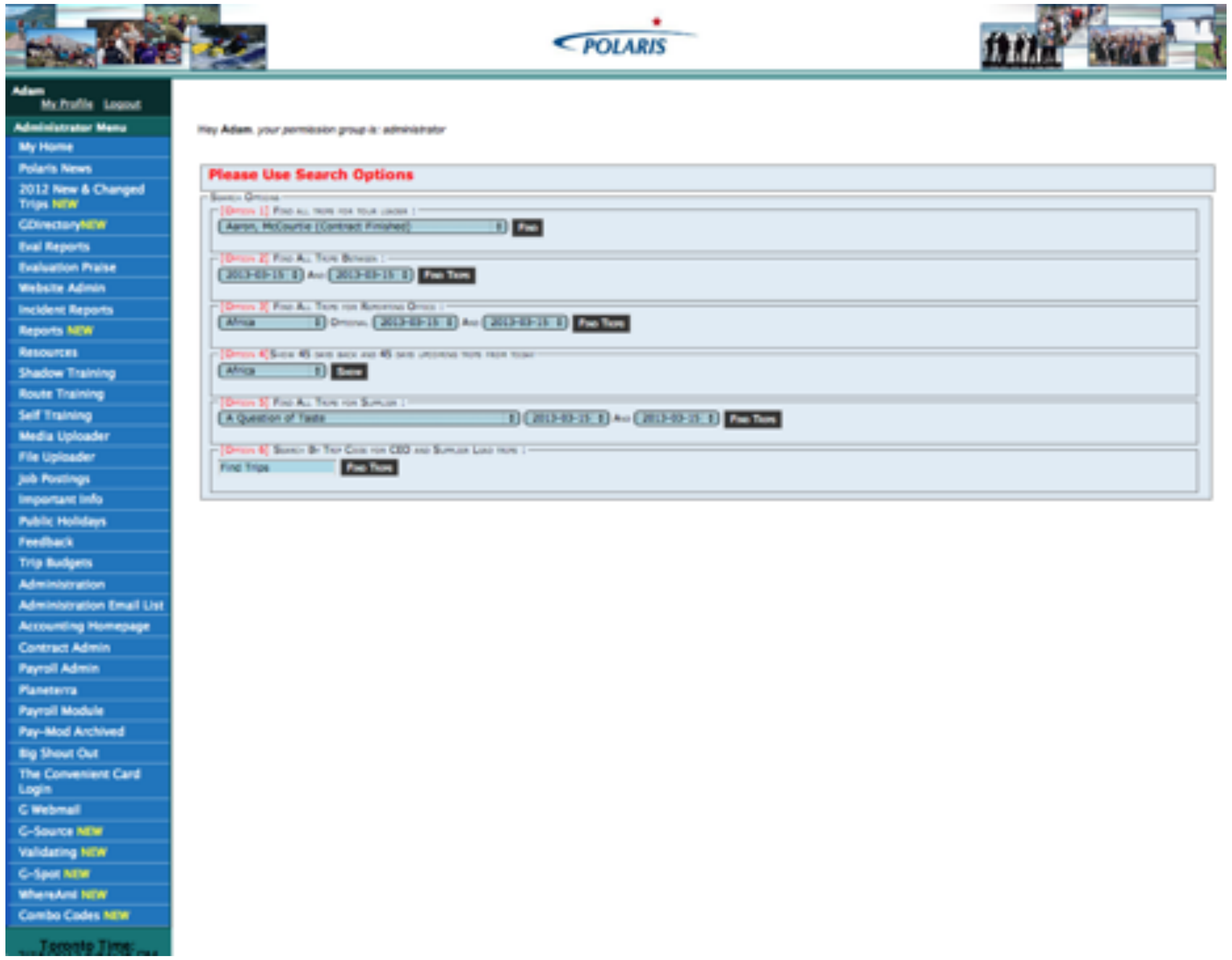
**Web** procrastinatingdev.com

# Then vs Now



Hey **Adam**, *your permission group is: administrator*

**Please Use Search Options**

Search Options

[Option 1] Find all trips for your leader : Aaron, McCourtie (Contract Finished) Find

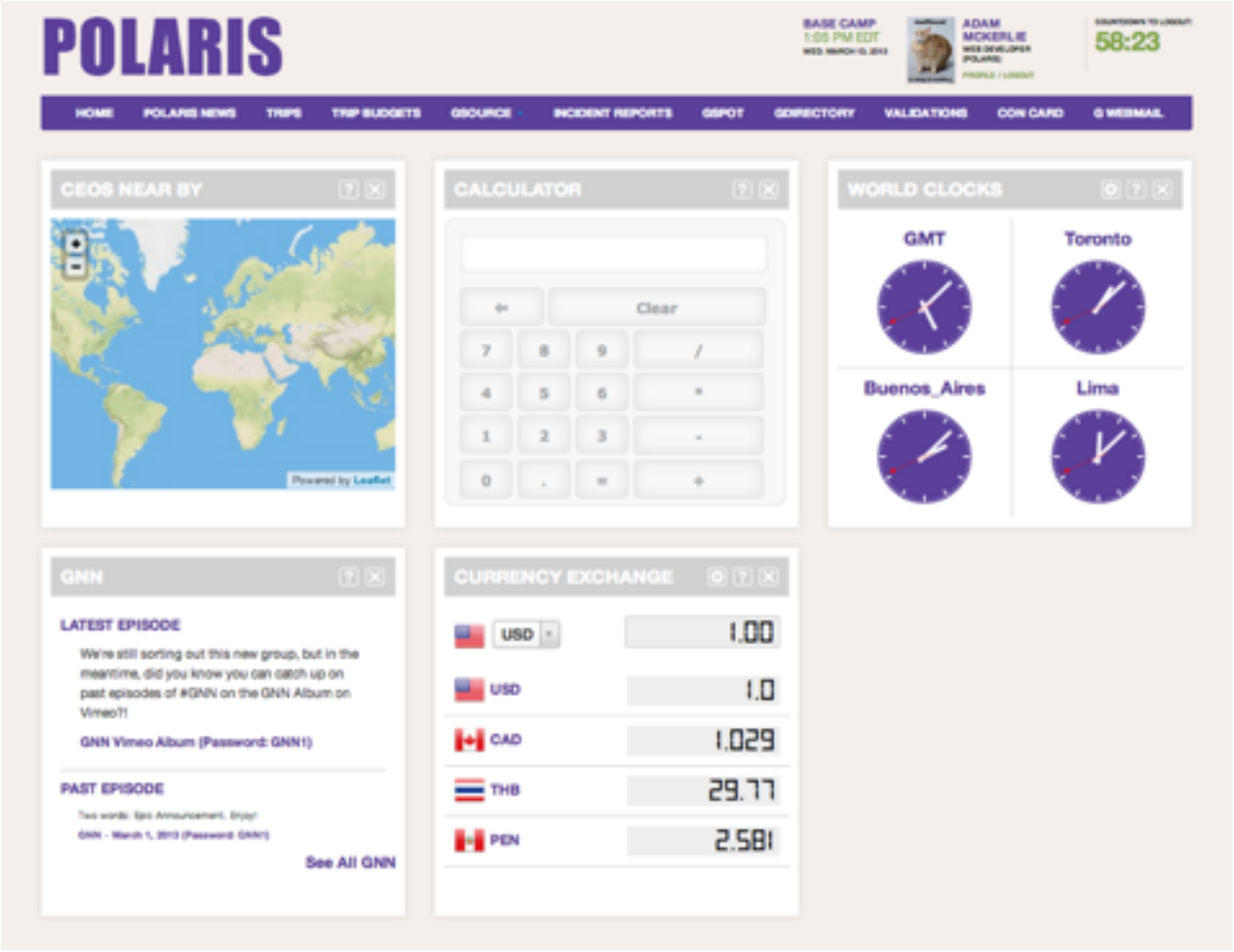
[Option 2] Find All Trips Between : 2013-03-15 And 2013-03-15 Find Trips

[Option 3] Find All Trips for Reporting Office : Africa Optional 2013-03-15 And 2013-03-15 Find Trips

[Option 4] Show 45 days back and 45 days upcoming trips from today Africa Show

[Option 5] Find All Trips for Supplier : A Question of Taste 2013-03-15 And 2013-03-15 Find Trips

[Option 6] Search By Trip Code for CEO and Supplier Load more : Find Trips Find Trips



LATEST EPISODE

We're still sorting out this new group, but in the meantime, did you know you can catch up on past episodes of #GNN on the GNN Album on Vimeo?!

GNN Vimeo Album (Password: GNN1)

PAST EPISODE

Two words: Epic Announcement. Enjoy!

GNN - March 1, 2013 (Password: GNN1)

See All GNN

| | |
|---|---|
| USD | 1.00 |
| USD | 1.0 |
| CAD | 1.029 |
| THB | 29.77 |
| PEN | 2.581 |

# Why Rewrite a Working Application?

- Other teams were using Python/Django
- Codebase was getting unmaintainable
- Easier to hire

# How Did We Do It?

# Two Applications
# One Login

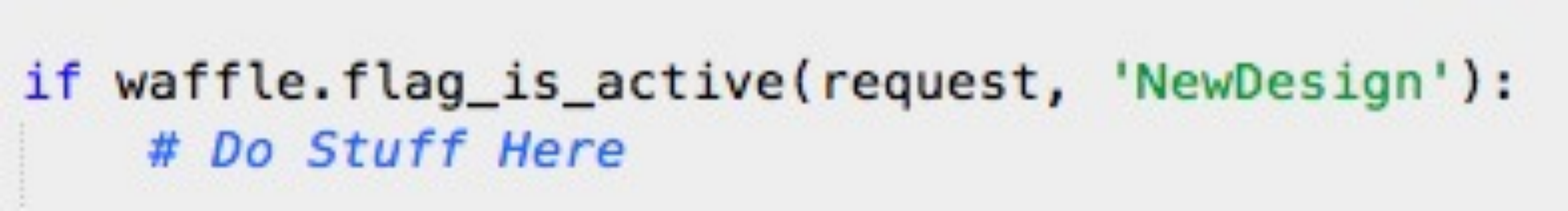
- Authenticated on the PHP side
- PHP sent a request to Django with the username, password hash and secret
- Authenticated in Django when the user visited the site

# One App at a Time

- Built what we thought users would need the most
- Specifications from Business
- Launched side-by-side with old site
- Turned off old site once we confirmed everything was working

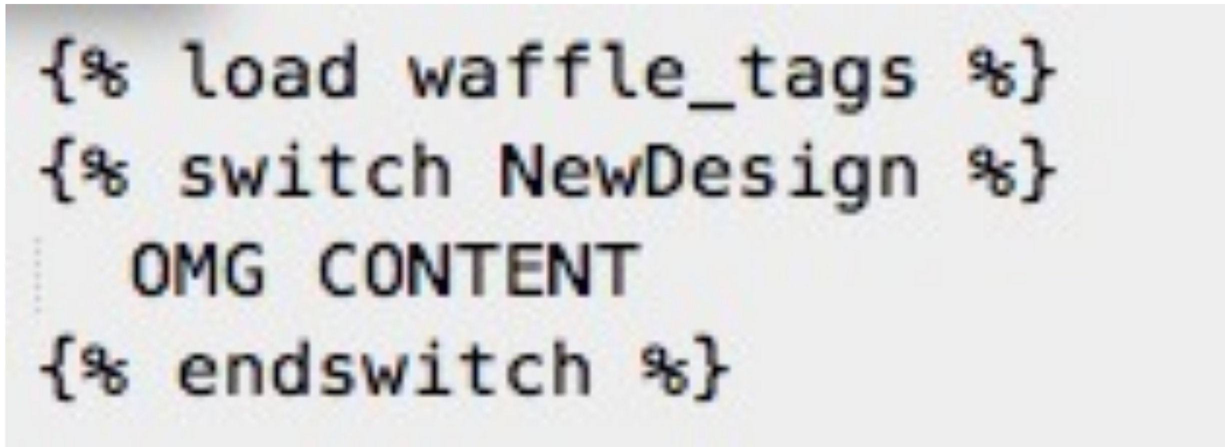
# Feature Flipping

- Django Waffle (https://github.com/jsocol/django-waffle)
- Views



```
if waffle.flag_is_active(request, 'NewDesign'):
    # Do Stuff Here
```

- Templates



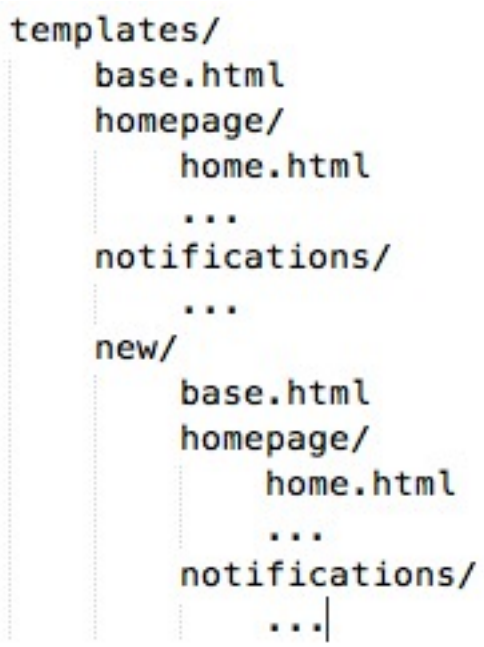
```
{% load waffle_tags %}
{% switch NewDesign %}
  OMG CONTENT
{% endswitch %}
```

# Contest Rollout

- Small core group of users
- We gave out invites to those users when they suggested ideas
- Those invites were then sent out to other users
- Eventually we flipped the flag for everyone

# Template Structure

- New design moved to new/



```
templates/
    base.html
    homepage/
        home.html
        ...
    notifications/
        ...
    new/
        base.html
        homepage/
            home.html
            ...
        notifications/
            ...
```

- Same for Static

# Realization #1

Specifications Change Quickly

- Don’t get too attached
- Need to know the business to anticipate changes
- Learn to say no

# Realization #2

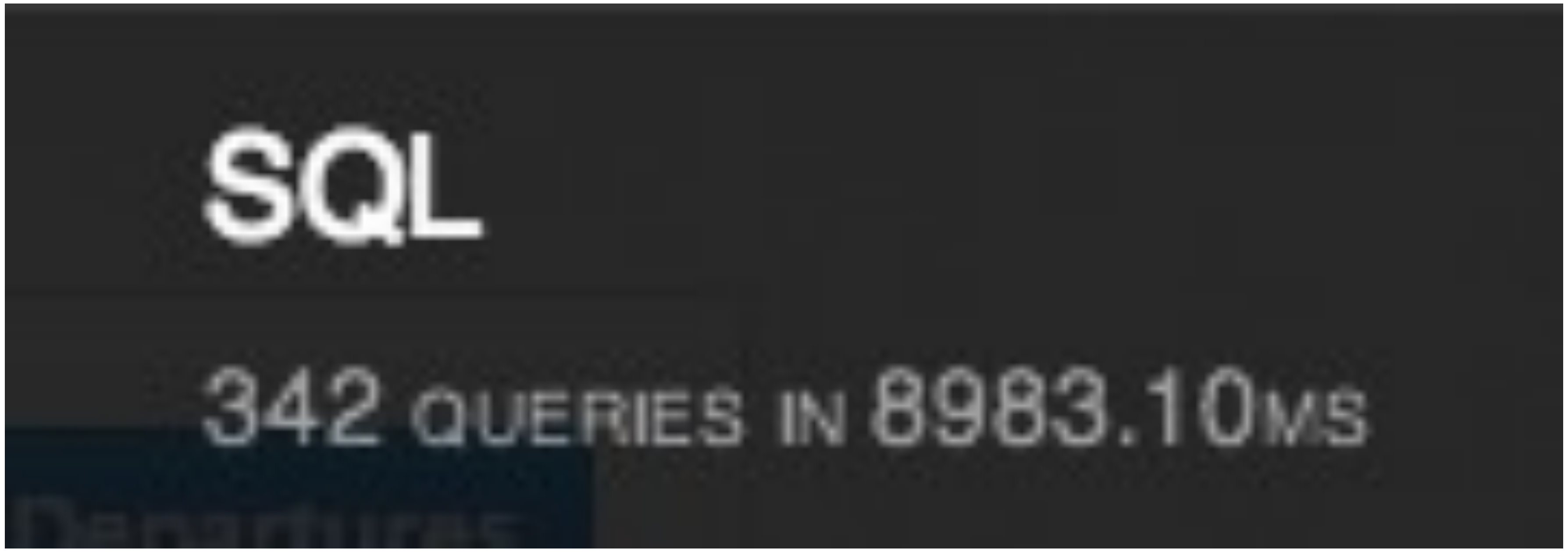
Your Users aren’t Always Right

- They only know from what they’ve seen
- They don’t know the technology
- You can tell them what they want
- Be ready to learn from them

# Realization #2

The ORM is Great…Until it’s Not

# Bad

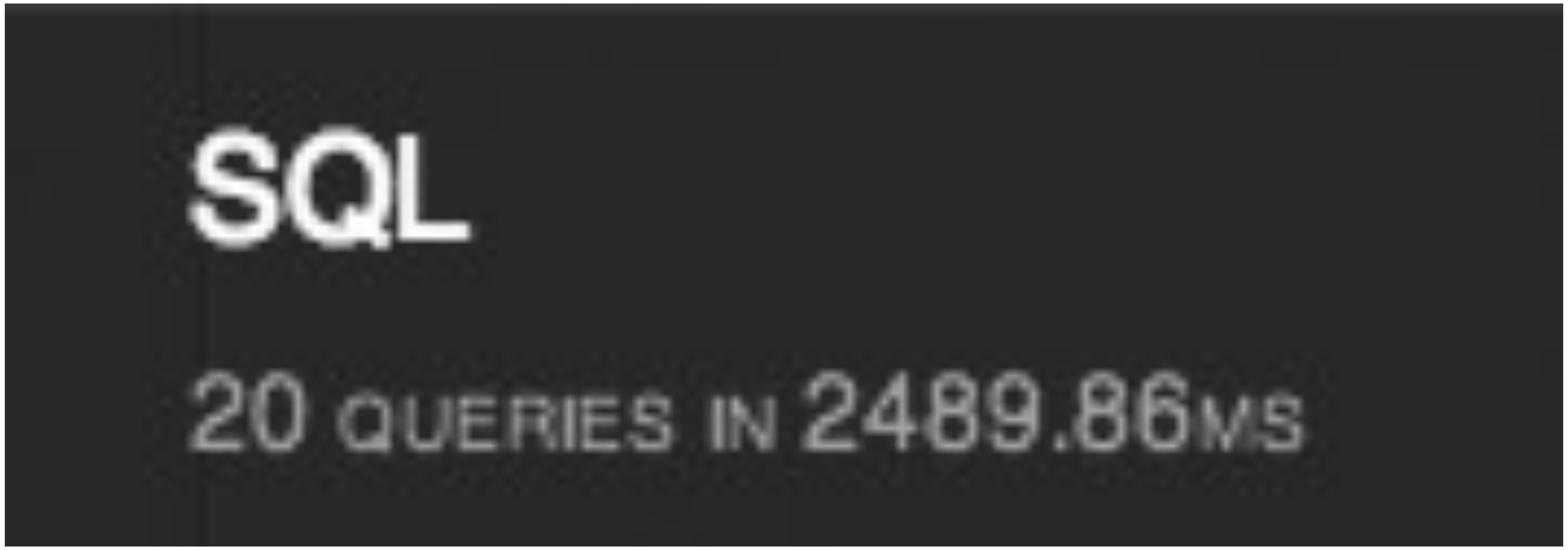


SQL

342 QUERIES IN 8983.10MS

Departures

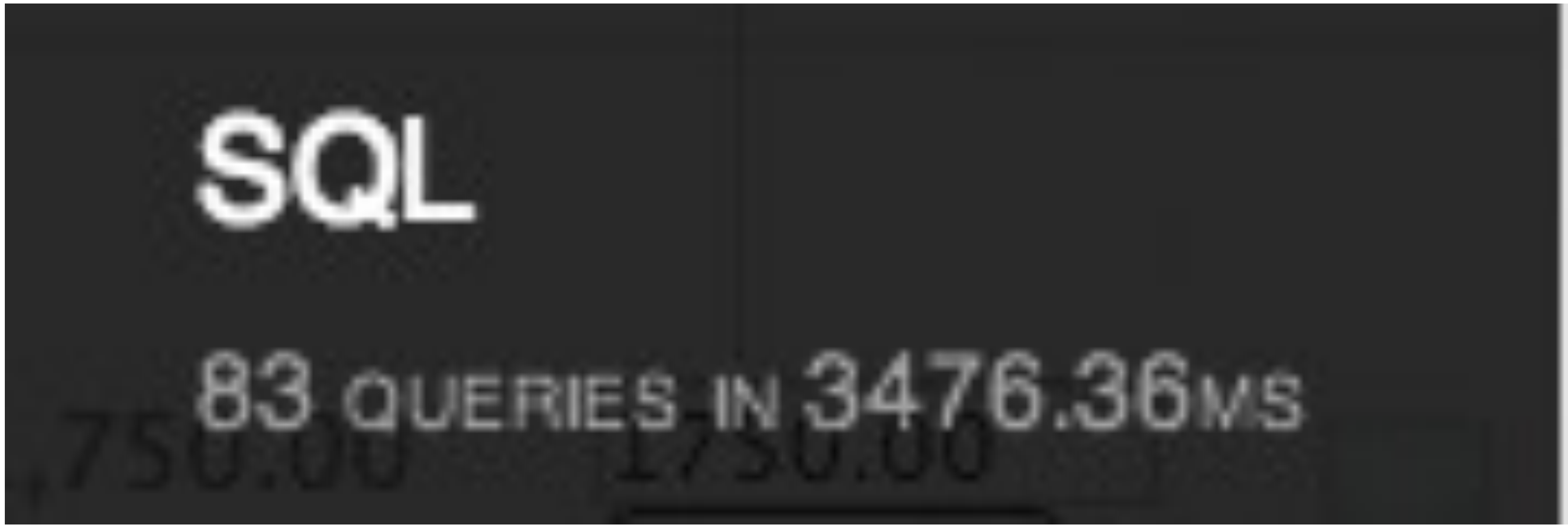
# Better



SQL

20 QUERIES IN 2489.86MS

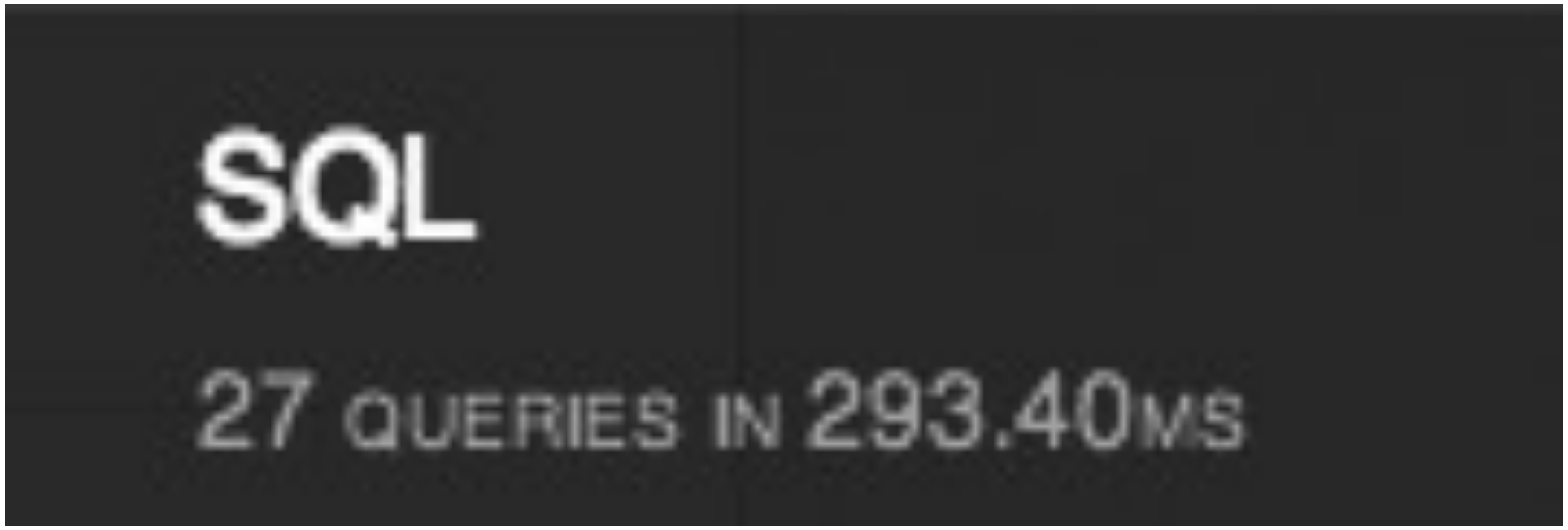
# Wat?



SQL

83 QUERIES IN 3476.36MS

# Best



SQL

27 queries in 293.40ms

- Can produce some very weird (slow) joins
- Hundreds of fast queries can kill a page
- One slow query can also kill a page

# Realization #4

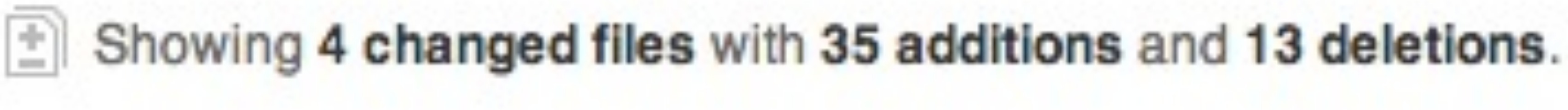
People with Slow Internet Connections Don’t Notice Performance Gains

- When they're used to waiting a few minutes per page load, 45 second page decrease doesn't make much of a difference
- Youtube

# Realization #5

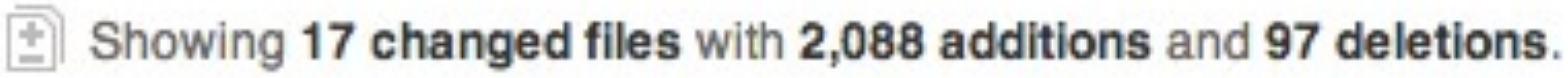
Simple Features get the Most Praise

- Lots of feedback and praise



Showing **4 changed files** with **35 additions** and **13 deletions**.

- *Crickets*



Showing **17 changed files** with **2,088 additions** and **97 deletions**.

# Realization #6

People Don’t Use Your Application in Ways You Expect

- Saving after every change instead of a final save
- Importance of seeing what your users do
- Mixpanel, Clicktale, In Person

# Thanks!

Questions?