Quality? What?

What quality is?

Multiple definitions exist

- Capability of a software product to conform to business requirements
- Bringing customer value
- Is easy to work with
- Seems everyone has it’s own opinion…

Why measure quality?

Risk management

— Software errors can lead to serious issues
— Aviation, nuclear power stations, hospitals

Cost management

— Mistakes can lead to money loss
— Banking, finance

CISQ’s quality model

CISQ?

Consortium for IT Software Quality

- launched in August 2009
- 24 founders
  - Software Engineering Institute at Carnegie Mellon University
  - Object Management Group
- standardising actions for defining, measuring and improving IT software
quality

Reliability

- likelihood of potential application failures
- defects injected during modifications (stability)
- prevents application downtime, outages, errors affecting users

Efficiency

- how fast software is
- more important in some environments, less in others

Security

- likelihood of potential security breaches damaging the business
- often low because of poor coding standards

Maintainability

— how hard it is to add new features

— notion of adaptability & portability between developers/teams

— critical for applications working under tight time-to-market schedules

Size

- not quality related itself, but usually has big impact on maintainability
- highly depends on technology stack

Quality in web development

Challenges?

Challenges

- quickly changing & evolving business requirements
- changing team members
- new features coming
- many usage contexts (phones, watches, laptops, fridges)

How to solve them?

Code quality

- code reviews
- static analysis
- pair programming
- automated testing

Product quality

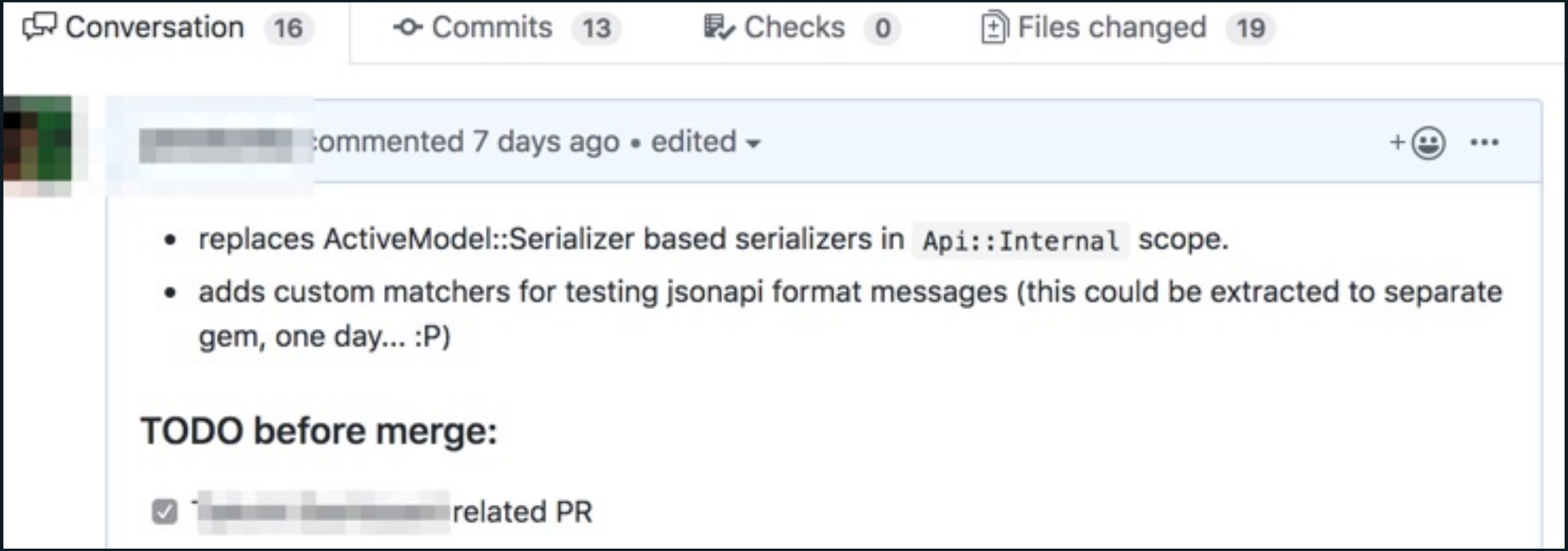
— product reviews

— customer testing

— automated testing

Code review

— Ask someone else to look at your code before getting to production
— Usually done in form of Pull Requests

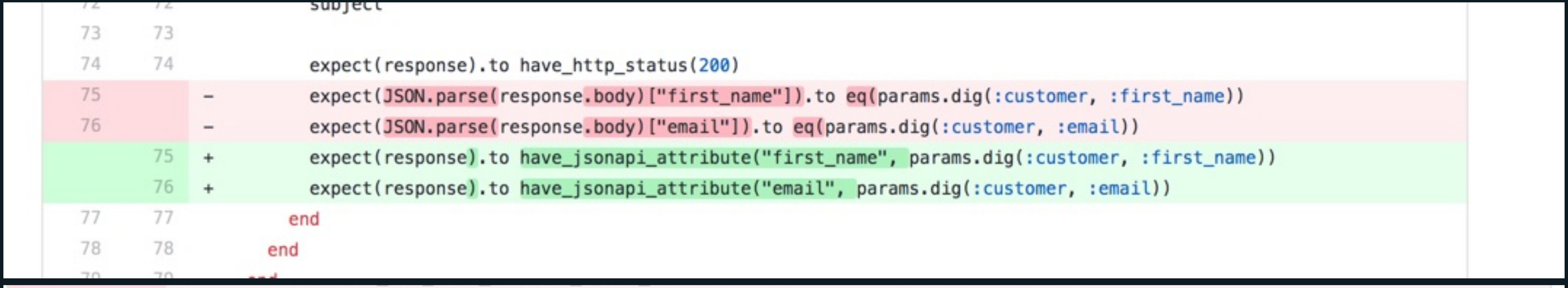


[redacted]ommented 7 days ago • edited

- replaces ActiveModel::Serializer based serializers in `Api::Internal` scope.
- adds custom matchers for testing jsonapi format messages (this could be extracted to separate gem, one day... :P)

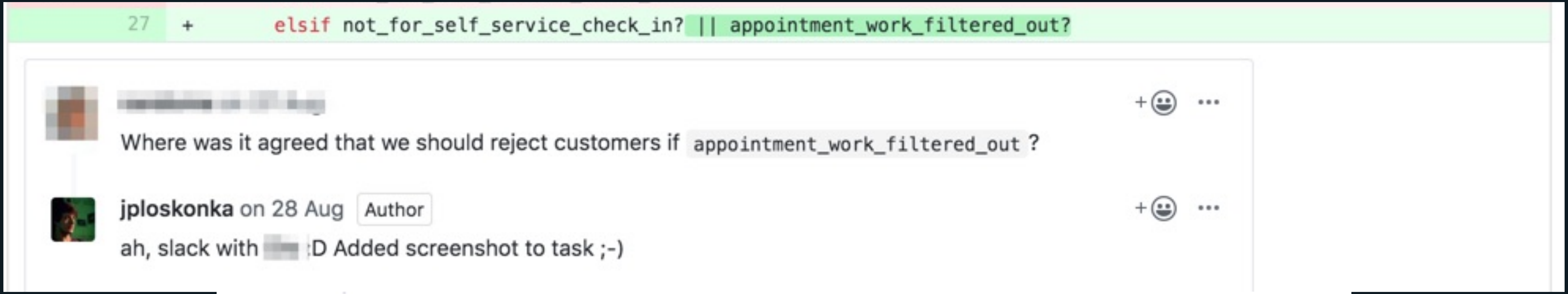
TODO before merge:

- [x] [redacted] related PR



```
        subject

        expect(response).to have_http_status(200)
-       expect(JSON.parse(response.body)["first_name"]).to eq(params.dig(:customer, :first_name))
-       expect(JSON.parse(response.body)["email"]).to eq(params.dig(:customer, :email))
+       expect(response).to have_jsonapi_attribute("first_name", params.dig(:customer, :first_name))
+       expect(response).to have_jsonapi_attribute("email", params.dig(:customer, :email))
      end
    end
```



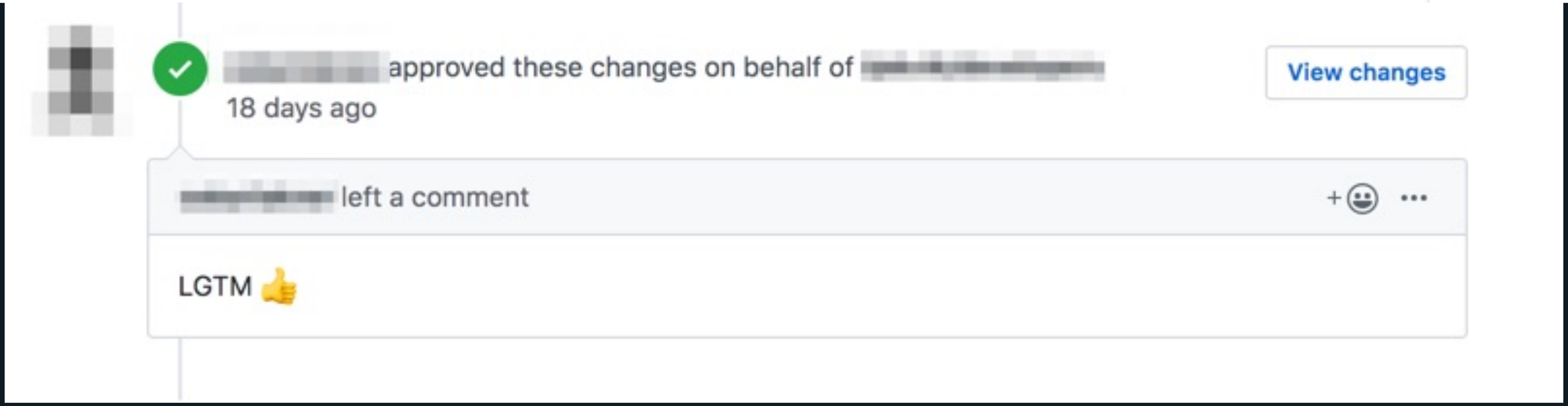
```
+     elsif not_for_self_service_check_in? || appointment_work_filtered_out?
```

[redacted]

Where was it agreed that we should reject customers if `appointment_work_filtered_out` ?

jploskonka on 28 Aug Author

ah, slack with [redacted] :D Added screenshot to task ;-)



[redacted] approved these changes on behalf of [redacted]

18 days ago

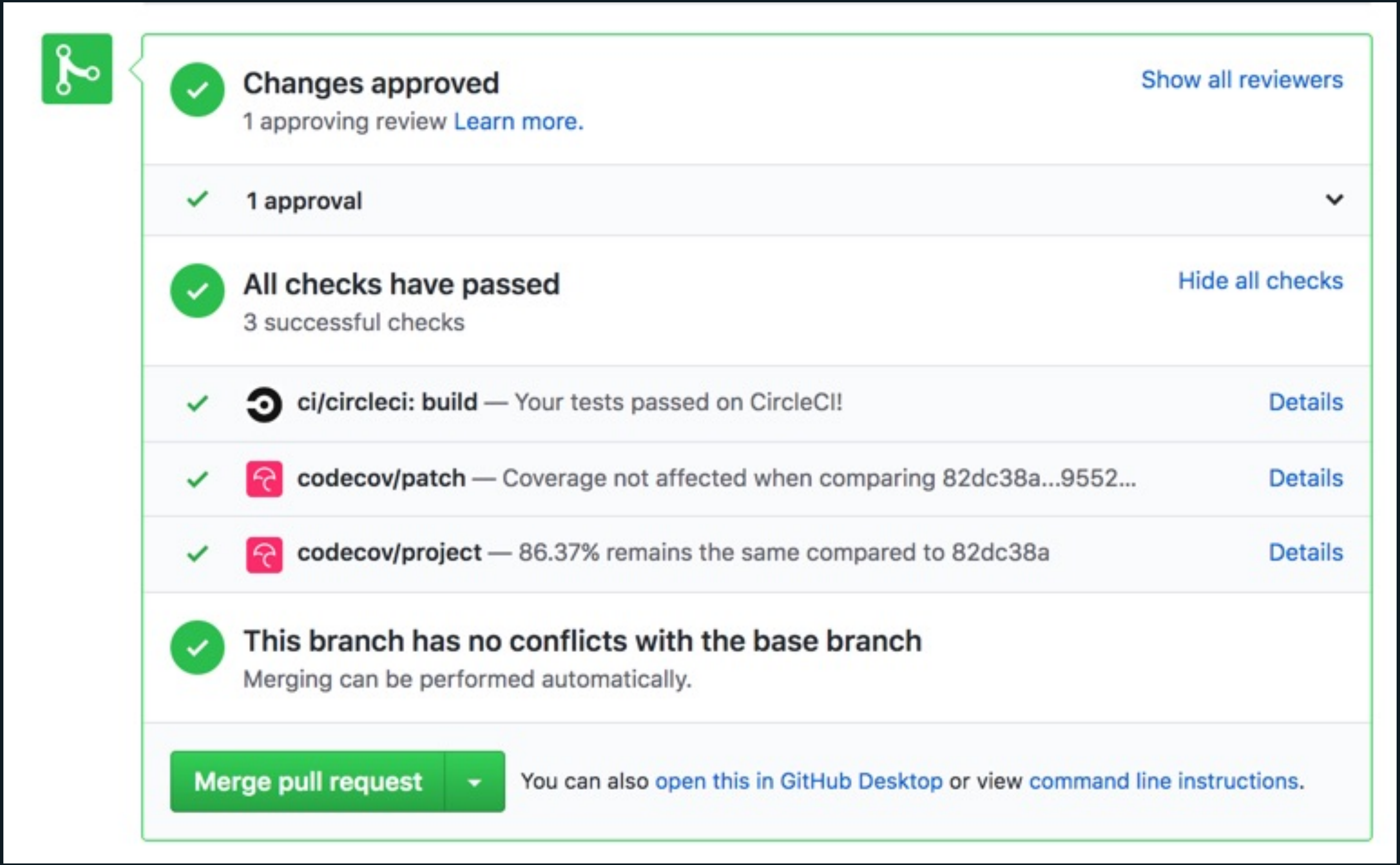
View changes

[redacted] left a comment

LGTM 👍

Static analysis

- checking for errors in code with specialised software
- for example:
  - eslint for javascript
  - rubocop for ruby



Changes approved

1 approving review Learn more.

Show all reviewers

✓ 1 approval

All checks have passed

3 successful checks

Hide all checks

✓ ci/circleci: build — Your tests passed on CircleCI! Details

✓ codecov/patch — Coverage not affected when comparing 82dc38a...9552... Details

✓ codecov/project — 86.37% remains the same compared to 82dc38a Details

This branch has no conflicts with the base branch

Merging can be performed automatically.

You can also open this in GitHub Desktop or view command line instructions.

Pair programming

- Let two people work on one thing together
- Helps spread knowledge in team
- Keeps code review short

Product reviews

- Like code review but done with product
- Ask other employee to test what you’ve done

Customer testing

- Ask people to use your product and watch them how they do it
- Can be done without their knowledge
- Many different approaches

Any issues with those?

Manual testing problems

- Assumes there're more people working on product
- Takes time
- May be expensive to setup
- Often repeats same steps

Automated testing

Let computer test things for you!

Different levels and ways of testing

- Unit testing
- Performance testing
- Monkey testing
- Feature/acceptance/**end to end testing**
- Integration testing
- Regression testing
- Visual testing
- Snapshot testing
- Load testing
- ... many many more ...

Questions?

What we’ve learned?

Key take outs

- Quality is complex and depends o context
- There’re efforts to measure and define it
- Code and product quality may be two different things
- Maintaining quality is hard but can be automated
  - With software that also has some quality… ;-)

Let’s write some tests!