Code Reviews: The “Secret” to Building Quality Software

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Madison PHP
July 18, 2013

What is a Code Review?

“Code review is systematic examination…of computer source code.

It is intended to find and fix mistakes overlooked in the initial development phase,

improving both the overall quality of software and the developers’ skills.”

(http://en.wikipedia.org/w/index.php?title=Code_review&oldid=530204872)

Who does Code Reviews?

- Peers (other developers)
- Managers / Team Leads / Senior Developers
- Dedicated QA / Testing Personnel
- All of the above

What kind of CRs are you talking about?

- Code review by a fellow team member
- Required part of development process
- Typically a step in an Agile workflow (Scrum, Kan-ban, etc.) but can be applied to other methodologies
- Reviews should happen as soon as possible after the task is complete
- Reviews are considered part of the task and should be included in all time / workload estimates
- Other types of code review (by management or QA) may also be used

The Flip-Side: Functional Testing

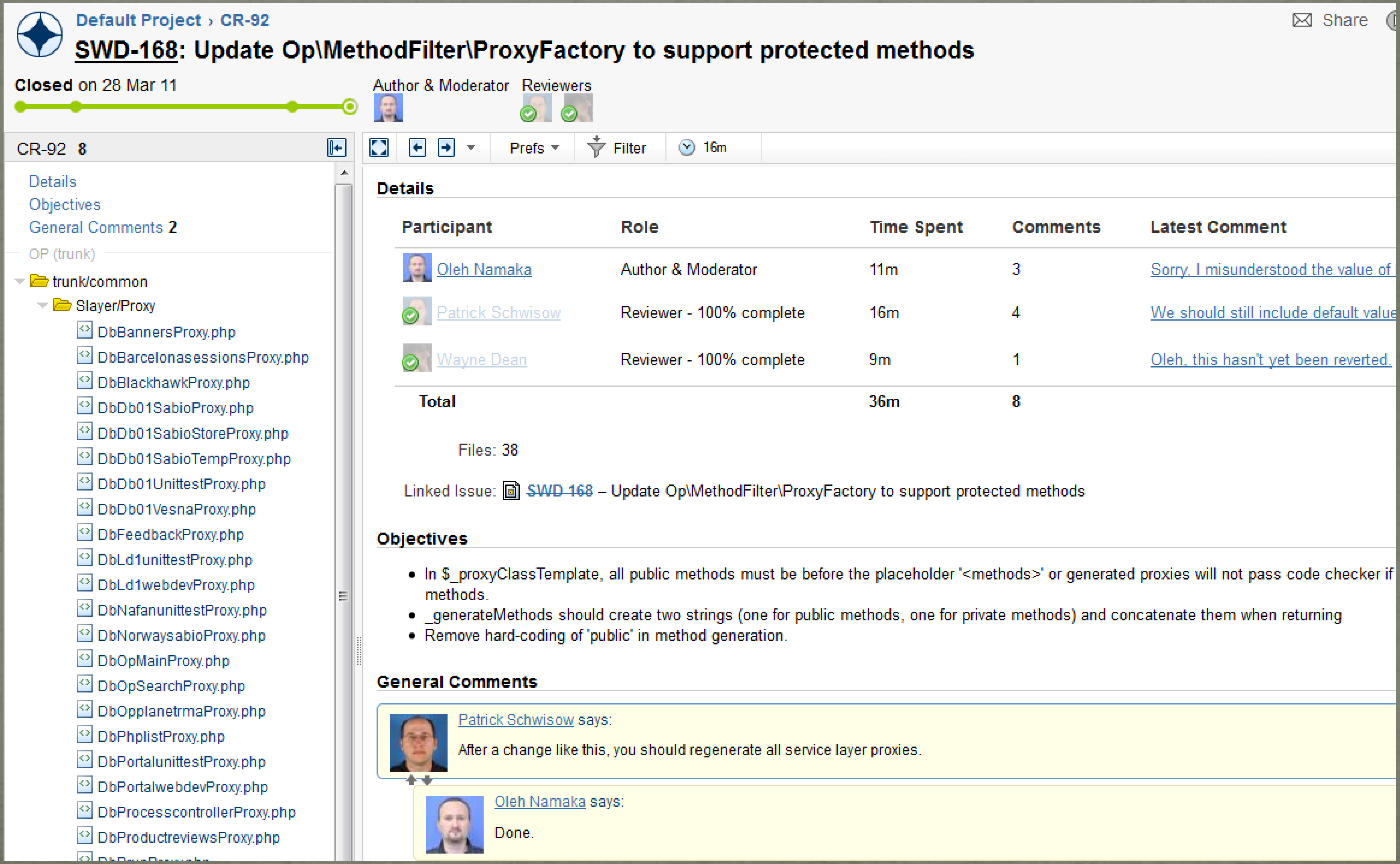
- “Functional testing” == “checking that all the stuff works”
- Test the updated code to make sure it does what is specified
- Check all the edge cases (Try to break stuff!)
- Run all the unit tests*
- Test things that may be affected by this change
- Functional testing may happen together with CR or as a separate workflow step

*Unless you’ve got them running automatically for you

Code Review Tools

- Prerequisites:
  - Issue Tracking (JIRA, Trac, GitHub Issues)
  - Version Control System (git, SVN, etc.)
- Atlassian Crucible (http://www.atlassian.com/software/crucible/overview)
- Atlassian Stash (http://www.atlassian.com/software/stash/overview)
- GitHub Pull Requests
- Review Board (http://www.reviewboard.org/)

CR Tools: Atlassian Crucible



Default Project › CR-92

SWD-168: Update Op\MethodFilter\ProxyFactory to support protected methods

Closed on 28 Mar 11

Author & Moderator   Reviewers

Details
Objectives
General Comments 2
OP (trunk)

- trunk/common
  - Slayer/Proxy
    - DbBannersProxy.php
    - DbBarcelonasessionsProxy.php
    - DbBlackhawkProxy.php
    - DbDb01SabioProxy.php
    - DbDb01SabioStoreProxy.php
    - DbDb01SabioTempProxy.php
    - DbDb01UnittestProxy.php
    - DbDb01VesnaProxy.php
    - DbFeedbackProxy.php
    - DbLd1unittestProxy.php
    - DbLd1webdevProxy.php
    - DbNafanunittestProxy.php
    - DbNorwaysabioProxy.php
    - DbOpMainProxy.php
    - DbOpSearchProxy.php
    - DbOpplanetrmaProxy.php
    - DbPhplistProxy.php
    - DbPortalunittestProxy.php
    - DbPortalwebdevProxy.php
    - DbProcesscontrollerProxy.php
    - DbProductreviewsProxy.php

Details

Participant	Role	Time Spent	Comments	Latest Comment
Oleh Namaka	Author & Moderator	11m	3	Sorry, I misunderstood the value of
Patrick Schwisow	Reviewer - 100% complete	16m	4	We should still include default value
Wayne Dean	Reviewer - 100% complete	9m	1	Oleh, this hasn't yet been reverted.
Total		**36m**	**8**	

Files: 38

Linked Issue: SWD-168 – Update Op\MethodFilter\ProxyFactory to support protected methods

Objectives

- In $_proxyClassTemplate, all public methods must be before the placeholder '<methods>' or generated proxies will not pass code checker if methods.
- _generateMethods should create two strings (one for public methods, one for private methods) and concatenate them when returning
- Remove hard-coding of 'public' in method generation.

General Comments

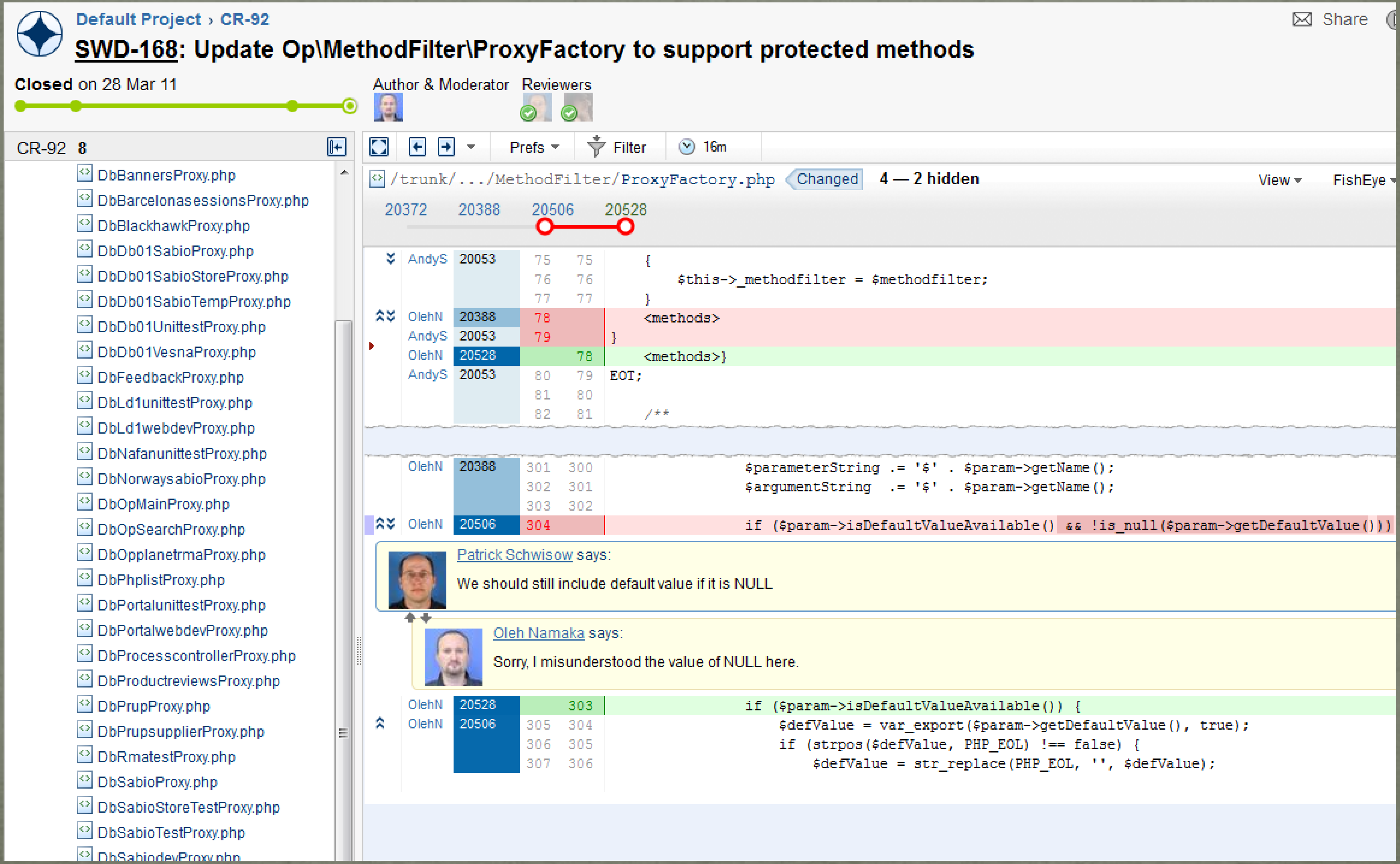
Patrick Schwisow says:

After a change like this, you should regenerate all service layer proxies.

Oleh Namaka says:

Done.

CR Tools: Atlassian Crucible



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- DbPortalwebdevProxy.php
- DbProcesscontrollerProxy.php
- DbProductreviewsProxy.php
- DbPrupProxy.php
- DbPrupsupplierProxy.php
- DbRmatestProxy.php
- DbSabioProxy.php
- DbSabioStoreTestProxy.php
- DbSabioTestProxy.php
- DbSabiodevProxy.php

/trunk/.../MethodFilter/ProxyFactory.php Changed **4 — 2 hidden**

20372 20388 20506 20528

```
AndyS  20053   75   75        {
               76   76            $this->_methodfilter = $methodfilter;
               77   77        }
OlehN  20388   78             <methods>
AndyS  20053   79        }
OlehN  20528        78        <methods>}
AndyS  20053   80   79   EOT;
               81   80
               82   81        /**

OlehN  20388  301  300                    $parameterString .= '$' . $param->getName();
              302  301                    $argumentString  .= '$' . $param->getName();
              303  302
OlehN  20506  304                         if ($param->isDefaultValueAvailable() && !is_null($param->getDefaultValue()))
```

Patrick Schwisow says:

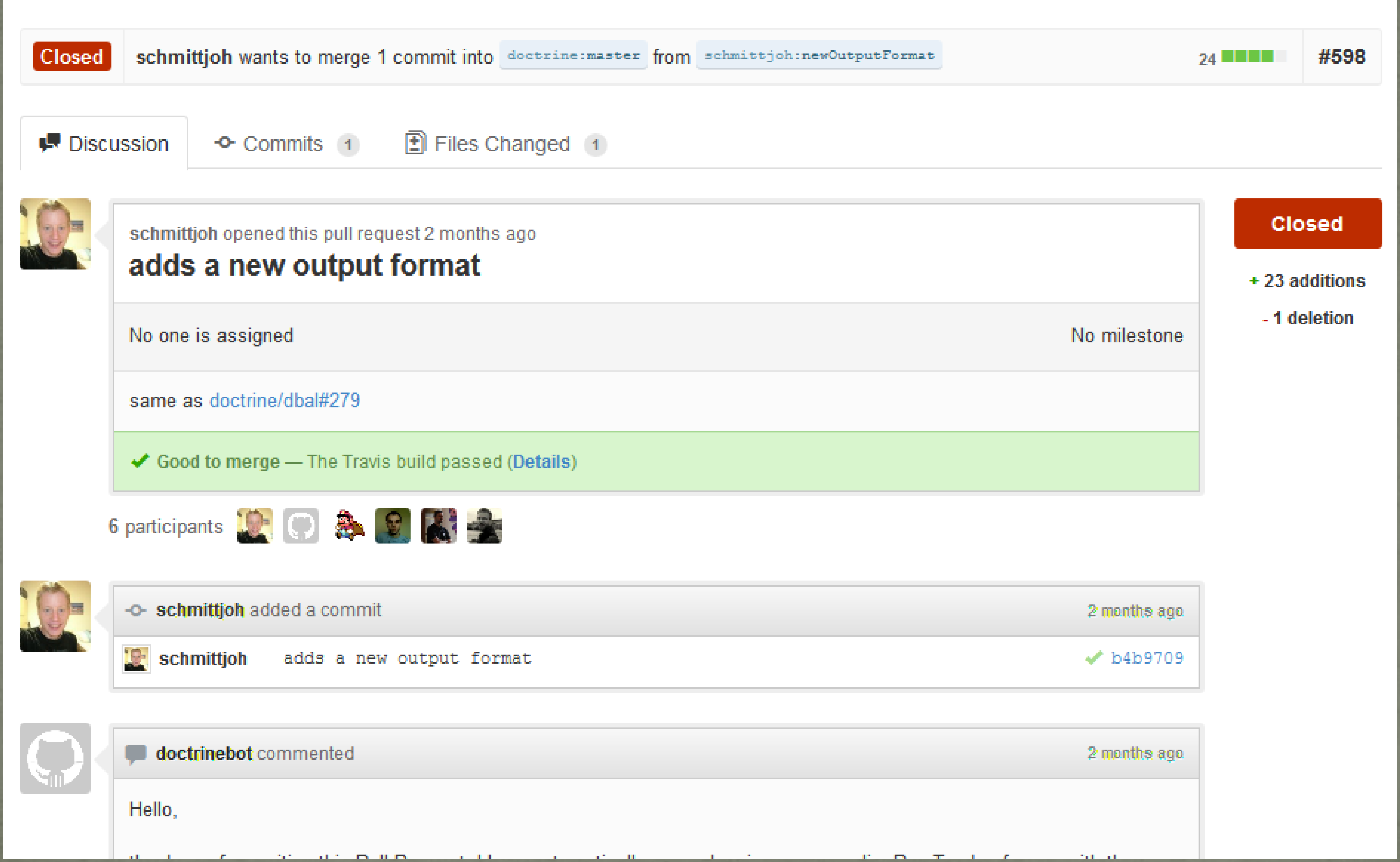
We should still include default value if it is NULL

Oleh Namaka says:

Sorry, I misunderstood the value of NULL here.

```
OlehN  20528       303                    if ($param->isDefaultValueAvailable()) {
OlehN  20506  305  304                        $defValue = var_export($param->getDefaultValue(), true);
              306  305                        if (strpos($defValue, PHP_EOL) !== false) {
              307  306                            $defValue = str_replace(PHP_EOL, '', $defValue);
```

CR Tools: GitHub Pull Requests



Closed **schmittjoh** wants to merge 1 commit into `doctrine:master` from `schmittjoh:newOutputFormat` 24 🟩🟩🟩🟩 **#598**

schmittjoh opened this pull request 2 months ago

adds a new output format

No one is assigned

No milestone

same as doctrine/dbal#279

✓ **Good to merge** — The Travis build passed (**Details**)

6 participants

+ 23 additions

- 1 deletion

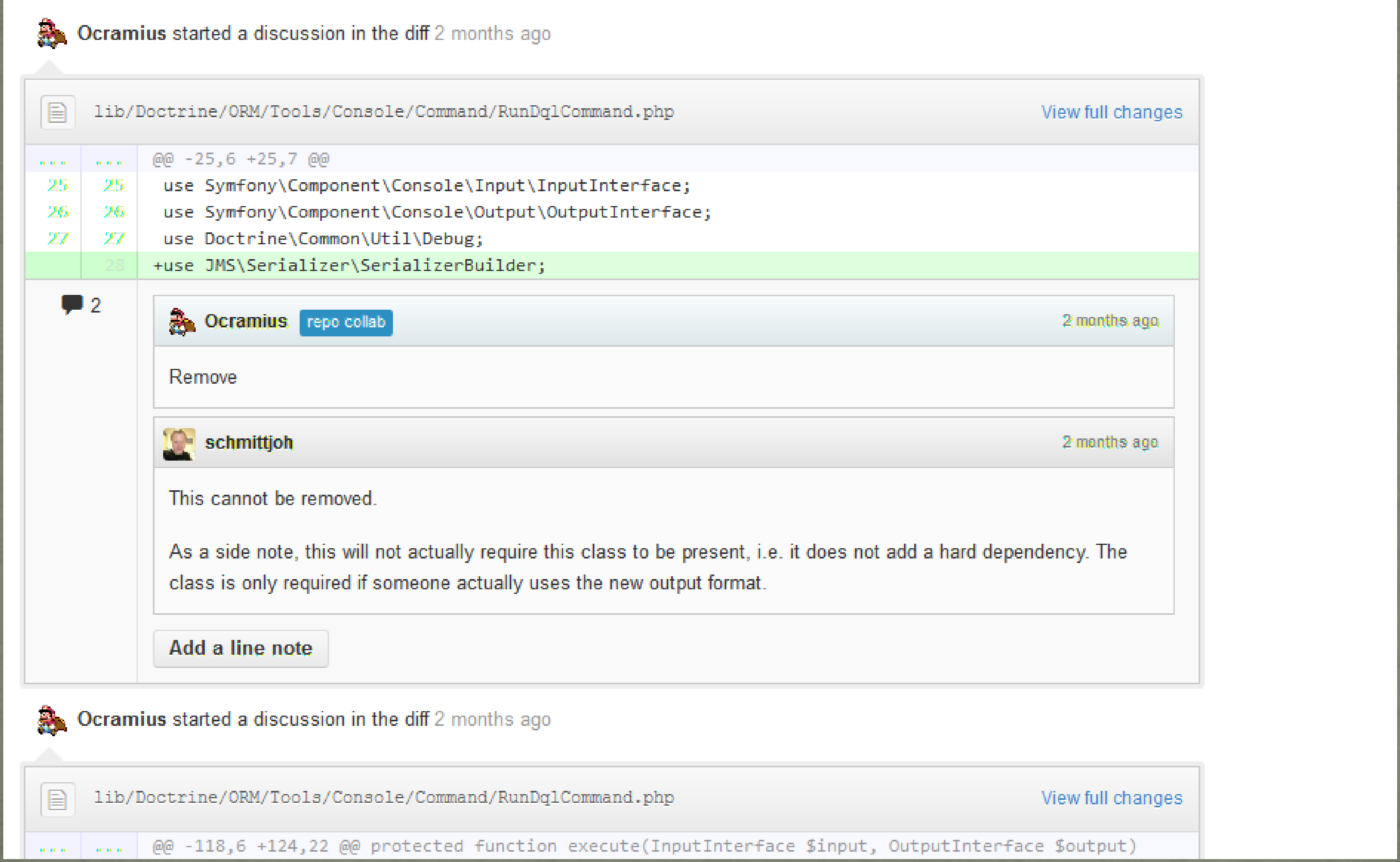
schmittjoh added a commit 2 months ago

schmittjoh `adds a new output format` ✓ `b4b9709`

doctrinebot commented 2 months ago

Hello,

CR Tools: GitHub Pull Requests



Ocramius started a discussion in the diff 2 months ago

lib/Doctrine/ORM/Tools/Console/Command/RunDqlCommand.php

```
@@ -25,6 +25,7 @@
 use Symfony\Component\Console\Input\InputInterface;
 use Symfony\Component\Console\Output\OutputInterface;
 use Doctrine\Common\Util\Debug;
+use JMS\Serializer\SerializerBuilder;
```

Ocramius 2 months ago

Remove

schmittjoh 2 months ago

This cannot be removed.

As a side note, this will not actually require this class to be present, i.e. it does not add a hard dependency. The class is only required if someone actually uses the new output format.

Ocramius started a discussion in the diff 2 months ago

lib/Doctrine/ORM/Tools/Console/Command/RunDqlCommand.php

```
@@ -118,6 +124,22 @@ protected function execute(InputInterface $input, OutputInterface $output)
```

Rules of Code Reviews

- Review ***ALL*** the changes.
- Do functional testing as much as possible (within reason).
- Nothing goes to production until it's been reviewed and tested.
- If something looks wrong or you're just unsure of the reasoning behind it, ASK!!!
- If you don't see anything wrong, it's OK to not say anything.

Rules of Code Reviews (cont.)

- Code must be ***correct***, but it doesn't have to be exactly how you would write it.
- Don't just look at what they ***did***; also think about what they ***didn't do***. (What was missed?)
- CR / testing is a higher priority than development.
- If you see a problem that's outside the scope of the ticket, open a separate ticket for that issue.
- The goal is better code quality. It's not personal.

A Suggested Workflow

1. Jack creates ticket and puts “in scrum”
2. Henry grabs ticket and writes code
3. Henry sets ticket to “Testing” and puts “in scrum”
4. Charlie grabs ticket and does CR / testing
   - If ticket fails, re-open and send back to Henry, repeat as necessary
   - If ticket passes, Charlie moves changes to production

A Suggested Workflow

1. Jack creates ticket and puts “in scrum”
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   - If ticke to production

Benefits of Requiring Peer CRs

- **Increased Quality** – Reduced chance of mistakes making it to production
- **Peer Pressure** – If you know someone will see your code, you'll be more conscious of the quality
- **Distributed Knowledge** – At least 2 people must know what a given line of code does
- **Distributed Ownership** – Instead of each person having his / her own area of responsibility, everything is owned by the team. (We're all in this together!)

Recommended Reading

- Mark Chu-Carroll: **Things Everyone Should Do: Code Review**
- Jeff Atwood: **Code Reviews: Just Do It**
- Steve McConnell: ***Code Complete: A Practical Handbook of Software Construction*** (http://amzn.com/0735619670)
- Karl Wiegers: ***Peer Reviews in Software: A Practical Guide*** (http://amzn.com/0201734850)

Who am I?
Feedback / Contact / Slides

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