

Clean PHP

PHP.RUHR 2015

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Hi, I'm Toby!



Qafoo

passion for software quality

Clean Code?

- ▶ How much time do you spend writing code?
- ▶ How much time do you spend reading code?
- ▶ Clean Code
 - ▶ Established rules for better programming
 - ▶ Made famous by Robert C. Martin (Uncle Bob)
 - ▶ <https://www.amazon.de/dp/B001GSTOAM/>

A Matter of Attitude

- ▶ Feel responsible
- ▶ Work together
- ▶ Share common rules

Outline

Naming

Coding Style

Code Structure

Comments

And More . . .

Good Names?

```
1  <?php
2
3  class Data
4  {
5      // ...
6      public function get()
7      {
8          $fp = array();
9          foreach ($this->data as $p) {
10             if ($p->bAct == 1) { // Product active?
11                 $fp[] = $p;
12             }
13         }
14         return $fp;
15     }
16 }
```

Better Names!

```
1 <?php
2
3 class ProductList
4 {
5     // ...
6     public function getActiveProducts ()
7     {
8         $filteredProducts = array ();
9         foreach ($this->products as $product) {
10             if ($product->isActive ()) {
11                 $filteredProducts [] = $product;
12             }
13         }
14         return $filteredProducts;
15     }
16 }
```

Rules of Thumb

- ▶ Don't abbreviate
- ▶ Class
 - ▶ Most likely a noun
 - ▶ Avoid: Manager, Processor, Handler, Data, Info, ...
- ▶ Method
 - ▶ Should contain a verb
 - ▶ Nice: `deleteProduct()`, `postComment()`, `hasWarranty()`
- ▶ Variable
 - ▶ Don't encode (e.g. type, usage, etc.)
 - ▶ 3 chars is typically too short
- ▶ A name requiring a comment is bad

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Consistent Coding Style

- ▶ Eases code reading
- ▶ Allows faster navigation
- ▶ Supports collective code ownership
- ▶ Makes developers feel at home

Standards

- ▶ PHP Standardization Requests (<http://www.php-fig.org/>)
 - ▶ PSR-0: <http://qa.fo/psr-0>
 - ▶ PSR-1: <http://qa.fo/psr-1>
 - ▶ PSR-2: <http://qa.fo/psr-2>
- ▶ PHP CodeSniffer <http://qa.fo/phpcs>

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Code Complexity

How much time do you need to understand code?

Goals

- ▶ Short methods
 - ▶ Few arguments
 - ▶ Few control structures
- ▶ Slim classes
 - ▶ Few methods
 - ▶ Few dependencies
- ▶ Encapsulate complex conditions
- ▶ Encapsulate side-effects
- ▶ Avoid global state

Guidelines

- ▶ Functions should be short
 - ▶ max. 20 lines of code
 - ▶ max. 2-3 control structures
- ▶ Classes should be slim
 - ▶ max. 5-10 methods

Code like Newspaper

- ▶ Descriptive, short headline (naming)
- ▶ Most important facts first (state)
- ▶ Important explanations (main methods)
- ▶ Details (private methods)
- ▶ Visual structure of paragraphs (blank lines)

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Comments?

The more comments, the better?

Sensible Comments?

```
1  class CoffeeMachine extends CoffeeMaker
2  {
3      /**
4       * Fills the cup given as parameter
5       */
6      public function in($c)
7      {
8      }
9  }
```

Sensible Comments?

```
1  class CoffeeMachine extends CoffeeMaker
2  {
3      /**
4       * Fills the $cup
5       *
6       * The cup is filled until it's full. Cup size is detected for
7       * certain
8       * brands. If no brand is detected, 0.25 liter is asumed.
9       *
10      * @param Vessel $vessel
11      * @return void
12      * @author Bob
13      */
14      public function fill(Cup $cup)
15      {
16      }
```

Sensible Comments?

```
1  class CoffeeMachine extends CoffeeMaker
2  {
3      /**
4       * Detects the fill size
5       *
6       * @param Cup $cup The cup to detect fill size for
7       * @return float Fill size in liter
8       */
9      private function detectFillSize(Cup $cup)
10     {
11     }
12 }
```

Sensible Comments?

```
1  class CoffeeMachine extends CoffeeMaker
2  {
3      private function detectFillSize(Cup $cup)
4      {
5          // Match "senseo" or "melitta" no matter in what case
6          if (preg_match('(senseo|melitta)i', $cup->brand, $matches))
7              {
8                  // Map the brand to a size
9                  // Should become a map as further brands are added
10                 switch(strtolower($matches[0])) {
11                     case 'senseo':
12                         return 0.33;
13                     case 'melitta':
14                         return 0.2;
15                 }
16             }
17         return 0.25;
18     }
19 }
```

Bad Comments

- ▶ Explain unexpressive code
- ▶ Repeat the code
- ▶ Clutter the code
- ▶ Are outdated

Good Comments

- ▶ Advice the future reader
- ▶ Are clear, straight forward and short
- ▶ Help understand complex situations, e.g.
 - ▶ Regular expressions
 - ▶ Unusual implementations (for a purpose)
- ▶ Warn of danger
- ▶ PHP: Support your IDE!

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And More ...

And More ...

- ▶ Encapsulation of side effects
- ▶ Loose coupling / high cohesion
- ▶ Inversion of Control (IcC)
- ▶ Test Driven Development (TDD)
- ▶ ...

How to Get There?

- ▶ Clean Code means constant improvement!
- ▶ Boyscout rule
 - “Always leave the campground cleaner than you found it.”
 - ▶ Don't try everything at once
 - ▶ Tackle one topic after another
 - ▶ Use tools for validation
- ▶ Code reviews help



THANK YOU

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