

# Testing for the Brave and True



AT&T

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Backend Engineer

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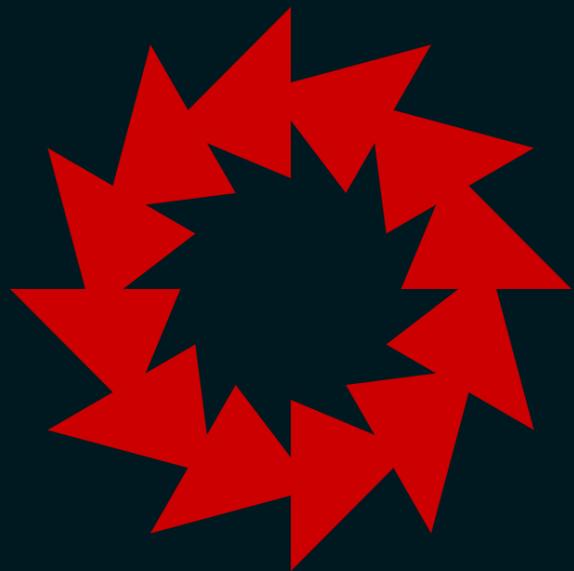
[github.com/gabesullice](https://github.com/gabesullice)

[drupal.org/u/gabesullice](https://drupal.org/u/gabesullice)

[@gabesullice](#)



**ATEN**



**ATEN**

**A little context.**

**What exactly is this  
automated testing thing?**

**Automated tests are  
just code.**

**We all test.**

Why all test.

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## The many ways that we all test

- In the browser
- With XDebug
- With `dpm()`, `var_dump()` or `print`
- By reading code

**Don't throw your work away.**



# Automated tests are living documentation

- You encode your assumptions
- They document context



Why do we test?

---

How can these tests make me  
**more productive** when it means writing  
**more code?**

Why do we test?

---

How can I **find the time** to write tests?

Why do we test?

---

How do I **justify** it to my client?

Why do we test?

---

How do I **convince myself?**

Why do we test?

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Why do we test?

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How do I **convince myself?**

**How do I get started?**

A black and white photograph of various tools including a hammer, pliers, a ruler, and a tape measure, with the word 'Tooling' overlaid in white text. The tools are arranged in a cluttered, overlapping manner, creating a sense of a well-used workshop or toolbox. The lighting is dramatic, highlighting the textures of the metal and wood. The word 'Tooling' is centered in a large, bold, white sans-serif font, standing out against the darker background of the tools.

# Tooling

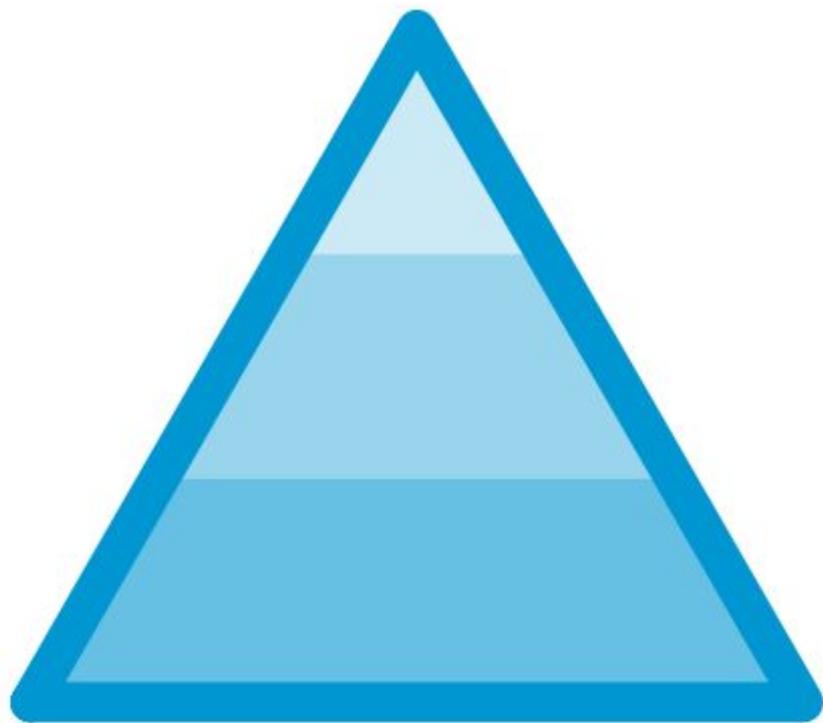
# PHPUnit / Behat

## PHPUnit

- Runs at the PHP level
- Doesn't need a browser or browser driver
- About testing your code in isolation
- Generally faster than Behat

# Behat

- Runs at the browser level
- Tests your site like your QA person or your client would test your site
- Tests your whole stack
- Slower than PHPUnit



# PHPUnit

- Comprised of two things:
  - `\PHPUnit\Framework\TestCase`
  - A command-line tool

# Drupal-isms

- Unit/Integration Tests
  - `\Drupal\Tests\UnitTestCase`
  - `\Drupal\KernelTests\KernelTestBase`
- Functional Tests
  - `\Drupal\KernelTests\KernelTestBase`
  - `\Drupal\simpletest\WebTestBase`
  - `\Drupal\Tests\BrowserTestBase`



**Set up.**

```
[0] gabe calculator:mas $ tree
```

```
.
├── calculator.info.yml
├── calculator.services.yml
├── tests
│   └── src
│       ├── Kernel
│       │   └── InputDeviceTest.php
│       └── Unit
│           ├── ArithmeticTest.php
│           └── InputDeviceTest.php
```

```
4 directories, 5 files
```

```
[0] gabe calculator:mas $
```

```
1 <?php
  1
  2 namespace Drupal\Tests\calculator\Unit;
  3
  4 use Drupal\Tests\UnitTestCase;
  5 use Drupal\calculator\Arithmetic;
  6
  7 /**
  8  * @coversDefaultClass \Drupal\calculator\Arithmetic
  9  * @group calculator
 10  */
 11 class ArithmeticTest extends UnitTestCase {
 12
```

NORMAL



master



ArithmeticTest.php

LN

1:1

```
2
1
14 class ArithmeticTest extends UnitTestCase {
1
2     /**
3     * Sets up an instance of Arithmetic.
4     */
5     public function setUp() {
6         parent::setUp();
7         $this->arithmetic = new Arithmetic();
8     }
9
10
```

NORMAL



master

ArithmeticTest.php +



14:1

:GitGutterDisable

```
2  
1  
13 class ArithmeticTest extends UnitTestCase {  
1  
2 /**  
3  * The class being tested.  
4  *  
5  * @var \Drupal\calculator\ArithmeticInterface  
6  */  
7  protected $arithmetic;  
8  
9  
10
```

NORMAL



master

ArithmeticTest.php +



LN 13:1

```
9  /**
8   * @coversDefaultClass \Drupal\calculator\Arithmetic
7   * @group calculator
6   */
5  class ArithmeticTest extends UnitTestCase {
4
3     /**
2     * @covers ::sum
1     */
17  public function testSum() {}
1
2  }
3
```

NORMAL



master

ArithmeticTest.php M +



L N 17:3

```
9  /**
8  * @coversDefaultClass \Drupal\calculator\Arithmetic
7  * @group calculator
6  */
5  class ArithmeticTest extends UnitTestCase {
4
3  /**
2  * @covers ::sum
1  */
17 public function testSum_negatives() {}
1
2  }
3
```

NORMAL



master

ArithmeticTest.php M +

LN

17:3

```
4  /**
3  * @covers ::sum
2  */
1  public function testSum() {
26  $cases = [
1      ['input' => [1, 1], 'expect' => 2],
2      ['input' => [1, -1], 'expect' => 0],
3      ['input' => [-1, -1], 'expect' => -2],
4  ];
5  }
6
7 }
```

~

NORMAL



master

ArithmeticTest.php M +



26:3

```
3     ['input' => [-1, -1], 'expect' => -2],
2 ];
1
32  foreach ($cases as $case) {
1     $arg0 = $case['input'][0];
2     $arg1 = $case['input'][1];
3
4     $actual = $this->arithmetic->sum($arg0, $arg1);
5
6     $this->assertEquals($case['expect'], $actual);
7 }
8 }
9
```

NORMAL



master

ArithmeticTest.php M +

LN

32:5

```
5a8437cfaec8:/var/www/web$ cd core/
```

```
5a8437cfaec8:/var/www/web/core$
```

```
../../vendor/bin/phpunit ../modules/custom/calculator
```

```
PHPUnit 4.8.35 by Sebastian Bergmann and contributors.
```

```
EF
```

```
Fatal error: Class 'Drupal\calculator\Arithmetic' not found in  
/var/www/web/modules/custom/calculator/tests/src/Unit/Arithmeti  
cTest.php on line 26
```

```
5a8437cfaec8:/var/www/web/core$
```

```
•
├── calculator.info.yml
├── calculator.services.yml
├── src
│   └── Arithmetic.php
├── tests
│   └── src
│       ├── Kernel
│       │   └── InputDeviceTest.php
│       └── Unit
│           ├── ArithmeticTest.php
│           └── InputDeviceTest.php
```

5 directories, 6 files

[0] gabe calculator:mas \$ █

```
1 <?php
2 namespace Drupal\calculator;
3
4 class Arithmetic implements ArithmeticInterface {
5
6     /**
7      * {@inheritdoc}
8      */
9     public function sum($x, $y) {
10         return $x + $y;
11     }
12
```

NORMAL



master

src/Arithmetic.php

7%

LN

1:1

"src/Arithmetic.php" 14L, 178C

```
02d82d35253a: /var/www/web/core$
```

```
../../vendor/bin/phpunit ../modules/custom/calculator
```

```
PHPUnit 4.8.35 by Sebastian Bergmann and contributors.
```

```
.
```

```
Time: 121 ms, Memory: 6.00MB
```

```
OK (1 test, 3 assertions)
```

```
02d82d35253a: /var/www/web/core$
```

```
bcf483f5f8a6: /var/www/web/core$
```

```
../../vendor/bin/phpunit ../modules/custom/calculator
```

```
PHPUnit 4.8.35 by Sebastian Bergmann and contributors.
```

```
.
```

```
Time: 122 ms, Memory: 6.00MB
```

```
OK (1 test, 4 assertions)
```

```
bcf483f5f8a6: /var/www/web/core$
```