# Testing mit Angular

Keine Angst vor dem eigenen Quellcode

# Who are we?

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# Content

- Introduction
- Unit Test
- e2e
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# What kind of tests exists?

**Unit Tests**

- Test certain functions or units of code
- Super fast
- Easy to write

**e2e Tests**

- Runs the real application and simulate the users behavior
- Very slow
- Very fragile

# Test Strategy

- Use the smallest test type possible
- Write readable tests
- Do not mock unless there is a reason to
- Test all the time
- Make tests fail

Testing mit Angular

# TOOLS & SETUP

# Tools

@JohannesHoppe

# KARMA

- Test runner
- Test code on various browsers
- Integrate with various continuous integration services like Jenkins

# Jasmine

- Behavior-driven development framework
- Fast
- Dependency free

# Protractor

end to end testing for AngularJS

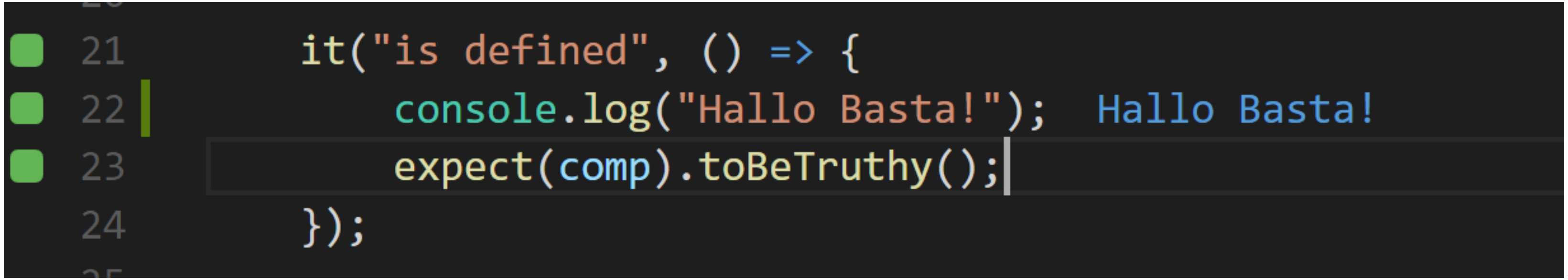
- End-to-end test framework
- Built on top of Selenium WebDriverJS
- Runs in a real browser
- Test like a user

# Insiders' tip

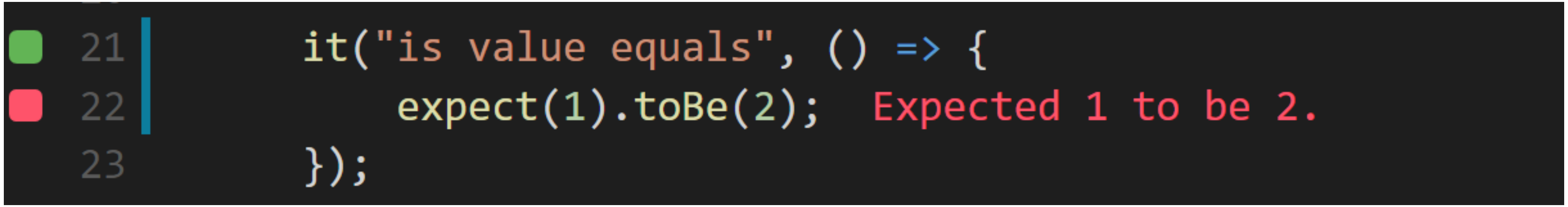
**Wallaby.js**

- Integrated Continuous Testing Tool for JavaScript

# Wallaby.js



```
    it("is defined", () => {
        console.log("Hallo Basta!");  Hallo Basta!
        expect(comp).toBeTruthy();
    });
```



```
    it("is value equals", () => {
        expect(1).toBe(2);  Expected 1 to be 2.
    });
```

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# UNIT TESTS

# Definition

**Unit Testing** is a level of software **testing** where individual functions of a sofware are tested. The **purpose** is to validate that each function of the software performs as designed.

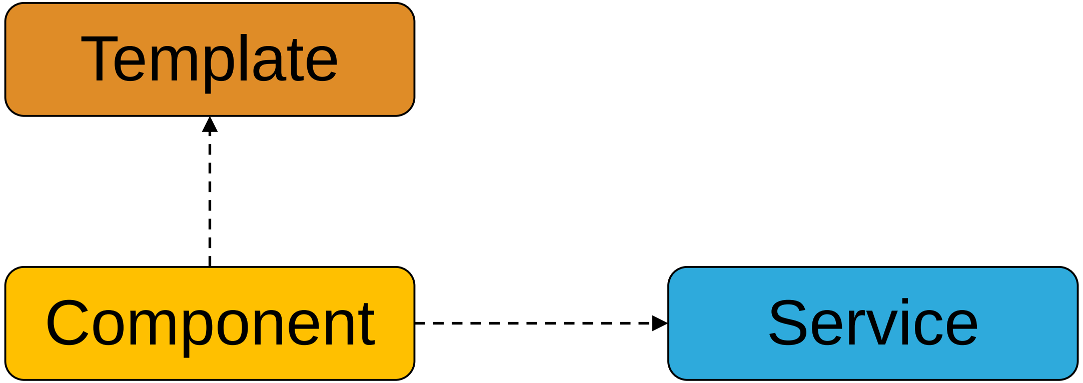
# Unit Test vs. Integration Test

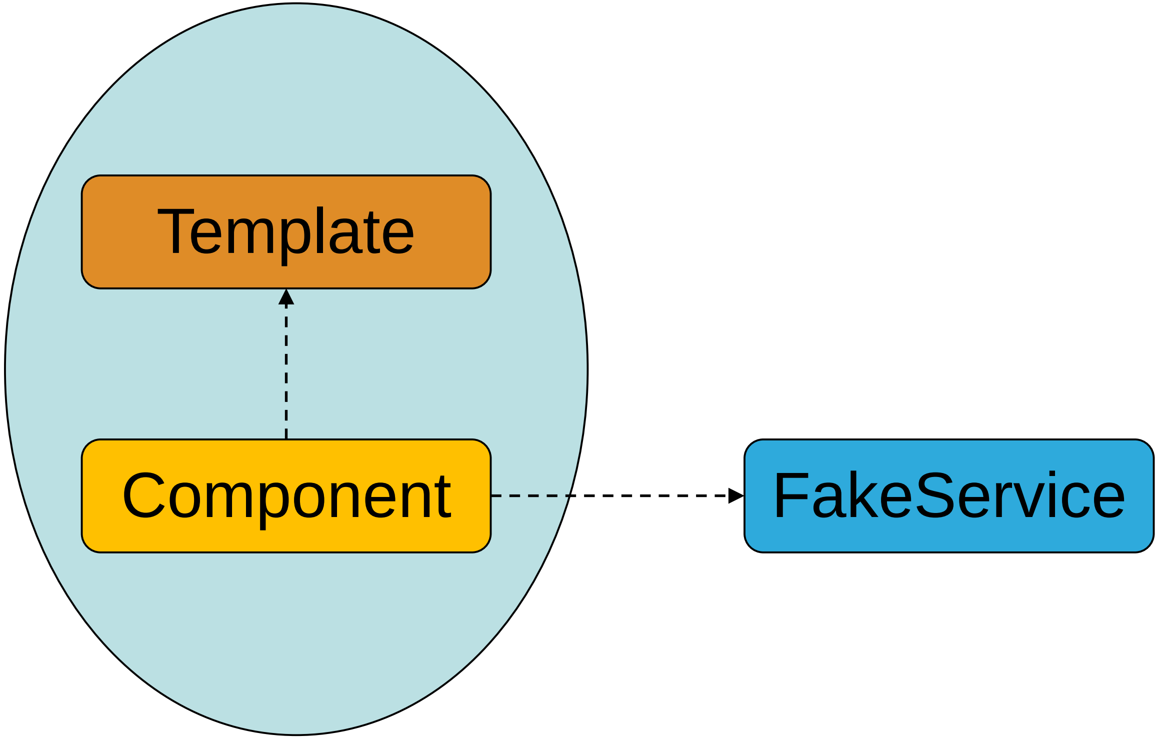
**Unit Test**

- Test in isolation, without external resources (e.g. templates)
- Just a simple function

**Integration Test**

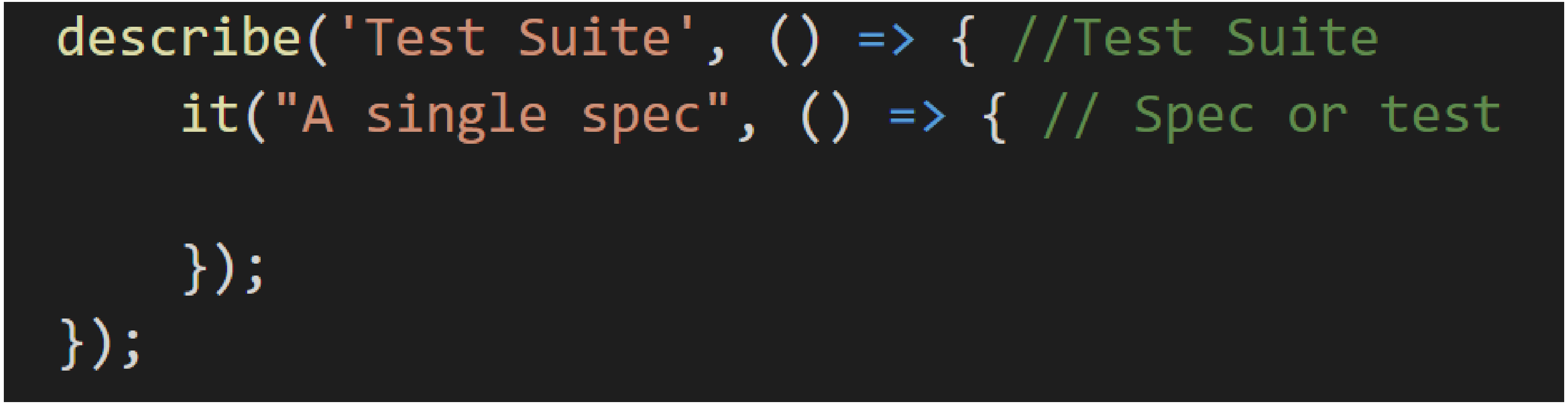
- Test with external resources (e.g. templates)


Template
Component
Service


Template
Component
FakeService

It helps you catch defects **before** releasing software

# Basics



```
describe('Test Suite', () => { //Test Suite
    it("A single spec", () => { // Spec or test

    });
});
```

# Basics

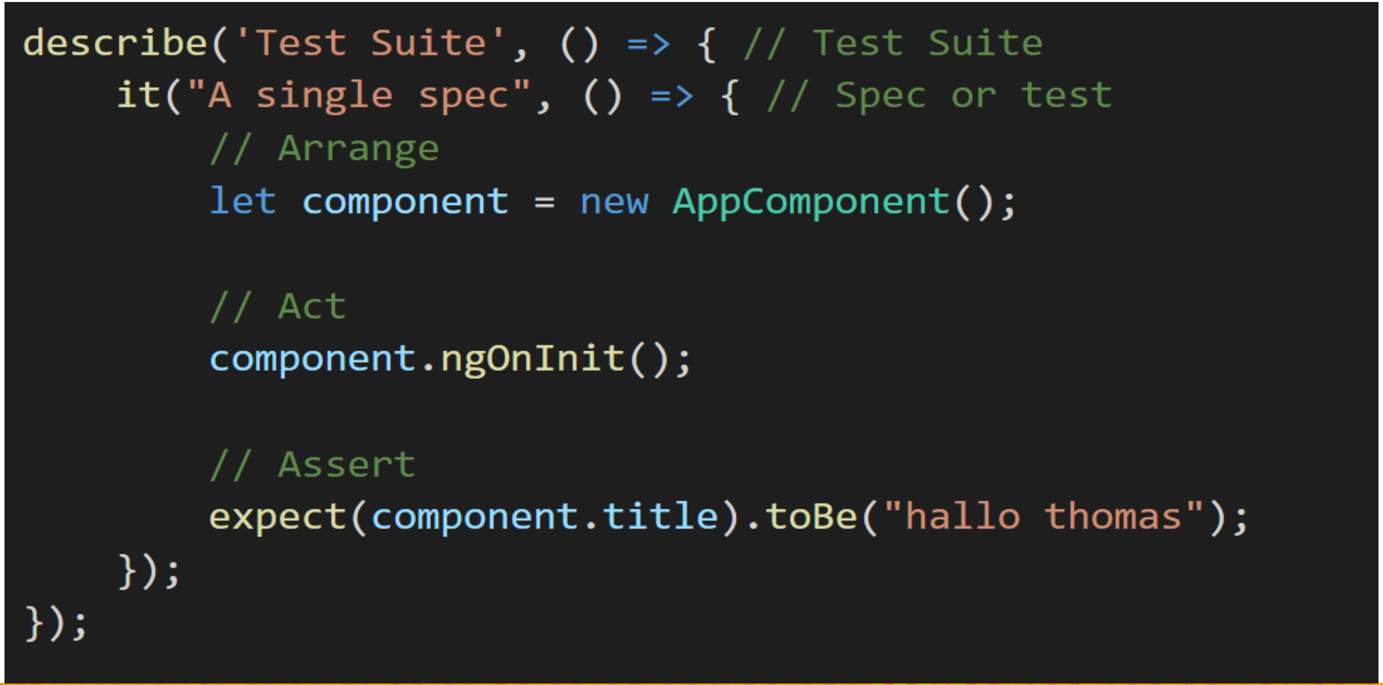
Make your test clean and readable

**A**rrange

**A**ct

**A**ssert

# Basics



```
describe('Test Suite', () => { // Test Suite
    it("A single spec", () => { // Spec or test
        // Arrange
        let component = new AppComponent();

        // Act
        component.ngOnInit();

        // Assert
        expect(component.title).toBe("hallo thomas");
    });
});
```

Unit Tests

# DEMO

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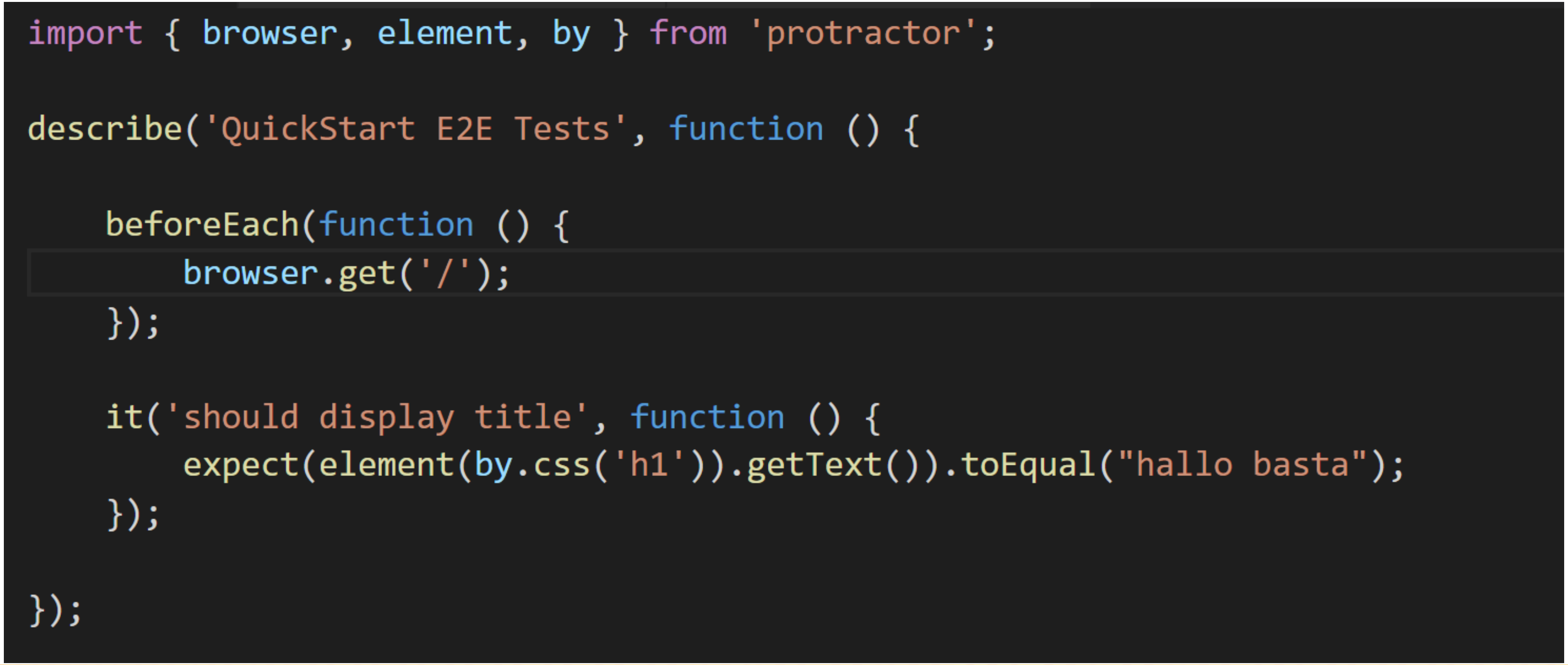
# E2E TESTS

# e2e Tests

- Test the entire app as a whole
- Simulate a real user
- With protractor

# Basics



```
import { browser, element, by } from 'protractor';

describe('QuickStart E2E Tests', function () {

    beforeEach(function () {
        browser.get('/');
    });

    it('should display title', function () {
        expect(element(by.css('h1')).getText()).toEqual("hallo basta");
    });

});
```

e2e Test

# DEMO

# How to start

- Angular CLI
- Our Demo
- Documentation on Angular Docs
- Ask us @Trivadis Stand ☺

# Demos

github.com/gassmannT/Testing-mit-Angular

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# BESTEN DANK