# Testing the Application Components

**Gill Cleeren**
CTO Xebia Microsoft Services Belgium

@gillcleeren

# Overview

Understanding unit tests

Writing unit tests

# Understanding Unit Tests

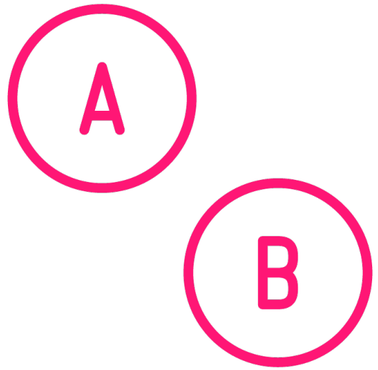
*From The Art of Unit Testing, Roy Osherove*

**A unit test is an automated piece of code that invokes a unit of work in the system and then checks a single assumption about the behavior of that unit of work.**

# Unit Tests

Block of code

Public methods




Isolated and independent

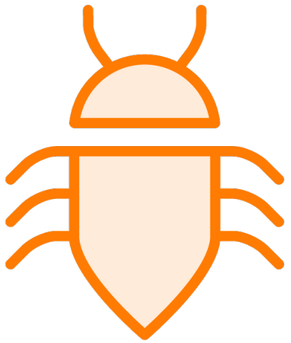
# Using Unit Tests

Consistent

Automated

Fast

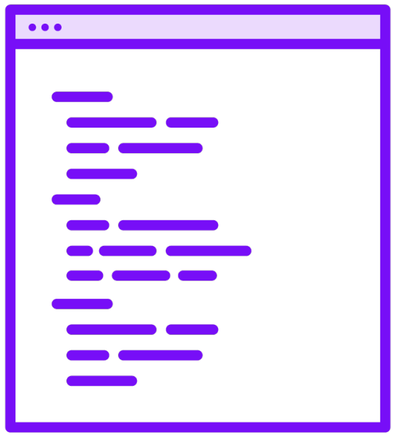
# Why Do We Need Unit Tests?



Find bugs

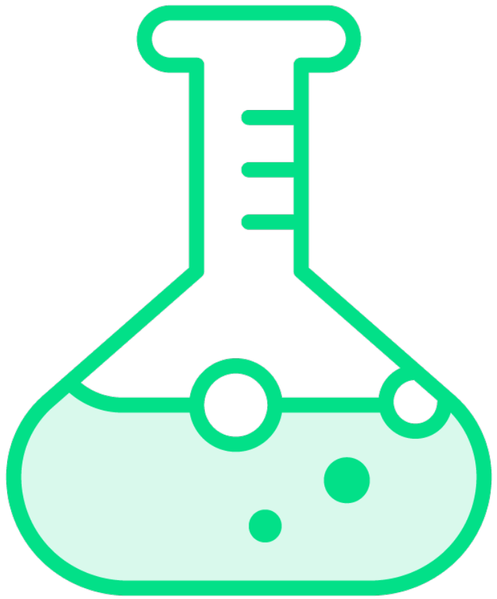
Change without fear of breaking something

Improve quality



Documentation of code

# Writing Unit Tests



**Parts of a unit test**

- Arrange
- Act
- Assert

**Used frameworks**

- xUnit
- Moq

# A Simple Unit Test

```
public void CanUpdatePiePrice()
{
    // Arrange
    var pie =
        new Pie { Name = "Sample pie", Price = 12.95M };

    // Act
    pie.Price = 20M;

    //Assert
    Assert.Equal(20M, pie.Price);
}
```

# Demo

Adding the correct project and packages

Writing a unit test for a controller

# Demo

## Creating a unit test for a tag helper

# Summary

Unit tests create a safety net around our code

Unit tests can be added on multiple levels in our code

Up Next:

# Adding interactivity to our site