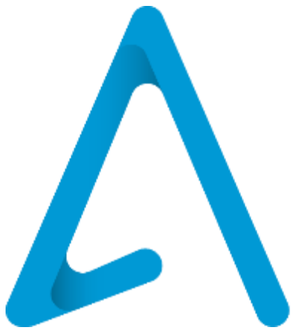

How To Practice TDD

without shooting yourself in the foot

Dennis Doomen | @ddoomen | Aviva Solutions | The Continuous Improver

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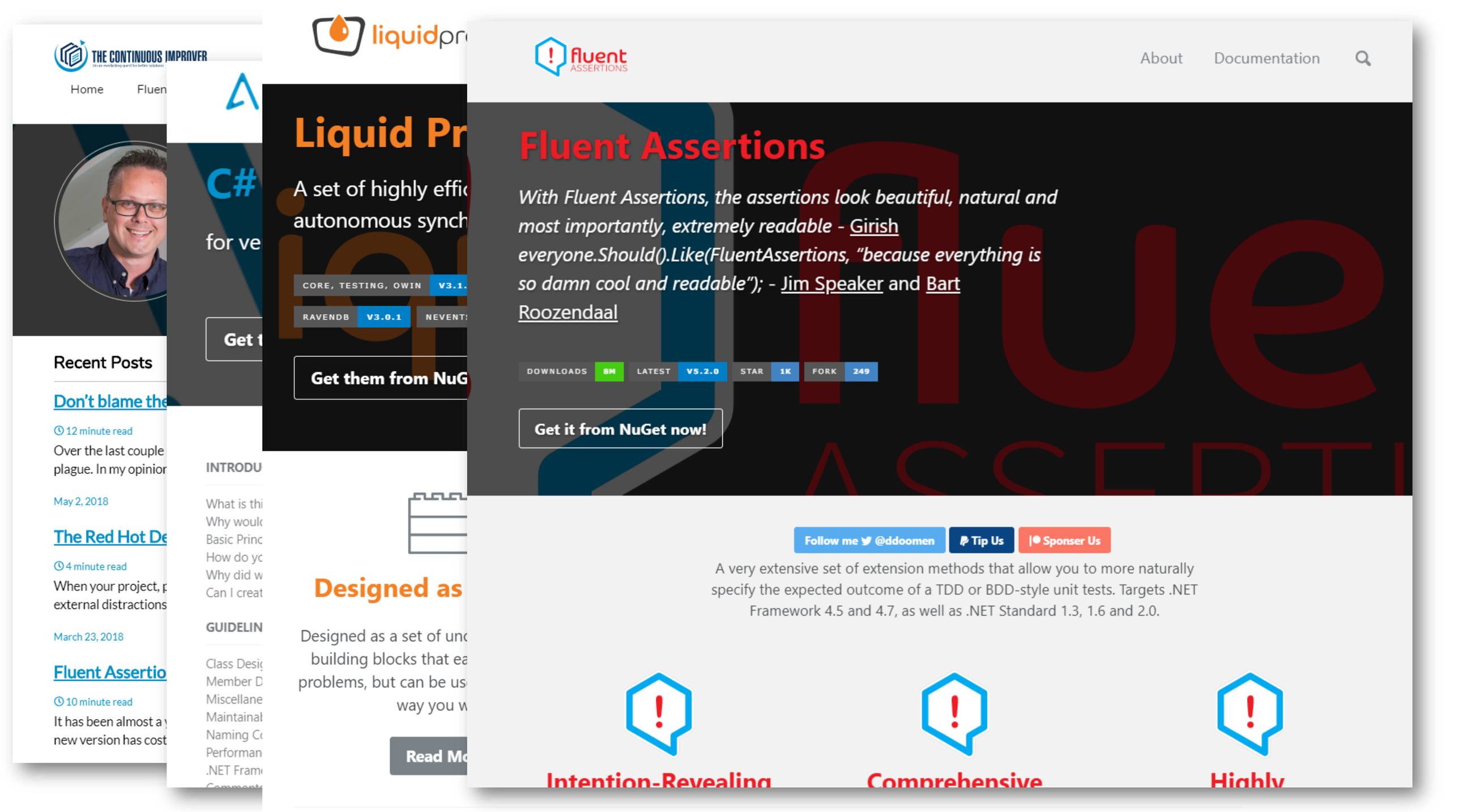
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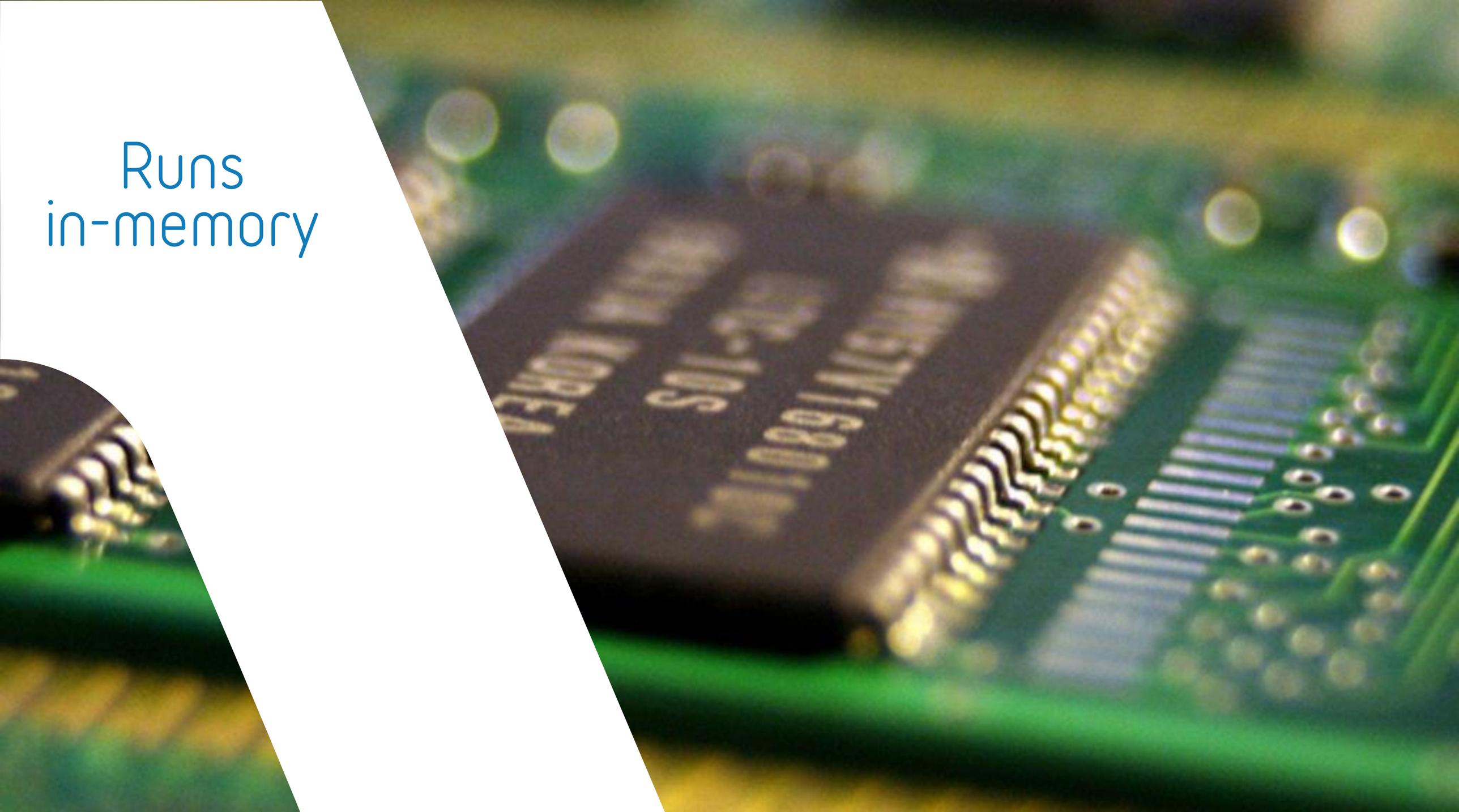
A very extensive set of extension methods that allow you to more naturally specify the expected outcome of a TDD or BDD-style unit tests. Targets .NET Framework 4.5 and 4.7, as well as .NET Standard 1.3, 1.6 and 2.0.
Intention-Revealing
Comprehensive
Highly

A unit test is....

An opinionated definition

Is fast
(< 50ms)

Runs in-memory



Has no I/O-bound dependencies

Has no static dependencies

Causes no side-effects

Should be parallelizable

Can be run in any order

Test Driven Development means...

(in my definition)

1. Design the class responsibilities
2. Write a first unit test
3. Generate stubs using R#, Rider, etc
4. Ensure test fails for the right reason
5. Implement the real deal
6. Ensure test succeeds
7. Identify alternative scenarios
8. Repeat twice
9. Refactor.

The principles of great unit tests

No black box.
No white box.

Test at the right scope

If it’s not important for the test, it’s very important to hide it

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Crystal-clear cause and effect

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Reads like a book

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Copy three times before refactoring

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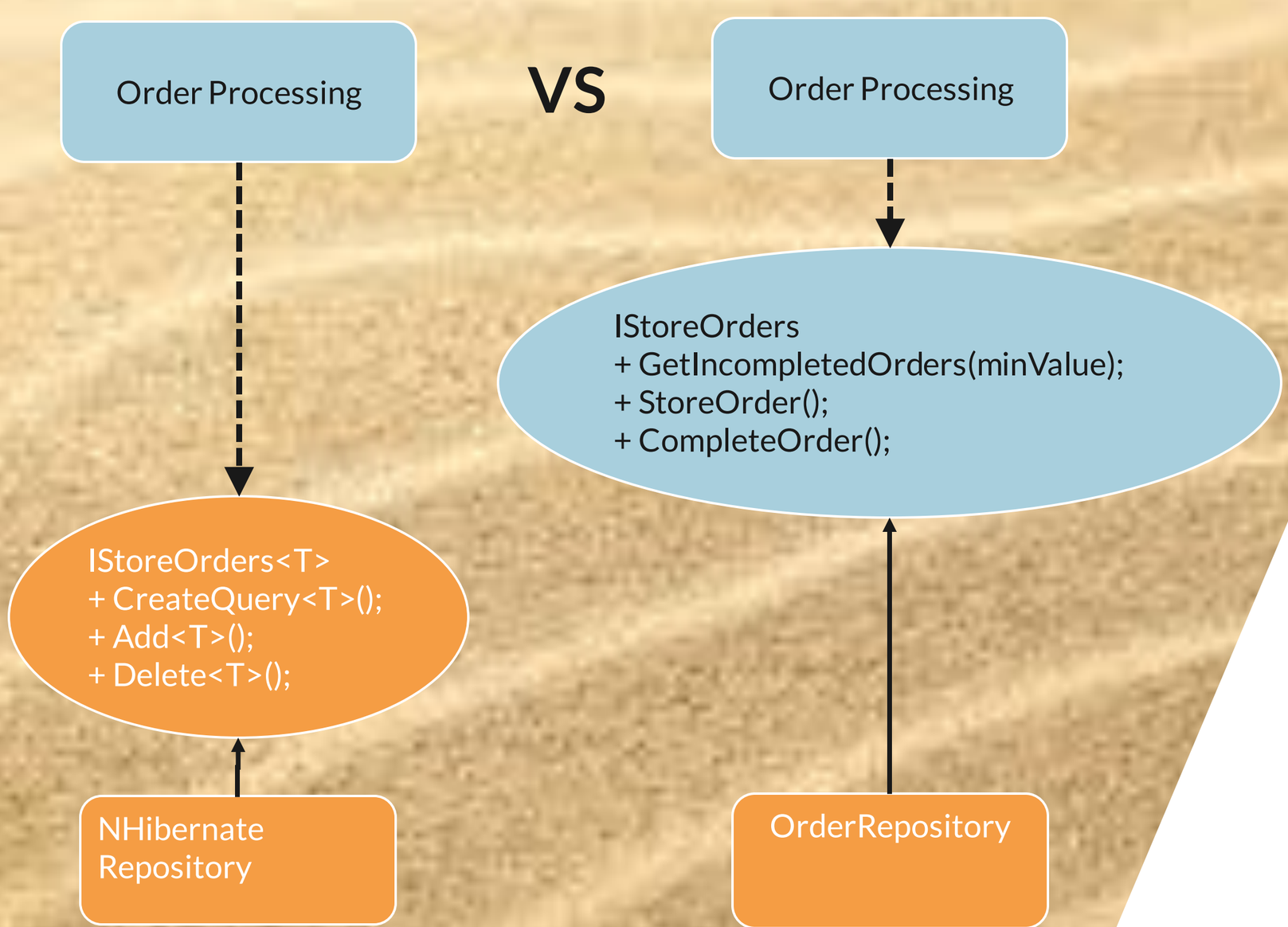
Avoids DRY



Acknowledges DIP

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Defining the scope of testing

```
eventMonitor.OccurredEvents.Should().BeEquivalentTo(new[]
{
    new
    {
        EventName = "PropertyChanged",
        TimestampUtc = utcNow - 1.Hours(),
        Parameters = new object[] { “third”, “first”, 123 }
    },
    new
    {
        EventName = "NonConventionalEvent",
        TimestampUtc = utcNow,
        Parameters = new object[] { "first", 123, "third" }
    }
}, o => o.WithStrictOrdering());
```

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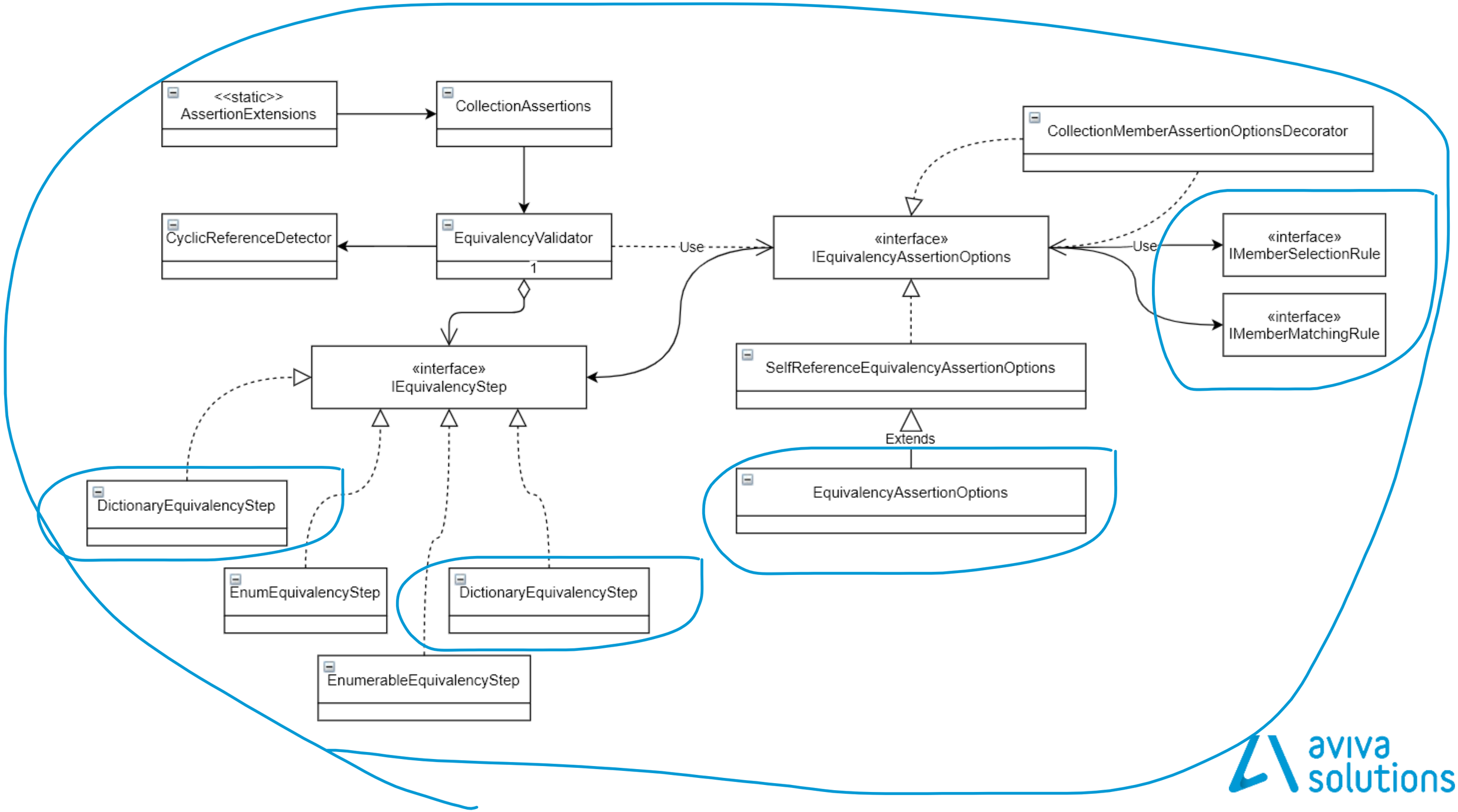

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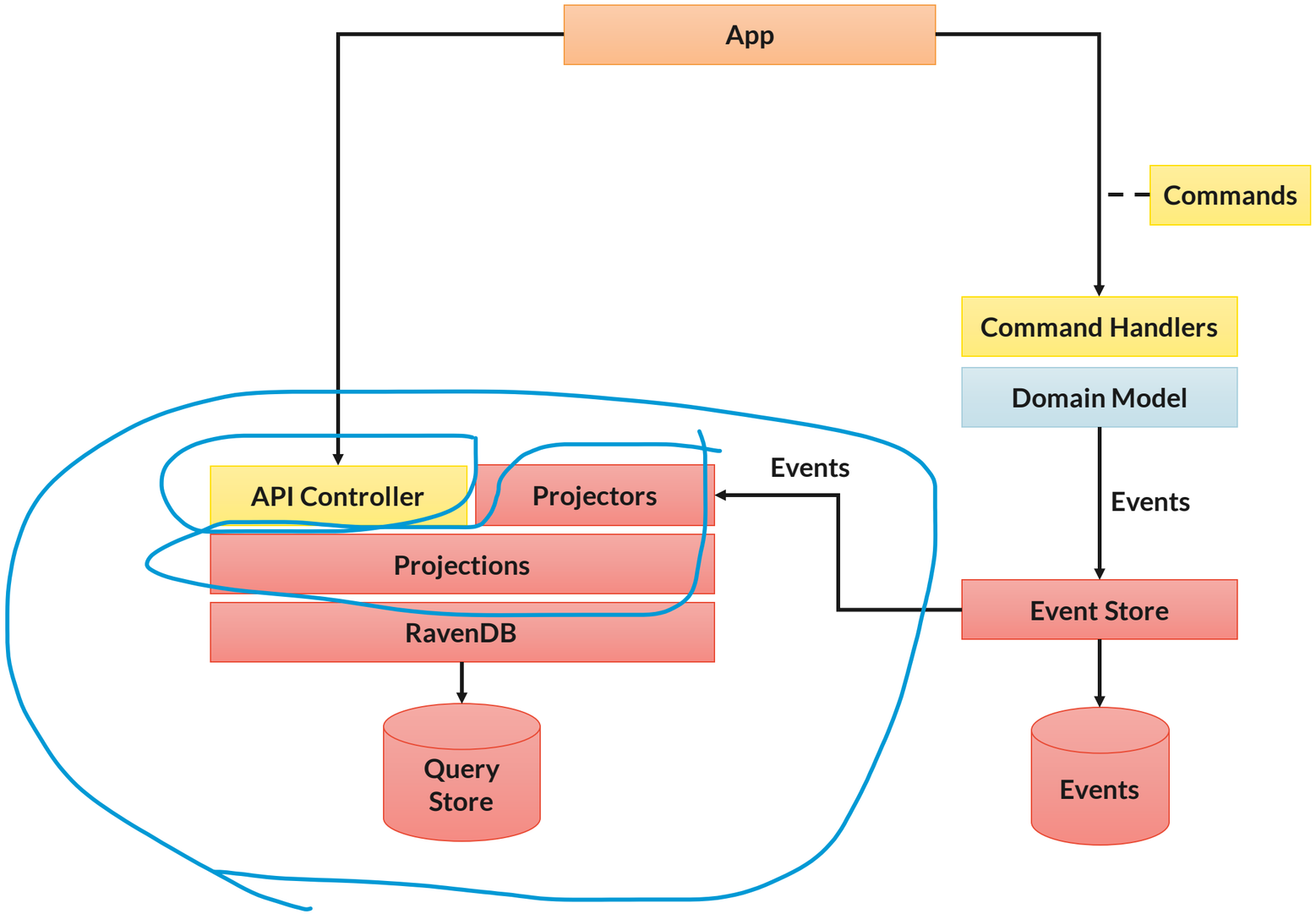

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Show me some code

The Practices

- Define the boundary carefully
- Use BDD or AAA when applicable
- Don’t repeat the context in names
- Don’t use technical names
- Avoid constants
- Use Test Data Builders for the irrelevant parts
- Show relevant dependencies
- Only assert the relevant parts
- Keep refactoring
- Keep out of the debugger hell.

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www.continuousimprover.com

www.fluentassertions.com
www.csharpcodingguidelines.com

Recommended Resources

- Example code
  https://github.com/dennisdoomen/EffectiveTddDemo
- Chill
  https://github.com/ChillBdd/Chill
- Fluent Assertions
  https://www.fluentassertions.com
- Laws of Jeremy D. Miller
  http://codebetter.com/jeremymiller/2005/10/21/haacked-on-tdd-and-jeremys-first-rule-of-tdd/
- Xunit Patterns
  http://xunitpatterns.com/
- Test data builders
  http://www.natpryce.com/articles/000714.html

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