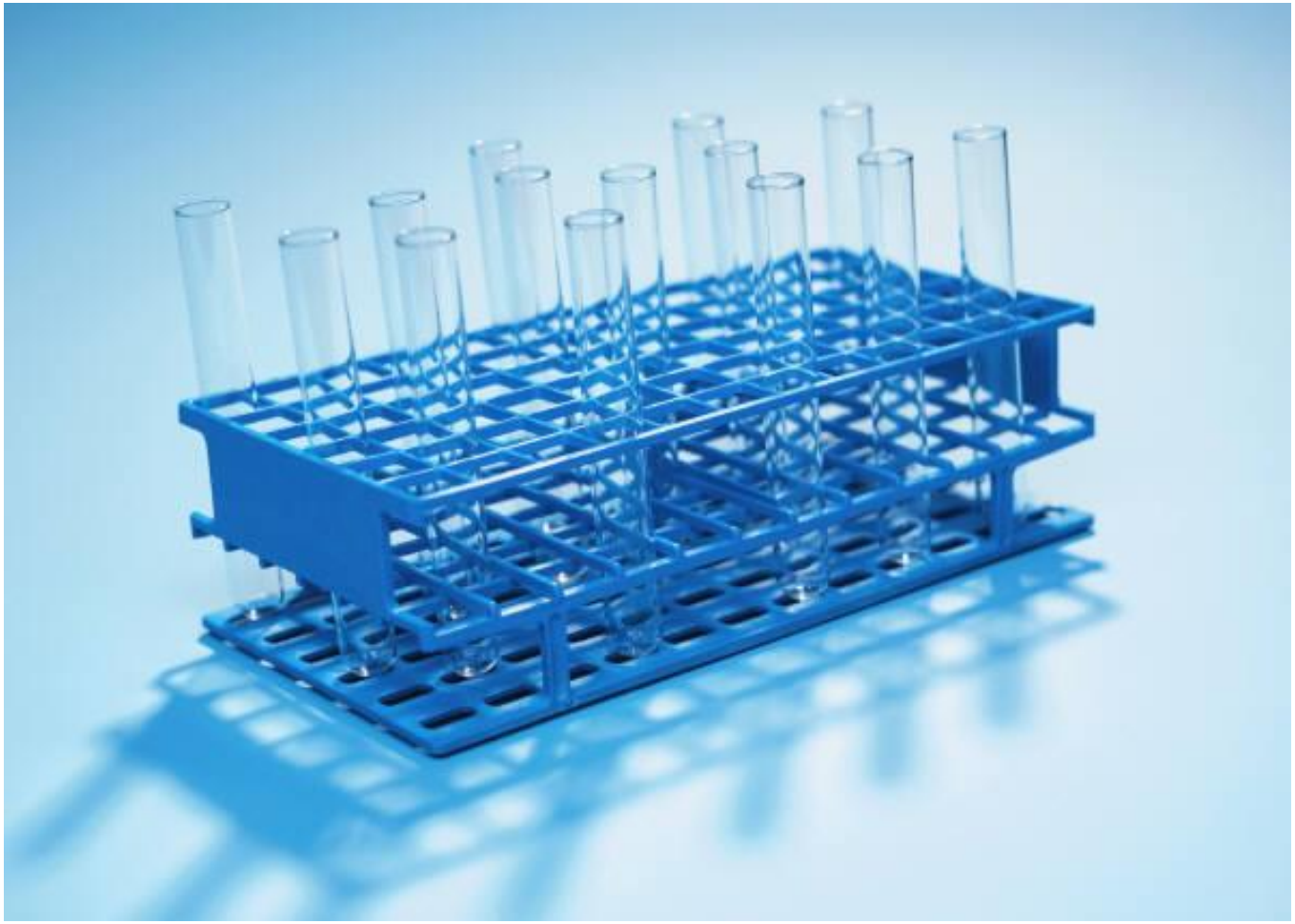
Malte Clasen

Grundlagen automatisierter Tests

Definition

automatisch

Kontext



Parameter

Messen

Es funktioniert

Es ist fertig

Es ist nutzbar

So funktioniert es

Es funktioniert immer noch

Flow

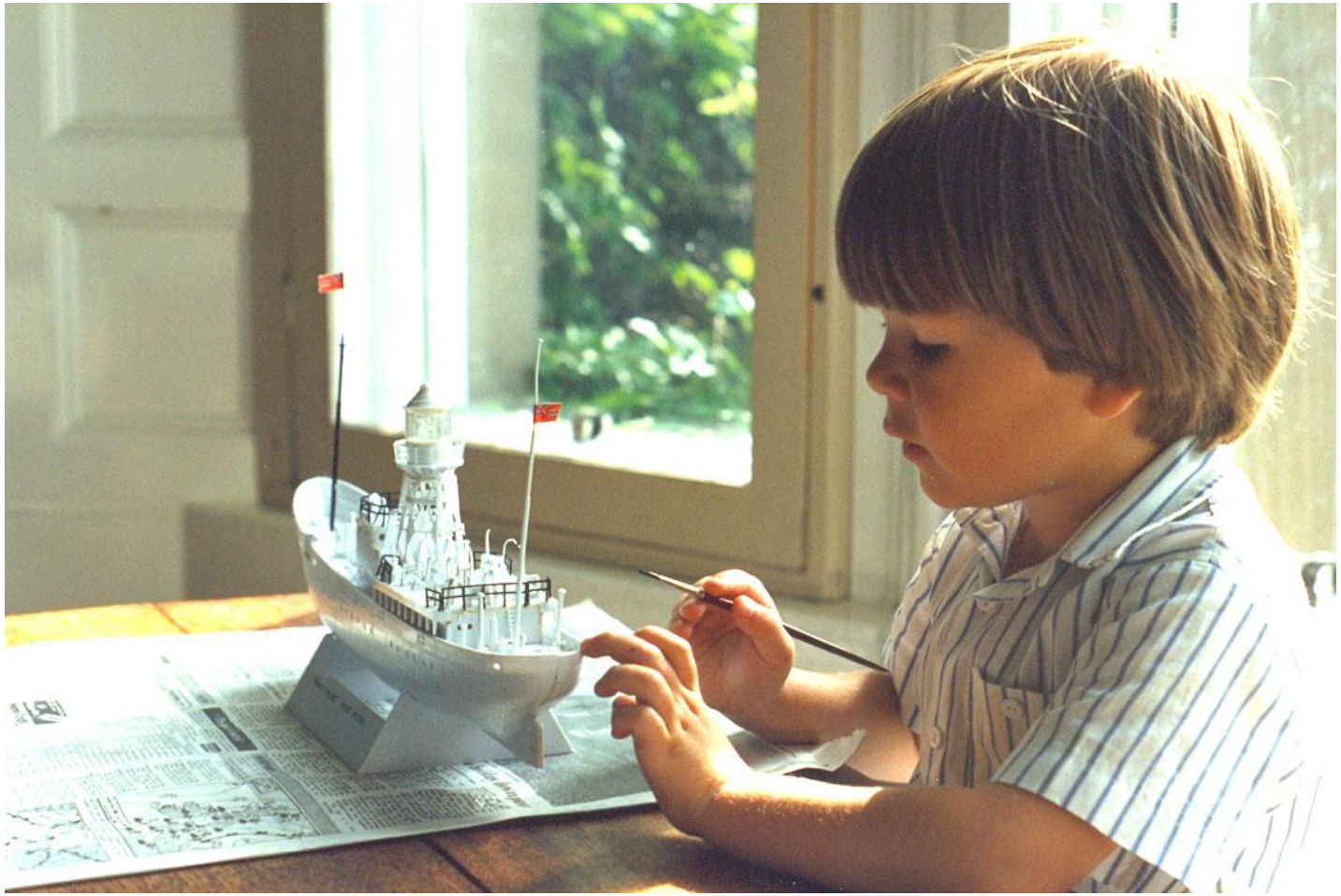
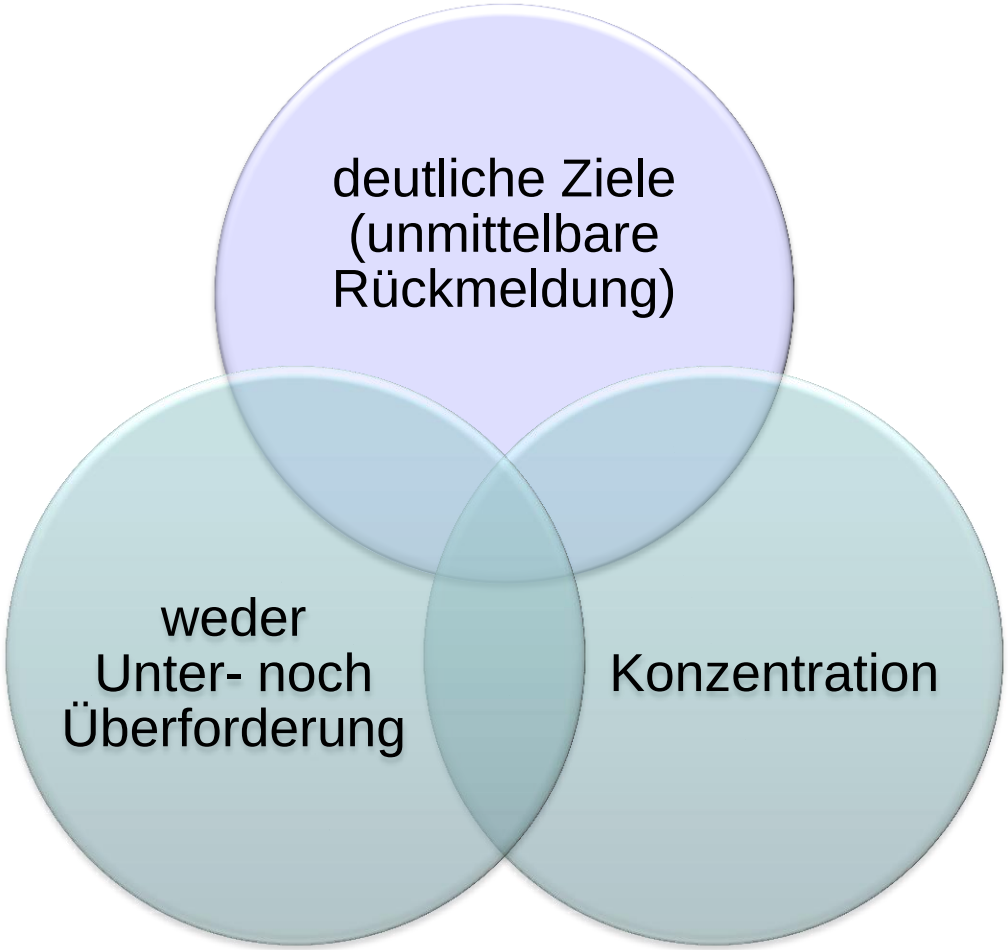


Foto: Charles J Sharp; licensed under the Creative Commons Attribution 2.5 Generic license; http://commons.wikimedia.org/wiki/File:South-Goodwin.jpg

Flow


deutliche Ziele (unmittelbare Rückmeldung)
weder Unter- noch Überforderung
Konzentration

einfacher Test

```
[TestMethod]
public void OneEqualsOne()
{
    Assert.AreEqual(1,1);
}
```

Given-When-Then

```
[TestMethod]
public void Addition()
{
    var a = 1;
    var b = 2;

    var result = a + b;

    Assert.AreEqual(result, 3);
}
```

MsTest

```
[TestClass]
public class MsTest
{
    [TestMethod]
    public void OneEqualsOne()
    {
        Assert.AreEqual(1,1);
    }
}
```

nUnit

```
[TestFixture]
public class NunitTest
{
    [Test]
    public void OneEqualsOne()
    {
        Assert.AreEqual(1,1);
    }
}
```

xUnit.net

```
public class XunitTest
{
    [Fact]
    public void OneEqualsOne()
    {
        Assert.Equal(1,1);
    }
}
```

Visual Studio Runner

AutomatedTestDemo - Microsoft Visual Studio

FILE EDIT VIEW GIT NCRUNCH PROJECT BUILD DEBUG TEAM SQL TOOLS TEST

Toolbox | Test Explorer | Unit Test Explorer

Object Browser | Unit Test Se

AutomatedTestDemo.Tests.MsTes

Selected Tests
All Tests Ctrl+R, A
Failed Tests
Not Run Tests
Passed Tests
Repeat Last Run Ctrl+R, L

Run
Debug
Playlist
Test Settings
Windows

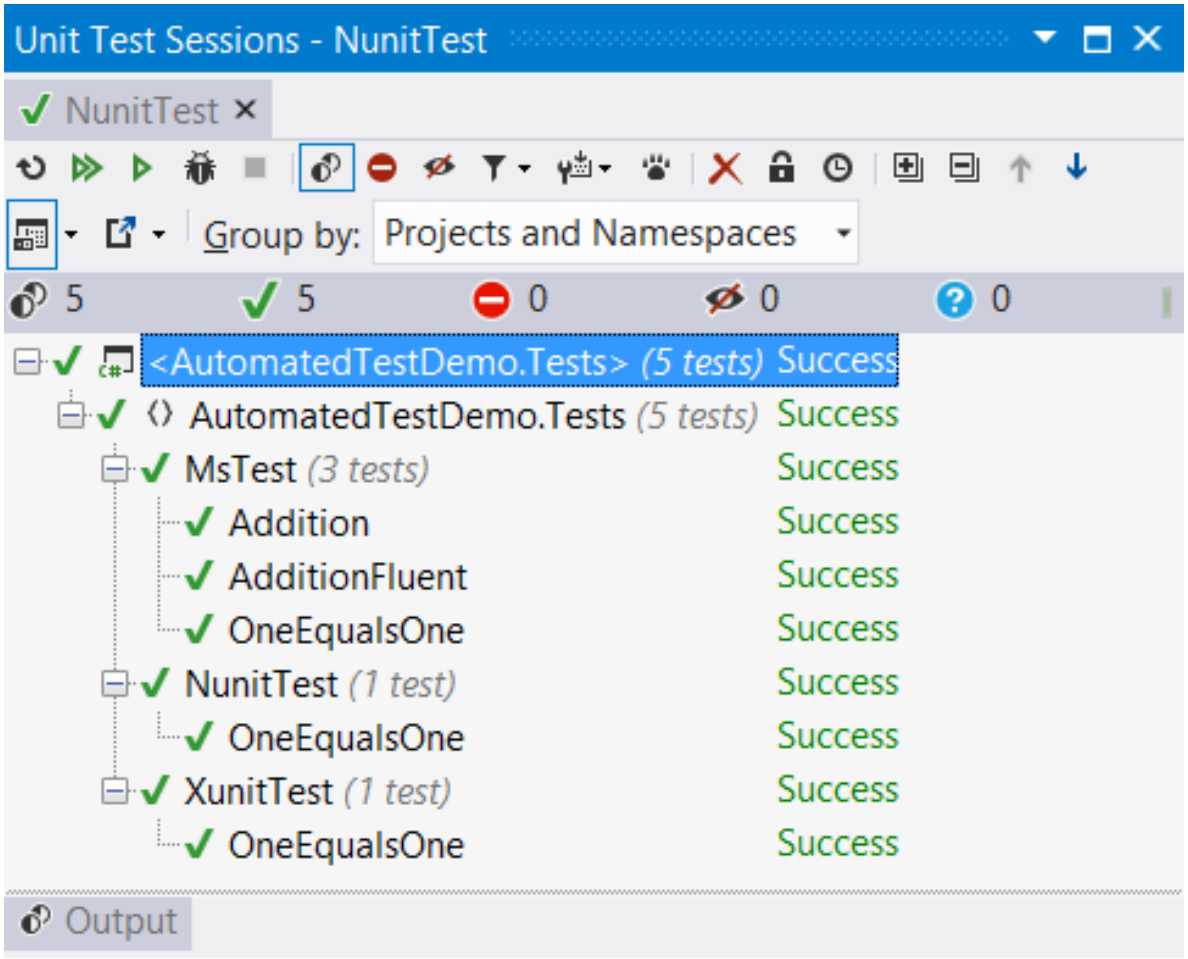
```
namespace Automated
{
    [TestClass]
    public class MsTest
    {
        [TestMethod]
        public void OneEqualsOne()
        {
            Assert.AreEqual(1,1);
        }
```

ReSharper

```
namespace AutomatedTestDemo.Tests
{
    public class XunitTest
        [Fact]
        public void OneEqualsOne()
        {
            Assert.Equal(1,1);
        }
    }
}
```

xUnit.net Test Class (click to run)

ReSharper Test Session



NCrunch

AutomatedTestDemo

XunitTest.cs

AutomatedTestDemo.Tests.Xunit | OneEqualsOne()

```
public class XunitTest
{
    [Fact]
    public void OneEqualsOne()
    {
        Assert.Equal(1,1);
    }

    [Fact]
    public void OneEqualsTwo()
    {
        Assert.Equal(1, 2);
    }
}
```

100 %

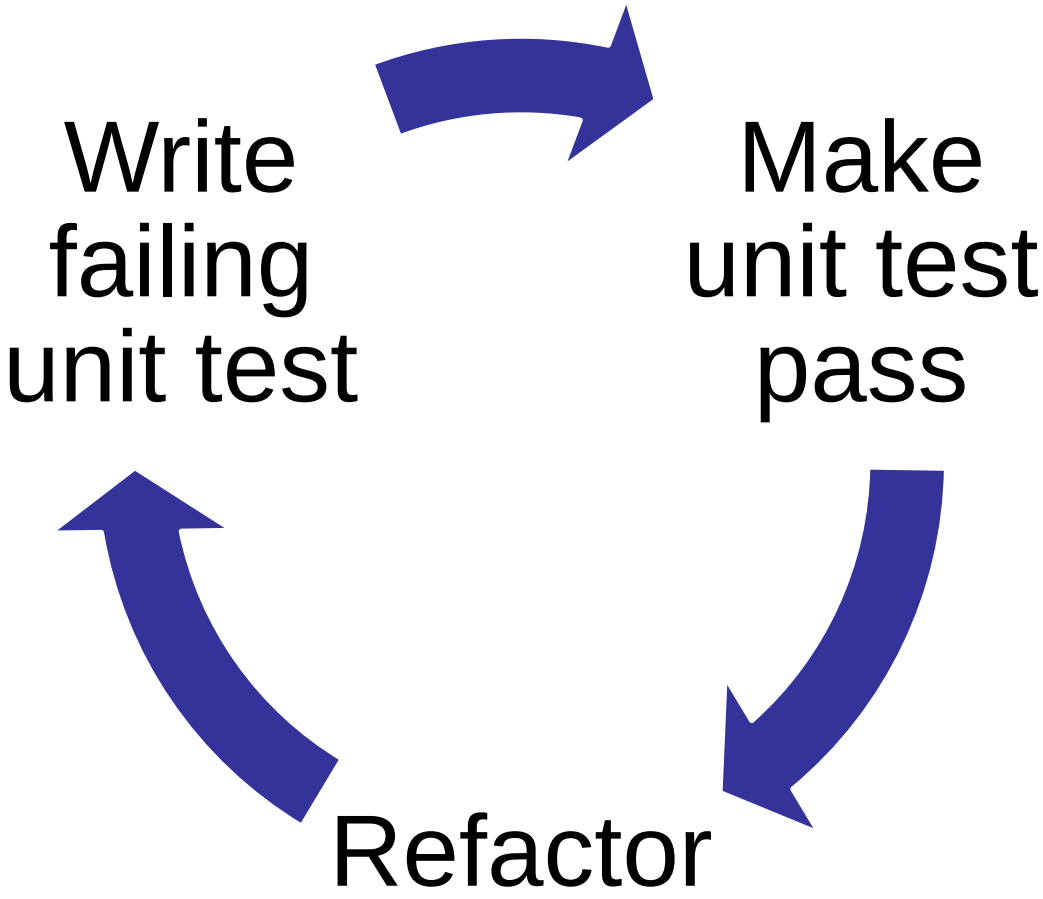
FluentAssertions

```
[TestMethod]
public void AdditionFluent()
{
    var a = 1;
    var b = 2;

    var result = a + b;

    result.Should().Be(3);
}
```

Test-Driven-Development



Klasse nutzen

```
[Fact]
public void StartsWithZero()
{
    var calculator = new Calculator();
}
```

Klasse anlegen

```
public class Calculator
{
}
```

Eigenschaft nutzen

```
[Fact]
public void StartsWithZero()
{
    var calculator = new Calculator();

    calculator.Value.Should().Be(0);
}
```

Eigenschaft anlegen

```
public class Calculator
{
    public double Value { get; set; }
}
```

Funktion nutzen

```
[Fact]
public void AddsValues()
{
    var calculator = new Calculator { Value = 4 };

    calculator.Add(2);

    calculator.Value.Should().Be(6);
}
```

Funktion anlegen

```
public class Calculator
{
    public double Value { get; set; }

    public void Add(double value)
    {
        Value += value;
    }
}
```

Isolation

Code-Isolation

Assembly

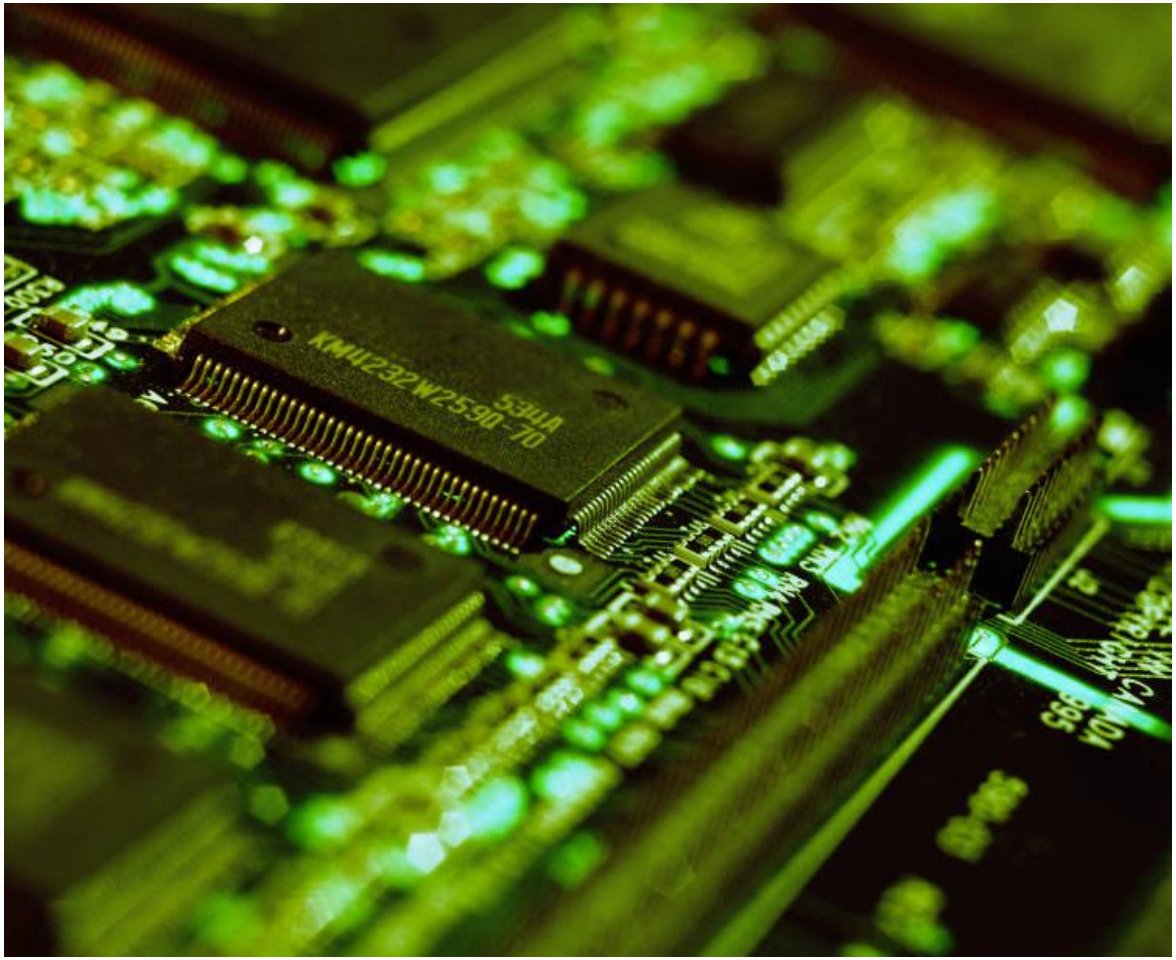
GAC


Masterpiece
Original
San Giorgio
Thin Spaghetti - 9
Pedigree
KIRKLAND
MIXED NUTS
Restaurant Style

Frameworks

Daten-Isolation

Arbeitsspeicher



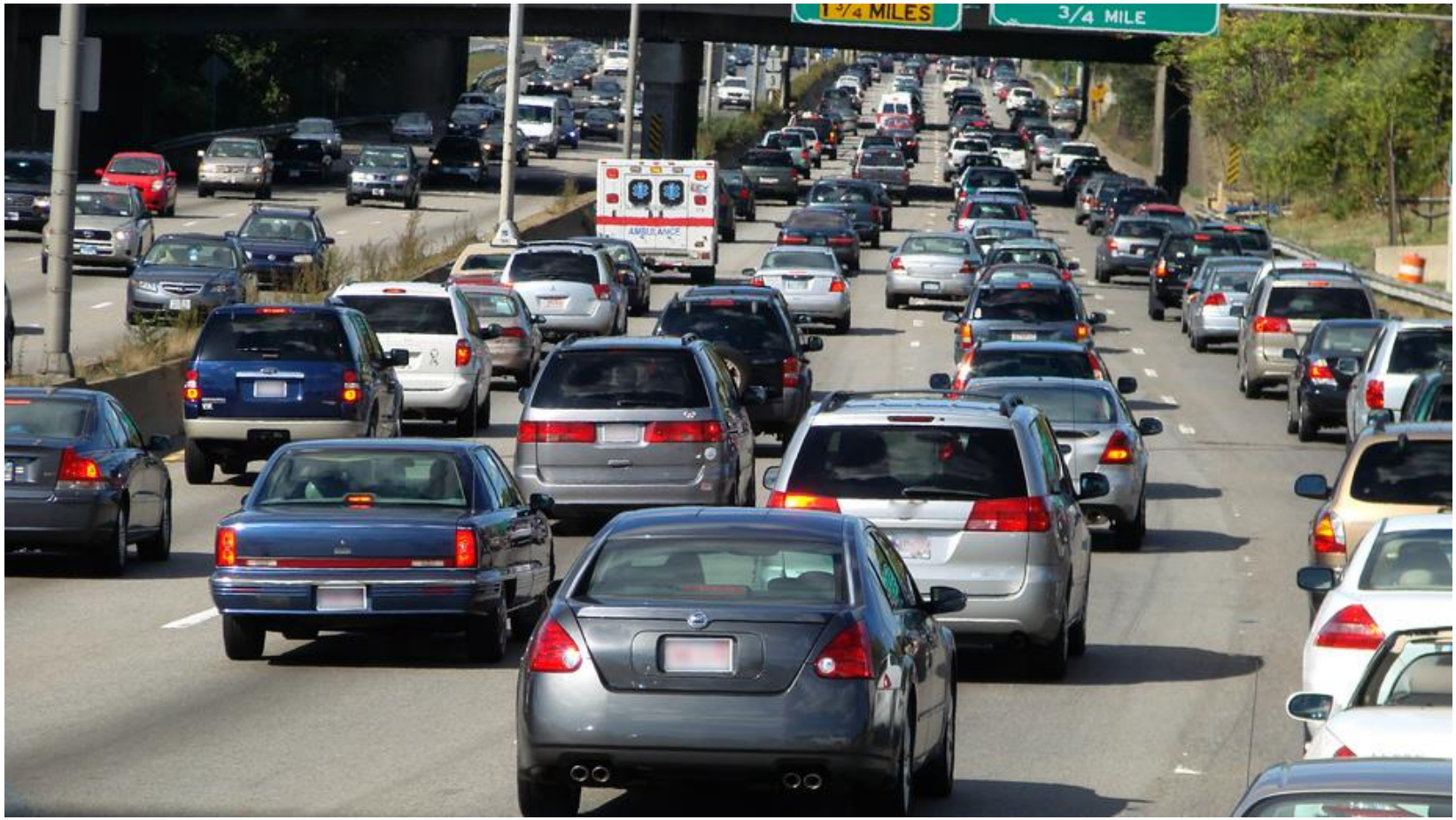
Datenbank mit Transaktion

Datenbank ohne Transaktion

Datenbank-ähnliches

weitere Ressourcen

Continuous Integration

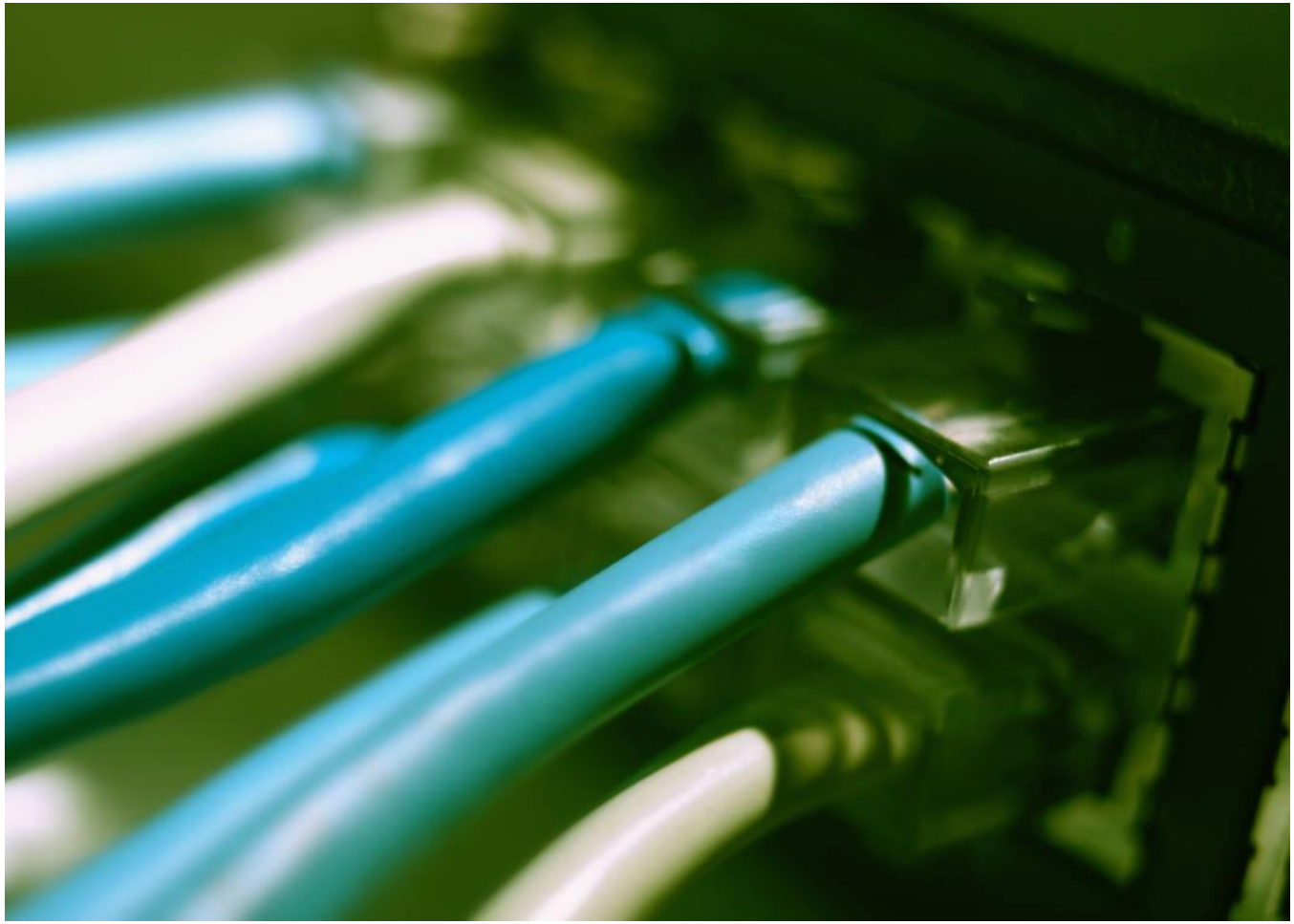


Unit Test

Integration Test

Acceptance Test

Abhängigkeiten



Service Locator

Dependency Injection

Platzhalter

Moq

AutoFixture

Zusammenfassung

- Funktion, Fertigstellung, Qualität, Lehre
- Unit, Integration, Acceptance
- Isolation

- Folien, Code
  http://malteclasen.de/blog
- Beratung, Training
  info@malteclasen.de