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Working Effectively with Legacy Code

Legacy Code

OCHUTNÁVKA

Legacy Code?

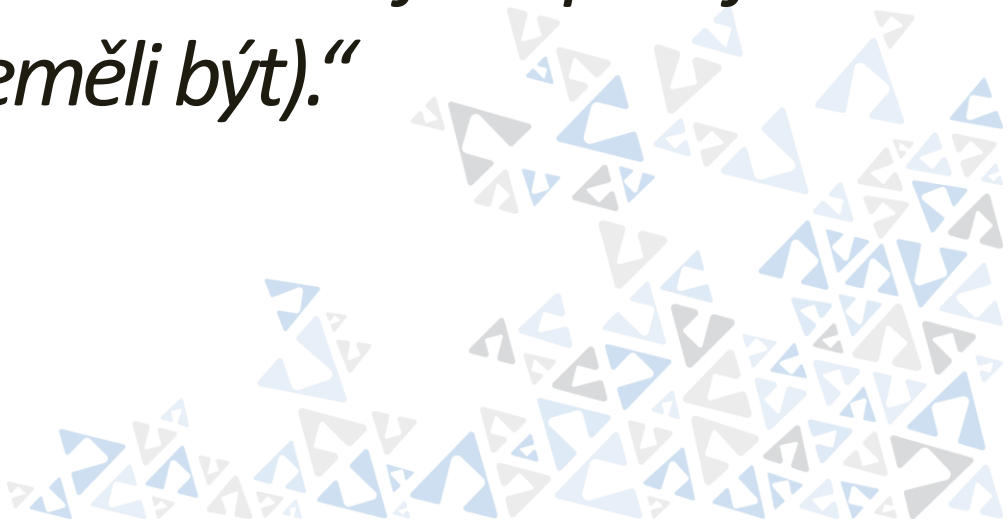
„Code without tests.“ [Michael Feathers]

„Source code inherited from someone else.“

„Source code inherited from an older version of the software.“

„Veškerý kód, s kterým aktuálně nejste spokojeni (nebo byste alespoň neměli být).“

[Robert Haken]



Legacy Code

Non-uniform coding style

Nesrozumitelný

Málo/bez testů

Bad Design

Code Smell

…

Refactoring Mindset

LEGACY:

„Do not touch working code, unless needed.“

Planned refactoring

NOW:

„Leave the code in better condition than you found it.“ [The Boy Scout Rule]

Refactoring as you go.

Předpoklady

Sdílené vlastnictví kódu

Source Code Management

Continuous Integration builds + runs Tests

Refactoring Justification

Quality

Clean Code

Professionalism

Right Thing

Economics

Roslyn CodeAnalysis + baseline

DEMO

Code Analyzers

Microsoft.AnalyzerPowerPack (Roslyn Team)

System.Runtime.[CSharp.]Analyzers

StyleCop Analyzers

SonarLint [SonarQube]

VS Perf-tip:

Tools / Options / Text Editor / C# / Advanced / Enable solution wide analysis = OFF

Refactoring

Continuous, As you go

Small steps

IDE/Tooling supported safe steps

Comprehension Refactoring (Rename, Extract, …)

Podpořeno testy

- Pomáhají porozumět kódu
- Guard Conditions, Contract.Requires
- Debug.Assert, InvalidOperationException, …
- Unit-Tests
- Integration Tests

"Good" Unit Test

- automated + repeatable
- fully isolated
- consistent in its results
- runs quickly
- full control of the unit under test (all dependencies)
- relevant tomorrow
- easy to implement
- able to run it at the push of a button
- if fails => easy to detect what was expected

Poor Man‘s Testability

Extract dependant call to virtual method

DEMO

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Mocking

DEMO

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Dependency Injection

DEMO

Tips & Tricks

[assembly::InternalsVisibleTo(MyTestAssembly)]

[Obsolete]

Treat Warnings as Errors

Ambient Context (ale ne ServiceLocator nebo public container!)

Service Factories

Analyze / Analyze Solution for Code Clones

Test / Analyze Code Coverage

Q & A