

Clean Code, TDD, BDD Crash Course (C#)

 Duration: 2 Days

 Available Languages: English German

Audience

Software Crafters: Software Developers, Architects.

Precondition

Good knowledge of C#.

Goals

Learn how to develop software better using Clean Code, TDD, and BDD.

Contents

- Clean Code Introduction
 - Clean Code and Scrum/XP
 - The Two Values of Software
 - The 5 Design Smells
- Clean Code Basics
 - Form and Names
 - Functions and Function Structure
 - Programming Paradigms Revisited
- Clean Architecture: Principles of Object-Oriented Class Design
 - Coupling and Cohesion
 - SOLID Principles
 - Package Principles
 - The 4 Rules of Simple Design
- Refactoring
 - Goals
 - Techniques (rename, move, extract, convert, etc)
 - Protect against regression
 - Legacy code: Characterization testing, seams, sprouts, etc
- Test Basics
 - Testing and Scrum/XP
 - The Test Automation Pyramid
 - Test Automation, Testing, and CI/CD

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- Test-Driven Design
 - Anatomy of xUnit Frameworks; MSTest, NUnit, xUnit
 - Definition of Testable
 - The Three Laws of TDD
 - The Red-Green-Refactor Cycle
 - The Red-Green-Refactor-Commit Cycle
 - The Test-Commit-Revert Cycle (TCR)
 - Principles of TDD
- Advanced TDD
 - The Transformation Priority Premise, Test Sequence
 - Test-Doubles, Mocking
 - Stateism vs Mockism
 - How TDD drives an emergent design
- Behavior-Driven Development
 - The Gherkin Language, Feature Files
 - Integrating and Mapping BDD in Scrum/XP - Acceptance Test-Driven Development
- SpecFlow
 - Step Definitions
 - Assertions
 - Reusing Feature Files on different levels of the test pyramid
 - Managing SpecFlow in large projects

In open classroom training, we use a specific set of tools listed below. In brackets are alternatives to which we can tailor the training in case of in-house training.

Language

C# (also available in C++, Golang, Java, JavaScript, Kotlin, and Scala)

IDE

Visual Studio Code (Rider)

Unit Test Framework

Visual Studio Testing Framework (NUnit)

BDD Framework

SpecFlow

Booking

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