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Agile Object Oriented Bootcamp Workshop

Summary

Object Oriented Programming Boot Camp is an intensive 10 days hands-on workshop designed for .NET and Java developers who want to gain a deeper understanding of the power of object oriented programming practices.

Junior developers will learn fundamental principles and how to put them in practice. Senior developers will reach a deeper understanding of the relation between principles and design patterns, of the synergies and tensions between different principles, and they will also learn how to put principles in practice in different contexts.

The focus of the course is to build object oriented problem-solving skills by solving problems of increasing complexity during the sessions, culminating in the understanding of where and how to apply design principles and some common design patterns. In addition to the core object skills gained, participants will be exposed to and use the following Agile practices throughout the course: pair programming, test-driven design, retrospectives, and just-in-time analysis.

Audience:

- Junior Software developers
- Senior Software developers
- Coding Architects
- Coding QA/Testers
- Tech-leads

Duration:

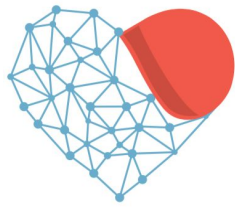
10 days

Prerequisites:

- Java or .NET coding skills
- familiarity with the Java SDK or .NET Framework
- familiarity with the IDE and the refactoring tool

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Learning Objectives:

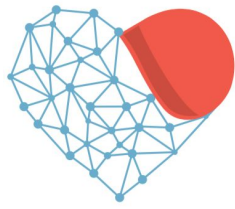
- Understand and be able to appropriately utilize, in real work situations, the three tenets of OO Programming: Encapsulation, Inheritance, and Polymorphism.
 - Understand Encapsulation, and correctly identify the inside and outside of an object.
 - Understand how visibility modifiers, argument passing semantic and other language features affect encapsulation.
 - Understand and be able to practice Simple design.
- Understand and be able to appropriately utilize the various ways in which objects interact with each other: Delegation, Inheritance, Composition and Collaboration.
 - Understand how to design a solution using objects, and understand how to distribute responsibilities among multiple objects.
 - Understand pros and cons of inheritance and composition and be able to choose between the two in different scenarios.
 - Experience the tensions between encapsulation and Single Responsibility Principle.
- Become familiar with the .NET/Java Collections library and their appropriate uses.
 - Be able to choose the right collection in different circumstances.
 - Understand how collections can affect encapsulation.
- Be able to write OO code using test driven design.
- Become comfortable with pair programming and understand the qualities of a good pairing partner.
- Begin to understand some of the following design patterns: Factory, Observer, Composite, Adapter, Visitor.

Benefits:

- Turn theoretical knowledge of abstract principles and design patterns into practices that produce better code in less time, and that produce code that's easier to test, maintain, change, and evolve.
- Provide a basic method of work in team.

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Topics covered

Basic OO

- Object terminology
- The three OO tenets

Building on the basics

- Object interactions
- .NET/Java Collections
- Solve problems using objects, collections, relations between objects
- Basic design principles and Simple design

Design Principles

- Main good design principles and their relationship
- More design principles YAGNI, DRY, KISS, SOLID, Rule of 3, etc.
- Simple design definition
- Applying design principles in practice and in context
- Main Design patterns in practice
- Replacing conditionals with polymorphism

Our approach to software development in action

- Pairing
- Refactoring
- Test driven design
- Sharing code
- Retrospective

Extra Topics selected by the class

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