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Test-Driven Development in Java

Course Summary

Description

Agile software development advocates delivering new features in very short periods of time. Business stakeholders prioritize feature requests, choosing the most important functionality to be added during each upcoming iteration. To meet the elevated expectations of users and stakeholders in an agile environment, development teams must embrace change by working in short iteration cycles and by using techniques that allow them to rapidly add new features, change existing functionality, and evolve the internal design of the system, safely, over time.

Test-driven development (TDD) is a core development practice used by agile teams. In TDD developers continuously write automated unit tests as they code the system. At controlled points in the process, they refactor, or reorganize, the code that has been written to remove duplication and increase clarity. This refactoring process reduces the chance of bugs being introduced in the future and increases the code's long-term maintainability. This practice of refactoring to a better design is known as "emergent design."

Objectives
At the end of this course, students will be able to:

- Master effective unit testing with JUnit and mock objects
- Practice test-driving code by writing unit tests first and then writing the minimal code needed to make the unit tests pass
- Refactor existing code into design patterns that leave the code more extensible and maintainable

Topics

- Overview of Agile Software Development
- Unit Testing and Integration Testing
- Test-Driven Development Using JUnit
- Test-Driven Development Using JUnit
- Mock Objects
- Testing Patterns
- Object-Oriented Design Principles
- Code Smells
- Refactoring Techniques

Audience

This course is designed for software developers of all skill levels and managers with a Java or other OO programming background.

Prerequisites

There are no prerequisites for this course.

Duration

Three days