



AI Tools for Java Developers - Workflows

- 4 Hours Course
- Hands-on and Lecture

Course Overview

This course teaches you how to apply AI tools throughout the entire software development lifecycle, from initial requirements through implementation, testing, and deployment of a minimum viable product (MVP). Using a real-world tournament management application as your learning vehicle, you'll build a complete CRUD application while mastering a modernized development methodology augmented by AI. You'll learn how to leverage Claude Code and GitHub Copilot at each stage of development, from writing specifications and designing schemas to implementing business logic, writing tests, and managing version control. By the end of this course, you'll understand both the technical patterns and the collaborative rhythm between human developers and AI tools, equipping you to take on AI-augmented projects in your own work.

Who Should Attend

- Java developers with foundational programming experience
- Teams transitioning to AI-augmented development practices
- Developers interested in learning modern SDLC methodologies
- Professionals building applications with Spring Boot
- Anyone seeking to understand how AI tools enhance each phase of development

What You'll Learn

- A complete requirements-to-MVP development methodology
- How to use AI tools at each stage of the software development lifecycle
- Best practices for building robust CRUD applications in Java and Spring Boot
- Effective prompting strategies for generating, reviewing, and refactoring code
- How to write and validate tests using AI assistance
- Version control workflows while collaborating with AI tools
- How to catch and prevent common errors in AI-generated code
- The balance between AI-assisted generation and manual development

Outline

1. Tournament Application: Project Overview

- Application Requirements and Architecture
- Database Design Fundamentals
- Understanding the Tournament CRUD Data Model

2. Building the Foundation

- Project Setup and Spring Boot Configuration
- Designing and Creating Database Schema

- Building Core REST Endpoints with AI Assistance

3. Implementing Business Logic

- Implementing Tournament Rules and Workflows
- Building Relationships and Advanced Queries
- Error Handling and Data Validation with AI

4. Capstone Pattern: Adding Features

- The Capstone Structure: Building on Your MVP
- How to Approach Feature Development Using Learned Patterns
- Planning and Implementing a New Feature (Take-Home Assignment)

5. Testing and Validation

- Writing Unit Tests with AI-Generated Test Cases
- Validating AI-Generated Code and Catching Edge Cases
- Best Practices for Test-Driven Development with AI

6. Understanding the AI-Augmented Development Methodology

- The Modern SDLC: From Requirements to Deployment
- Where AI Tools Add Value at Each Stage
- The Human-AI Collaboration Model

7. Version Control and Collaboration

- Git Workflows While Working with AI Tools
- Committing and Managing Code History Effectively

Prerequisites

- Foundational programming experience in Java (Suggested)
- Familiarity with Spring Boot concepts (Suggested)

Next Courses