Implementing AI in JAVA Training

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Duration: **1 Day**

Implementing AI in Java is a hands-on course designed for software developers who want to integrate Artificial Intelligence into Java development workflows using modern AI-assisted coding tools. Throughout the programme, participants will learn how to use **GitHub Copilot** to improve productivity, accelerate software development, and enhance code quality within Java projects.

The course explores the growing influence of Artificial Intelligence on software engineering, demonstrating how AI can assist with code generation, debugging, documentation, and overall development efficiency. Practical exercises allow participants to apply AI technologies to real development scenarios while learning industry best practices for AI-assisted programming.

Collaborative workshops and hands-on labs provide opportunities to use GitHub Copilot for software development and project documentation. Participants will also learn how AI can support the creation, maintenance, and continuous improvement of technical documentation.

Before attending the course, learners are expected to have a basic understanding of GitHub, repository management, and standard Git workflows.

Prerequisites

Participants are recommended to have:

- A basic understanding of software development concepts.
- Familiarity with file systems and command-line environments.
- Basic knowledge of Git and GitHub.
- No advanced programming experience is required.

Technical Requirements

Participants must have access to:

- A valid email address.
- An active **GitHub** account.
- A licensed **GitHub Copilot** subscription.

Who Should Attend

This course is designed for:

- Software engineers.
- Java developers and software professionals.
- Front-End developers.
- Full-Stack developers.
- Developers interested in integrating AI-assisted coding into their daily workflows.
- Professionals seeking to improve software development productivity using GitHub Copilot.

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What You Will Learn

Upon successful completion of this course, participants will be able to:

- Explain the evolution of Artificial Intelligence and its impact on modern software development.
- Evaluate the ethical and legal considerations associated with AI-assisted software engineering.
- Configure, use, and integrate GitHub Copilot into professional development workflows.
- Apply AI tools to real-world coding tasks while recognizing common challenges and effective mitigation strategies.
- Make effective use of advanced GitHub Copilot capabilities.
- Understand licensing, copyright, and legal considerations related to AI-generated software.
- Use AI tools to create and improve project documentation.
- Produce clearer, more maintainable, and higher-quality technical documentation with AI assistance.

Training Outline

Module 1 - Understanding AI in Software Development

- The evolution of Artificial Intelligence in software engineering
- The impact of AI on the software development lifecycle
- Benefits of AI-assisted software development
- Ethical principles and responsible AI usage
- The future of AI in software engineering

Module 2 - Deep Dive into GitHub Copilot

- Core features of GitHub Copilot
- Installation and configuration
- AI-powered code generation and suggestions
- Integrating Copilot into development workflows
- Improving developer productivity with AI assistance

Module 3 - Practical Application and Common Challenges

- Applying AI to real-world software development tasks
- Benefits of AI-assisted coding
- Common pitfalls and development challenges
- Best practices for avoiding AI-related issues
- Improving software quality with AI tools

Module 4 - Debugging and Coding Standards

- AI-assisted debugging techniques
- Maintaining coding standards and best practices
- Using AI during code review processes
- Writing clean, maintainable, and sustainable code

Module 5 - Advanced GitHub Copilot Features and Legal Considerations

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- Advanced GitHub Copilot capabilities
- Maximizing the value of AI-generated code suggestions
- Copyright and software licensing considerations
- Legal aspects of AI-generated source code
- Enterprise adoption scenarios

Module 6 - Creating and Improving Documentation

- Using AI to generate technical documentation
- Enhancing existing project documentation
- Producing code comments and developer documentation
- Best practices for maintainable documentation

Module 7 - Hands-on Documentation Workshop

- Collaborative documentation exercises
- Creating project documentation with AI tools
- Reviewing and improving documentation quality
- Continuous learning and responsible AI usage