GitHub + GitHub CoPilot

- 2 Days
- Lecture and Hands-on Labs

Course Overview

This course introduces students to GitHub and GitHub Copilot, emphasizing how these tools work in tandem to streamline software development. The course starts with foundational topics like Git basics, repository management, and branching strategies. As the training progresses, students will configure GitHub Copilot within Visual Studio Code (VS Code) and explore how to utilize Copilot for code generation, debugging, and automating repetitive tasks.

The course also covers essential collaboration practices, including pull requests, code reviews, and GitHub Actions for CI/CD workflows. By the end of the course, participants will confidently integrate GitHub and GitHub Copilot into their development workflows, using best practices for secure and efficient software delivery.

Review this course online at https://www.alta3.com/courses/ghc

Who Should Attend

- Software Developers
- DevOps Engineers
- Team Leads and Project Managers
- QA Engineers

What You'll Learn

- Master Git fundamentals and repository management on GitHub.
- Configure GitHub Copilot within VS Code for efficient development.
- Leverage AI-powered suggestions to generate and debug code.
- Establish best practices for collaboration using GitHub workflows.
- Automate CI/CD pipelines using GitHub Actions.
- Address security and licensing concerns related to Copilot.

Outline

Git & GitHub Fundamentals

- 💬 Lecture: Introduction to Version Control
- 💬 Lecture: Core Git Commands (clone, commit, push, pull)
- 💻 Lecture + Lab: Creating and Managing GitHub Repositories
- 💻 Lecture + Lab: Branching and Merging Strategies
- 💻 Lecture + Lab: Collaborating with Pull Requests

GitHub Copilot Configuration

- 💬 Lecture: Introduction to GitHub Copilot

- 💬 Lecture: Installing and Configuring Copilot in VS Code
- 💻 Lecture + Lab: First Steps with Copilot Suggestions
- 💻 Lecture + Lab: Debugging with AI-Powered Assistance

Leveraging Copilot's Features

- 💬 Lecture: Exploring Copilot's Code Generation Capabilities
- 💻 Lecture + Lab: Generating Code Snippets in Multiple Languages
- 💻 Lecture + Lab: Writing Functions and Debugging with Copilot
- 💻 Lecture + Lab: Fine-Tuning Copilot Suggestions for Code Quality

Advanced GitHub Workflows

- 💬 Lecture: Best Practices for GitHub Collaboration
- 💬 Lecture: Using GitHub Actions for CI/CD
- 💻 Lecture + Lab: Automating Test Pipelines with GitHub Actions
- 💻 Lecture + Lab: Code Review and Maintaining Test Coverage

Project-Based Collaboration

- 💬 Lecture: Managing Tasks with GitHub Projects and Issues
- 💬 Lecture: Security and Licensing in AI Development
- 💻 Lecture + Lab: Building a Simple Application Using GitHub and Copilot
- 💻 Lecture + Lab: Resolving Merge Conflicts and Real-Time Collaboration

Prerequisites

- A GitHub Copilot Account
- Programming Experience