GitHub Copilot Training

Duration: **1 Day**

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Overview

The **GitHub Copilot Training** course is designed for professionals who want to incorporate generative AI into software development, improve coding efficiency, and use AI-powered development tools responsibly.

Through this training, participants will:

- Learn to use **GitHub Copilot** to accelerate code generation, code analysis, debugging, and refactoring.
- Develop **Prompt Engineering** skills to obtain more relevant and effective coding suggestions.
- Explore how **Copilot Chat, Agent Mode, and Cloud Agent** can support the automation of software development tasks.
- Apply AI-assisted capabilities to **unit testing, code reviews, and pull request workflows**.
- Understand how to reduce ethical, security, and operational risks by applying **responsible AI principles**.

The **GitHub Copilot Training** course examines how **GitHub Copilot**, a generative AI-powered coding assistant, can be used effectively throughout software development activities.

The course helps participants develop the knowledge and skills needed to use Copilot for **code generation, code understanding, refactoring, debugging, and test development**.

Participants will explore capabilities such as **Copilot Chat, Prompt Engineering, Copilot Spaces, Agent Mode, Cloud Agent, and Model Context Protocol (MCP)**. The training also demonstrates how GitHub Copilot can be used across different development environments and incorporated into the **Software Development Life Cycle (SDLC)**.

An important part of the programme focuses on understanding and reducing the **ethical and operational risks associated with generative AI tools**. Participants will examine **Microsoft and GitHub's six principles of responsible AI**, alongside approaches to responsible usage and governance.

By exploring both foundational and advanced Copilot capabilities, learners will gain an understanding of how AI-assisted development can help **increase productivity, reduce repetitive tasks, and improve code quality**.

Exams and Assessments

The **GH-300 exam** associated with this training is available separately.

The GH-300 examination can be taken independently of the course.

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Prerequisites

There are no specific technical prerequisites for this course. However, participants are expected to have a **basic understanding of software development**.

Important: Learners must provide their own **GitHub Copilot Free** licence for use during the training.

You can register for a free GitHub Copilot plan using the following link:

GitHub Copilot Plans: https://github.com/features/copilot/plans

Who Should Attend

This course is suitable for professionals interested in using AI technologies in software development and understanding responsible AI practices.

- **AI Developers and Engineers:** Professionals involved in building and deploying AI systems who need to understand ethical implications and governance frameworks.
- **Data Scientists and Analysts:** Specialists focusing on transparency, fairness, and accountability in AI models.
- **Business Leaders and Managers:** Individuals overseeing AI initiatives and responsible for implementing responsible AI practices.
- **Policy Makers and Regulators:** Professionals developing policies, standards, and regulations relating to AI usage.

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What You Will Learn

By the end of this course, participants will be able to:

- Use **GitHub Copilot effectively** across different software development environments.
- Apply AI-assisted capabilities for **code generation, code analysis, refactoring, and debugging**.
- Develop effective instructions using **Prompt Engineering** techniques to improve coding suggestions.
- Incorporate **Copilot Chat and Copilot Spaces** into development workflows.
- Use **Agent Mode and Cloud Agent** to support the automation of development tasks.
- Understand how **MCP Server** enables GitHub capabilities to integrate with AI-powered tools.
- Apply Copilot features to **unit testing, code reviews, and pull request workflows**.
- Use GitHub Copilot in **JavaScript and Python development scenarios**.
- Evaluate **productivity improvements** achieved through AI-assisted software development.
- Identify and mitigate **ethical and operational risks** associated with AI usage.
- Explain and apply **Microsoft and GitHub's six principles of responsible AI**.
- Understand the fundamental principles of **responsible generative AI usage** in software development.

Outline

1. Responsible Use of AI with GitHub Copilot

- Introduction to **responsible AI** in the context of GitHub Copilot
- Understanding and mitigating risks associated with AI usage
- Exploring **Microsoft and GitHub's six principles of responsible AI**

2. Introduction to GitHub Copilot

- Understanding **GitHub Copilot as an AI-powered coding assistant**
- Generating, understanding, refactoring, and debugging code
- Working with **inline code suggestions** and the conversational **Copilot Chat** experience

3. Introduction to Prompt Engineering with GitHub Copilot

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- Developing effective **prompts** for coding tasks
- Converting code comments into actionable code
- Applying advanced **Prompt Engineering strategies**

4. Introduction to Copilot Spaces

- Creating, configuring, and working with **Copilot Spaces**
- Managing sharing, discoverability, and governance
- Applying **best practices** when working within a Space

5. Using Advanced GitHub Copilot Features

- Exploring advanced Copilot capabilities through a **Python application**
- Configuring GitHub Copilot in **Visual Studio Code**
- Applying practical **Copilot development techniques**

6. GitHub Copilot Across Environments

- Using Copilot in **IDEs, chat interfaces, GitHub.com, command-line environments, and the Copilot app**
- Working with AI-assisted coding and natural-language conversations
- Improving **command-line productivity** with Copilot

7. Management and Customisation Considerations with GitHub Copilot

- Exploring **GitHub Copilot plans** and administrative capabilities
- Understanding contractual protections and disabling suggestions that match public code
- Managing **content exclusions** and troubleshooting configuration issues

8. Developer Use Cases for AI with GitHub Copilot

- Improving **developer productivity** through AI-assisted workflows
- Enhancing the **Software Development Life Cycle (SDLC)**
- Measuring productivity improvements achieved through AI tools

9. Developing Unit Tests Using GitHub Copilot Tools

- Creating **unit tests** with GitHub Copilot and Copilot Chat
- Planning and automating testing workflows

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- Extending existing tests and resolving test issues

10. Building Applications with GitHub Copilot Agent Mode

- Using **Agent Mode** to perform autonomous development tasks
- Managing, updating, and improving code through iterative development

11. Accelerating Development with GitHub Copilot Cloud Agent

- Assigning and tracking development tasks through **Copilot Cloud Agent**
- Customising Cloud Agent and validating its outputs
- Applying **responsible usage practices** when working with Cloud Agent

12. Introduction to MCP Server

- Integrating GitHub capabilities into AI tools through **Model Context Protocol (MCP) Server**
- Configuring and using MCP Server in **Visual Studio Code**
- Connecting **MCP Server with Copilot Chat**

13. Improving Code Reviews and Pull Requests with GitHub Copilot

- Enhancing **code review processes** and supporting development best practices
- Automating code reviews and evaluating their impact

14. Using GitHub Copilot with JavaScript

- Configuring GitHub Copilot for **JavaScript development**
- Using Copilot to update **JavaScript portfolio projects**

15. Using GitHub Copilot with Python

- Setting up GitHub Copilot for **Python development**
- Using Copilot to update **Python web APIs**