GitHub Foundations (GH-900) Training

Duration: **2 Day**

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Overview

GitHub Foundations is an introductory course designed to provide developers with the essential knowledge and practical skills required to use Git and GitHub effectively in modern software development environments. The programme introduces the core concepts, products, and collaborative capabilities of GitHub while establishing a solid foundation in source code management.

Throughout the course, participants will learn how to manage repositories, create and maintain branches, perform commits, work with pull requests, and merge code changes using industry best practices. The programme also explores GitHub's collaboration features, enabling development teams to work more efficiently throughout the software development lifecycle.

Due to the breadth of the official curriculum, Bilginç IT Academy delivers this programme over two days, combining instructor-led sessions with practical laboratories and real-world exercises to ensure participants gain hands-on experience with the GitHub platform.

Prerequisites

Participants are recommended to have:

- A basic understanding of software development processes.
- Familiarity with programming concepts.
- General software development experience.

Who Should Attend

This course is designed for:

- Software developers who want to build a strong foundation in GitHub.
- Technical professionals learning Git and GitHub best practices.
- Developers responsible for managing repositories, branches, commits, and pull requests.
- Team members adopting the GitHub Flow development workflow.
- Software teams looking to improve collaboration using GitHub.
- Users interested in working with GitHub Issues, Discussions, notifications, and subscription management.
- Professionals seeking to adopt GitHub best practices within modern software development environments.

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What You Will Learn

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

- Apply the core principles of version control and use essential Git commands.
- Manage repositories, issues, branches, commits, and pull requests using GitHub.
- Describe GitHub products, licensing options, GitHub Desktop, and GitHub Mobile.
- Configure code scanning and apply GitHub security features to improve repository security.
- Set up and use GitHub Copilot and GitHub Codespaces for AI-assisted and cloud-based software development.
- Manage projects and create technical documentation using GitHub Projects and Markdown.
- Contribute to Open Source and InnerSource initiatives using GitHub workflows.
- Administer GitHub organizations, manage user access, and maintain secure repositories following industry best practices.

Outline

Module 1 - Introduction to Git

- Fundamentals of version control
- The role of Git in software development
- Essential Git commands
- Hands-on Git exercises

Module 2 - Introduction to GitHub

- Core GitHub features
- Understanding the GitHub Flow
- Working with repositories, branches, commits, and pull requests
- Collaboration within GitHub
- Platform management fundamentals
- Guided GitHub exercises

Module 3 - GitHub Products

- GitHub account types and subscription plans
- Comparing GitHub plans and features
- Using GitHub Desktop and GitHub Mobile
- License management and usage reporting
- Billing and consumption insights

Module 4 - Code Security with GitHub

- Introduction to Code Scanning
- Using CodeQL for security analysis
- Integrating third-party security tools
- Automating security checks with GitHub Actions
- Hands-on security configuration

Module 5 - Introduction to GitHub Copilot

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- GitHub Copilot fundamentals
- AI-assisted software development
- Installation and configuration
- Making effective use of AI code suggestions
- Practical development with Visual Studio Code

Module 6 - GitHub Codespaces

- Cloud-based development environments
- Understanding the Codespaces lifecycle
- Personalizing development environments
- Comparing Codespaces and GitHub.dev
- Hands-on development with Visual Studio Code

Module 7 - Managing Projects with GitHub Projects

- Introduction to GitHub Projects
- Creating and managing projects
- Planning and organizing work items
- Workflow automation
- Project reporting and insights

Module 8 - Effective Communication with Markdown

- Markdown fundamentals
- Creating technical documentation
- Writing clear and maintainable GitHub content
- Practical Markdown exercises

Module 9 - Contributing to Open Source

- Finding open-source projects
- Managing contribution workflows
- Creating pull requests
- Communicating with project maintainers
- Working within open-source communities

Module 10 - Managing InnerSource with GitHub

- Introduction to InnerSource
- Building an internal open-source culture
- Collaboration across development teams
- Practical InnerSource exercises

Module 11 - Maintaining Secure Repositories

- Repository security best practices
- Security automation
- Software supply chain security
- GitHub security recommendations

Module 12 - GitHub Administration

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- GitHub administration features
- Authentication mechanisms
- Organization management and permissions
- Enterprise governance

Module 13 - Authentication and Authorization

- User identity management
- Authentication methods
- Authorization models
- Team synchronization

Module 14 - Managing Pull Requests

- Pull request workflows
- Code review practices
- Reviewing and approving changes
- Hands-on pull request exercises

Module 15 - Managing Repository History

- Exploring repository history
- Searching and filtering commits
- Using Git blame and repository insights
- Managing source code history

Module 16 - Using GitHub Copilot with Python

- GitHub Copilot for Python development
- Visual Studio Code integration
- AI-assisted Python programming
- Hands-on Python Web API development