edunet foundation

LAB MANUAL

Integrating Git, GitHub, and Utilize Copilot

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Objective

To set up Git and GitHub integration in VS Code and use GitHub Copilot to generate simple AI-assisted code snippets. This practical will help participants understand how to manage code using version control while using AI tools for faster coding.

Equipment Required

- Computer or laptop with internet connection.
- Installed software:
    - **VS Code**
    - **Node.js** (for running JavaScript if needed)
    - **Git** (latest version)
    - **GitHub Copilot extension** in VS Code
- A valid GitHub account with Copilot access.

Prerequisites

- Basic knowledge of programming concepts (variables, functions).
- Familiarity with VS Code user interface.
- A GitHub account.

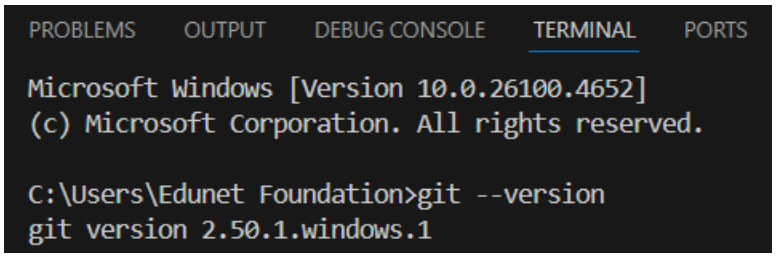
Problem Statement

Integrate Git and GitHub within VS Code and use Copilot to generate a simple function that calculates the square of a number. Commit and push the code to a GitHub repository.

Procedure

1. Setting up Git in VS Code

1. Open **VS Code**.
2. Open the **Terminal** (Terminal → New Terminal). Instead of Powershell select Command Prompt ***(From the options available on the right-side)***
3. Verify Git installation: git --version



4. Configure Git with your user name and email:

   git config --global user.name "Your Name"

   git config --global user.email "you@example.com"

```
C:\Users\Edunet Foundation>git config --global user.name "Alpha"

C:\Users\Edunet Foundation>git config --global user.email "[redacted]"
```

2. Create a New Project Folder

1. Create a new folder called copilot-demo.
2. Open it in VS Code.

3. Initialize Git Repository

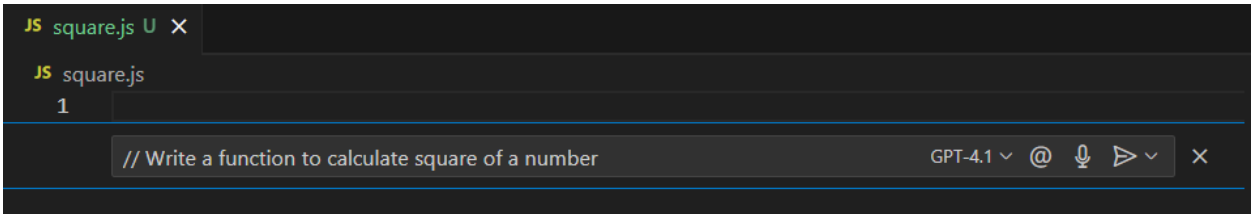
In the terminal: git init

4. Sign in to GitHub from VS Code

- Click on the **Accounts icon** (bottom left).
- Sign in using your GitHub credentials.
- Ensure that the **GitHub Copilot extension** is installed and enabled.

5. Create a New JavaScript File

- Create a file named square.js.
- Type the following comment: // Write a function to calculate square of a number



6. Use Copilot Suggestions

- Wait for Copilot to suggest the function. It may suggest:

```
function square(num) {
    return num * num;
}
console.log(square(5));
```

- Press **Tab** to accept the suggestion.

7. Run the File

In the terminal: node square.js

```
C:\Edunet Foundation\Next Gen EY\FDP\Module 1\Content\Lab\copilot-demo>node square.js
25
```

Output:

25

8. Commit and Push Code

1. Stage and commit changes:

   git add .

   git commit -m "Added square function using Copilot"

   ```
   C:\Edunet Foundation\Next Gen EY\FDP\Module 1\Content\Lab\copilot-demo>git add .

   C:\Edunet Foundation\Next Gen EY\FDP\Module 1\Content\Lab\copilot-demo>git commit -m "Added squar
   e function using Copilot"
   [master (root-commit) 645cb5b] Added square function using Copilot
    1 file changed, 4 insertions(+)
    create mode 100644 square.js
   ```

2. Create a new repository on GitHub (from your browser).
3. Link the local repository:

   git remote add origin https://github.com/your-username/copilot-demo.git

   git branch -M main

   git push -u origin main

Setting up the Environment

- Ensure Git is installed and configured. If git is not installed run the following command in cmd (Admin mode)

  winget install --id Git.Git -e --source winget

  git --version

- Install VS Code extensions:
  - **GitHub Copilot**
  - **GitHub Pull Requests and Issues** (optional)
- Node.js must be installed if running JavaScript code.
- Sign in to GitHub from VS Code.

Key Outcomes

- Git and GitHub integration with VS Code.
- Using GitHub Copilot to write simple JavaScript functions.
- Pushing local code to a GitHub repository.