Installation of VS Code:

Steps to Download and Install Visual Studio Code on Windows 11:

1. **Download VS Code:**
    - Go to the Visual Studio Code website.
    - Click on the "Download" button for Windows.
2. **Run the Installer:**
    - Locate the downloaded `VSCodeUserSetup-x64-1.xx.x.exe` file in your Downloads folder.
    - Double-click the installer to run it.
3. **Installation Steps:**
    - Accept the licence agreement.
    - Choose the destination location (the default location is usually fine).
    - Select any additional tasks (like adding a shortcut to the desktop, adding to PATH, etc.).
    - Click "Install" and wait for the installation to complete.
    - Once installed, click "Finish" to launch VS Code.

Prerequisites:

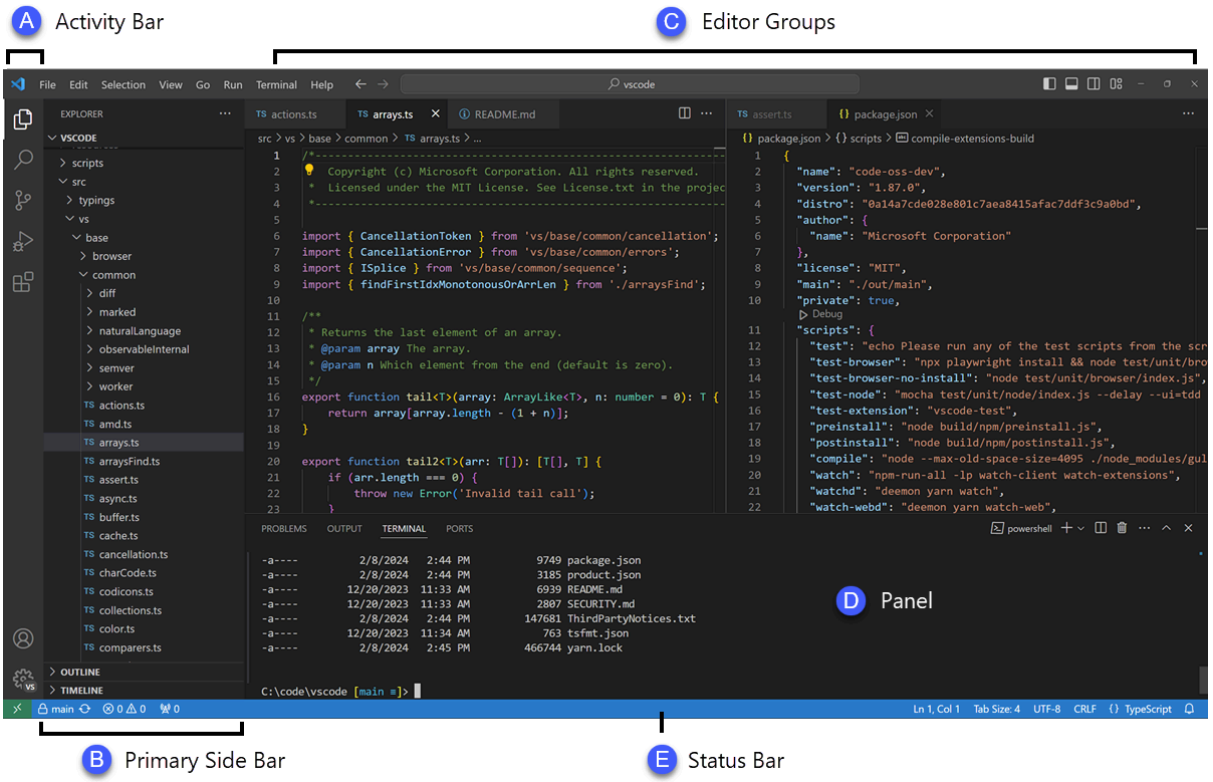
- **Windows 11 Operating System**: Ensure your system is running Windows 11.
- **Internet Connection**: Required for downloading the installer.

First-time Setup:

Initial Configurations and Settings:

1. **Theme and Appearance:**
    - Go to `File` > `Preferences` > `Colour Theme` to choose a theme that suits your preference.
2. **Font Size and Family:**
    - Go to `File` > `Preferences` > `Settings`, then search for `Font Size` to adjust the font size.
    - You can also change the `Font Family` to use a different programming font.
3. **Extensions:**
    - Open the Extensions view by clicking the Extensions icon in the Activity Bar or pressing `Ctrl+Shift+X`.
    - Install essential extensions like:
        - `Prettier - Code formatter`
        - `ESLint`
        - `Live Server`
        - `GitLens`
        - `Debugger for Chrome`

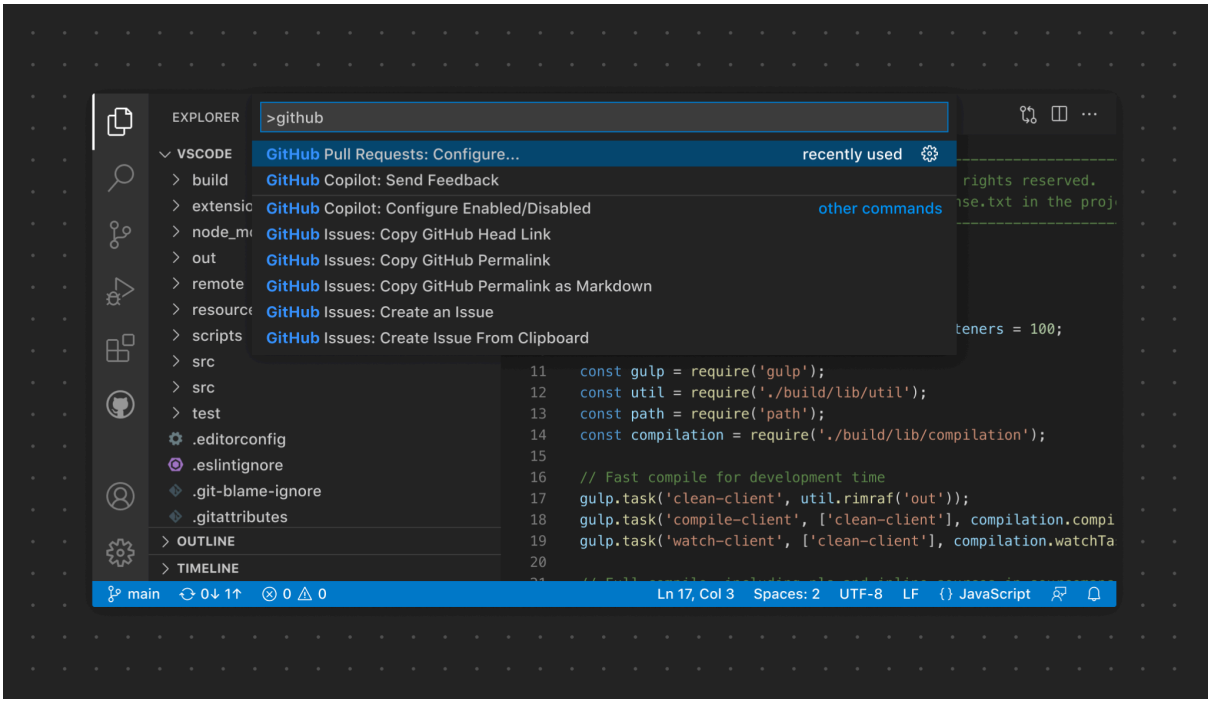
User Interface Overview:



Main Components:

1. **Activity Bar:**
   - Located on the far left side, it provides access to different views such as Explorer, Search, Source Control, Run and Debug, and Extensions.
2. **Side Bar:**
   - The area next to the Activity Bar, which displays different views and functions depending on the icon selected in the Activity Bar.
3. **Editor Group:**
   - The central area where you open and edit files. You can split this area to work on multiple files side by side.
4. **Status Bar:**
   - Located at the bottom of the window, it shows information about the opened project and the current file, like encoding, line number, and git branch.

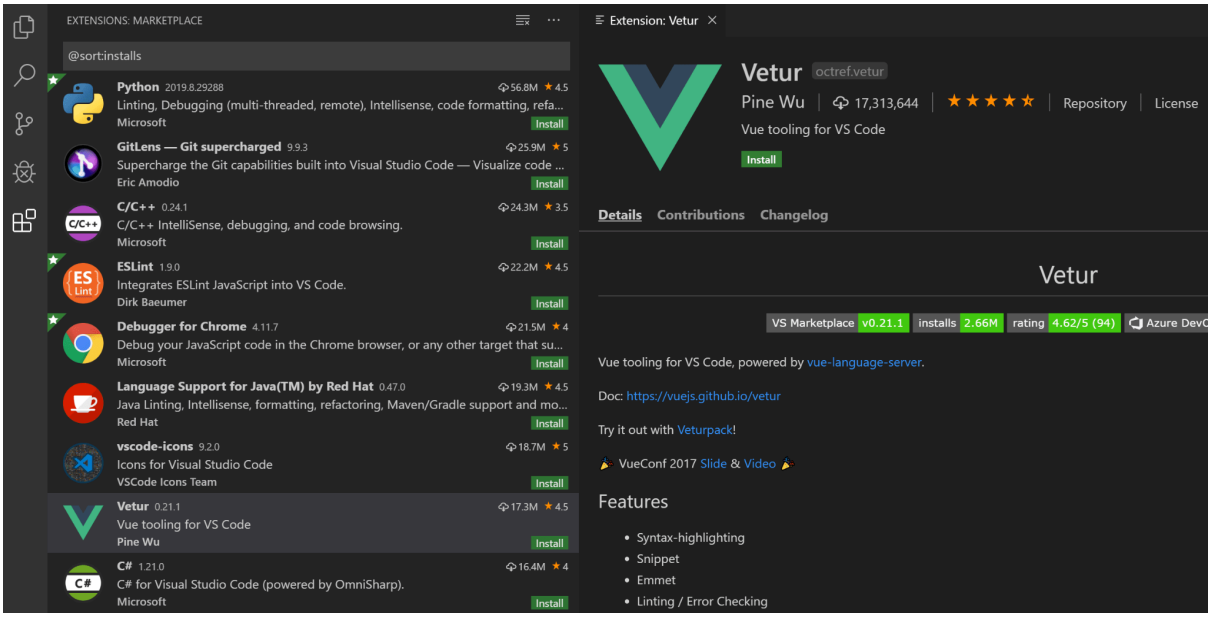
Command Palette:



Accessing and Using the Command Palette:

- **Access:**
  - Press `Ctrl+Shift+P` (Windows/Linux) or `Cmd+Shift+P` (Mac).
- **Common Tasks:**
  - **Open Settings**: Type `Preferences: Open Settings`.
  - **Install Extensions**: Type `Extensions: Install Extensions`.
  - **Git Commands**: Type `Git` and select commands like `Git: Clone`, `Git: Commit`, etc.
  - **Run Tasks**: Type `Tasks: Run Task`.

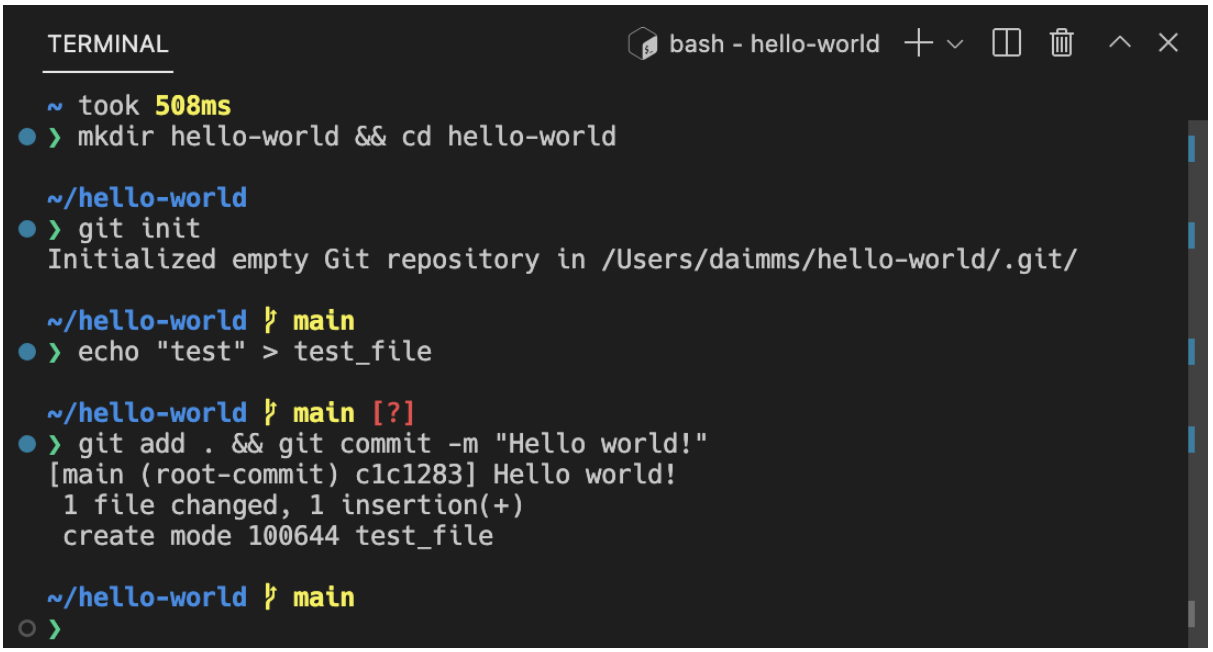
Extensions in VS Code:



Role of Extensions:

- **Functionality:** Extensions add new features and functionality to VS Code, tailored to different programming languages and workflows.
- **Installation:**
  - Open the Extensions view (`Ctrl+Shift+X`).
  - Search for the desired extension.
  - Click `Install`.
- **Essential Extensions for Web Development:**
  - `Prettier - Code formatter`
  - `ESLint`
  - `Live Server`
  - `Debugger for Chrome`
  - `HTML CSS Support`

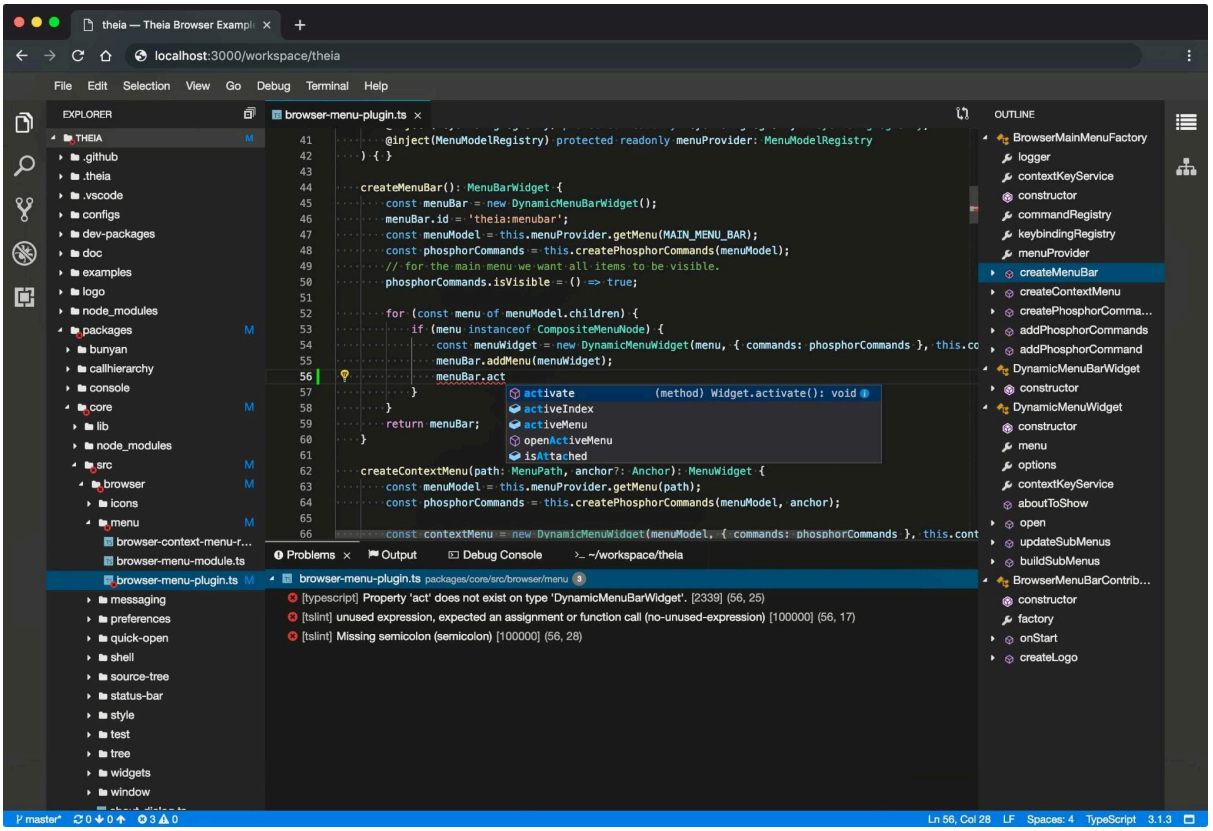
Integrated Terminal:



Opening and Using the Integrated Terminal:

- **Open Terminal:**
  - Press `Ctrl+` (backtick) or go to View>Terminal`.
- **Advantages:**
  - **Seamless Workflow:** Directly execute commands within the same window.
  - **Context Awareness:** The terminal opens in the current project directory by default.
  - **Multiple Terminals:** You can have multiple terminal sessions open simultaneously.

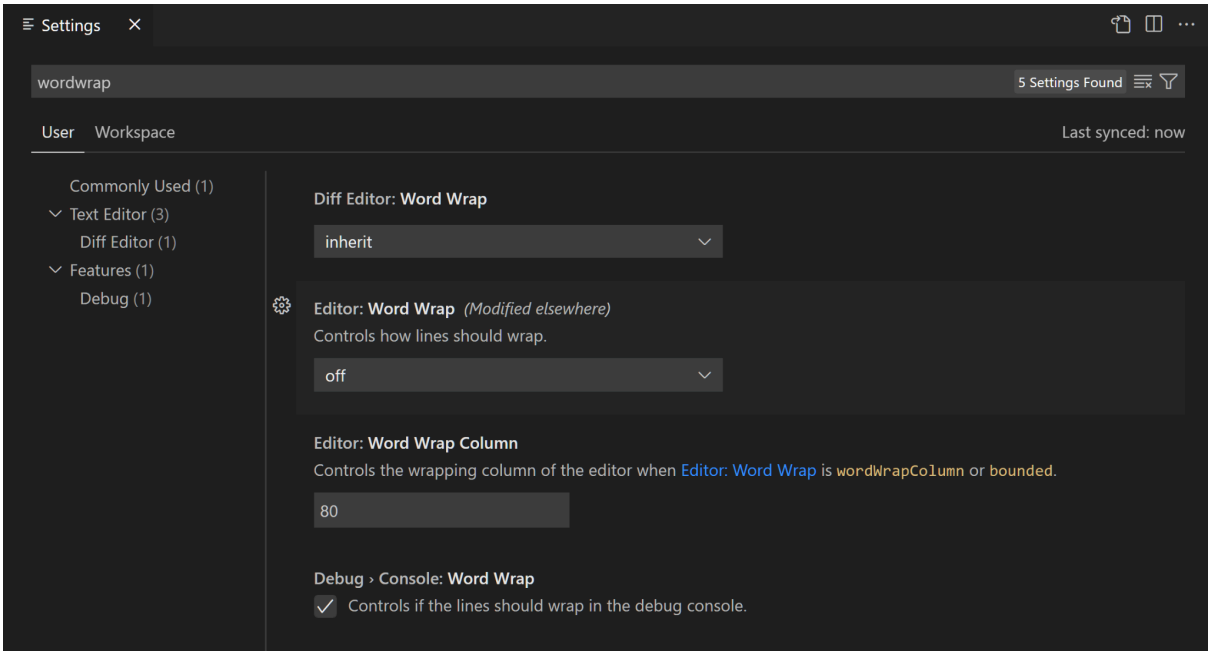
File and Folder Management:



Creating, Opening, and Managing Files and Folders:

1. **Creating:**
   - Right-click in the Explorer view and select `New File` or `New Folder`.
2. **Opening:**
   - Click on a file in the Explorer view to open it in the Editor Group.
3. **Managing:**
   - Use the Explorer view to navigate and manage files and folders.
   - Drag and drop files to move them between folders.
4. **Efficient Navigation:**
   - Use `Ctrl+P` to quickly open files by typing their names.

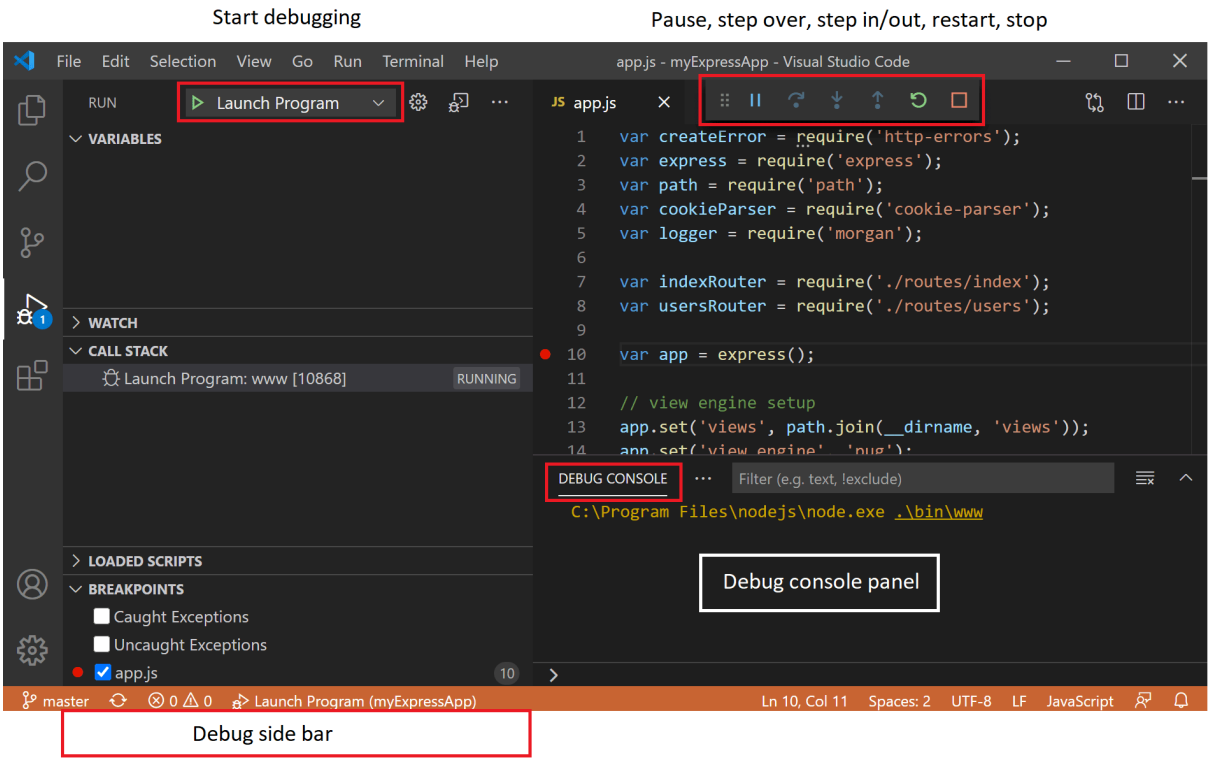
Settings and Preferences:



Customising Settings:

1. **Accessing Settings:**
   - Go to `File` > `Preferences` > `Settings`.
2. **Changing Theme:**
   - Search for `Colour Theme` and select your preferred theme.
3. **Adjusting Font Size:**
   - Search for `Font Size` and adjust it as needed.
4. **Keybindings:**
   - Search for `Keyboard Shortcuts` to customise keybindings.

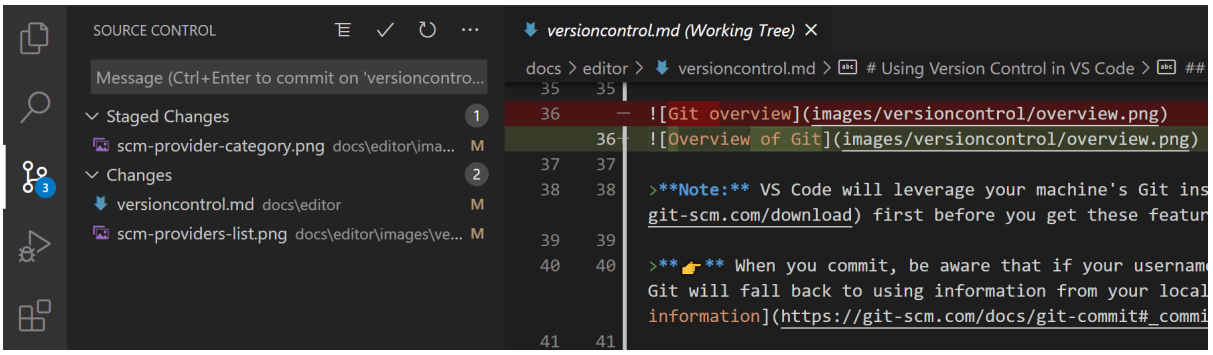
Debugging in VS Code:



Setting Up and Starting Debugging:

1. **Setup:**
   - Open the file you want to debug.
   - Go to the Run and Debug view in the Activity Bar.
   - Click on `Create a launch.json file` to configure debugging settings.
2. **Starting Debugging:**
   - Set breakpoints by clicking in the gutter next to the line numbers.
   - Click the green `Start Debugging` button or press `F5`.
3. **Key Debugging Features:**
   - **Breakpoints:** Pause execution at specific lines.
   - **Watch:** Monitor variables.
   - **Call Stack:** View the call stack to trace function calls.

Using Source Control:



Integrating Git with VS Code:

1. **Initialize Repository:**
   - Open the Source Control view in the Activity Bar.
   - Click `Initialize Repository`.
2. **Making Commits:**
   - Stage changes by clicking the + icon next to files.
   - Enter a commit message and click the ✓ icon to commit.
3. **Pushing Changes:**

   Set up the remote repository:
   bash

   ```
   git remote add origin <your-repo-url>
   ```

   -
   - Push changes:
     bash

     ```
     git push -u origin master
     ```

Installing Visual Studio Code on a Windows 11 operating system is a straightforward process that enhances your development environment with a powerful code editor. By following the outlined steps, you can seamlessly integrate VS Code into your workflow, leveraging its customizable settings, rich extension ecosystem, and integrated tools like the terminal for efficient coding. This installation not only provides a versatile platform for coding but also ensures you have access to essential features and extensions tailored to your development needs. Embracing Visual Studio Code enhances productivity and facilitates a more effective coding experience on Windows 11.