Installation of VS Code:

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

1. Download VS Code:
- Go to the official Visual Studio Code website: Microsoft Visual Studio Code [Online].
- Here you will find the button called ‘ Download for Windows’, click on it.

2. Run the Installer:
- After the download is successful, the next thing is to open the downloaded file that is `VSCodeSetup.exe`.
- After that heed the installation wizard. They can be applied to the factory settings or set from scratch depending on the user’s choice.
- Accept other provisions as well as the terms and conditions.
- Select the folder to which this installation will install the files.
- Additional tasks include creating a desktop icon, and/or adding VS Code to the PATH which can be done at will.

3. Finish Installation:
- In this case you need to click the “Install” button.
- Once the installation is done, click ‘Finish’ and this will open the Visual Studio Code.

Prerequisites:
- Make sure the Windows you have is Windows 11.
- . NET Framework extensions can require it, but it is not obligatory for the basic configuration of VS Code.

First-time Setup:

Initial Configurations and Settings:

1. Theme and Appearance:
- Select `File > Preferences > Color Theme`, this will allow you to select a theme that fancies you, for instance, Dark+, Light+.

2. Font and Size:
- Press `CTRL` + `,` or go to `File > Preferences > Settings`.
- Finally, type in “Font Size” to change the font size with which you are comfortable.
- Type in “Font Family” to type in the coding font which you would wish to use.

3. Extensions: Open the Extensions option by either clicking on the Extensions icon located on the Activity Bar which is found on the side of the web browser window or by pressing the hotkey of `Ctrl + Shift + X.

- Install essential extensions such as:- Install essential extensions such as:
- More GitHub-ish (for code formatting)
- ESLint(for linting JavaScript)
IDE — Integrated Development Environment (For Python development only)
- Live Server (for doing web development with the feature of live-reloading)
- GitLens (that contains advanced features for working with Git)

4. Settings Sync:
- Enable Settings Sync to synchronize your VS Code settings across multiple devices: It is located at `File > Preferences > Settings Sync > Turn On`.

User Interface Overview:

Main Components of the VS Code User Interface:Main Components of the VS Code User Interface:

1. Activity Bar:
- At the extreme left column, it has buttons for other perspectives such as explorer, search, source control, run and debug, and extensions among others.

2. Side Bar:
- As shown in figure 1, it is placed near the Activity Bar and shows the contents of the view which is selected at the moment: files and folders in case of File explorer or search results, or information about sources and their status in case of Version control.

3. Editor Group:
- It refers to the main area of the application through which one opens and manipulates documents. You may have many editor groups at a time in parallel.

4. Status Bar:
- It is placed in the bottom and provides some details of the current file being edited like encoding, line break, and language. It also has navigation buttons leading to different configurations it has.

Command Palette:

What is the Command Palette and How to Access it:What is the Command Palette and How to Access it:

- Present in the VS Code, the Command Palette has all the commands that you can execute in the application.
- Type it with the help of hotkeys: `Ctrl + Shift + P` or `F1`.
- Common Tasks:
- Open a file: This options' associated shortcut is `Ctrl + P `.

- Change language mode: It is a shortcut key that can be entered as `Ctrl + K M`.
- Install extensions: The command that is used in the browser address bar to install the extension is `Ext install [extension name]`.
- Toggle terminal: This mostly involves using the `Ctrl + `
Extensions in VS Code:

Role and Management of Extensions:Role and Management of Extensions:

- Role: Extensions bring in features to the VS Code that includes programming languages, debuggers, and tools in analyzing the code.
- Finding Extensions:
- Navigate to the Extensions view; you can open this by clicking the Extensions icon on the Activity Bar or by pressing Ctrl + Shift + X.
- Some extensions are categorically installed, while others are grabbed from the Chrome store, and to get a particular extension; you can use the search bar.
- Installing Extensions:
- Select the option of the installation of the extension, which is located on the left of its name or name the extension just click on the word “Install”.
- Managing Extensions:
- Extensions that have been installed can be run or stopped, or removed from the Extensions view.

Essential Extensions for Web Development:Essential Extensions for Web Development:

- HTML CSS Support
- Brief JavaScript (ES6) examples
- Debugger for Chrome
- Auto Rename Tag
- Path Intellisense

Integrated Terminal:

How to Open and Use the Integrated Terminal:How to Open and Use the Integrated Terminal:

- Open the terminal: It is accessible by pressing `Ctrl + ` or visiting `View > Terminal`.
- Advantages:
- Having native access and not opening up a new window in VS Code.
- Can run multiple instances of the terminal at the same time.
- To the editor, to run scripts directly and switch to the output interface easily.

File and Folder Management:

Creating, Opening, and Managing Files and Folders:Creating, Opening, and Managing Files and Folders:

- Creating:
- Go to the context menu by right-clicking in the explorer view area and click on “New File”, “New Folder”.
- Use the command `File: The two ways are `New File` or `File: New Folder` available in the Command Palette.
- Opening:
- Open files/folders and paste them in the VS Code user interface by simply dragging and dropping them over the software’s windows.
- Open Folder Using `File > Open Folder`.
- Navigating:
 - Decide on the Explorer view for the files.
 - To open files simply enter the name of a file use `Ctrl + P`.
 - Apply breadcrumbs to move between files and subfolders at the top of the editor.

 Settings and Preferences:

 Customizing Settings:

 - Access Settings: So, it can be accessed using the following path, `File > Preferences > Settings` or by using keyboard shortcut `Ctrl + ,`.
 - Changing Themes:
 - `File > Preferences > Color Theme` or use the Command Palette `Preferences: This milestone output would be identified as ‘Color Theme’.
 - Font Size:
 - Look for the ”Font Size” in the settings and change the value of it.
 - Keybindings:
 - > on the _Menu Bar:_ ‘File > Preferences > Keyboard Shortcuts’ OR use ‘Ctrl + K Ctrl + S’ to set keybindings.

 Debugging in VS Code:

 Steps to Set Up and Start Debugging:Steps to Set Up and Start Debugging:

 1. Open the Debug View: Use the Debug icon located in the Activity Bar or press the hotkeys `Ctrl + Shift + D`.
 2. Create a Debug Configuration:
 - You are able to do this by going to the debug view, expanding the chimpanzee template you are working on and clicking on the gear icon to bring up `launch. json`.
 - Choose the right environment (Node. js, Python etc. ).
 3. Set Breakpoints: Place the cursor in the gutter left to the line number, there you will be able to set breakpoints.
 4. Start Debugging: There is the green triangle play button in the right-top corner of the Debug view or press the “F5” key on the keyboard.

Key Debugging Features:

- Breakpoints
- The sequence most commonly used is: step over, step into, and step out.
- Watch expressions
- Variable inspection
- Call stack view

Using Source Control:
Integrating Git with VS Code:Integrating Git with VS Code:

1. Initialize a Repository:
- To open the Source Control view click on the Source Control icon on the Activity Bar.
- To do this go to the screen that displays the list of claims and click on the “Initialize Repository” button.
2. Making Commits:

- Stage changes by clicking on the `+ ` sign beside the files.
- Type a message, or fill in the template for this commit in order to create a commit.
3. Pushing Changes to GitHub:
- Right click on the Source Control view and click on `Push` which is the three dots (. .. ) on the right side.
- Configure the remote at this point with the URL of the remote repository.