**Installation of VS Code**

Steps to Download and Install Visual Studio Code on Windows 11

1. Download the Installer:

- Visit the [official VS Code website](https://code.visualstudio.com/).

- Click on the "Download for Windows" button to download the installer.

2. Run the Installer:

- Locate the downloaded installer file (usually in your Downloads folder) and double-click to run it.

3. Installation Process:

- Accept the license agreement.

- Select the destination folder where you want VS Code to be installed.

- Choose any additional tasks (such as creating a desktop icon, adding to PATH, etc.).

- Click "Install" to start the installation.

4. Launch VS Code:

- Once the installation is complete, you can choose to launch VS Code immediately or find it in your Start menu.

Prerequisites:

- Ensure your system meets the minimum requirements for running VS Code.

- Administrator privileges to install software.

First-time Setup

Initial Configurations and Settings:

1. Theme and Appearance:

- Go to `File > Preferences > Color Theme` to choose your preferred color theme.

- Adjust font size and family in `File > Preferences > Settings > Text Editor > Font`.

2. Extensions:

- Install essential extensions such as:

- Python for Python development.

-Live Server- for live preview of web applications.

3.\*Editor Settings:

- Enable format on save: `File > Preferences > Settings > Text Editor > Formatting`.

- Set up autosave: `File > Preferences > Settings > Files: Auto Save`.

**User Interface Overview**

Main Components of the VS Code User Interface:

1. Activity Bar:

- Located on the far left side, provides access to different views like Explorer, Search, Source Control, Run and Debug, and Extensions.

2. Side Bar:

- Located next to the Activity Bar, shows context-specific information and tools, such as a list of files in the Explorer view.

3. Editor Group;

- The central area where files are opened and edited. You can have multiple editor groups for side-by-side editing.

4. Status Bar

- Located at the bottom of the window, provides information about the current file, such as line number, encoding, and Git branch.

**Command Palette**

What is the Command Palette and How to Access It:

- The Command Palette provides a quick way to access VS Code commands and settings.

- Access it by pressing `Ctrl+Shift+P` or `F1`.

Common Tasks Using Command Palette

- Opening files: Type `Open File`.

- Changing settings: Type `Preferences: Open Settings`.

- Running tasks: Type `Run Task`.

**Extensions in VS Code**

Role of Extensions and How to Manage Them:

1. Finding Extensions

- Go to the Extensions view by clicking the Extensions icon in the Activity Bar or pressing `Ctrl+Shift+X`.

2. Installing Extensions:

- Search for an extension by name or keyword, click on it, then click the `Install` button.

3. Managing Extensions:

- Disable or uninstall extensions via the Extensions view.

- Manage extension settings through `File > Preferences > Settings > Extensions`.

Essential Extensions for Web Development:

Integrated Terminal

How to Open and Use the Integrated Terminal:

- Open the terminal by selecting `View > Terminal` or pressing `Ctrl+` ` ` (backtick).

Advantages of Integrated Terminal:

- Directly run commands and scripts without leaving the editor.

- View outputs alongside your code.

**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:

- Double-click a file in the Explorer view to open it.

- Use `Ctrl+O` to open a file from the filesystem.

3. Managing

- Use the Explorer view to move, rename, and delete files and folders.

- Navigate between files with `Ctrl+P` to quickly open files by name.

Settings and Preferences

Customizing Settings in VS Code:

1.Access Settings:

- Go to `File > Preferences > Settings` or press `Ctrl+,`.

2. Changing Theme:

- `File > Preferences > Color Theme`.

3. Adjusting Font Size:

- `File > Preferences > Settings > Text Editor > Font`.

4. Changing Keybindings:

- `File > Preferences > Keyboard Shortcuts`.

**Debugging in VS Code**

Setting Up and Starting Debugging:

1. Set Up:

- Open the file to debug.

- Add breakpoints by clicking in the gutter next to the line numbers.

2. Start Debugging:

- Open the Run and Debug view from the Activity Bar.

- Click `Run and Debug` button and choose the appropriate environment.

3. Key Debugging Features:

- Breakpoints, watch expressions, call stacks, and variable inspection.

**Using Source Control**

Integrating Git with VS Code:

1. Initializing a Repository:

- Open the Source Control view from the Activity Bar.

- Click `Initialize Repository`.

2. Making Commits

- Stage changes, enter a commit message, and click `Commit`.

3.Pushing Changes:

- Connect to a remote repository like GitHub.

- Use `Push` to upload your changes.