***Installation of Visual Studio Code (VS Code)***

**I)Steps to Download and Install VS Code on Windows 11**

1.Download Visual Studio Code:

- Go to the official VS Code website(Visual Studio Code).

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

2. Run the Installer.

- Locate the downloaded file on your downloads and double-click it to start the installation.

3. Accept License Agreement

- Read and accept the license agreement, then click "Next."

4. Select Destination Location

- Choose the destination folder where you want to install VS Code(leave the path as set as default) and click "Next."

5. Select Additional Tasks

- Choose additional tasks such as creating a desktop icon or adding VS Code to the PATH environment variable. Click "Next."

6. Install

- Click "Install" to begin the installation process.

7. Launch VS Code

- Once the installation is complete, click "Finish" to launch VS Code.

**II) First-time Setup**

****General Settings:****

* ****Themes:**** Choose a theme that is easy on your eyes and matches your preferences.
* ****Font Size and Zoom:**** Adjust the font size and zoom level for comfortable reading and coding.
* ****Keyboard Shortcuts:**** VS Code uses default keyboard shortcuts, but can be customized to match your workflow or preferences.
* ****Auto Save:**** Enable auto-save to avoid losing work in case of crashes.
* ****File Indentation:**** Configure indentation settings (spaces or tabs) to match your coding style and project preferences.

****Extensions:****

* ****Language support:**** Install extensions for the specific programming languages one will be using. These extensions provide syntax highlighting, code completion, debugging, and other language-specific features.
* ****Linters and Formatters:**** Linters help identify potential errors and enforce coding style guidelines. Formatters automatically format your code according to a consistent style.
* ****Version control:**** Integrate Git or other version control systems directly into VS Code for easier management of your codebase.
* ****Productivity:**** Explore extensions that enhance productivity, such as code snippets, bracket pairing, improved search functionality, and debugging tools.

**III)User Interface Overview**

****1. Activity Bar (leftmost panel):****

This vertical bar on the far left acts as a quick access point for various functionalities within VS Code. It typically displays a set of icons representing different views:

* ****Files:**** Opens the File Explorer view for managing your project files and folders.
* ****Search:**** Allows you to search your codebase for specific terms or patterns.
* ****Source Control (Git):**** Provides access to Git functionalities like committing changes, viewing version history, and pushing to remote repositories (if Git is integrated).
* ****Run and Debug:**** Used for launching and debugging your code.
* ****Extensions:**** Opens the Extensions view for browsing, installing, and managing extensions.
* ****More icons:**** Additional icons might appear depending on installed extensions, offering quick access to their functionalities.

****2. Side Bar (second panel from the left):****

This panel acts as a container for different views that provide more detailed information or functionalities related to your project. The specific views displayed depend on the context and what's currently selected in the Activity Bar:

* ****Explorer View:**** This is the default view displayed when the Files icon is selected in the Activity Bar. It shows your project folders and files, allowing you to navigate, open, and manage them.
* ****Search View:**** Appears when the Search icon is selected. It provides options for refining your code searches and displaying search results.
* ****Source Control View:**** Visible when using Git integration. It shows the Git status of your files, commit history, and allows you to interact with your Git repository.
* ****Other Views:**** Extensions can add their own views to the Side Bar, providing specific functionalities related to the extension's purpose.

****3. Editor Group (center area):****

This is the heart of VS Code, where you write and edit your code. It's the main workspace and can accommodate multiple files open simultaneously. Each open file is displayed as a tab within the Editor Group. You can switch between open files using these tabs or keyboard shortcuts.

****4.Status Bar (bottom panel):****

This horizontal bar at the bottom of the window displays various informational elements:

* ****Current Line Number:**** Indicates the line number where your cursor is positioned in the active editor tab.
* ****Indentation Mode:**** Shows whether your code is indented using spaces or tabs.
* ****Encoding:**** Displays the character encoding used for the current file (e.g., UTF-8).
* ****Git Status (if integrated):**** Provides a quick overview of the Git status of your files (modified, staged, etc.).

**IV) Command Palette**

How the command palette can be accessed:

- Press `Ctr l + Shift + P` or `F1` to open the Command Palette.

1. Task that can be performed using the command palette

-Change color theme.

- Install extensions.

- Open settings.

**V)Extensions in VS Code**

What are the roles of extension in VS Code?

- Extensions enhance functionality like language support, themes, debuggers, etc.

How to find and Install extensions:

- Open the Extensions view with `Ctr l + Shift + X`.

- Search for extensions and click "Install."

How to Manage Extensions:

- Disable or uninstall extensions from the Extensions view.

Examples of extensions used in web development:

- Live Server - HTML Snippets - CSS IntelliSense.

**VI)Integrated Terminal**

How to open and use the integrated terminal

- Go to View > Terminal or press Ctr l + .

The advantages of using integrated Terminal over External Terminal.

- Integrated within the IDE, providing a seamless development experience.

- Supports multiple terminal instances.

- Direct access to project directories.

**VII) File and Folder Management**

1.How to create Files/Folders:

- Right-click in the Explorer view and select "New File" or "New Folder."

2. How to open Files/Folders:

- Click on files in the Explorer view or use File > Open Folder.

3. How to navigate:

- Use Ctr l + P to quickly open files.

- Use the breadcrumbs at the top of the editor to navigate directories.

**VII) Settings and Preferences**

Where to find and customize settings:

- Go to File > Preferences > Settings or press Ctr l + ,.

Change Theme:

- Search for "Color Theme" and select a new theme.

Changing the Font Size

- Search for "Font Size" and set your preferred size.

Modify Key bindings:

- Go to File > Preferences > Keyboard Shortcuts or press Ctr l + K, Ctr l + S.

**IX) Debugging in VS Code**

Setting Up and Starting Debugging in a simple program.

Open Debug View:

- Click the Run and Debug icon in the Activity Bar or press `Ctrl + Shift + D`.

Add Configuration:

- Click on the gear icon to add a debug configuration.

Set Breakpoints:

- Click in the gutter next to the line numbers.

Start Debugging:

- Click the green play button or press F5.

Key debugging features in VS Code.

- Watch variables, call stack, and output window.

**X) Using Source Control**

How to Integrating Git with VS Code

Initialize Repository:

- Open the Source Control view with Ctr l + Shift + G.

- Click "Initialize Repository."

Making Commits:

- Stage changes, enter a commit message, and click the check mark to commit.

Pushing to Git Hub:

- Set up a remote repository on Git Hub.

- Use the Command Palette (Ctr l + Shift + P).