**Answers of SE- Assignment – 5**

**1.** To download and install Visual Studio Code (VS Code) on Windows 11

**Prerequisites:**

**Operating System**: Ensure you are running Windows 11.

**Administrator Access**: You need administrator rights to install software on your computer

**Steps to Install VS Code**

**Download the Installer:**

* + Open your web browser and go to the [Visual Studio Code website](https://code.visualstudio.com/).
  + Click on the "Download for Windows" button. This will download the VS Code installer for Windows.

**Run the Installer:**

* + Once the download is complete, navigate to your Downloads folder and double-click on the VSCodeSetup.exe file to run the installer.
  + If prompted by the User Account Control (UAC), click "Yes" to allow the installer to make changes to your device.

**Install VS Code:**

* + **License Agreement**: Read the license agreement, and if you agree, select "I accept the agreement" and click "Next".
  + **Select Destination Location**: Choose the installation location or leave it as the default. Click "Next".
  + **Select Additional Tasks**: Choose any additional tasks you want to set up during the installation. Common options include:
  + Adding "Open with Code" action to the Windows Explorer context menu.
  + Adding "Open with Code" action to the Windows Explorer directory context menu.
  + Registering VS Code as the default editor for supported file types.
  + Adding to PATH (this allows you to open VS Code from the command line).
  + Click "Next" after making your selections.
  + **Ready to Install**: Review your installation choices and click "Install" to begin the installation.

**Complete Installation:**

* + The installer will copy files and set up VS Code on your computer. Once the installation is complete, you can choose to launch VS Code immediately by checking the "Launch Visual Studio Code" box.
  + Click "Finish" to close the installer.

**2.** First-time Setup:

* After installing Visual Studio Code (VS Code), it's important to adjust certain settings and install extensions to create an optimal coding environment. Here are some recommended steps for the initial setup:

**Open Settings** Click on the gear icon (⚙️) in the lower-left corner of the VS Code window and select "Settings".

**Adjust Editor Settings:**

* Font Size and Family**: `**editor.fontSize: Set your preferred font size (e.g., 14).
* `editor.fontFamily: Choose a coding-friendly font (e.g., "Fira Code", "Consolas", "Courier New", monospace).

**Theme:** Choose a theme that suits your preference by going to the Extensions view (Ctrl+Shift+X), searching for "theme", and installing a theme extension (e.g., "One Dark Pro", "Dracula Official").

### **Essential Extensions**

### **Language Support:**

### **Python:** Install the Python extension by Microsoft for Python development.

### **JavaScript/TypeScript:** These are built-in, but additional extensions like "ESLint" and "Prettier" can be useful.

### **C++:** Install the C++ extension by Microsoft.

### **Java:** Install the Extension Pack for Java by Microsoft.

### **Sync Settings**

**Enable Settings Sync:**Click on the gear icon (⚙️) and select "Turn on Settings Sync".

* + Sign in with your Microsoft or GitHub account to sync your settings, extensions, and keybindings across multiple devices.

### **Terminal Setup**

### **Open Integrated Terminal:** Press Ctrl+ (backtick) or go to View > Terminal to open the integrated terminal.

### Set your preferred shell (PowerShell, Command Prompt, Git Bash, etc.) by going to File > Preferences > Settings, and searching for terminal.integrated.shell.windows.

**3.** Visual Studio Code (VS Code) has a clean and intuitive user interface that consists of several main components.

### **Activity Bar**

**Location:** Left side of the VS Code window

**Purpose:**

* The Activity Bar provides quick access to different views and functions within VS Code.
* It contains icons for navigating between the Explorer, Search, Source Control, Run and Debug, Extensions, and other installed views.

**Main Icons:**

* **Explorer (📁):** Shows the file and folder structure of your workspace.
* **Search (🔍):** Allows you to search for files, text, or symbols across your workspace.
* **Source Control (🔄):** Integrates with version control systems like Git.
* **Run and Debug (🐞):** Provides tools to start debugging, view variables, call stack, and breakpoints.
* **Extensions (🔌):** Manages and installs extensions to enhance functionality.

**Side Bar**

**Location:** Next to the Activity Bar, on the left side of the window

**Purpose:**

* The Side Bar displays different views depending on the selected activity from the Activity Bar.
* It serves as the main navigation and management panel for files, search results, version control, debugging information, and extensions.

### **Editor Group**

**Location:** Center of the VS Code window

**Purpose:**

* The Editor Group is where you write and edit your code. It can host multiple editors (tabs) side-by-side or in a grid layout.

**Features:**

* **Tabs:** Each open file appears as a tab at the top of the Editor Group.
* **Split Editors:** You can split the Editor Group to view multiple files simultaneously (e.g., side-by-side editing).
* **Breadcrumb Navigation:** Located at the top of the editor, it shows the current file path and allows for quick navigation.

### **Status Bar**

**Location:** Bottom of the VS Code window

**Purpose:**

* The Status Bar displays information about the current state of the editor and workspace.
* It shows details such as line number, column number, file encoding, end-of-line sequence, language mode, and Git branch.

4. The Command Palette in Visual Studio Code (VS Code) is a powerful feature that allows you to access and execute various commands quickly and efficiently without navigating through menus. It provides a quick way to perform a wide range of tasks within VS Code using a simple and consistent interface.

### **Accessing the Command Palette -** You can open the Command Palette in VS Code by using the following methods:

* **Keyboard Shortcut:** Press Ctrl+Shift+P (Windows)
* **Menu Bar:** Click on View in the menu bar and select Command Palette....

### **Using the Command Palette** When you open the Command Palette, a text input field appears at the top of the VS Code window. You can start typing the name of the command you want to execute, and the Command Palette will show a list of matching commands. You can then select the desired command from the list to execute it.

Here are some examples of common tasks that can be performed using the Command Palette:

**Opening Files and Folders:**

* Open File...: Quickly open a file by name.
* Open Folder...: Open a folder to create a new workspace.

**Terminal Commands:**

* >Terminal: Create New Integrated Terminal: Open a new integrated terminal instance.
* >Terminal: Run Active File: Run the currently active file in the terminal.

**5.** Extensions play a crucial role in Visual Studio Code (VS Code) by enhancing its functionality and allowing users to customize their development environment to suit specific needs. Extensions can provide additional language support, tools for debugging, version control integration, code formatting, and much more.

### **Finding, Installing, and Managing Extensions**

**Using the Extensions View:**

* + Open the Extensions view by clicking the Extensions icon in the Activity Bar on the side of the window or by pressing Ctrl+Shift+X.
  + Use the search bar at the top of the Extensions view to find specific extensions or browse through categories and recommendations.

**VS Code Marketplace:**

* + Visit the [Visual Studio Code Marketplace](https://marketplace.visualstudio.com/vscode) to search for extensions, read reviews, and view detailed information.

#### **Installing Extensions**

#### **From the Extensions View:**

#### Find the desired extension in the Extensions view.

#### Click the Install button next to the extension. Once installed, some extensions might require you to reload the VS Code window (you’ll be prompted if necessary).

#### **Managing Extensions**

**Enable/Disable Extensions:**

* + In the Extensions view, click the gear icon (⚙️) next to the installed extension.
  + Select Disable to turn off the extension or Enable to turn it back on.

**Uninstall Extensions:**

* + Click the gear icon (⚙️) next to the installed extension and select Uninstall.

**Extension Settings:**

* + Many extensions have configurable settings. After installing, you can find these settings by clicking the gear icon (⚙️) and selecting Extension Settings.

**Updating Extensions:**

* + Extensions are updated automatically, but you can manually check for updates by clicking the gear icon (⚙️) in the Extensions view and selecting Check for Updates.

### **Essential Extensions for Web Development**

* **HTML, CSS, and JavaScript Support:**
  + **HTML Snippets:** Provides HTML5 code snippets.
  + **CSS Peek:** Allows peeking at CSS definitions from HTML files.

**6.** The integrated terminal in Visual Studio Code (VS Code) is a powerful feature that allows you to run command-line tools and scripts directly within the editor. This seamless integration enhances productivity by allowing you to perform tasks without leaving the editor environment.

### **Opening the Integrated Terminal**

### There are several ways to open the integrated terminal in VS Code:

### **Keyboard Shortcut:**

* + Press Ctrl+ (backtick) on Windows

### **Using the Integrated Terminal**

Once the terminal is open, you can use it just like any other terminal:

* **Run Commands:** Type and run any command-line tools or scripts you need, such as git, python, etc.

### **Advantages of Using the Integrated Terminal**

**Seamless Workflow:** The integrated terminal allows you to execute commands and see their results without switching away from the editor, maintaining your focus and workflow.

* **Ease of Use:** Quickly open and close terminals, and easily manage multiple terminal instances within the same window.
* **integration with VS Code Features:** The terminal integrates with other VS Code features like version control and debugging, making it easier to manage commits, run build scripts, and debug applications.
* By using the integrated terminal in VS Code, you streamline your development workflow, making it more efficient and cohesive. This reduces context switching, provides a consistent environment, and leverages the full power of VS Code's features directly from within the editor.

**7.** Managing files and folders efficiently is crucial for a productive development workflow in Visual Studio Code (VS Code). Here's how to create, open, and manage files and folders, as well as navigate between them efficiently.

### **Creating Files and Folders**

**Using the Explorer:**

* + Open the Explorer view by clicking the Explorer icon in the Activity Bar or pressing Ctrl+Shift+E.
  + Right-click in the Explorer pane where you want the new file and select New File.
  + Enter the file name and press Enter.

#### **Creating a New Folder**

**Using the Explorer:**

* + Open the Explorer view.
  + Right-click in the Explorer pane where you want the new folder and select New Folder.
  + Enter the folder name and press Enter.
* **Navigating Between Files and Directories Efficiently**
* **Explorer View:**

Use the Explorer to quickly navigate between files and folders in your workspace.

Collapse and expand folders as needed to manage your view.

* **Quick Open:**

Press Ctrl+P and type part of the file name to quickly switch between files.

Use: followed by a line number to jump to a specific line in a file (e.g., index.js:25).

* **Go to Definition:**

Right-click on a symbol and select Go to Definition or press F12 to navigate to its definition.

Use Ctrl+Click on a symbol to go to its definition.

8. In Visual Studio Code (VS Code), users can find and customize settings to personalize their development environment. Here’s how to access and modify settings, including changing the theme, font size, and keybindings.

### **Accessing Settings**

### **Settings UI:** Click on the gear icon (⚙️) in the lower-left corner of the VS Code window and select Settings.

* **Changing the Theme:-** Using the Settings U**I:**
* Open the Settings UI (Ctrl+,).
* In the search bar at the top, type color theme.
* Click on Color Theme and select your preferred theme from the dropdown menu.

### **Changing the Font Size :-**Using the Settings UI: Open the Settings UI (Ctrl+,).

* + In the search bar, type font size.
  + Locate Editor: Font Size and enter your desired font size in the input field.

### **Changing Key bindings:-** Using the Key bindings UI: Click on the gear icon (⚙️) and select Keyboard Shortcuts.

### Alternatively, press Ctrl+K Ctrl+S to open the Key bindings UI.

### **9**. Setting Up and Starting Debugging

### Install Necessary Extensions

Before you can start debugging, make sure you have the appropriate extensions installed for the language you are working with. For example:

* **Python:** Install the Python extension.
* **JavaScript/TypeScript:** The built-in Node.js extension is sufficient.
* **Open Your Project**

Open your project folder in VS Code by clicking File > Open Folder... or using the shortcut Ctrl+K, Ctrl+O.

* Create a Debug Configuration

Open the Run and Debug View:

* + Click on the Run icon in the Activity Bar on the side of the window or press Ctrl+Shift+D.