

## **Installation of VS Code:**

### **Steps to download and install Visual Studio Code on Windows 11:**

#### **1. Download VS Code:**

- Visit the [Visual Studio Code website](#).
- Click on the “Download for Windows” button.

#### **2. Run the Installer:**

- Once the download is complete, run the VSCodeSetup.exe file.
- Follow the installation wizard. Accept the license agreement and choose the installation location.

#### **3. Select Additional Tasks:**

- During installation, you can choose additional tasks such as:
  - Adding Open with Code action to the Windows Explorer context menu.
  - Registering VS Code as the default editor for supported file types.
  - Adding VS Code to the PATH environment variable.

#### **4. Complete the Installation:**

- Click on the “Install” button and wait for the installation to complete.
- Once done, click “Finish” to launch Visual Studio Code.

## **Prerequisites:**

- Windows 11 operating system.
- Administrator privileges to install software.
- .NET Framework (typically already included in Windows 11).

## **First-time Setup:**

### **Initial configurations and settings:**

#### **1. Theme and Appearance:**

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

#### **2. Font Size and Family:**

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

- Search for "Font Size" to set a preferred font size.
- Similarly, set the "Font Family" if you prefer a different font.

### 3. **Extensions:**

- Install essential extensions like:
  - **Prettier** for code formatting.
  - **ESLint** for JavaScript linting.
  - **Live Server** for a live preview of web pages.
- Access the Extensions view by clicking the Extensions icon in the Activity Bar or pressing Ctrl + Shift + X.

### 4. **Workspace Settings:**

- Configure settings specific to the workspace by creating or editing the settings.json file in the .vscode folder.

## **User Interface Overview:**

### **Main components of the VS Code user interface:**

#### 1. **Activity Bar:**

- Located on the far left side.
- Contains icons for various views such as Explorer, Search, Source Control, Run and Debug, Extensions.

#### 2. **Side Bar:**

- Displays different views like Explorer (file and folder navigation), Search, Source Control, etc.
- Positioned next to the Activity Bar.

#### 3. **Editor Group:**

- The central area where files are opened and edited.
- Supports multiple tabs and split views for side-by-side editing.

#### 4. **Status Bar:**

- Located at the bottom.

- Shows information like line and column number, encoding, language mode, and notifications.

## **Command Palette:**

### **Accessing and using the Command Palette:**

- Access the Command Palette by pressing Ctrl + Shift + P or F1.
- The Command Palette allows quick access to all commands and settings.
- Examples of common tasks:
  - Opening settings: Preferences: Open Settings.
  - Changing the theme: Preferences: Color Theme.
  - Installing extensions: Extensions: Install Extensions.

## **Extensions in VS Code:**

### **Role and management of extensions:**

- **Role:**
  - Extensions add functionality and support for additional programming languages, debuggers, tools, and services.
- **Finding and Installing:**
  - Click on the Extensions icon in the Activity Bar or press Ctrl + Shift + X.
  - Search for desired extensions and click "Install".
- **Managing Extensions:**
  - View installed extensions in the Extensions view.
  - Disable or uninstall extensions from the same view.
- **Essential Extensions for Web Development:**
  - **Live Server** for live reloading.
  - **ESLint** for JavaScript linting.
  - **Prettier** for code formatting.
  - **Debugger for Chrome** for debugging web applications.

## **Integrated Terminal:**

### **Opening and using the integrated terminal:**

- Open the integrated terminal by pressing Ctrl + (backtick) or navigating to View > Terminal.
- Advantages:
  - Directly integrated within VS Code, allowing seamless workflow.
  - Supports multiple terminal instances and tabs.
  - Synchronization with the project's root directory.

## **File and Folder Management:**

### **Creating, opening, and managing files and folders:**

- **Creating:**
  - Right-click in the Explorer view and select "New File" or "New Folder".
- **Opening:**
  - Double-click on files in the Explorer view or use Ctrl + O to open files.
- **Managing:**
  - Use the Explorer view for hierarchical navigation.
  - Navigate between files using the tabs in the Editor Group or the Ctrl + P quick open feature.
  - Use the Go to Definition feature (F12 or Ctrl + Click) to navigate code.

## **Settings and Preferences:**

### **Customizing settings in VS Code:**

- Access settings by navigating to File > Preferences > Settings or pressing Ctrl + ,.
- **Changing Theme:**
  - File > Preferences > Color Theme or use the Command Palette.
- **Changing Font Size:**
  - Search for "Font Size" in the settings.

- **Changing Keybindings:**

- Go to File > Preferences > Keyboard Shortcuts or press Ctrl + K Ctrl + S.
- Modify or add new keybindings.

## **Debugging in VS Code:**

### **Setting up and starting debugging:**

1. **Open the Debug View:**

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

2. **Configure Debugger:**

- Click on create a launch.json file to set up debug configurations.
- Select the appropriate environment (e.g., Node.js, Python).

3. **Set Breakpoints:**

- Click in the gutter next to the line numbers in the Editor to set breakpoints.

4. **Start Debugging:**

- Click the green play button in the Debug toolbar or press F5.

- **Key Debugging Features:**

- Breakpoints, step over, step into, and step out.
- Watch expressions, call stack, and variable inspection.

## **Using Source Control:**

### **Integrating Git with VS Code:**

1. **Initialize Repository:**

- Open the Source Control view by clicking the Source Control icon in the Activity Bar or pressing Ctrl + Shift + G.
- Click on "Initialize Repository".

2. **Making Commits:**

- Stage changes by clicking the "+" icon next to the file.
- Enter a commit message and click the checkmark icon to commit.

### 3. Pushing to GitHub:

- Add a remote repository: `git remote add origin <repository-url>`.
- Push changes: `git push -u origin main`.

These comprehensive steps and explanations should help you get started with Visual Studio Code, understand its interface, configure it for optimal use, and effectively use its features for coding and version control.