**SE-Assignment-5**

Installation and Navigation of Visual Studio Code (VS Code) Instructions: Answer the following questions based on your understanding of the installation and navigation of Visual Studio Code (VS Code). Provide detailed explanations and examples where appropriate.

Questions:

1. Installation of VS Code:
   * Describe the steps to download and install Visual Studio Code on Windows 11 operating system. Include any prerequisites that might be needed.

 **Download VS Code Installer:**

* Open your web browser and go to the official Visual Studio Code website: <https://code.visualstudio.com/>
* Click on the "Download for Windows" button. This will download the installer (.exe file) suitable for your Windows architecture (32-bit or 64-bit).

 **Run the Installer:**

* Once the download is complete, locate the downloaded VSCodeSetup-x64-<version>.exe file (the filename may vary based on the version).
* Double-click on the downloaded file to start the installation process.

 **Accept License Agreement:**

* You may be prompted with a User Account Control dialog asking for permission to proceed. Click "Yes" to continue.
* The Visual Studio Code Setup wizard will open. Click "Next" to proceed.

 **Select Destination Location:**

* Choose the destination folder where you want to install Visual Studio Code. The default location is usually fine for most users. Click "Next" to continue.

 **Select Start Menu Folder:**

* Choose whether to create a Start Menu folder for Visual Studio Code shortcuts or not. Click "Next" to continue.

 **Select Additional Tasks:**

* Optionally, you can choose to add shortcuts to the desktop and/or add to the PATH. Adjust these options as needed. Click "Next" to continue.

 Install**:**

* Click on the "Install" button to begin the installation process. This may take a few moments to complete.

 Launch **Visual Studio Code:**

* Once the installation is finished, you will see a "Completing the Visual Studio Code Setup Wizard" screen. Ensure the "Launch Visual Studio Code" checkbox is checked. Click "Finish" to complete the installation.

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* Click on the "Install" button to begin the installation process. This may take a few moments to complete.

** Launch Visual Studio Code:**

* Once the installation is finished, you will see a "Completing the Visual Studio Code Setup Wizard" screen. Ensure the "Launch Visual Studio Code" checkbox is checked. Click "Finish" to complete the installation.

 **Configuration and Extensions:**

* On first launch, Visual Studio Code may ask you to customize your settings. You can configure these settings as per your preference.
* You can also install extensions to add functionality to VS Code by clicking on the Extensions icon in the Activity Bar on the side (or by pressing Ctrl+Shift+X).

 **Verify Installation:**

* Open Visual Studio Code and verify that it opens without any issues.

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1. First-time Setup:
   * After installing VS Code, what initial configurations and settings should be adjusted for an optimal coding environment? Mention any important settings or extensions. files.trimTrailingWhitespace: Remove trailing whitespace on save editor.formatOnSave then Format code on save editor.codeActionsOnSave: Run code actions e.g., ESLint fixes on save.

**Initial Configurations and Settings:**

**Trim Trailing Whitespace on Save:**

* + Open VS Code.
  + Go to File > Preferences > Settings (or use Ctrl+,).
  + Search for files.trimTrailingWhitespace.
  + Check the box to enable "Trim Trailing Whitespace" on save.

1. **Format Code on Save:**
   * Search for editor.formatOnSave.
   * Check the box to enable "Format Code on Save".
   * This ensures that your code is automatically formatted according to the settings of the language formatter (e.g., Prettier, ESLint) whenever you save a file.
2. **Run Code Actions on Save (e.g., ESLint Fixes):**
   * Search for editor.codeActionsOnSave
3. User Interface Overview:
   * Explain the main components of the VS Code user interface. Identify and describe the purpose of the Activity Bar, Side Bar, Editor Group, and Status Bar. Activity Bar: Vertical bar on the left for switching between views e.g., Explorer, Search, Debug.

* Side Bar: Area on the left for navigating projects (Explorer), managing extensions, and accessing views
* Editor Group, the Central area where code files are opened and edited
* Status Bar, the Bottom bar displaying information about the current file, project, and system e.g., errors, warnings, Git status

1. Command Palette:
   * What is the Command Palette in VS Code, and how can it be accessed? Provide examples of common tasks that can be performed using the Command Palette. The Command Palette is a powerful tool in VS Code that allows users to access numerous features and commands directly with the keyboard. It can be opened by using the keyboard shortcut Ctrl+Shift+P (or Cmd+Shift+P on Mac). Examples of common tasks that can be performed using the Command Palette include configure tasks, change language mode, according to ttps://code.visualstudio.com/docs/terminal/basics
2. Extensions in VS Code:
   * Discuss the role of extensions in VS Code. How can users find, install, and manage extensions? Provide examples of essential extensions for web development. According to FreeCodeCamp, Extensions play a crucial role in VS Code, enhancing its functionality and allowing users to customize their coding experience. Users can find extensions in the Extensions view (Ctrl+Shift+X), search for specific extensions, and install them with a single click. Essential extensions for web development include: HTML Snippets, CSS, JavaScript e6 etc.
3. Integrated Terminal:
   * Describe how to open and use the integrated terminal in VS Code. What are the advantages of using the integrated terminal compared to an external terminal? In order to open the integrated terminal in VS Code, press Ctrl+` (backtick) or use the "View" menu and select "Terminal". This will open a terminal panel in the editor, allowing you to run commands and interact with your project. The integrated terminal offers advantages such as ease of use, convenience, and streamlined workflow, as you don't need to switch between VS Code and an external terminal. Additionally, the integrated terminal provides features like syntax highlighting and command history.
4. File and Folder Management:
   * Explain how to create, open, and manage files and folders in VS Code. How can users navigate between different files and directories efficiently? To create a new file in VS Code, open the Explorer panel, right-click, and select "New File" or use the keyboard shortcut Ctrl+N. To open an existing file, navigate to the file's location in the Explorer and click on it. Users can manage files and folders by renaming, deleting, or moving them within the Explorer. Efficient navigation is possible using the bread crumbs navigation, keyboard shortcuts like Ctrl+P (Go to File), and the Explorer's tree view.
5. Settings and Preferences:
   * Where can users find and customize settings in VS Code? Provide examples of how to change the theme, font size, and keybindings. Users can find and customize settings in VS Code by opening the Settings editor through the gear icon or pressing Ctrl+, (comma). Examples of customizations
6. Debugging in VS Code:
   * Outline the steps to set up and start debugging a simple program in VS Code. What are some key debugging features available in VS Code?
7. You pen the Debugger view, select the debugging configuration, and click the "Start Debugging" button or press F5.
8. Then set breakpoints in your code by clicking in the gutter next to the line numbers.
9. Use the debugging features, such as Step Over, Step Into, and Step Out, to navigate through your code and identify issues.
10. Using Source Control:
    * How can users integrate Git with VS Code for version control? Describe the process of initializing a repository, making commits, and pushing changes to GitHub. Initialize a repository: Open VS Code, select the folder you want to use as your repository, and click the "Initialize Repository" button in the Source Control view.

* Make commits: Add files to the staging area using the "+" icon, then enter a commit message and click the "Commit" button.
* Push changes to GitHub: Enter your GitHub credentials, click the "Publish to GitHub" button, and select the repository you want to push to