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.

ANSWERS:

1. Installation of VS Code:

   - Go here https://code.visualstudio.com/Download and get the VS Code installer file.
   - Next, give the installer file that you downloaded a double-click.
   - After reading the license agreement and selecting the "I accept the agreement" option, you will be presented with the setup window.
   - Then click next to continue.
   - Select the installation location now, then click Next to proceed.
   - Visual Studio Code can be added to the system environment variable by clicking on the add to PATH option.
   - Click Next to proceed after that.
   - Click install button to begin with installation.
   - Once it is done installing, click Finish. Now ready for programming and coding.

2. First-time Setup:

   - Basic setup for Visual Studio Code includes setting up the editor preferences, typeface, and theme.
   - To improve functionality, install must-have extensions, like Prettier, Code Runner, JavaScript, HTML and Python. Personalize the terminal settings and key bindings, and take into account more sophisticated features like tasks for automation and snippets. By controlling extensions and updating frequently, you may maximize performance. An effective and customized coding environment is guaranteed by this configuration.

3. User Interface Overview:

   - The Activity Bar provides instant access to views such as File Structure Explorer, Search, Source Control (Git), Run and Debugg, and Extensions.
   - Side Bar: This section, which is next to the Activity Bar, has views such as Remote Explorer for remote connections, Explorer (project files), Search results, Source Control (Git), Extensions, and Debugging controls.
   - Editor Group: The main editing area, which allows for multitasking with numerous tabs and split views.
   - Status Bar: This bar at the bottom shows many statuses, including the current language mode, the location of the cursor, the Git status, errors and warnings, and the state of the extension.

4. Command Palette:

   - The Command Palette in Visual Studio Code enables users to swiftly find and apply commands. Accessing the Command Palette can be achieved through **View > Command Palette or by using keyboard shortcuts Ctrl–Shift–P (Windows)**. The Command Palette can be utilized to transform selected text into title case.

5. Extensions in VS Code:

- One of the key aspects of efficient web development is having a smooth and optimized workflow. VS Code extensions can help you achieve this by automating repetitive tasks and providing convenient features. For example, the Live Server extension allows you to launch a local development server with live reload functionality, eliminating the need to manually refresh your browser every time you make changes to your code.(https://caisy.io/blog/best-vscode-extensions)

- Another extension that can greatly improve your workflow is Auto Rename Tag. When you rename an HTML tag, this extension automatically renames the corresponding closing tag, saving you time and reducing the chances of errors.

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- Debugging and testing are crucial parts of the web development process, and VS Code has you covered with powerful extensions. The Debugger for Chrome extension enables you to debug your JavaScript code directly within VS Code, providing a seamless debugging experience. You can set breakpoints, step through your code, and inspect variables without leaving your editor.(https://caisy.io/blog/best-vscode-extensions)
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- Writing clean, readable, and maintainable code is essential for any web developer. VS Code extensions can assist you in this regard by providing linting, formatting, and code analysis tools. The ESLint extension integrates the popular ESLint linter into VS Code, helping you catch potential errors and enforce consistent coding styles across your projects.(https://caisy.io/blog/best-vscode-extensions)

6. Integrated Terminal:

- Visual Studio Code includes a full featured integrated terminal that starts at the root of your workspace. It provides integration with the editor to support features like links and error detection. The integrated terminal can run commands such as mkdir and git just like a standalone terminal.

You can open a terminal as follows:

- From the menu, use the Terminal > New Terminal or View > Terminal menu commands.
- From the Command Palette (Ctrl+Shift+P), use the View: Toggle Terminal command.
- In the Explorer, you can use the Open in Integrated Terminal context menu command to open a new terminal from a folder.
- To toggle the terminal panel, use the Ctrl+` keyboard shortcut.

- To create a new terminal, use the Ctrl+Shift+` keyboard shortcut.(https://code.visualstudio.com/docs/terminal/basics)

7. File and Folder Management:

- To manage files and folders in Visual Studio Code (VS Code):
  - Creating: Use Explorer view to right-click and create new files or folders.
  - Opening: Use Ctrl+P for Quick Open to swiftly access files by name or Ctrl+K Ctrl+O to open folders.
  - Managing: Rename, delete, move, and copy files/folders via right-click options in Explorer.
  - Navigating: Use Explorer, breadcrumbs, Ctrl+Tab for switching files, and Ctrl+Click for quick file access.

8. Settings and Preferences:

Changing the Theme:

- Using the Settings UI:

Go to Settings (Ctrl+,).

- In the search bar, type "Color Theme" and press Enter.
- Click on the dropdown under "Color Theme" and select a theme (e.g., "Dark+ (default dark)").

Settings UI:

- Open VS Code and go to the Settings tab by clicking on the gear icon in the bottom left corner of the Activity Bar.

Settings File (settings.json):

- Open the Command Palette (Ctrl+Shift+P or Cmd+Shift+P) and type "Preferences: Open Settings (JSON)" to directly edit the settings.json file.

hanging Keybindings:

- Using the Settings UI:
- Go to Keyboard Shortcuts (Ctrl+K Ctrl+S).
- Search for the action you want to customize (e.g., "Comment Line").
- Click on the edit icon (pencil) next to the keybinding.
- Enter your preferred keybinding.

Editing keybindings.json:

- Open the Command Palette (Ctrl+Shift+P or Cmd+Shift+P).
- Type "Preferences: Open Keyboard Shortcuts (JSON)" and press Enter.
- Add or modify keybindings as needed. For example, to change the keybinding for commenting a line:

Changing Font Size:

- Using the Settings UI:
- Go to Settings (Ctrl+,).

- In the search bar, type "Font Size" and press Enter.
- Adjust the "Editor: Font Size" setting to your preferred size (e.g., 14).

Editing settings.json:

- Open the Command Palette (Ctrl+Shift+P or Cmd+Shift+P).
- Type "Preferences: Open Settings (JSON)" and press Enter.

9. Debugging in VS Code:

Set Up Debug Configuration:

- Click the Run and Debug icon or press Ctrl+Shift+D.
- Create and customize a launch.json file.
- Debugging Features in VS Code

Breakpoints:

- Set by clicking the gutter next to line numbers.

Step Through Code:

- Use toolbar controls: Continue (F5), Step Over (F10), Step Into (F11), Step Out (Shift+F11).

Variable Inspection:

- Hover over variables or use the Variables pane.

Watch Expressions:

- Monitor values in the Watch pane.

Call Stack:

- View the function call hierarchy.

Debug Console:

- Evaluate expressions and execute commands in real-time.

Exception Handling:

- Configure to break on exceptions.
- Running and Debugging

Start Debugger:

- Press F5 to start debugging.

Inspect and Modify:

- Use debugging features to troubleshoot.

Fix Issues:

- Make changes to code and rerun.

10. Using Source Control:

Initialize a Git Repository:

- Open your project folder in VS Code.

  Use the Source Control view (Ctrl+Shift+G) and click Initialize Repository or run git init in the terminal.

Making Commits:

- Stage changes by clicking the + icon next to the files or all changes.

  Enter a commit message and click the checkmark icon to commit.

Pushing Changes to GitHub:

- Create a repository on GitHub and copy the repository URL.

  Add the remote repository: git remote add origin https://github.com/your-username/your-repository.git.

  Push commits to GitHub: git push -u origin master.

  Additional Features

Sync Changes:

- Use the Sync button in the Source Control view to fetch and push changes.

Branch Management:

- Manage branches using Git: Branch commands via the Command Palette (Ctrl+Shift+P).

Conflict Resolution:

- Use built-in tools in VS Code to resolve merge conflicts.