**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.

**Go to** [**https://code.visualstudio.com/**](https://code.visualstudio.com/)**, click on “Download for Windows”**

**Open the downloaded file, follow the installation process and accept the license agreement then choose destination folder. Click install to start the process, when complete click finish.**

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.

**After installing, go to settings, adjust to your preferences such as the theme, dark or light theme, the font size, line numbers, tab size etc. Some extensions you can download include prettier, live server, Python for python development , code runner or Blackbox AI.**

1. 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.

**The Activity Bar: it provides access to different views such as Search, Source control, Run and Debug.**

**Side bar: displays different views and panels selected from the Activity Bar, such as the file explorer.**

**Editor group: this is the central area where files are opened and edited**

**Status bar: this displays information about the current filr and workspace, including language mode, line endings and any active background tasks.**

1. Command Palette:
   * What is the Command Palette in VS Code, and how can it be accessed?

**This is a tool in VS Code that provided access to many commands.**

* + Provide examples of common tasks that can be performed using the Command Palette.

**Example: Changing the color theme, running of tasks or opening settings**

1. 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.

**Extensions enhance the functionality of VS Code by adding features and support for additional languages, tools or frameworks.**

**You can find the extensions by clicking on the Extension icon in the activity bar, search for extensions by name or functionality, click on “install” to add it. Example of extensions for web development include: HTML, CSS and JS Snippet, Live Server, Prettier and ESLint- identifies and fixes JavaScript code issues.**

1. 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?

**Open the terminal by selecting “Terminal then New Terminal” from the top menu, it allows one to run command-line tasks without leaving VS Code. It keeps development tools within the same environment, allows easy switching between editing code and running commands it also supports multiple terminal instances and split views.**

1. 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?

**You can create a file by right-clicking in the explorer view and select “New File” or “Folder”, To open a file, click on a file in the Explorer view then to manage it, use drag and drop to move files, or right click for more options such as rename, delete etc**

1. 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.

**Open settings via “File > Preferences > Settings” then search for any specific setting you would like to change. For example, changing the theme, you can navigate to Preference: Color Theme in the command palette, Font size: Search for Editor: Font size then Keybindings: go to File then preferences then keyboard shortcuts**

1. 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?

**On a project, open the run and debug view from the Activity Bar, click on the gear icon to create a ‘launch.json’ file if one doesn’t exists. Select the appropriate configuration( python or node.js) then click the green play button to start debugging.**

**Debugging features: Breakpoint, pauses execution at specific lines, Watch: Monitor variable values, Call Stack: View the stack trace, Step Over, Step Into, Step Out: Control execution flow**

1. 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.

**To initializing a repository: Open a folder, open the source control view from the Activity Bar, click initialize Repository, stage changes by clicking the “+” icon next to the file, enter a commit message in the message box and click the checkmark icon to commit.**

**Then push the changes to Github, by first setting up GitHub integration.Click “…” icon in the Source Control view and select “Push” , you then enter your GitHub credentials if prompted.**