# 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:**

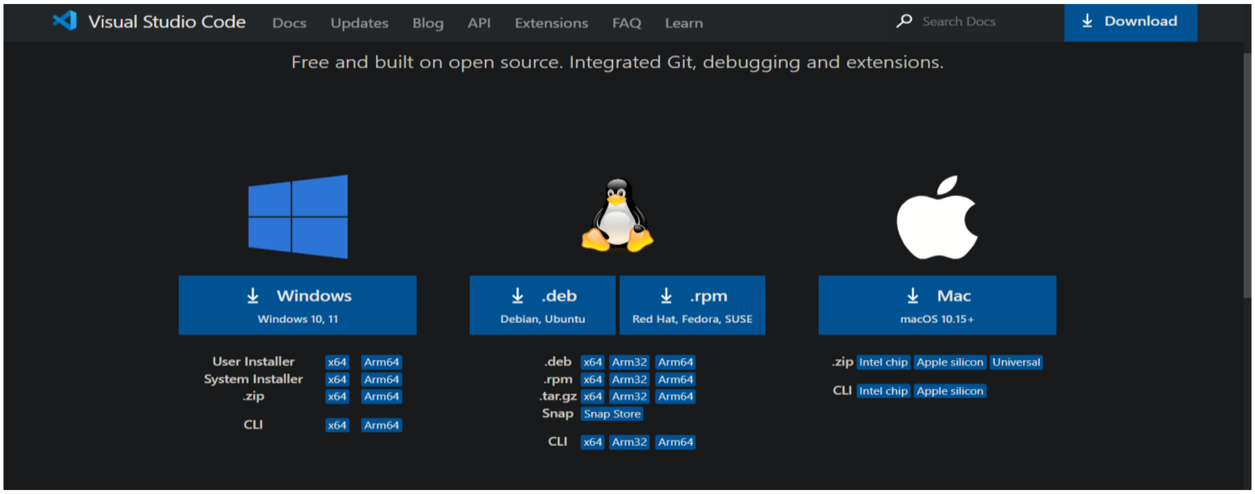
- Describe the steps to download and install Visual Studio Code on Windows 11 operating system. Include any prerequisites that might be needed.

- Visual Studio Code is the most popular code editor and the IDEs provided by Microsoft for writing different programs and languages. It allows the users to develop new code bases for their applications and allow them to successfully optimize them.

How to download and install Visual Studio Code:

Step 1: Download Visual Studio Code

- Visit the Official Website**:** Open your web browser and go to the [Visual Studio Code download page](#).
- Choose your desired operating system (windows, linux, macos)

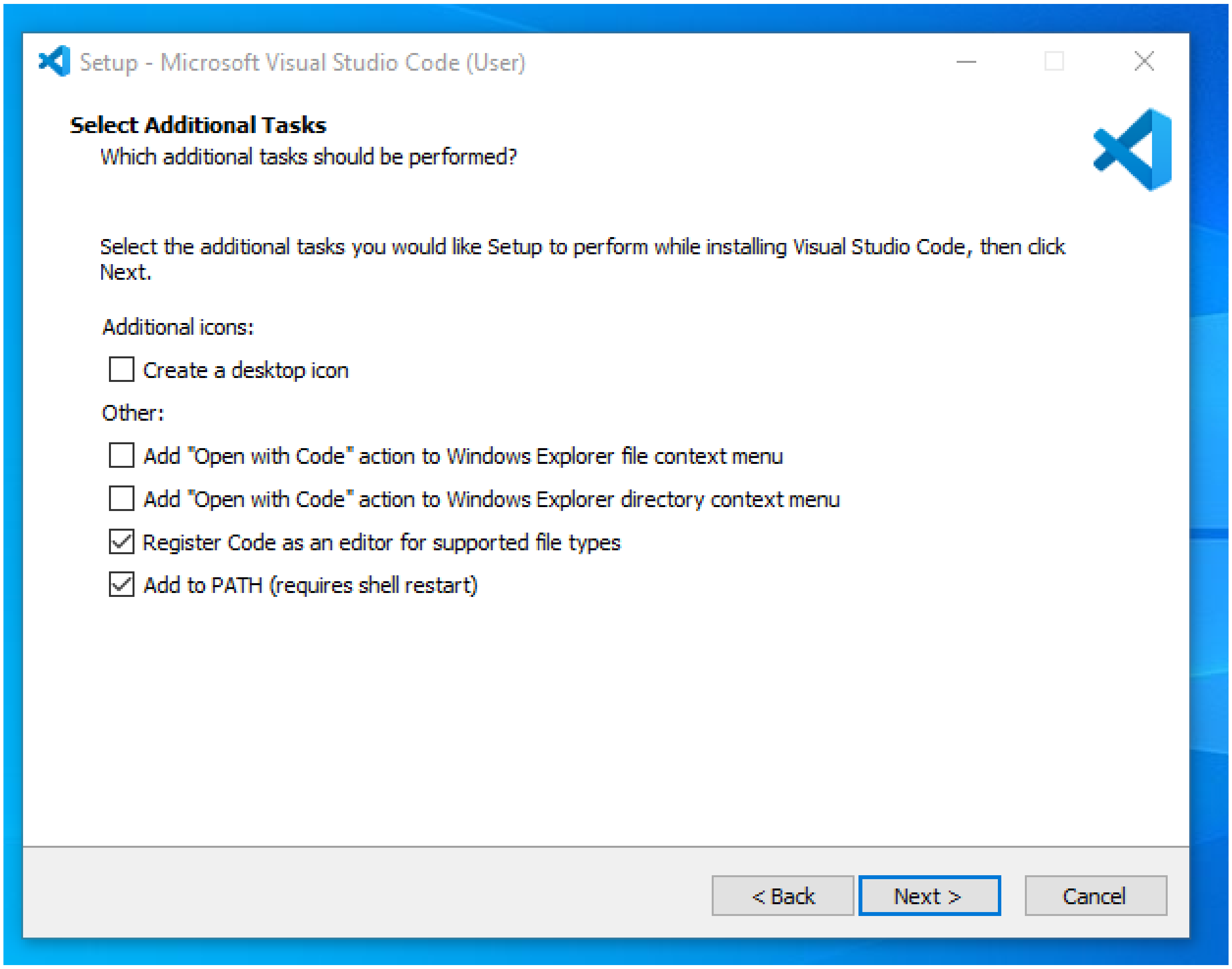


Free and built on open source. Integrated Git, debugging and extensions.

Step 2: Install Visual Studio Code For Windows:

- Run the Installer, once the download is complete, locate the installer file in your Downloads folder and double-click it to run the installer.

- Choose the location data for running the Visual Studio Code



Select Additional Tasks

Which additional tasks should be performed?

Select the additional tasks you would like Setup to perform while installing Visual Studio Code, then click Next.

Additional icons:

□ Create a desktop icon

Other:

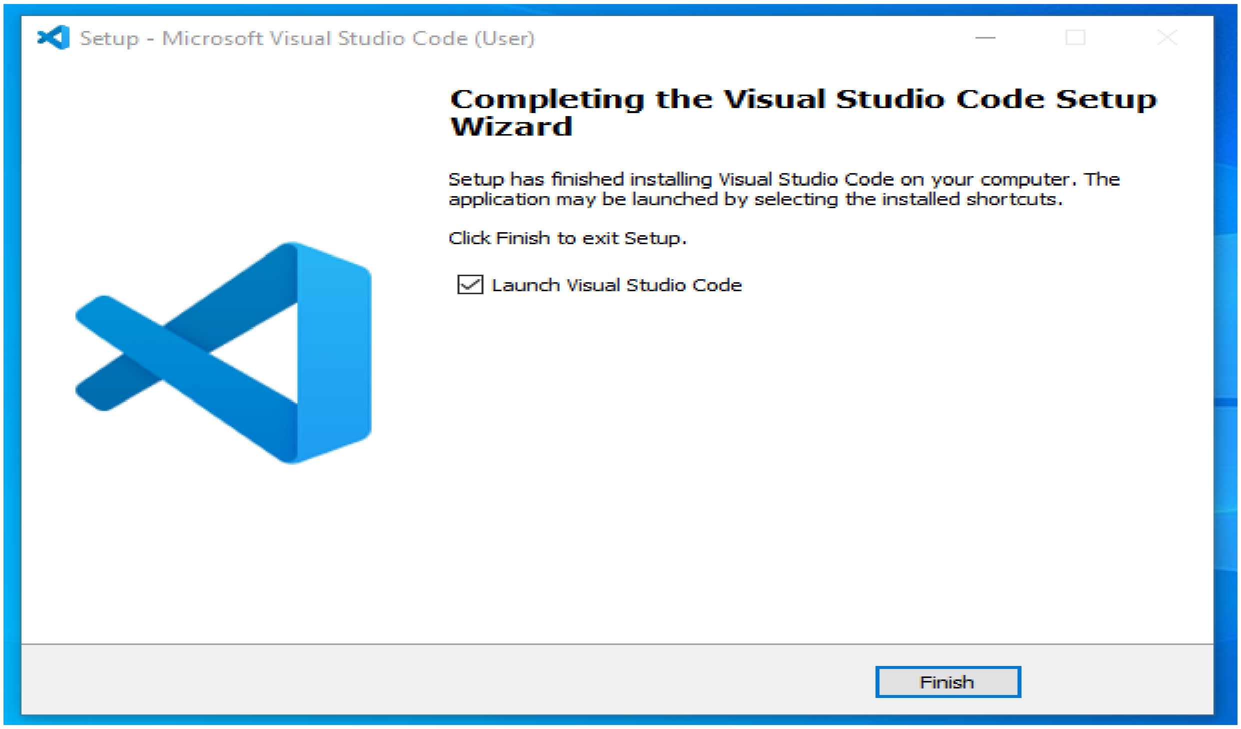
□ Add "Open with Code" action to Windows Explorer file context menu

□ Add "Open with Code" action to Windows Explorer directory context menu

☑ Register Code as an editor for supported file types

☑ Add to PATH (requires shell restart)

Step 3: After the Installation setup for Visual Studio Code is finished, it will show a window like this below. Tick the “Launch Visual Studio Code” checkbox and then click finish.



Setup - Microsoft Visual Studio Code (User)

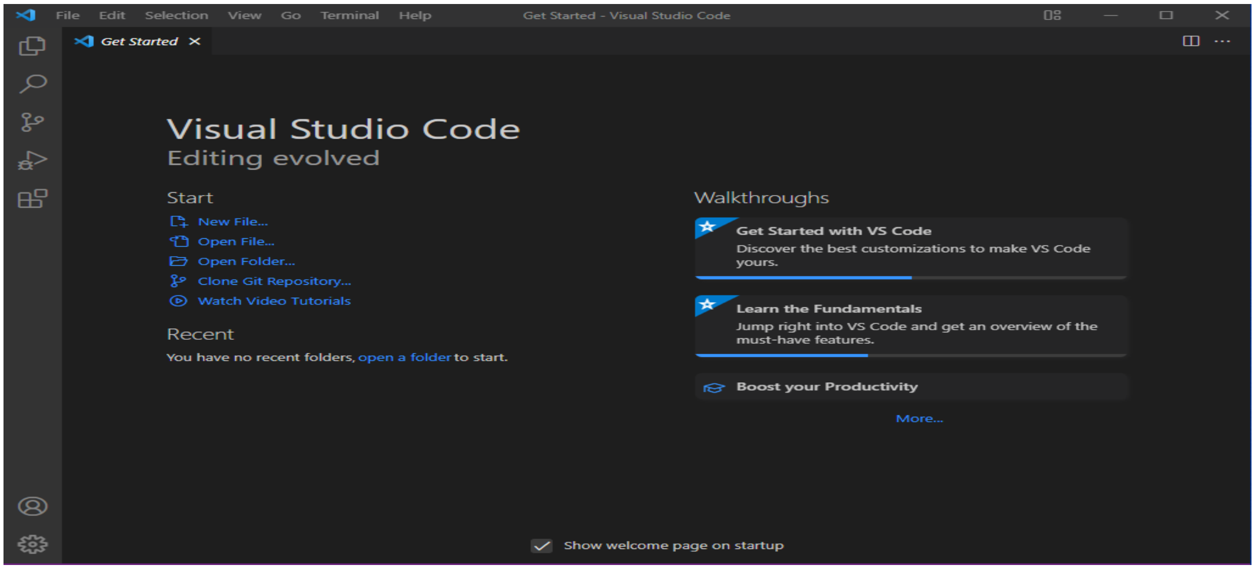
Completing the Visual Studio Code Setup Wizard

Setup has finished installing Visual Studio Code on your computer. The application may be launched by selecting the installed shortcuts.

Click Finish to exit Setup.

☑ Launch Visual Studio Code

Step 4: Now you can create a new file in the Visual Studio Code window and choose a language of yours.



Visual Studio Code

Editing evolved

Start

Recent

You have no recent folders, open a folder to start.

Walkthroughs

Get Started with VS Code

Discover the best customizations to make VS Code yours.

Learn the Fundamentals

Jump right into VS Code and get an overview of the must-have features.

Boost your Productivity

☑ Show welcome page on startup

2**. 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.

Important Configurations:

- User and Workspace Settings
- Auto save
- Linting and Formatting
- Editor settings

Important extensions:

- Code Runner: Allows you to run code snippets or entire files directly from within VSCode.
- ESLint: Integrates ESLint code linting into your editor to help you follow code style guidelines.
- Prettier: Automates code formatting and improves code readability.
- GitLens: Provides Git blame annotations and other helpful Git-related features.

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 - Located on the far left-hand side, and lets you switch between views and gives you additional context-specific indicators, like the number of outgoing changes when Git is enabled.
- Side Bar - Contains different views like the Explorer to assist you while working on your project.
- Editor - The main area to edit your files. You can open as many editors as you like side by side vertically and horizontally.
- Status Bar: its located at the bottom of the VS Code window and provides information about the current state of the editor. It displays various indicators, such as the file encoding, line and column numbers, language mode, and current Git branch.

4. **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 Visual Studio Code (VS Code) that provides a centralized hub for accessing various commands, features, and functions. It serves as a shortcut to many of the editor's features, allowing you to quickly perform tasks without having to navigate through menus or use keyboard shortcuts.
- Press Ctrl + Shift + P (Windows/Linux) or Cmd + Shift + P (macOS) on your keyboard to access the command palette.
- Click on the "View" menu in the top menu bar and select "Command Palette" from the dropdown menu.

Examples of command tasks:

- Open a file: Type "Open File" in the Command Palette and select the file you want to open.
- Run tasks: Type "Run Task" in the Command Palette and select the desired task from the list.
- Debugging: Type "Debug: Start Debugging" in the Command Palette to start debugging your code.
- Configure settings: Type "Preferences: Open Settings (JSON)" in the Command Palette to edit the settings.json file.

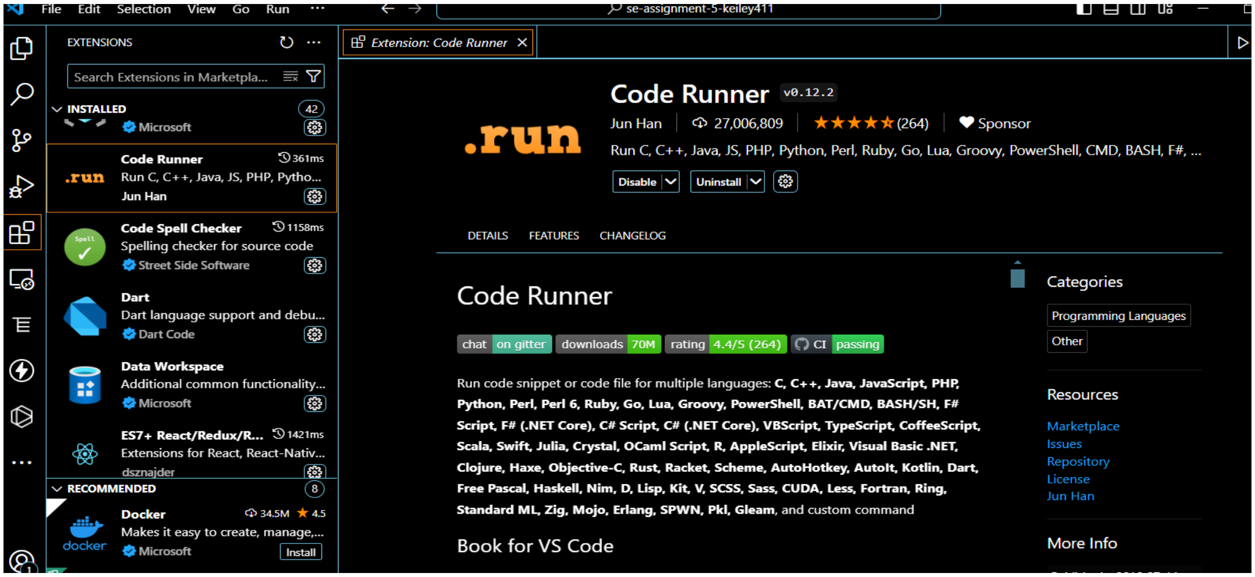
5. **Extensions in VS Code:**

- 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 in VS Code are add-ons that enhance the functionality and capabilities of the code editor.

To find and install extensions in VS Code:

- Open VS Code.
- Click on the Extensions icon on the sidebar (or press `Ctrl+Shift+X`).


File Edit Selection View Go Run ···
se-assignment-5-keiley411
EXTENSIONS
Search Extensions in Marketpla...
INSTALLED 42
Microsoft
Code Runner 361ms
Run C, C++, Java, JS, PHP, Pytho...
Jun Han
Code Spell Checker 1158ms
Spelling checker for source code
Street Side Software
Dart
Dart language support and debu...
Dart Code
Data Workspace
Additional common functionality...
Microsoft
ES7+ React/Redux/R... 1421ms
Extensions for React, React-Nativ...
dsznajder
RECOMMENDED 8
Docker 34.5M ★ 4.5
Makes it easy to create, manage,...
Microsoft
Install
Extension: Code Runner
Code Runner v0.12.2
Jun Han | 27,006,809 | ★★★★★(264) | ♥ Sponsor
Run C, C++, Java, JS, PHP, Python, Perl, Ruby, Go, Lua, Groovy, PowerShell, CMD, BASH, F#, ...
Disable | Uninstall
DETAILS FEATURES CHANGELOG
chat on gitter | downloads 70M | rating 4.4/5 (264) | CI passing
Categories
Programming Languages
Other
Resources
Marketplace
Issues
Repository
License
Jun Han
More Info

Code Runner

Run code snippet or code file for multiple languages: **C, C++, Java, JavaScript, PHP, Python, Perl, Perl 6, Ruby, Go, Lua, Groovy, PowerShell, BAT/CMD, BASH/SH, F# Script, F# (.NET Core), C# Script, C# (.NET Core), VBScript, TypeScript, CoffeeScript, Scala, Swift, Julia, Crystal, OCaml Script, R, AppleScript, Elixir, Visual Basic .NET, Clojure, Haxe, Objective-C, Rust, Racket, Scheme, AutoHotkey, AutoIt, Kotlin, Dart, Free Pascal, Haskell, Nim, D, Lisp, Kit, V, SCSS, Sass, CUDA, Less, Fortran, Ring, Standard ML, Zig, Mojo, Erlang, SPWN, Pkl, Gleam**, and custom command

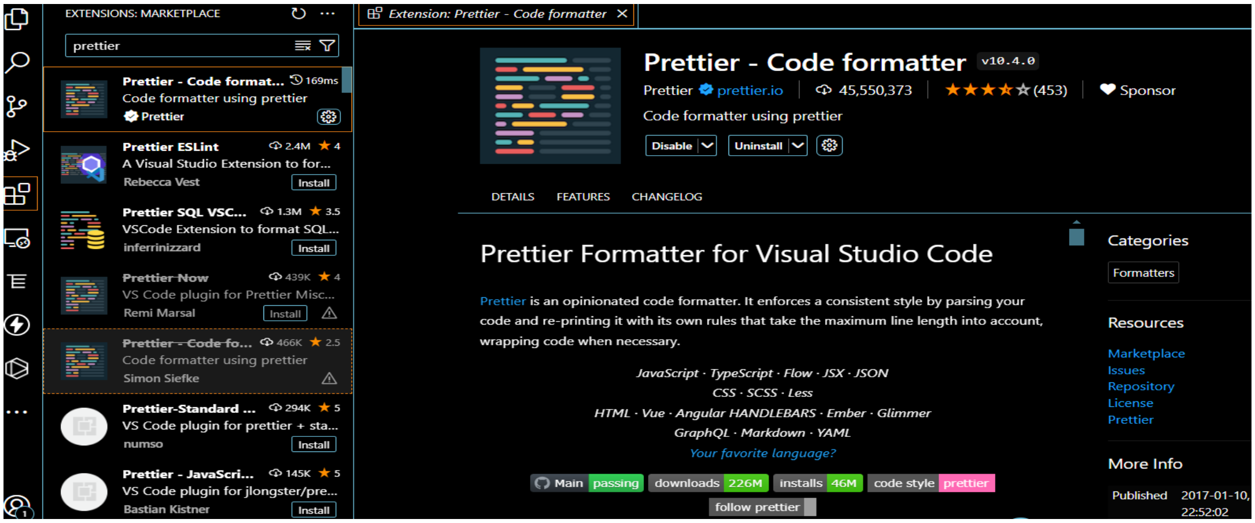
Book for VS Code

- Install an extension:

  To install an extension, select the Install button. Once the installation is complete, the Install button will change to the Manage gear button.

- Find extensions:

  The Search box at the top of the Extensions view and type in the name of the extension, tool, or programming language you're looking for.


EXTENSIONS: MARKETPLACE
prettier
Prettier - Code format... 169ms
Code formatter using prettier
Prettier
Prettier ESLint 2.4M ★ 4
A Visual Studio Extension to for...
Rebecca Vest
Install
Prettier SQL VSC... 1.3M ★ 3.5
VSCode Extension to format SQL...
inferrinizzard
Install
Prettier Now 439K ★ 4
VS Code plugin for Prettier Misc...
Remi Marsal
Install
~~Prettier - Code fo...~~ 466K ★ 2.5
Code formatter using prettier
Simon Siefke
Prettier-Standard ... 294K ★ 5
VS Code plugin for prettier + sta...
numso
Install
Prettier - JavaScri... 145K ★ 5
VS Code plugin for jlongster/pre...
Bastian Kistner
Install
Extension: Prettier - Code formatter
Prettier - Code formatter v10.4.0
Prettier prettier.io | 45,550,373 | ★★★★★(453) | ♥ Sponsor
Code formatter using prettier
Disable | Uninstall
DETAILS FEATURES CHANGELOG
Categories
Formatters
Resources
Marketplace
Issues
Repository
License
Prettier
More Info
Published 2017-01-10, 22:52:02
Main passing | downloads 226M | installs 46M | code style prettier
follow prettier

Prettier Formatter for Visual Studio Code

Prettier is an opinionated code formatter. It enforces a consistent style by parsing your code and re-printing it with its own rules that take the maximum line length into account, wrapping code when necessary.

JavaScript · TypeScript · Flow · JSX · JSON
CSS · SCSS · Less
HTML · Vue · Angular HANDLEBARS · Ember · Glimmer
GraphQL · Markdown · YAML
Your favorite language?

- Manage extensions: VS Code makes it easy to manage your extensions. You can install, disable, update, and uninstall extensions through the Extensions view and Command Palette .

Examples of essential extensions for web development:

- Live Server: This extension launches a development server to quickly see changes in real-time while editing HTML, CSS, and JavaScript files.
- Auto Rename Tag: This extension automatically renames the matching HTML/XML tags when users rename one of them.
- Prettier - Code formatter: This extension automatically formats code for consistent and clean styles across multiple languages.
- Bracket Pair Colorizer: This extension helps to visually match brackets with colors, making it easier to navigate code with complex nesting.

6. **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?

How to open and use the integrated terminal in VS Code:

- Open VS CODE.
- Press Ctrl + Backtick (`) on Windows.
- Go to the View menu, then click on "Terminal."

Advantages of using intergrated terminal:

- Customization: VS Code allows you to customize the integrated terminal to match your preferences, making it more comfortable and productive to use
- Integration: The integrated terminal is tightly integrated with VS Code, which means it can easily interact with other features and extensions available in the editor.
- Accessibility: It provides a seamless experience for developers, allowing them to access the terminal functionality without leaving their code editor.
- Convenience: The integrated terminal is directly accessible within the VS Code environment.

7. **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?

Creating a New File or Folder

- Open VS Code and navigate to the desired location in the File Explorer panel.
- Right-click in the File Explorer panel and select New Folder to create a new folder.
- To create a new file, right-click in the File Explorer panel and select New File.

Opening a File or Folder

- To open a file, double-click on the file in the File Explorer panel or use the keyboard shortcut Ctrl + O (Windows/Linux) or Cmd + O (macOS).
- To open a folder, double-click on the folder in the File Explorer panel or use the keyboard shortcut Ctrl + Shift + E (Windows/Linux) or Cmd + Shift + E (macOS).

Managing Files and Folders

- To rename a file or folder, right-click on the file or folder and select Rename.
- To delete a file or folder, right-click on the file or folder and select Delete.
- To create a new folder within a folder, right-click on the parent folder and select New Folder.

Navigating Between Files and Folders

- Use the File Explorer panel to navigate between files and folders. You can also use the Explorer view by clicking on the Explorer button in the top-left corner of the VS Code window.
- To quickly switch between open files, use the Ctrl + Tab (Windows/Linux) or Cmd + Tab (macOS) keyboard shortcut.
- To open a file in a new window, use the File menu and select New Window with Folder or use the keyboard shortcut Ctrl + Shift + N (Windows/Linux) or Cmd + Shift + N (macOS).

8. **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.

a) To find and customize settings in VS Code:

- Click on the File menu and select Preferences > Settings
- Press ctrl + ,

b) To change the theme, you can select a theme from the Themes section in the Settings file or by clicking on the Explorer view and searching for theme.

c) To change font size, via settings UI, search for ‘font size’ and adjust the ‘Editor: font size’ to your preferred size.

d) To customize keybindings via keybindings UI:

- Open the Keybindings UI by pressing Ctrl+K Ctrl+S (Windows/Linux) or Cmd+K Cmd+S (macOS).
- Search for the command you want to customize.
- Click on the pencil icon next to the command and press the new key combination you want to assign.

9. **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?

<u>To set up and start debugging a simple program in VS Code:</u>

- Create a new folder for your project and open it in VS Code.
- Write your code in a file, for example, app.js.
- Open the Run and Debug view by selecting the Run and Debug icon in the Activity Bar on the side of VS Code, or by using the keyboard shortcut ⇧⌘D (Windows, Linux Ctrl+Shift+D).
- The Run and Debug view displays all information related to running and debugging, including a top bar with debugging commands and configuration settings.
- In the Run and Debug view, select the debug configuration for your project. For a simple Node.js application, you can use the Node.js configuration.
- Set a breakpoint in your code by clicking on the line number where you want to pause execution.

- Press F5 to start the debugger. VS Code will launch your application and pause at the breakpoint.
- You can use the Stepping In, Stepping Over, and Stepping Out commands to step through your code.
- Use the Variables view to inspect variables and their values.
- You can also use the Call Stack view to see the call stack and jump to a specific function in the call stack.
- To stop the debugger, click the Stop button in the top bar of the Run and Debug view.

Some key debugging features available in VS Code include:

- Breakpoints: Allows you to pause execution at specific points in your code.
- Stepping: Allows you to step through your code line by line.
- Variables: Allows you to inspect the values of variables and their properties.
- Call Stack: Allows you to see the call stack and jump to a specific function in the call stack.
- Console: Allows you to see the output of your application and debug messages.
- Debugger: Allows you to debug your application locally or remotely.
- Debugging extensions: Allows you to debug specific frameworks and languages, such as Node.js, Python, and Java.

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.

1. Integrating Git with VS Code

VS Code has built-in support for Git. Here's how to get started:

1. **Install Git**: Ensure Git is installed on your machine, verify this by running (`git--version`) in your terminal.
2. **Open VS Code**: Open the project folder you want to manage with Git in VS Code.

2. Initializing a Git Repository

1. **Open the Source Control View**:

    - Click on the Source Control icon in the Activity Bar on the side of the window.
    - Alternatively, use the shortcut `Ctrl+Shift+G` (Windows/Linux) or `Cmd+Shift+G` (macOS).

2. **Initialize Repository**:

    - Click on the `Initialize Repository` button in the Source Control view.
    - This will create a `.git` folder in your project directory, initializing it as a Git repository.

3. Making Commits

1. **Stage Changes**:

    - **Automatically**: By clicking the `+` icon next to the files listed in the Changes section.
    - **Manually**: By right-clicking the files and selecting `Stage Changes`.

2. **Write a Commit Message**:

    - In the text box at the top of the Source Control view, write a meaningful commit message.

3. **Commit Changes**:

    - Click the checkmark icon above the commit message box to commit your staged changes.

4. Pushing Changes to GitHub

1. **Create a GitHub Repository**:

    - Go to GitHub and create a new repository. Do not initialize it with a README, .gitignore, or license, as your local repository already contains these files.

2. **Add the Remote Repository**:

    - In VS Code, open the terminal (Ctrl+`` (Windows/Linux) or Cmd+`` (macOS)).
    - Add the GitHub repository as a remote(git remote add origin https://github.com/username/repository.git)

3. **Push Changes**:

- Push your local commits to GitHub: (git push -u origin master)