Objective:

This assignment aims to familiarize you with the tools and configurations necessary to set up an efficient developer environment for software engineering projects. Completing this assignment will give you the skills required to set up a robust and productive workspace conducive to coding, debugging, version control, and collaboration.

Tasks:

1. Select Your Operating System (OS):

Download and Install Windows 11:

- Go to the [Windows 11 download page](https://www.microsoft.com/software-download/windows11).

- Click on the "Download Now" button to get the installation assistant.

- Run the installation assistant and follow the prompts to upgrade to Windows 11.

- Make sure your system meets the [Windows 11 minimum system requirements](https://www.microsoft.com/en-us/windows/windows-11-specifications).

2. Install a Text Editor or Integrated Development Environment (IDE):

Download and Install Visual Studio Code:

- Visit the [Visual Studio Code download page](https://code.visualstudio.com/Download).

- Choose the version for Windows and download the installer.

- Run the installer and follow the prompts to complete the installation.

- Launch Visual Studio Code from the Start menu or desktop shortcut.

3. Set Up Version Control System:

Install Git:

- Go to the [Git download page](https://git-scm.com/download/win).

- Download the Git for Windows installer.

- Run the installer and follow the default options unless you have specific preferences.

- Verify the installation by opening a command prompt and typing `git --version`.

Create a GitHub Account:

- Visit [GitHub](https://github.com) and sign up for a free account.

- Follow the instructions to verify your email address.

Initialize a Git Repository:

- Open Visual Studio Code.

- Open the integrated terminal (`Ctrl+``).

- Navigate to your project directory or create a new one:

```bash

mkdir my\_project

cd my\_project

```

- Initialize a new Git repository:

```bash

git init

```

- Create a new file and make your first commit:

```bash

echo "# My Project" >> README.md

git add README.md

git commit -m "Initial commit"

```

4. Install Necessary Programming Languages and Runtimes:

Install Python:

- Go to the [Python download page](https://www.python.org/downloads/).

- Download the latest Python installer for Windows.

- Run the installer and ensure you check the box to add Python to PATH.

- Verify the installation by opening a command prompt and typing `python --version`.

5. Install Package Managers:

Install pip:

- Pip is installed by default with Python. Verify by typing `pip --version` in the command prompt.

- To upgrade pip, run:

bash

python -m pip install

upgrade pip

6. Configure a Database (MySQL):

Download and Install MySQL

- Visit the [MySQL download page](https://dev.mysql.com/downloads/windows/installer/5.7.html).

- Download the MySQL Installer.

- Run the installer and follow the prompts to install MySQL Server.

- Configure MySQL server as needed and set a root password.

- Verify the installation by opening MySQL Command Line Client and logging in with the root account.

7. Set Up Development Environments and Virtualization (Optional):

Consider Using Docker:

- Visit the [Docker Desktop download page](https://www.docker.com/products/docker-desktop).

- Download and install Docker Desktop for Windows.

- Follow the prompts to complete the installation and ensure Docker is running.

8. Explore Extensions and Plugins:

Install VS Code Extensions:

- Open Visual Studio Code.

- Click on the Extensions icon in the Activity Bar on the side of the window or press `Ctrl+Shift+X`.

- Search for and install the following recommended extensions:

- Python by Microsoft.

- ESLint for JavaScript linting.

- Prettier for code formatting.

-Live Server for a live preview of web applications.

9. Document Your Setup:

Create a Comprehensive Document:

- Open a text editor or word processor.

- Document each step taken to set up your developer environment.

- Include screenshots where necessary to illustrate key steps and configurations.

- Note any troubleshooting steps you encountered and how you resolved them.

Deliverables:

1. Setup Documentation:

- A detailed document outlining each step taken to set up your development environment.

- Include screenshots, configurations, and troubleshooting steps.

2. GitHub Repository:

- A repository containing a sample project initialized with Git.

- Include necessary configuration files such as `.gitignore`.