**Developer Environment Setup for Software Engineering Projects**

This document outlines the steps taken to set up an efficient developer environment for software engineering projects. The setup includes installing an operating system, a text editor/IDE, version control system, programming languages, package managers, database, and exploring extensions and plugins.

**1. Select Your Operating System (OS)**

**Task**: Choose an operating system that best suits your preferences and project requirements.

**Step**:

1. **Download and Install Windows 11**:
   * Visit the official Microsoft website: [Windows 11 Download](https://www.microsoft.com/software-download/windows11).
   * Follow the instructions to download and install Windows 11.

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

**Task**: Select and install a text editor or IDE suitable for your programming languages and workflow.

**Step**:

1. **Download and Install Visual Studio Code**:
   * Visit the Visual Studio Code download page: [Visual Studio Code Download](https://code.visualstudio.com/Download).
   * Choose the appropriate version for Windows and follow the installation instructions.

**3. Set Up Version Control System**

**Task**: Install Git, configure it on your local machine, create a GitHub account, and initialize a Git repository.

**Steps**:

1. **Install Git**:
   * Visit the Git download page: [Git Download](https://git-scm.com/download/win).
   * Download and install Git for Windows.
2. **Configure Git**:
   * Open Git Bash and run the following commands to configure your Git username and email:

sh

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git config --global user.name "Your Name"

git config --global user.email "your.email@example.com"

1. **Create a GitHub Account**:
   * Visit GitHub: [GitHub](https://github.com).
   * Sign up for a new account.
2. **Initialize a Git Repository**:
   * Create a new project directory:

sh

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mkdir my\_project

cd my\_project

* + Initialize a Git repository:

sh

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git init

* + Create a README file and make your first commit:

sh

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echo "# My Project" > README.md

git add README.md

git commit -m "Initial commit"

**4. Install Necessary Programming Languages and Runtimes**

**Task**: Install Python programming language and ensure the necessary tools to build and execute code are available.

**Steps**:

1. **Install Python**:
   * Visit the Python download page: [Python Download](https://www.python.org).
   * Download and install the latest version of Python for Windows.
2. **Verify Python Installation**:
   * Open Command Prompt and run:

sh

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python --version

* + Install pip (if not already installed):

sh

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python -m ensurepip --upgrade

**5. Install Package Managers**

**Task**: Install package managers like pip for Python.

**Steps**:

1. **Verify pip Installation**:
   * Open Command Prompt and run:

sh

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pip --version

**6. Configure a Database (MySQL)**

**Task**: Download and install MySQL database.

**Steps**:

1. **Download and Install MySQL**:
   * Visit the MySQL download page: [MySQL Download](https://dev.mysql.com/downloads/windows/installer/5.7.html).
   * Download and install MySQL using the provided installer.

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

**Task**: Consider using virtualization tools like Docker or virtual machines.

**Steps**:

1. **Install Docker** (Optional):
   * Visit the Docker download page: Docker Download.
   * Download and install Docker Desktop for Windows.

**8. Explore Extensions and Plugins**

**Task**: Explore available extensions, plugins, and add-ons for Visual Studio Code.

**Steps**:

1. **Open Visual Studio Code**.
2. **Install Extensions**:
   * Open the Extensions view by clicking on the Extensions icon in the Activity Bar on the side of the window.
   * Search for and install the following recommended extensions:
     + Python
     + GitLens
     + Prettier - Code formatter
     + ESLint