**Developer Environment Setup Guide**

This document outlines the steps taken to set up a developer environment for SimonD1606 Demo Project. It includes details on software installations, configurations, customizations, and troubleshooting encountered during the process.

**Tasks:**

1. **Operating System:**

* **Selection:** Windows 11 was chosen due to familiarity and project requirements (if applicable).
* **Installation:** Downloaded and installed Windows 11 from the official Microsoft website: <https://www.microsoft.com/software-download/windows11>

1. **Text Editor/IDE:**

* **Selection:** Visual Studio Code was chosen for its versatility and extensive plugin support.
* **Installation:** Downloaded and installed Visual Studio Code from the official website: <https://code.visualstudio.com/download>

1. **Version Control System:**

* **Git Installation:** Installed Git from the official website and configured it on the local machine.
* **GitHub Account:** Created a GitHub account (<https://github.com/index.html>) for hosting project repositories.
* **Git Repository:** Initialized a Git repository for the project and made the first commit, by using the following steps;

Open a terminal window and initialize a Git repository for your project:

git init

Make your first commit:

* + git add .

(adds all tracked files to the staging area)

* + git commit -m "Initial commit"

(commits the staged changes)

1. **Programming Languages and Runtimes:**

* **Python Installation:** Installed Python from the official website (<https://www.python.org/>), as it's required for the project and to verify the Python installation by opening a terminal window and typing

python --version

* **Verifying Environment:** Ensured the necessary tools to build and execute Python code are available (e.g., pip).

1. **Package Manager:**

* **pip Installation:** Installed pip (Python Package Installer) as it's the primary package manager for Python. The Following steps used;

Open a terminal window and install pip (Python package manager):

pip install pip

Verify the pip installation by typing

pip --version

1. **Database (Optional):**

* **MySQL Installation (Optional):** This step is skipped if the project doesn't require a database. If needed, download and install MySQL from the official website: <https://dev.mysql.com/downloads/installer/> by using the following steps;
  + Download MySQL from <https://dev.mysql.com/downloads/windows/installer/5.7.html>.
  + Run the installer and follow the on-screen instructions.
  + Create a database user and grant necessary permissions.

1. **Development Environments and Virtualization (Optional):**

* **Virtualization (Optional):** The use of virtualization tools like Docker or virtual machines is not implemented in this initial setup but will be considered for future project needs. The following steps followed;
  + Install Docker from <https://www.docker.com/>.
  + Create a Dockerfile for your project.
  + Build a Docker image from the Dockerfile.
  + Run the Docker image to create a container for your project.

1. **Extensions and Plugins:**

* **Exploration:** Explored available extensions for Visual Studio Code to enhance functionality. These may include syntax highlighting, linting, code formatting, and Git integration. Specific extensions installed will be documented in a separate file (e.g., extensions.txt). the following steps followed;
  + Open the Extensions tab in Visual Studio Code.
  + Browse and install extensions such as:
  + Python: Official Python extension for syntax highlighting, linting, and debugging.
  + Git: Extension for version control integration.
  + Docker: Extension for Docker integration.

**Reflection on Challenges and Strategies**

**Challenges Encountered:**

* **Installing MySQL:** Navigating MySQL configurations and ensuring successful connection to the database.
* **Setting up Git:** Understanding and applying Git commands for version control.
* **Choosing the right extensions and plugins:** Evaluating compatibility and selecting the most suitable ones for specific project needs.

**Strategies Employed:**

* **Research and Documentation:** Thoroughly reading documentation and online resources to clarify setup procedures.
* **Community Support:** Seeking assistance from online forums and communities to troubleshoot specific issues.
* **Testing and Iteration:** Trying different approaches and making adjustments based on test results to optimize the setup.
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**Additional Documents:**

* A GitHub repository containing a sample project initialized with Git is <https://github.com/SimonD1606/Demo.git>

This document serves as a living record of the development environment setup process. It will be updated as additional tools, configurations, or customizations are implemented.