Developer Environment Setup Documentation

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1. Operating System Installation

Choosing Windows 11

- Selected Windows 11 for its modern interface and compatibility with various software.

Downloading and Installing Windows 11

- Visited [Microsoft's website](https://www.microsoft.com/software-download/windows11) and downloaded the Windows 11 installation media.
- Followed the installation wizard to complete the installation on my machine.

2. Text Editor/IDE Installation

Selecting Visual Studio Code

- Chose Visual Studio Code (VS Code) for its versatility and extensive extension support.

Downloading and Installing Visual Studio Code

- Downloaded VS Code from [Visual Studio Code website](https://code.visualstudio.com/Download).
- Ran the installer and selected the default installation location.

3. Version Control System Setup

Installing Git

- Downloaded Git from [git-scm.com](https://git-scm.com/download/win).
- Ran the installer and followed the prompts to complete installation.

Configuring Git

- Opened Git Bash and configured Git with my username and email:

```
git config --global user.name "Your Name"
git config --global user.email "your.email@example.com"
```

Creating a GitHub Account

- Created a GitHub account at github.com.

Initializing a Git Repository

- Created a new project directory and initialized a Git repository:

```
git init
```

Making Your First Commit

- Added files to the repository and committed them:

```
git add .
git commit -m "Initial commit"
```

Creating a GitHub Repository and Pushing Your Code

- Created a new repository on GitHub.
- Linked the local repository to the remote GitHub repository and pushed the code:

```
git remote add origin <repository_url>
git push -u origin master
```

4. Programming Languages and Runtimes Installation

Installing Python

- Downloaded Python from [python.org](https://www.python.org/downloads/).
- Ran the installer, selecting "Add Python to PATH" during installation.

5. Package Managers Installation

Installing pip (Python Package Installer)

- pip, the package installer for Python, was automatically installed with Python.

6. Database (MySQL) Configuration

Installing MySQL Server

- Downloaded MySQL Installer from [dev.mysql.com](https://dev.mysql.com/downloads/windows/installer/5.7.html).
- Ran the installer and followed the prompts to install MySQL Server.

Installing MySQL Workbench

- Installed MySQL Workbench as part of the MySQL Installer package.

Setting Up MySQL Server

- Configured MySQL Server with necessary settings (optional, depending on project requirements).

7. Development Environments and Virtualization

Considering Virtualization Tools (Optional)

- Explored Docker and virtual machines for isolating project dependencies and ensuring consistent environments across different machines (optional based on project needs).

8. Exploring Extensions and Plugins

Installing Essential VS Code Extensions

- Explored and installed VS Code extensions such as:
  - Python for IntelliSense and debugging.
  - GitLens for Git integration.
  - Pylint for code linting.

9. Documenting Your Setup

Detailed Steps with Screenshots

- Created a comprehensive document outlining each step of the setup process.
- Included screenshots where necessary to illustrate installation and configuration steps.

10. Reflection on Challenges and Strategies

Challenges Faced

- Initial configuration of Git settings.
- Ensuring proper integration and setup of Python and MySQL.

Strategies Employed

- Thoroughly reading documentation and following step-by-step guides.

- Seeking assistance from online forums and communities for any issues encountered.

This documentation provides a detailed guide to setting up a robust developer environment on Windows 11, tailored to support software development projects efficiently.