DEVELOPER ENVIRONMENT SETUP DOCUMENTATION

Introduction

This document outlines the steps taken to set up a development environment for software engineering projects. The setup includes installing necessary software, configuring tools, and ensuring the environment is ready for development tasks such as coding, debugging, version control, and collaboration.

Step-by-Step Instructions:

1. Select Your Operating System (OS)

Windows 11 Installation:

A. Download Windows 11 from the Microsoft website.

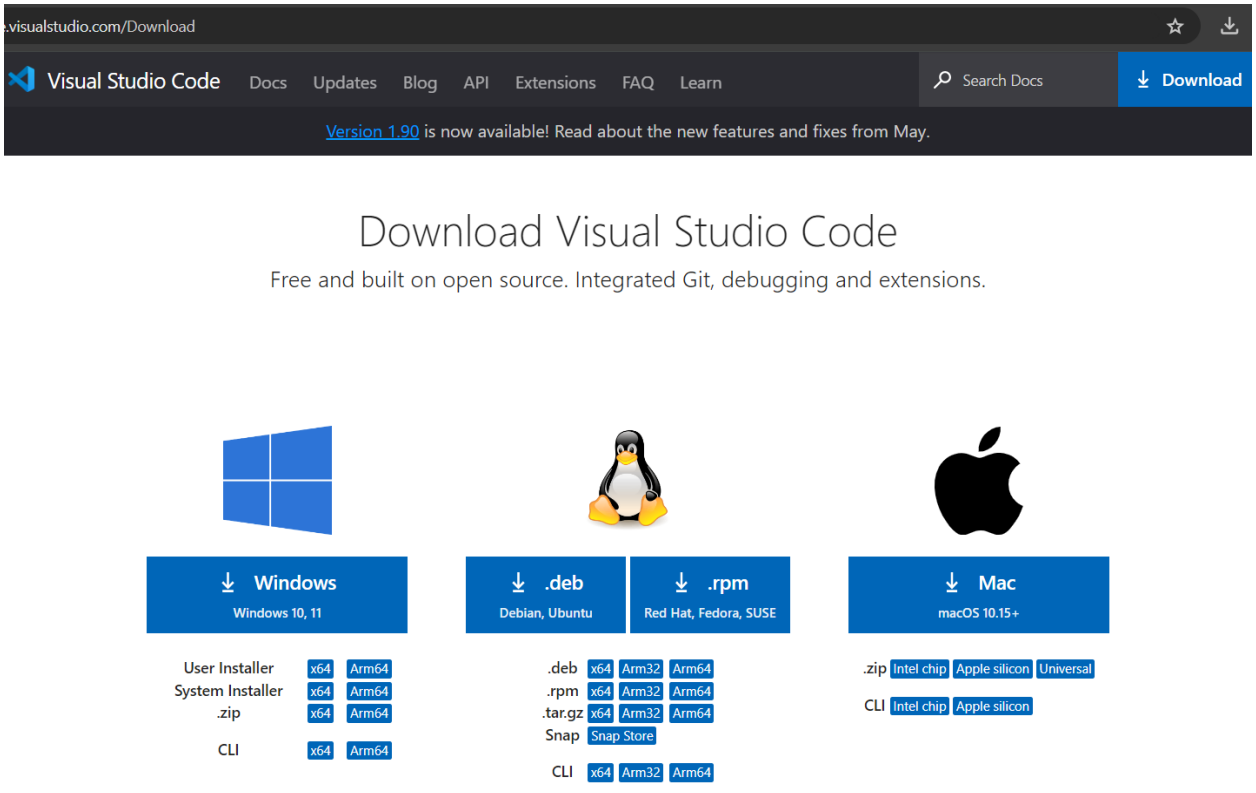
B. Create a bootable USB drive using the Windows Media Creation Tool.

C. Install Windows 11 by booting from the USB drive and following the on-screen instructions.

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

Visual Studio Code Installation:

1. Download Visual Studio Code from the VS Code website.

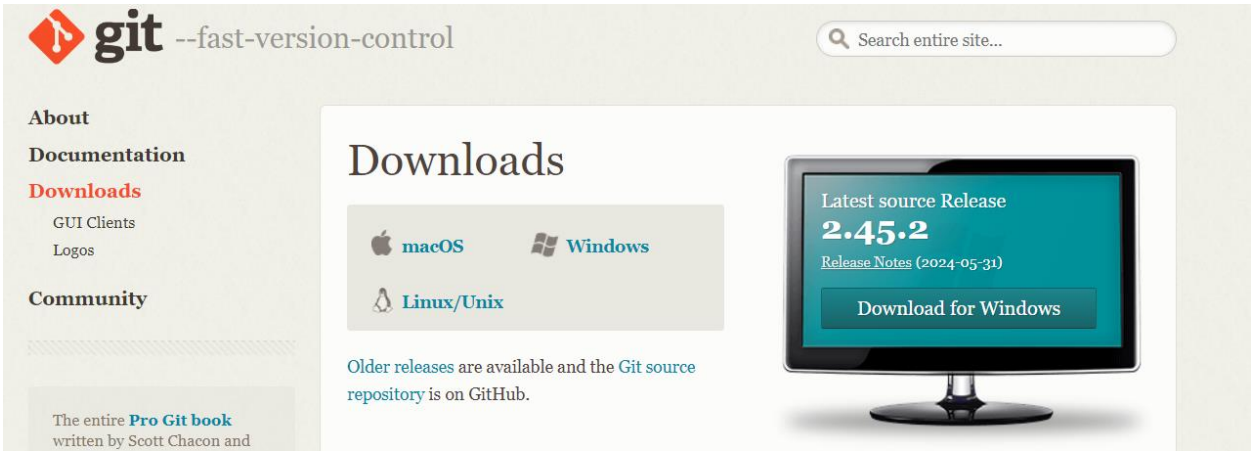


2. Run the installer and follow the setup wizard.
3. Launch Visual Studio Code and customize the settings as needed.

3. Set Up Version Control System

Git Installation and Configuration:

1. Download Git from the official Git website.



2. Run the installer and follow the setup instructions.
3. Open Git Bash and configure Git with your user information:

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

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

GitHub Account Setup

1. Create a GitHub account at GitHub if you don't already have one.
2. Verify your email address and set up two-factor authentication for added security.

Initialize a Git Repository

1. Open Git Bash or your preferred terminal.
2. Navigate to your project directory:

```
cd path/to/your/project
```

3. Initialize a Git repository and make the first commit:

```
git init
```

```
git add .

git commit -m "Initial commit"
```

Link to GitHub Repository

1. Create a new repository on GitHub.
2. Link your local repository to the GitHub repository:

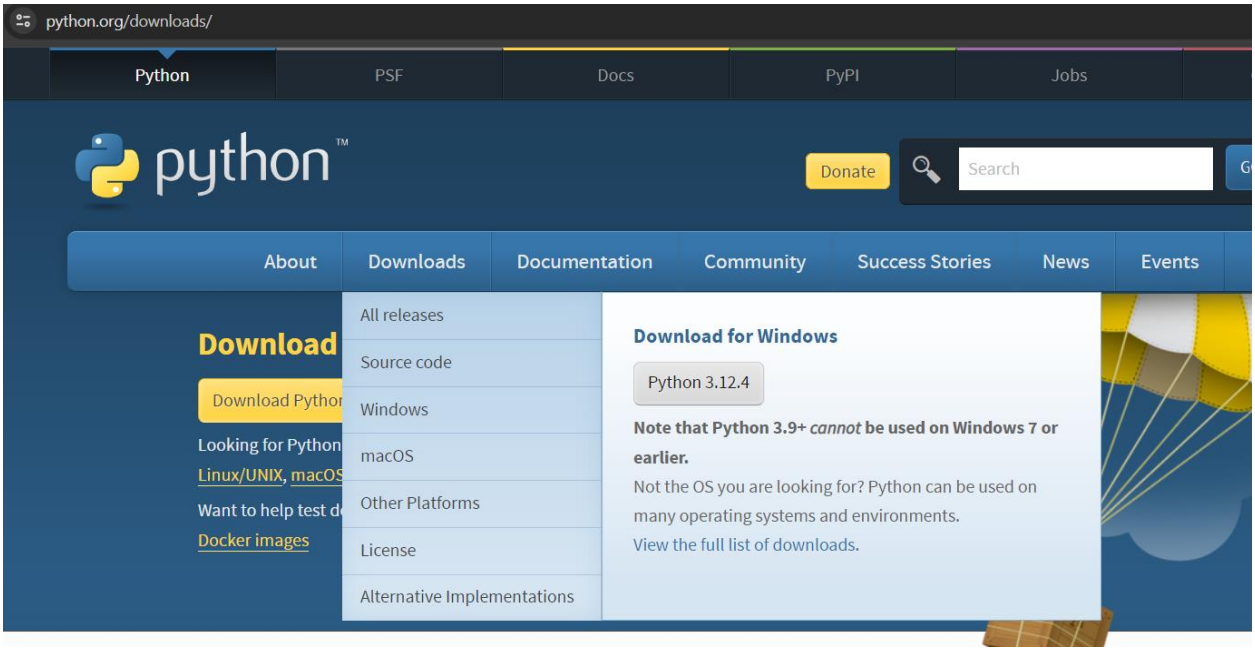
```
git remote add origin https://github.com/yourusername/your-repository.git

git push -u origin master
```

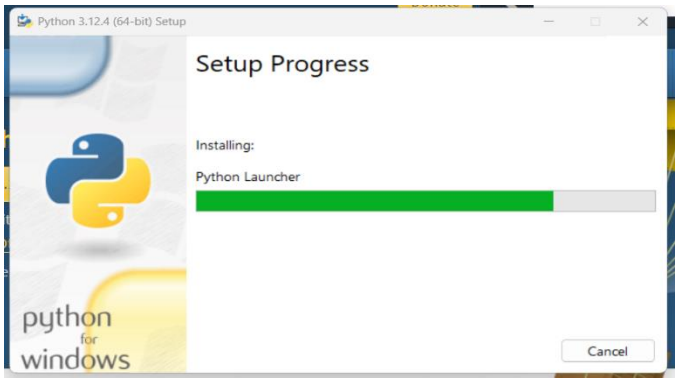
4. Install Necessary Programming Languages and Runtimes

Python Installation:

1. Download Python from the official website.



2. Run the installer and ensure "Add Python to PATH" is checked.



3. Verify the installation:

```
python --version
```

5. Install Package Managers

Pip Installation

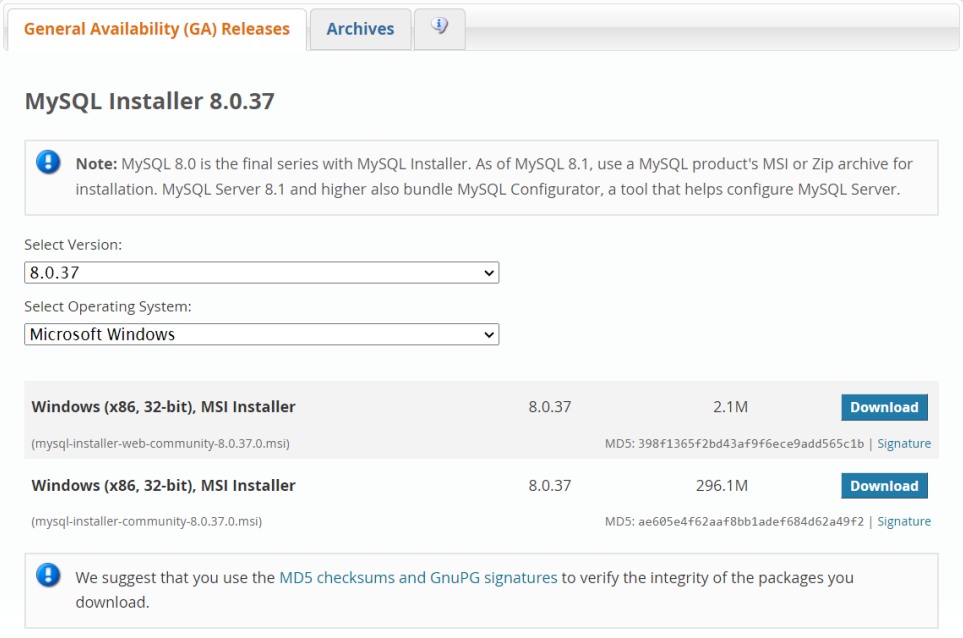
1. Pip is included with Python 3.4+.
2. Verify pip installation:

```
pip --version
```

6. Configure a Database (MySQL)

MySQL Installation:

1. Download MySQL from the MySQL website.



2. Run the installer and follow the setup wizard, choosing the appropriate configuration for your needs.
3. Set up a root password and configure the database as required.

7. Set Up Development Environments and Virtualization (Optional)

Docker Installation

1. **Download Docker Desktop** from the Docker website.

2. **Run the installer** and follow the setup instructions.
3. **Verify the installation**:

```
docker --version
```

8. Explore Extensions and Plugins

Visual Studio Code Extensions:

1. Open Visual Studio Code.
2. Go to the Extensions view by clicking the Extensions icon or pressing Ctrl+Shift+X.
3. Search for and install the following extensions:
    - Python
    - GitLens
    - Prettier - Code formatter

Reflection

Challenges Faced

1. **Git and GitHub Configuration**: Initially faced issues with SSH key setup for secure connections.
2. **Docker Installation**: Encountered errors due to virtualization not being enabled in BIOS.

Strategies Employed

1. **GitHub Documentation**: Followed detailed instructions from the GitHub documentation.
2. **BIOS Configuration**: Enabled virtualization in BIOS by referring to the motherboard's manual.

Deliverables

GitHub Repository

- GitHub repository link