

Python 3.11 Installation & Virtual Environment Setup on macOS

✅ Step 1: Check if Python is Already Installed

Open **Terminal** (Cmd + Space → type Terminal → Enter)

```
> python3 --version
```

If the version is **3.11.x**, you're all set. If not, follow the next steps to install it.

✅ Step 2: Install Homebrew (if not already installed)

Homebrew is a package manager for macOS that makes installing software easier.

In Terminal, paste this command and press Enter:

```
> /bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```

Then add Homebrew to your path (you'll see instructions after the install completes). Usually it's:

```
> echo 'eval "$(/opt/homebrew/bin/brew shellenv)"' >> ~/.zprofile
```

```
> eval "$(/opt/homebrew/bin/brew shellenv)"
```

Check it's working:

```
> brew --version
```

✅ Step 3: Install Python 3.11

Now install Python 3.11 using Homebrew:

```
> brew install python@3.11
```

Check that it installed correctly:

```
> python3.11 --version
```

✅ Step 4: Create a Virtual Environment

Pick or create a project folder:

```
> git clone https://github.com/ironfrown/qml\_workshop\_intro.git
```

```
> cd qml_workshop_intro
```

Now create the virtual environment:

```
> python3.11 -m venv venv
```

✓ **Step 5: Activate the Virtual Environment**

To activate it, run:

```
> source venv/bin/activate
```

✓ **Step 6: Install Python Packages Inside the Environment**

Now you can install packages without affecting the system Python:

```
(venv) > pip install -r requirements.txt
```

✓ **Step 7: Run jupyter lab**

```
> jupyter lab
```

✓ **Step 8: Deactivate the Environment (when you're done)**

```
> deactivate
```