🐍 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_v2
> cd qml_workshop_intro_v2

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