

## # Python Installation Guide for macOS

This guide will walk you through installing Python on macOS from scratch. No prior experience required.

### ## Step 1: Check if Python is Already Installed

macOS comes with Python pre-installed, but it's usually an older version. Let's check:

1. Press `Command + Space` to open Spotlight search
2. Type `terminal` and press Enter to open Terminal
3. Type `python3 --version` and press Enter
4. If you see `Python 3.8` or higher, you're ready to go
5. If you see `Python 3.7` or lower, you'll need to install a newer version

**\*\*Note\*\*:** Never use the `python` command on macOS (without the "3") as it points to the outdated Python 2.7.

### ## Step 2: Download Python

1. Open your web browser and go to [<https://python.org>] (<https://python.org/>)
2. Click the yellow "Download Python 3.x.x" button
3. This downloads the macOS installer (a .pkg file)
4. The file will be named something like `python-3.11.5-macos11.pkg`

### ## Step 3: Install Python

1. Locate the downloaded .pkg file (usually in Downloads)

2. Double-click the installer to start the installation process
3. Click "Continue" through the introduction screens
4. When prompted, click "Install" (you may need to enter your Mac password)
5. Wait for installation to complete (usually 2-3 minutes)
6. Click "Close" when finished

## ## Step 4: Verify the Installation

1. Open a new Terminal window:
  - Press `Command + Space`
  - Type `terminal` and press Enter
2. Type `python3 --version` and press Enter
3. You should see the new Python version (like `Python 3.11.5`)
4. Type `pip3 --version` and press Enter
5. You should see pip version information

## ## Step 5: Test Python is Working

1. In Terminal, type `python3` and press Enter
2. You should see the Python interpreter start with `>>>`
3. Type `print("Hello, World!")` and press Enter
4. You should see "Hello, World!" printed
5. Type `exit()` and press Enter to leave Python

## ## Step 6: Create Shortcuts (Optional but Recommended)

To make commands shorter, you can create aliases:

1. Open Terminal
2. Type `nano ~/.zshrc` and press Enter (for newer Macs with zsh)
3. Or type `nano ~/.bash_profile` and press Enter (for older Macs with bash)

4. Add these lines at the end:

```
alias python=python3alias pip=pip3
```

5. Press `Control + X`, then `Y`, then Enter to save

6. Close and reopen Terminal for changes to take effect

## Step 7: Install Xcode Command Line Tools (If Needed)

Some Python packages require compilation tools:

1. Open Terminal
2. Type `xcode-select --install` and press Enter
3. Click "Install" in the popup dialog
4. Wait for installation to complete (can take 10-30 minutes)
5. This step may not be necessary immediately but prevents future issues

## Troubleshooting Common Issues

### Problem: "command not found" when typing python3

**\*\*Solution\*\*:** The installation didn't complete properly.

1. Try downloading and reinstalling Python from python.org
2. Make sure you're using `python3` not `python`
3. Restart Terminal after installation

### Problem: Permission denied errors

**\*\*Solution\*\*:** macOS security restrictions.

1. Go to System Preferences > Security & Privacy
2. If you see a message about Python being blocked, click "Allow"
3. Try the installation again

### Problem: Multiple Python versions causing confusion

**\*\*Solution\*\*:** This is normal on macOS.

1. Always use `python3` for the version you installed
2. Use `which python3` to see which Python you're using
3. Use `python3 -m pip` instead of just `pip3` for installing packages

### Problem: "pip3: command not found"

**\*\*Solution\*\*:** pip wasn't installed properly.

1. Download get-pip.py from [\]\(https://bootstrap.pypa.io/get-pip.py\)](https://bootstrap.pypa.io/get-pip.py)
2. In Terminal, navigate to Downloads: `cd ~/Downloads`
3. Run: `python3 get-pip.py`

## What You've Accomplished

You now have:

- Python 3.x installed and working on macOS
- pip3 (Python package manager) ready for installing libraries
- A working Terminal environment
- Optional shortcuts for easier command usage
- The foundation needed to follow along with this book

## Next Steps

With Python installed, you're ready to:

1. Install Cursor AI (covered in Chapter 1)
2. Begin your vibe coding journey
3. Start building applications with AI assistance

## ## macOS-Specific Tips

- Always use ``python3`` and ``pip3`` commands
- Terminal is your command line interface (like Command Prompt on Windows)
- Use ``Command + Space`` to quickly open Terminal via Spotlight
- The ``~`` symbol represents your home directory
- You can drag files from Finder into Terminal to get their full path

Remember: macOS can be particular about security, so if you encounter permission issues, check System Preferences > Security & Privacy for any blocked installations.