

Python & PyOpenGL Installation Guide (Windows)

Step 1: Install Python

1. Download Python from the official website:
<https://www.python.org/downloads/>
2. Install Python (any version). During installation:
 - Check 'Add Python to PATH' (recommended).
 - Complete the installation.

Step 2: Verify Python Installation

1. Open Command Prompt (CMD) or PowerShell.

2. Run the following command:

```
python --version
```

- If Python is installed correctly, it will show something like: Python 3.12.5
- If you get an error (Python not found), continue to the next step.

Step 3: Check Python Path

1. In CMD, run:

```
where python
```

- If Python is installed correctly, this should show a path like:
C:\Users\LENOVO\AppData\Local\Programs\Python\Python312\python.exe
- If nothing shows, Python is not added to PATH.

Step 4: Fix PATH Issue

1. Find your Python installation folder. Usually it is in:

C:\Users\LENOVO\AppData\Local\Programs\Python\Python3xx
(where 3xx = version like 312).

2. Copy that folder path.
3. Go to: - **Settings** → **System** → **About** → **Advanced system settings** → **Environment Variables**.

- Under System variables, select **Path** → **Edit**.
- Add these two paths (adjust version number):

*C:\Users\LENOVO\AppData\Local\Programs\Python\Python312\
C:\Users\LENOVO\AppData\Local\Programs\Python\Python312\Scripts*

4. Save and restart your terminal.

Step 5: Disable Microsoft Store Alias (if still not working)

1. Open: Settings → Apps → Advanced app settings → App execution aliases.
2. Turn OFF the switches for:
 - python.exe
 - python3.exe

This prevents Windows from redirecting to Microsoft Store.

Step 6: Verify Installation

Reopen CMD or PowerShell and run:

```
python --version
```

It should now show something like:

Python 3.12.5

👉 If you already installed multiple versions of Python, remove all except one (preferably the latest version).

Step 7: Download PyOpenGL

1. Open this GitHub repository:
<https://github.com/cgohlke/pyopengl-build/releases>
2. Download the following files based on your system:

- For Ryzen (AMD processor):
 - *PyOpenGL-3.X.X-cp3XX-cp3XX-win_amd64.whl*
 - *PyOpenGL_accelerate-3.X.X-cp3XX-cp3XX-win_amd64.whl*
- For Intel processor:
 - *PyOpenGL-3.X.X-cp3XX-cp3XX-win_amr64.whl*
 - *PyOpenGL_accelerate-3.X.X-cp3XX-cp3XX-win_amr64.whl*

(Note: 3XX = Python version, e.g., for Python 3.12 → cp312)

3. Save both .whl files in a specific folder.

Step 8: Install PyOpenGL

1. Open CMD or PowerShell in the folder where you saved the .whl files.
2. Run the following commands (adjust filenames to match your downloaded version):

```
pip install PyOpenGL-3.X.X-cp3XX-cp3XX-win_amd64.whl  
pip install PyOpenGL_accelerate-3.X.X-cp3XX-cp3XX-win_amd64.whl
```

3. Wait until installation completes.

Step 9: Verify Installation

Run Python and try importing PyOpenGL:

```
import OpenGL  
print("PyOpenGL installed successfully!")
```

If no error appears, installation is complete 