Requirements

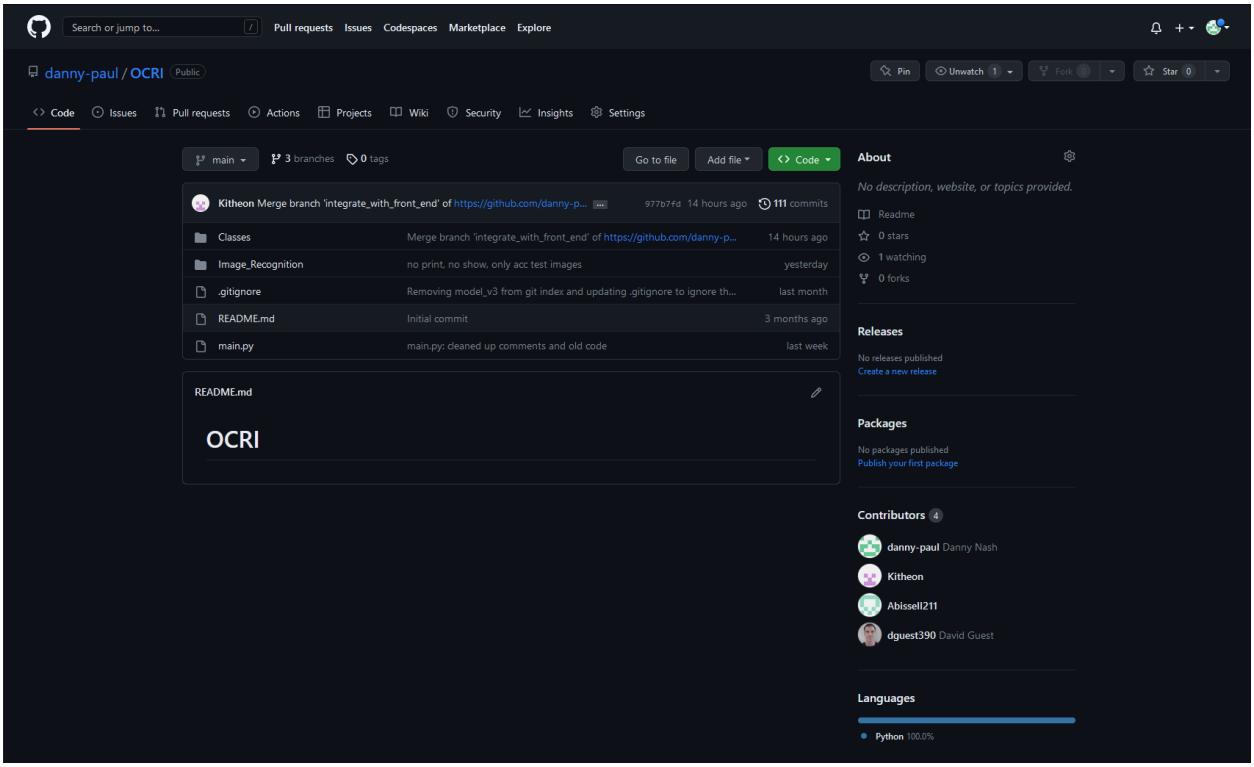
- Python 3.10+
- Git (v 2.40.0.1 was used) if downloading through git.
- Internet connection
- Windows Machine
    - Can run on Mac and Debian based Linux, but the guide does not cover those systems.

Downloading the source code with git

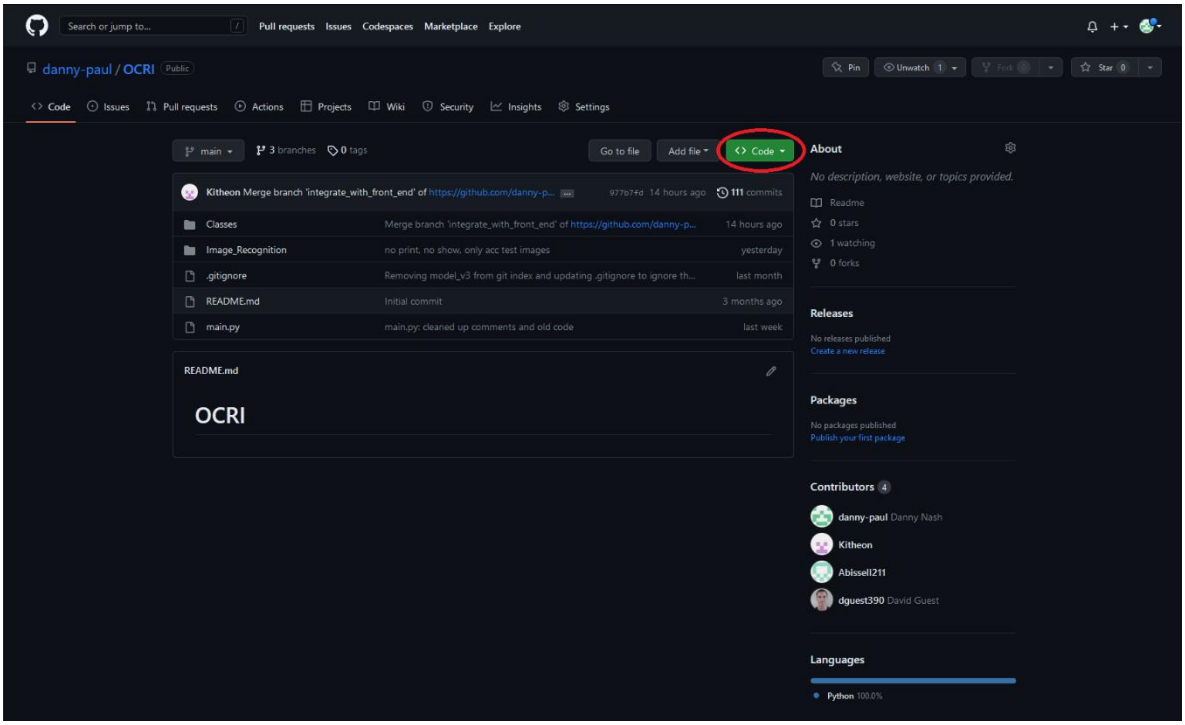
1. Choose a location on your computer to store the incoming project files. Git will create a new folder called OCRI within the chosen folder.
2. Open command prompt and navigate to the desired location.
3. Enter “git clone https://github.com/danny-paul/OCRI”
4. It will get the source code with project structure and add it to your folder.

Downloading the source code with web browser

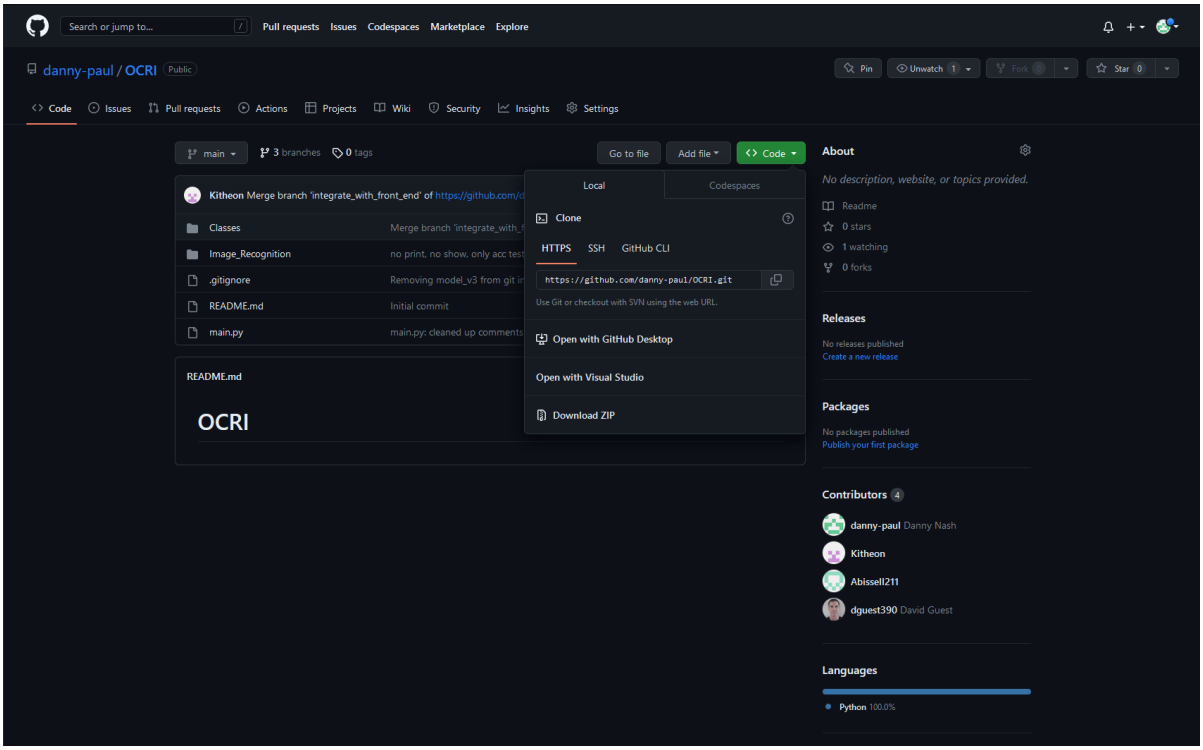
1. Navigate to https://github.com/danny-paul/OCRI
2. You will be presented with the main branch, this is what we want to save



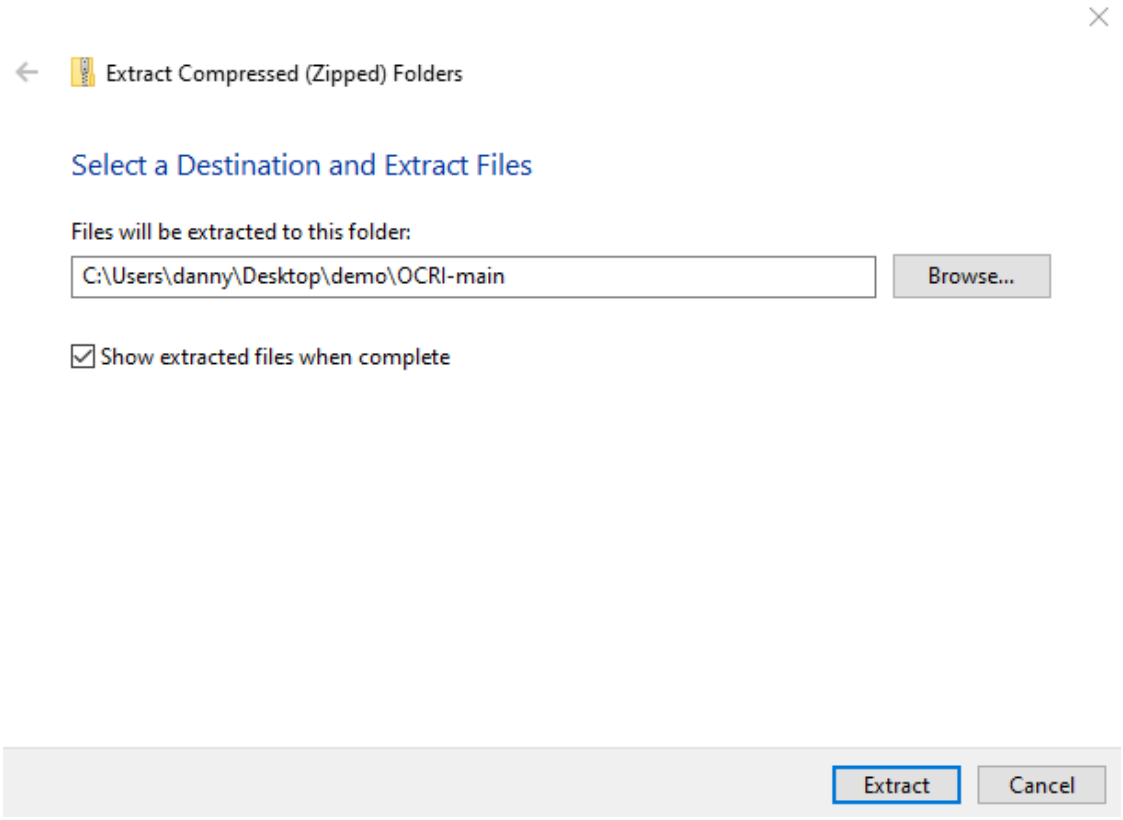
3. Select the “<> Code” Dropdown



4. Click “Download Zip” and save somewhere on your device.



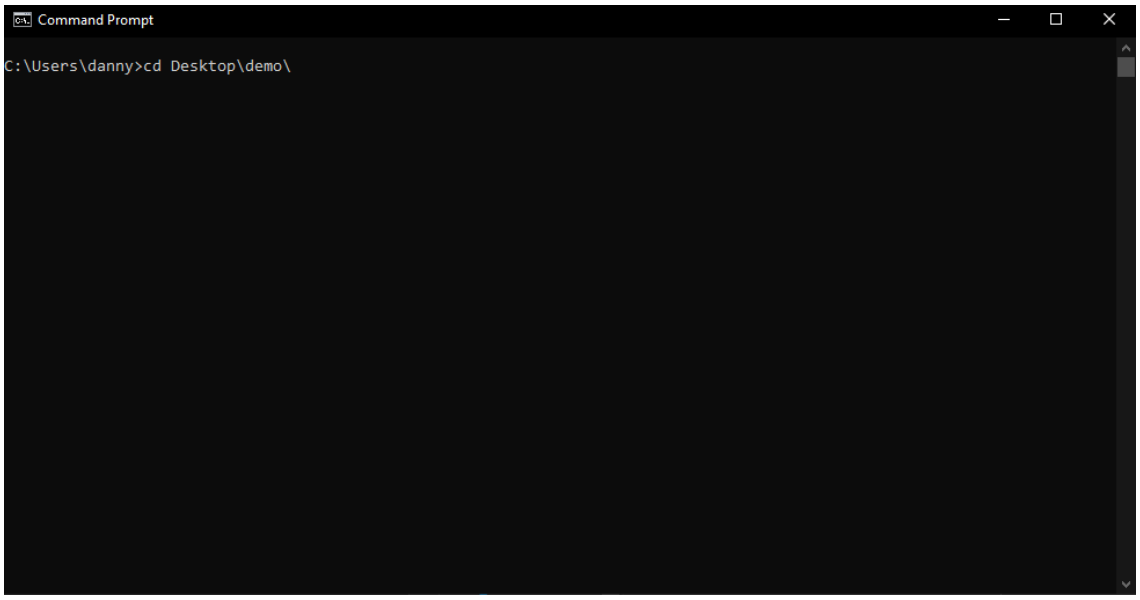
5. Extract the contents of the zip folder to your desired location to run the project



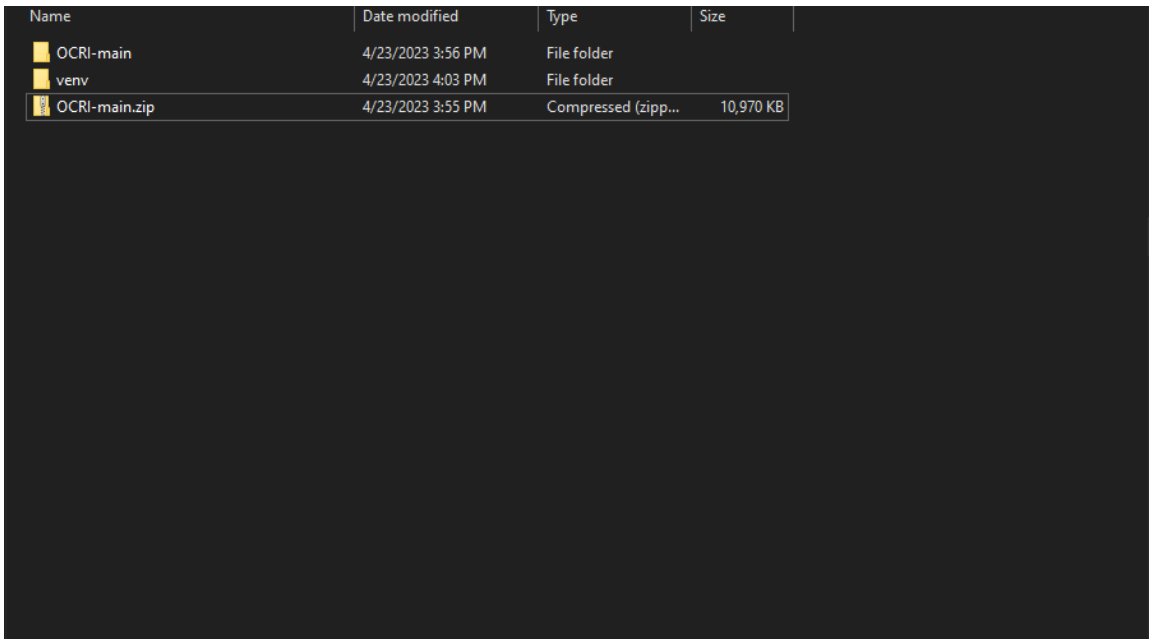
6. A folder called “OCRI-main” containing the project is created.

Creating the Virtual Environment

1. Open command prompt and navigate to where you want to save the virtual environment
    a. Typically in the project directory's parent.

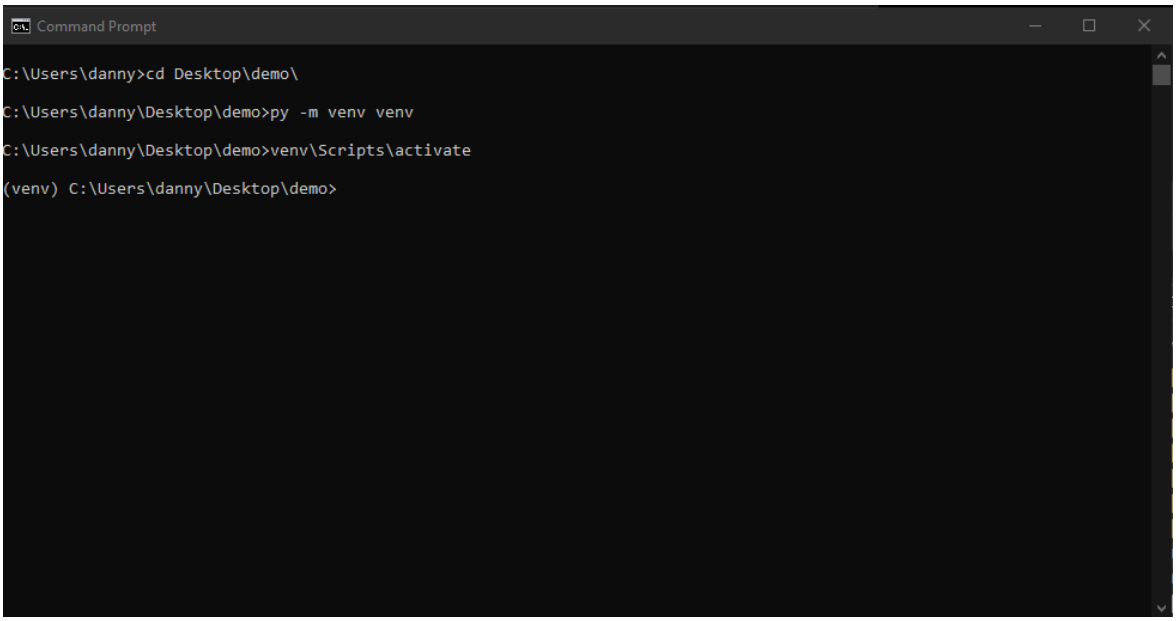


2. Type the following command to create the virtual environment "py -m venv venv"
3. This will create a "venv" folder in your current directory.



4. Now activate the virtual environment with "venv\Scripts\activate"

5. You will see a (venv) appear to the left of your file path.



6. Any python program we run will look to the virtual environment libraries for additional necessary files.
7. We can now “pip install” the necessary files for the project.

Installing Necessary Libraries

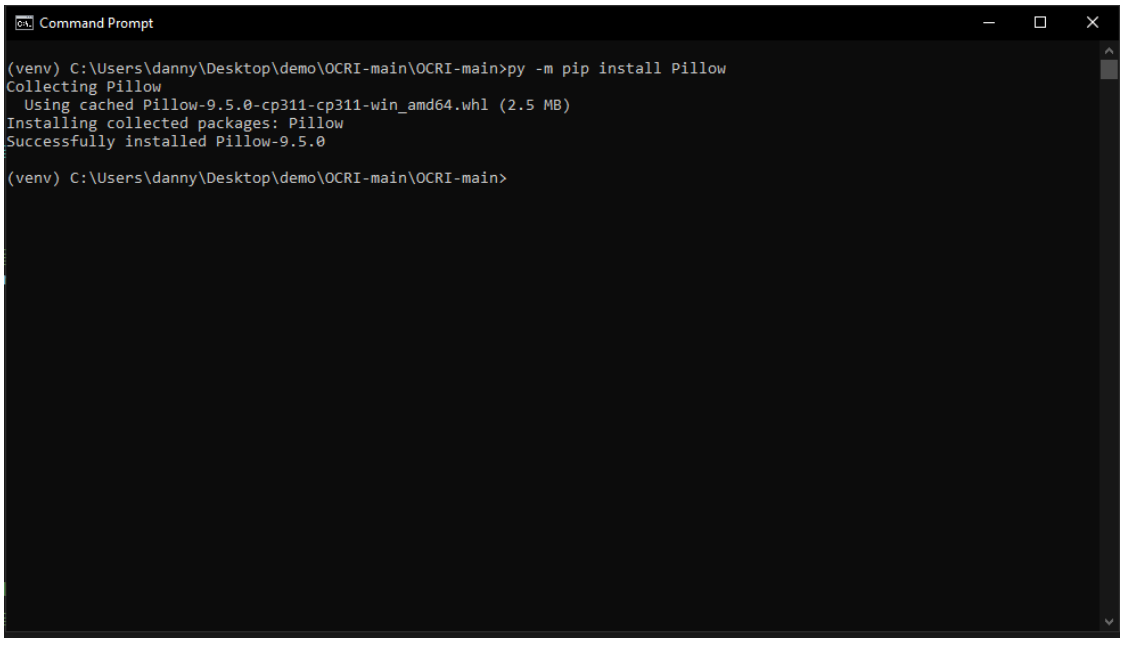
Required Libraries:

- OpenCV on Wheels (opencv-python 4.7.0.72 or later)
    - “pip install opencv-python”
- Pillow 9.5.0 or later
    - “pip install Pillow”
- TensorFlow 2.10 or later
    - “pip install tensorflow”
- matplotlib 3.71 or later
    - “pip install matplotlib”
- imutils 0.54 or later
    - “pip install imutils”
- numpy 1.23.5 or later
    - “pip install numpy”

Installing libraries with pip

Best practice to update pip first, so before installing anything run “pip install --upgrade pip”

1. Call the python interpreter and then run the pip commands to install the necessary libraries.
    a. For example, “pip install Pillow” to install the Pillow library



2. Repeat this for each required library.

Troubleshooting

- Python interpreter is not recognized in command line.
    - After installing the python interpreter, you have to set up PATH on your system
    - Guide to setup: https://www.makeuseof.com/python-windows-path/
- TensorFlow was installed, but keras library is still not being recognized during runtime.
    - This can occur when you are not using a virtual environment. If installing dependencies globally (ie: without venv), keras requires a different path.