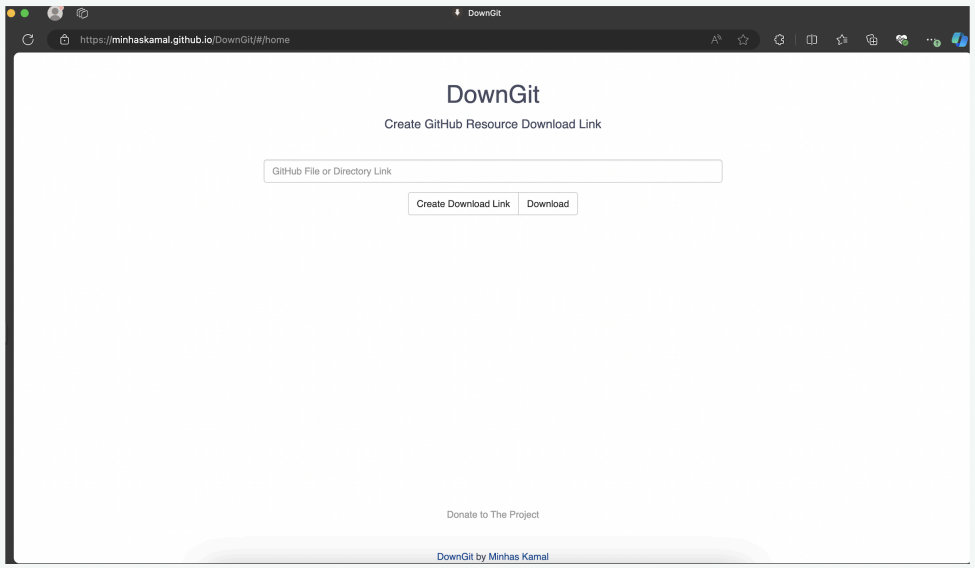
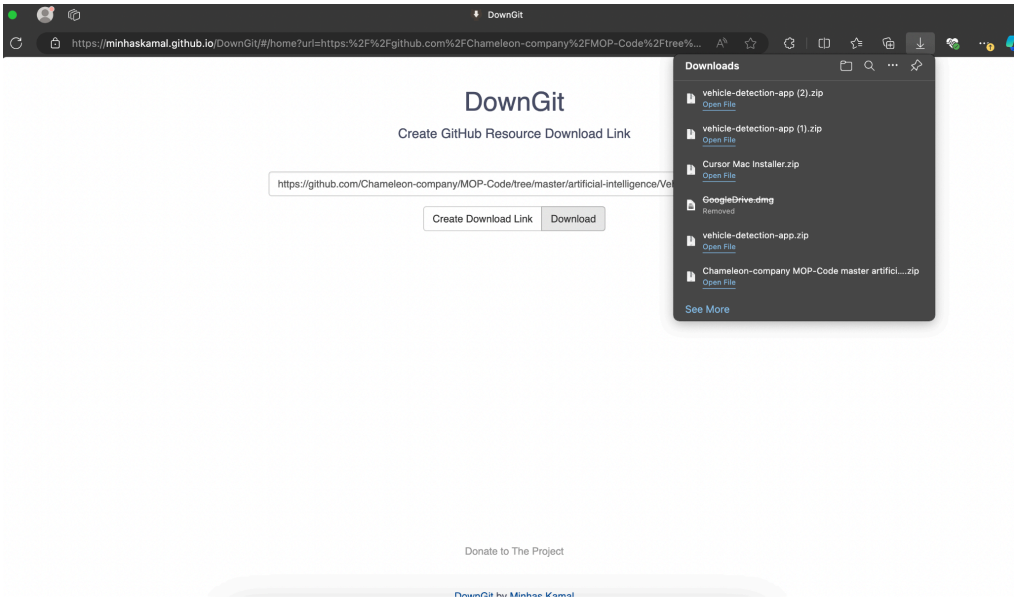
How to run Vehicle detection web app locally

Step 1: Download the Web App Code from GitHub

1. Visit the following website: [DownGit](#).



2. Paste this URL in the input field:
`https://github.com/Chameleon-company/MOP-Code/tree/master/artificial-intelligence/Vehicle%20Classification/vehicle-detection-app`

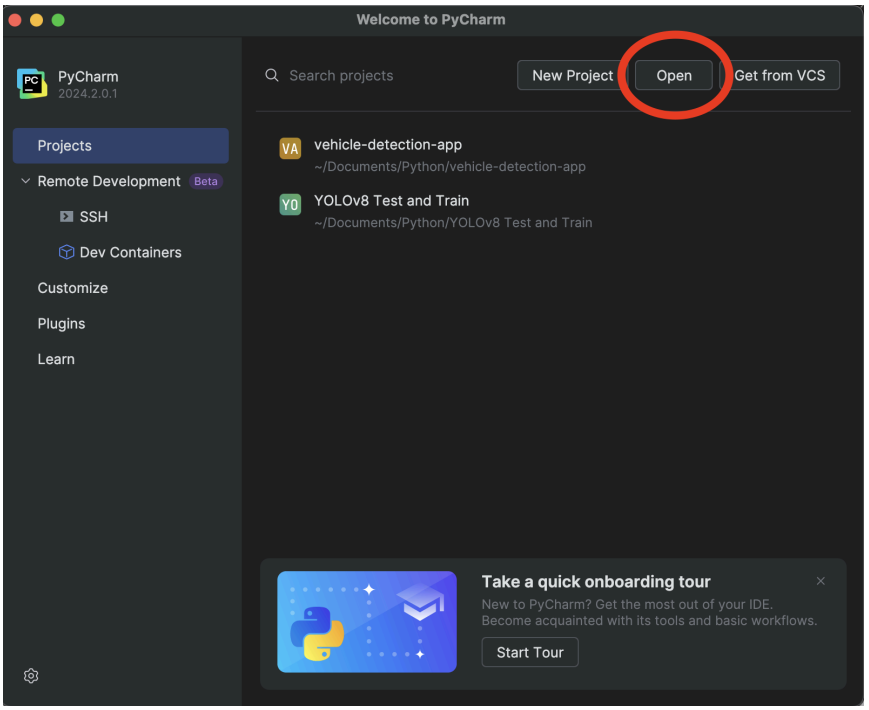


3. Click the **Download** button to download a `.zip` file containing all the necessary web app files.

4. Once downloaded, extract the contents of the `.zip` file to a location of your choice on your local machine.

Step 2: Open the Project in PyCharm or Similar IDE

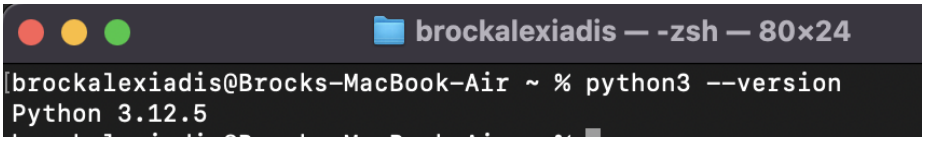
1. **For PyCharm:**
   - Launch PyCharm and go to `Open`.



   - Navigate to the folder where you extracted the project files, and select it.
2. **For Visual Studio Code (VS Code):**
   - Open VS Code, go to `File -> Open Folder`, and select the extracted project folder.
   - Most IDEs will follow similar steps for opening a project folder.

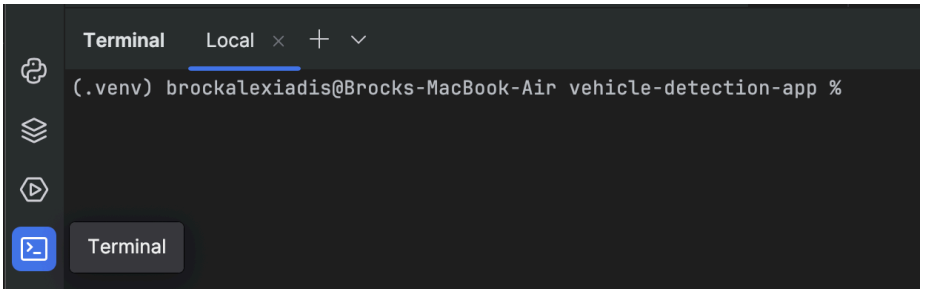
Step 3: Install Python and Set Up a Virtual Environment

1. **Ensure Python is Installed:**
   - Verify that Python 3.8 or higher is installed on your system. If not, you can download it from python.org.

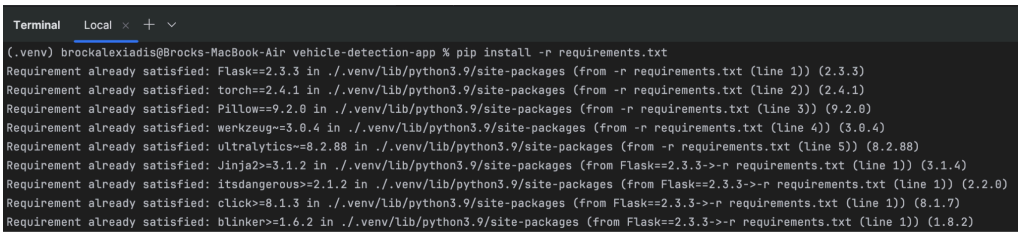


2. **Install Required Packages:**

- Open the terminal in your IDE (PyCharm or VS Code).



- Ensure you're in the project directory, then enter the following command to install the required packages: pip install -r requirements.txt

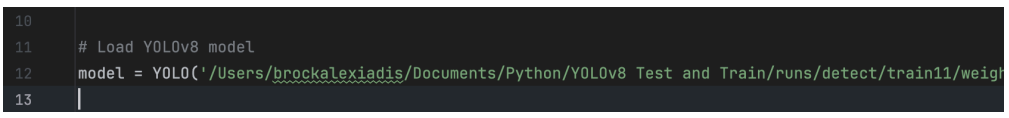


Step 4: Using the YOLOv8 Model

1. **Using YOLOv8 Model Weights (2 Different Options):**
   - **Using Your Own Model:** If you haven't trained your own YOLOv8 model there is a tutorial on how to do so on GitHub. If you have, you can move to the next step
   - OR
   - **Download Final Model:** At the time this document is being created the final trained model has not been added to GitHub. It is up to you to look and see if it has when you are using this tutorial. If it has, download the final pre-trained YOLOv8 model weights (`.pt` file) from the GitHub
2. **Save the Model:**
   - Save the `.pt` file to a convenient location on your system. Take note of the EXACT path where it is stored, as you'll need it in the next step. For example, `/Users/brockalexiadis/Documents/Python/YOLOv8 Test and Train/runs/detect/train11/weights/last.pt`

Step 5: Update the YOLO Model Path

1. **Open `app.py`:**
   - In your IDE, open the `app.py` file located in the project folder.
2. **Modify the YOLO Model Path:**
   - Locate the line of code where the YOLO model is loaded:

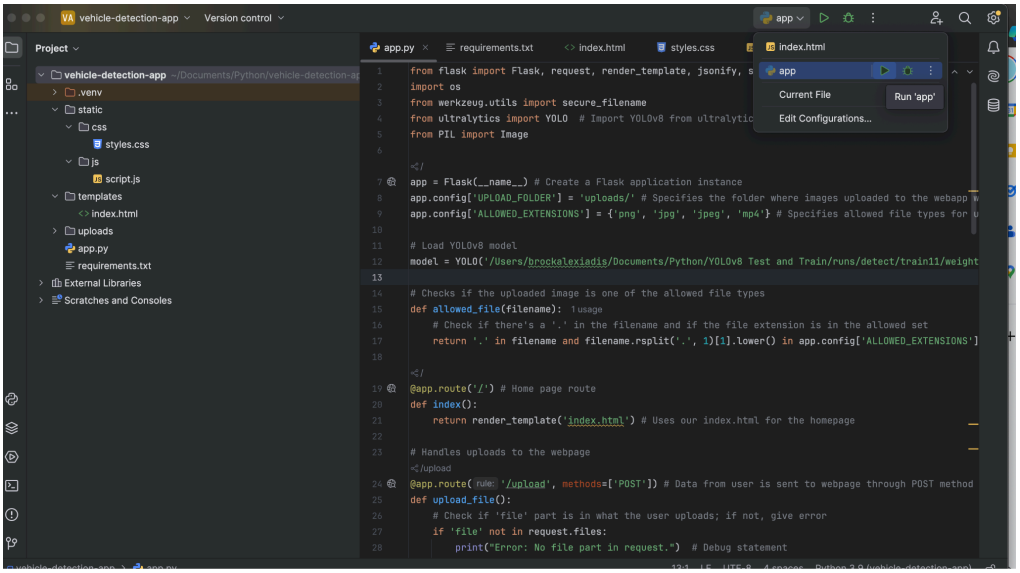


   - Update this line with the path to the YOLOv8 model file you saved earlier, for example:

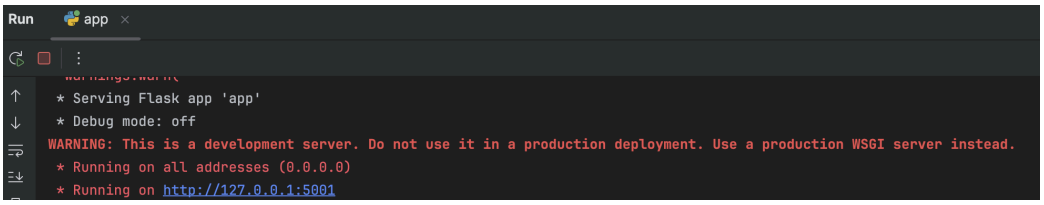
- model = YOLO('C:/Users/YourName/Downloads/yolov8-model.pt') or whatever the path is to where you saved it

Step 6: Run the Web App

1. **For PyCharm Users:**
   - In PyCharm, ensure `app.py` is selected from the dropdown at the top-right corner.
   - Press the **green play button** to run the web app.



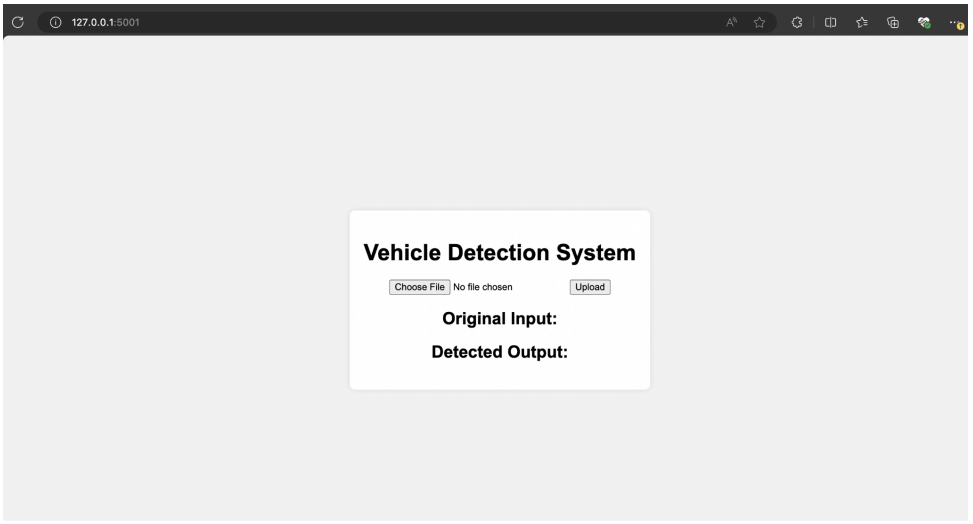
2. **Monitor the Terminal:**
   - The terminal will display the Flask server starting and provide a URL, which typically looks like http://127.0.0.1:5000/. i have set it to 5001 in the code so it will look like this



Step 7: Open the Web App in Your Browser

1. **Access the Web App:**
   - Open a web browser and navigate to the URL provided by the Flask server (`http://127.0.0.1:5001/`).

- Alternatively, you can click the link directly from the terminal.



2. **Test the Web App:**

- Use the interface to upload an image or video, and confirm that the vehicle detection functionality works as expected.