Camera Calibration using Python with OpenCV

A fully functional code that calibrate camera using chess board images

This application only goal is to calibrate the camera using chess board inner squire angles, I've made this project as a way for me to learn more about computer vision, And picked Python combined with OpenCV library because they're both beginner-friendly and easy to have fun with.

Built with
![Python](https://img.shields.io/badge/Python-3776AB?style=for-the-badge&logo=python&logoColor=white)

![OpenCV](https://img.shields.io/badge/OpenCV-5C3EE8?style=for-the-badge&logo=opencv&logoColor=white)

Installation instructions

first you have to install OpenCV:
Open your Command line as Administrator and type "pip install opencv-python", After that we are going to run this application...
The easiest way is just to have/Install Visual Studio Code at your machine and then download and open this project at your VSCode and run it from there!

BUt here it's the easiest way for a different type of people:
Open your command-line again and do the next:
1. **clone the repo:**
   git clone https://github.com/M0hialdin/OpenCV-assignments.git
2. **go inside the folder where the code is:**
   cd OpenCV-assignments
3. **Run the code:**
   Camera_Calibration.py

Usage example

This project does one thing only: **calibrating a camera using a chessboard pattern**. Here’s how to use it:

Step 1: Take photos
Capture multiple photos of a real chessboard from different angles. The more images you take, the more accurate the calibration will be. Typically, 10–15 clean images are enough.

Step 2: Place files
Put all the photos in the same folder as the code. When you run the program, it will process each image and return the same set of photos with the **inner squares marked and detected**.

Step 3: Run the code
python Camera_Calibration.py

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