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Drive p5v04a sunny camera with Raspberry Pi 5

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This document shows the easy steps to drive p5v04a sunny camera with a Raspberry Pi 5. Python and picamera2 library are used. Also, some information relevant to the environment setting is mentioned. I also developed a script to drive and take shots for testing and further integration into your application.

Please see the following link for the git repository:

https://github.com/kevin-chengchihlee/p5v04a_camera_easyshot

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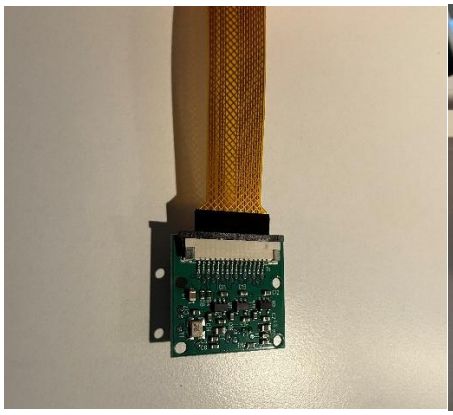
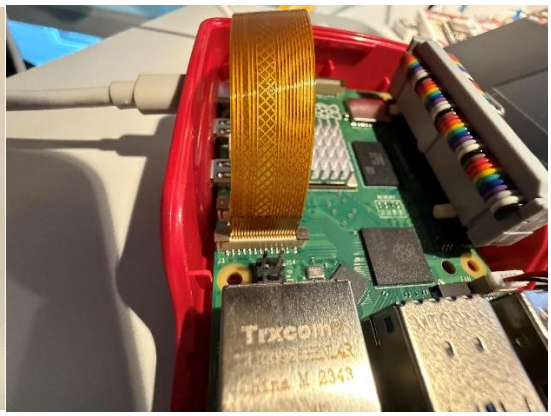
1. Camera HW installation

Use the cable provided in the kit to connect the camera to the RPi.

Mind that the cable has different sides. Attach the side with metal pads to the connector pins.

Power-OFF RPi before connection.



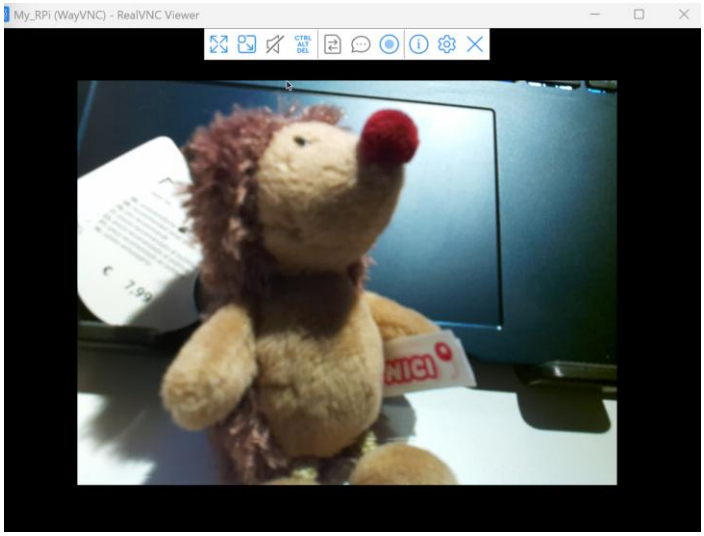


2. Camera Basic Test

On RPi, open the terminal and put the cmd:

```
libcamera-hello –camera 0 -t 0
```

With correct installation, you shall see the camera view.



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3. Camera Library

`picamera2`

Picamera2 is only compatible with **NumPy ≤ 1.26**

We are running this on an RPi5, and if we are running it in a virtual env, mins that the **picamera2 is a system package.** Your virtual env probably won't be able to access the system package.

If so, you can change the config in

`[your_virtual_env]/pyvenv.cfg`

`include-system-site-packages = false to…`

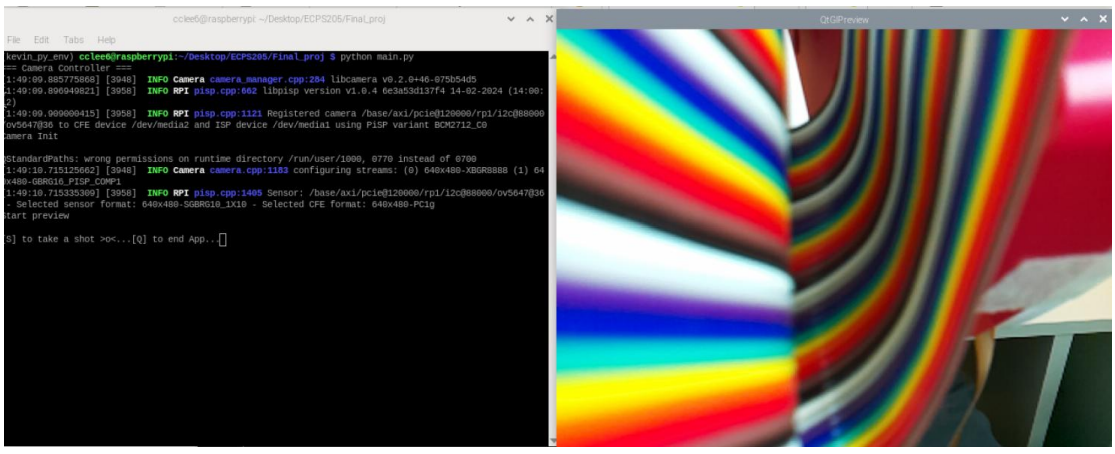
`include-system-site-packages = true`

And please also mind that **picamera2 is compatible with only numpy `1.24.4` !!! You might need to reinstall for matching.**

4. Run the py script :

Open a terminal and run the main.py

a.You will see the camera being initialized with a preview window.



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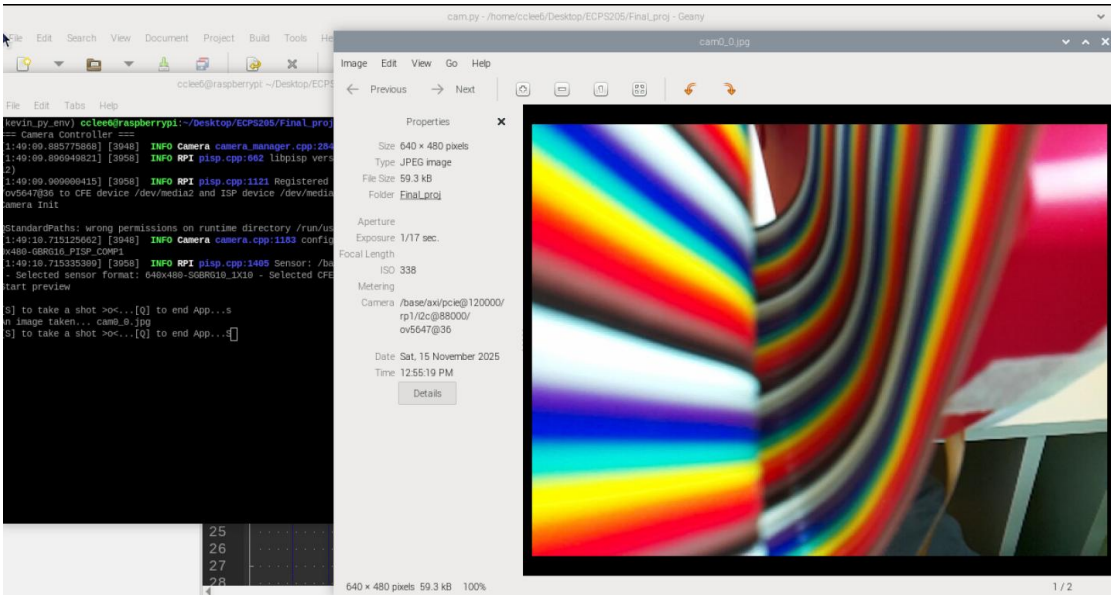
b.Type in “s” for taking a shot, “q” for ending application. Other input will be ignored.

Type : “s”



Type : “q”