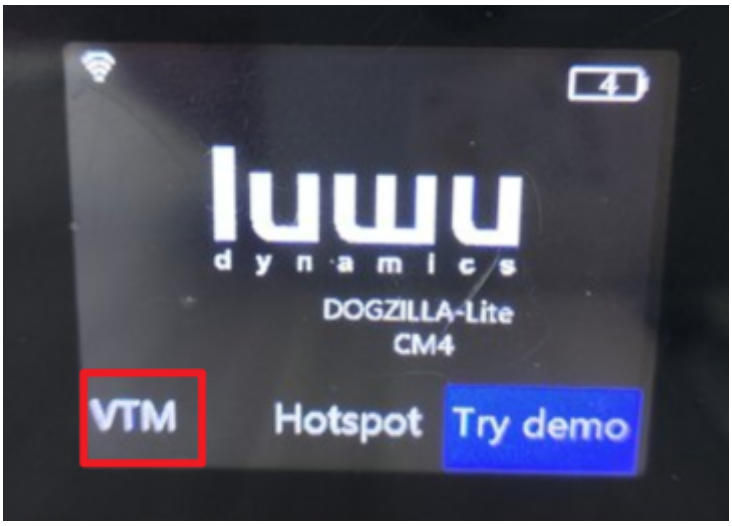
JupyterLab environment construction and use

The JupyterLab environment requires the computer and Raspberry Pi to be in the same LAN to work properly. The DOGZILLA factory system starts the JupyterLab service by default.

4.1 Get the IP address of the Raspberry Pi

When you boot the machine for the first time with the factory image, you need to configure the network connection in the boot program, then enter the remote control interface and press the button in the lower right corner of the Rider-pi screen to query the corresponding IP address.



4.2 Open JupyterLab environment

Open the browser on your computer and enter the IP address + port number of the Raspberry Pi in the address bar.

```
192.168.2.112:8888
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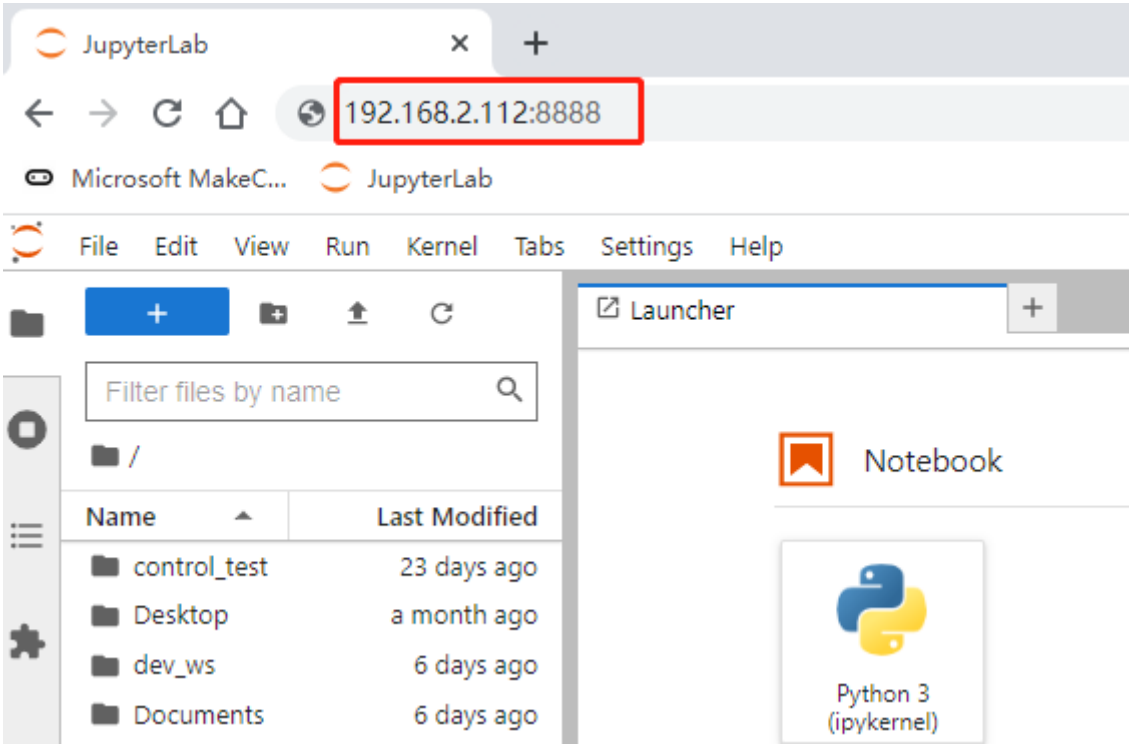
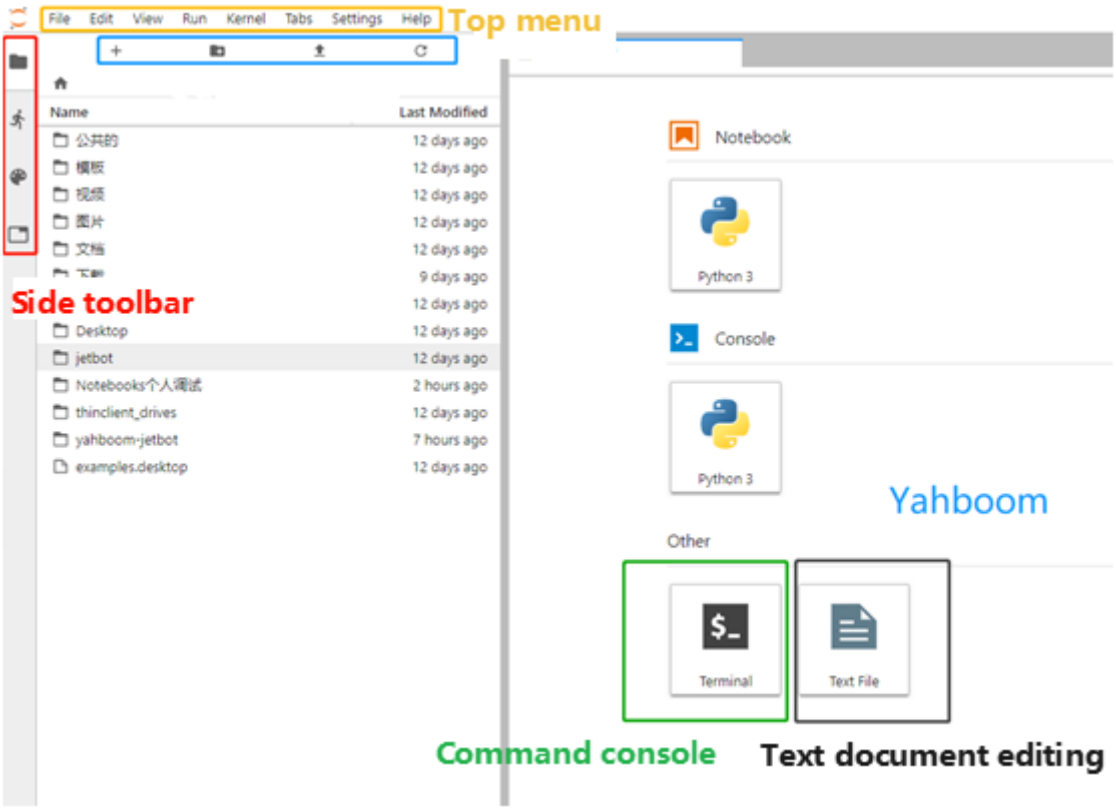


Then enter the JupyterLab login password (yahboom) to log in.

4.3 How to use JupyterLab

The JupyterLab interface is a dashboard that provides access to interactive iPython notebooks, folder structures, and terminal windows into the Linux operating system. The first view you will see includes **the menu bar** at the top , the directory tree in **the left sidebar , and the main workspace** that initially opens to the "launcher" page .

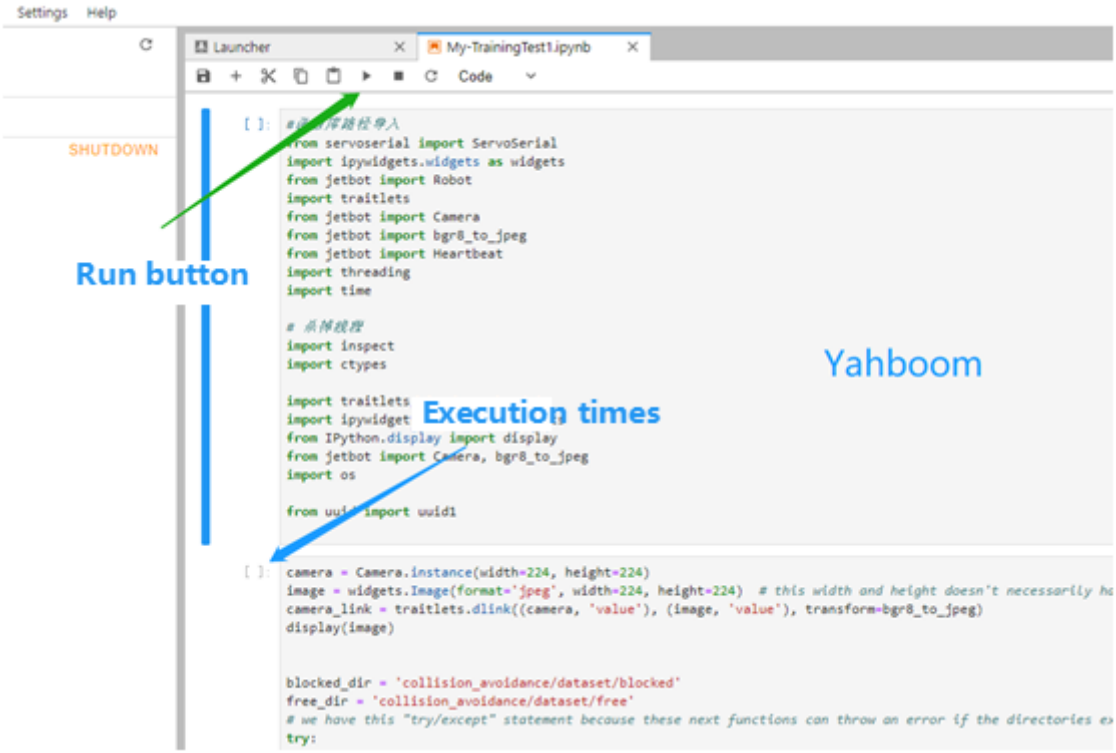


File Browser:

The file browser in the left sidebar allows navigating the file structure. Double-clicking a notebook or file opens it in the main workspace.

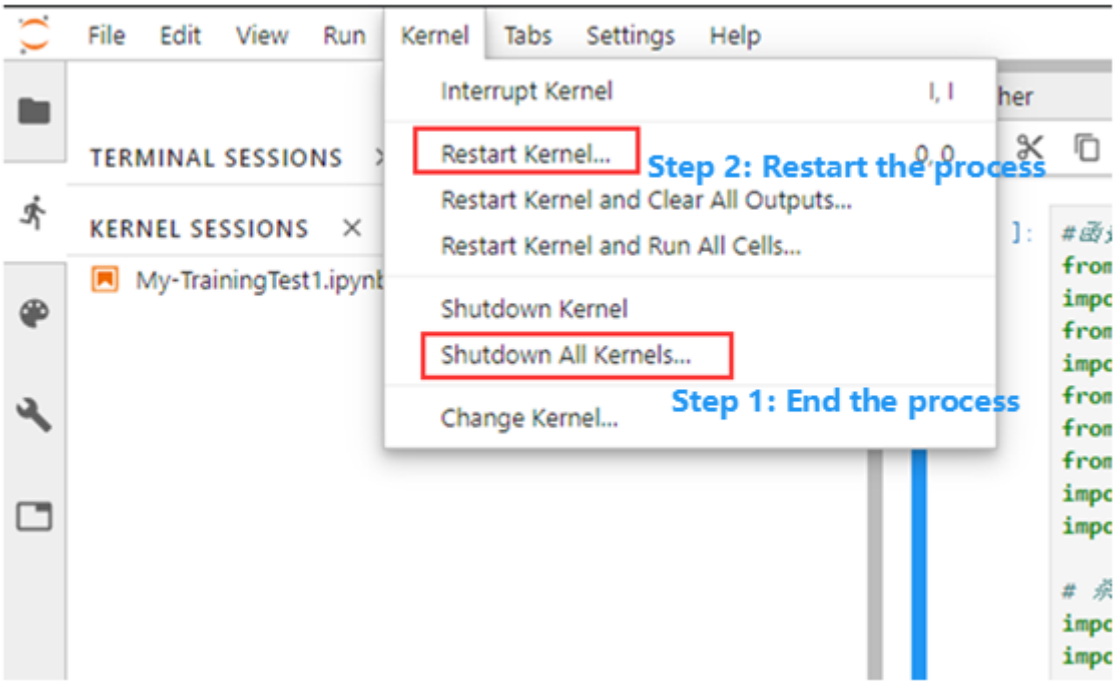
iPython Notebook:

The interactive notebooks used in this course have a ".ipynb" file extension. When you double-click a notebook from the file browser, it will open in the main workspace and its process will begin. Notebooks consist of text and code "cells". When a code cell is "run", by clicking the Run button at the top of the notebook or the keyboard shortcut [CTRL] + [ENTER], the block of code in the cell will be executed and the output (if any) will be displayed below the notebook. To the left of each executable cell, there is an "execution count" or "prompt number" in brackets. If a cell takes more than a few seconds to run, you will see an asterisk mark there, indicating that the cell has not yet finished executing. When processing of that cell has been completed, a number will be displayed in brackets.



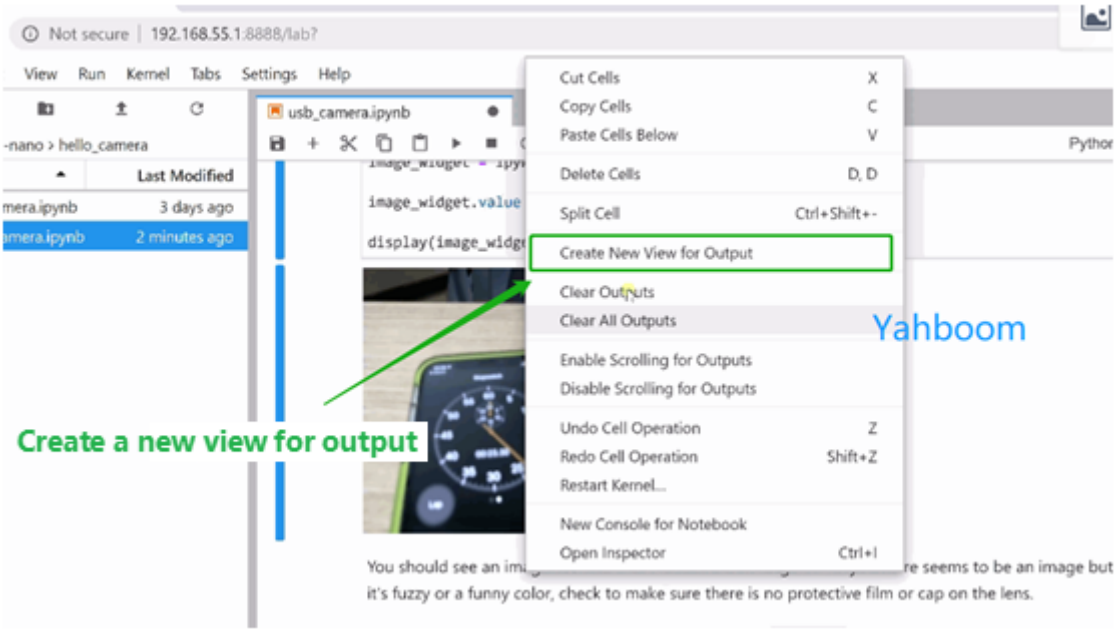
Kernel operations:

The kernel of each running notebook is an independent process that runs user code. A kernel is automatically started when you open a notebook from the file browser. The kernel menu on the main menu bar contains commands to shut down or restart kernels, and you will need to use them regularly. After the kernel is shut down, no code cells can be executed. When you restart the kernel, all memory is lost due to imported packages, variable assignments, etc.



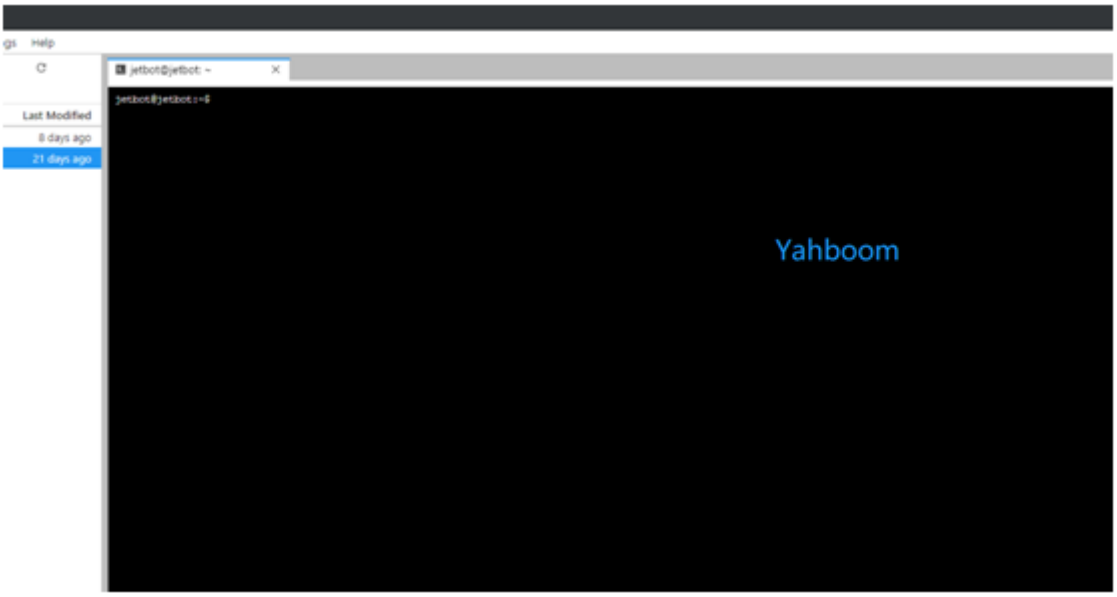
Cell Labels:

You can move any cell to a new window tab in the main workspace by right-clicking the cell and selecting "Create New View for Output". This allows you to continue scrolling down your JupyterLab notebook while still watching a specific cell. This is especially useful in cells that contain camera views!



Terminal window:

You can work in a terminal window on your Raspberry Pi directly through Jupyter Remote Login . From the Launcher page, click the Terminal icon under "Other". To bring up the Launcher page, if it is no longer visible, click the "+" icon at the top of the left sidebar.


gs Help
jetbot@jetbot: ~
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Last Modified
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Yahboom