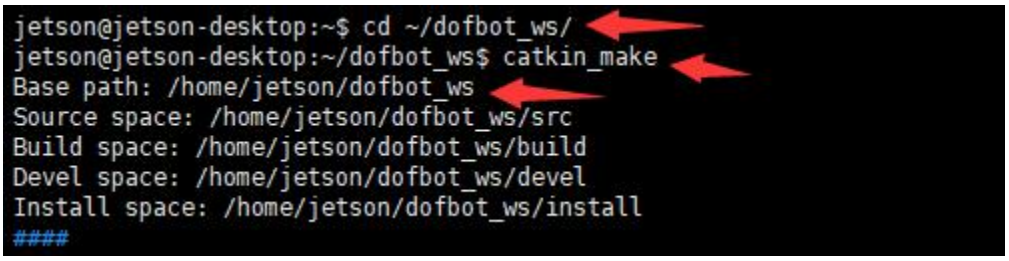
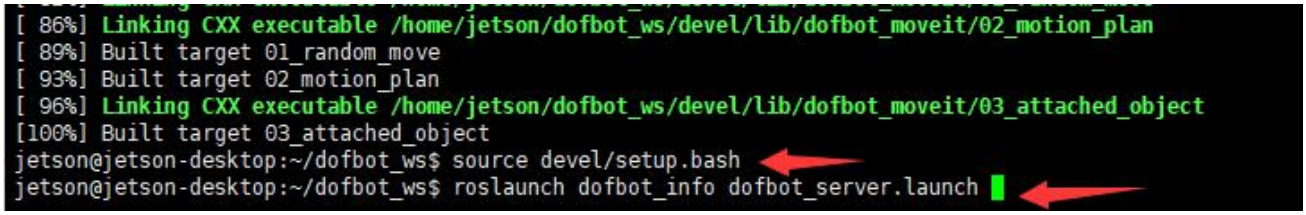
Color sorting code path: dofbot_ws/src/dofbot_color_identify/scripts/Color sorting.ipynb
Color stacking code path: dofbot_ws/src/dofbot_color_stacking/scripts/Color_stacking.ipynb

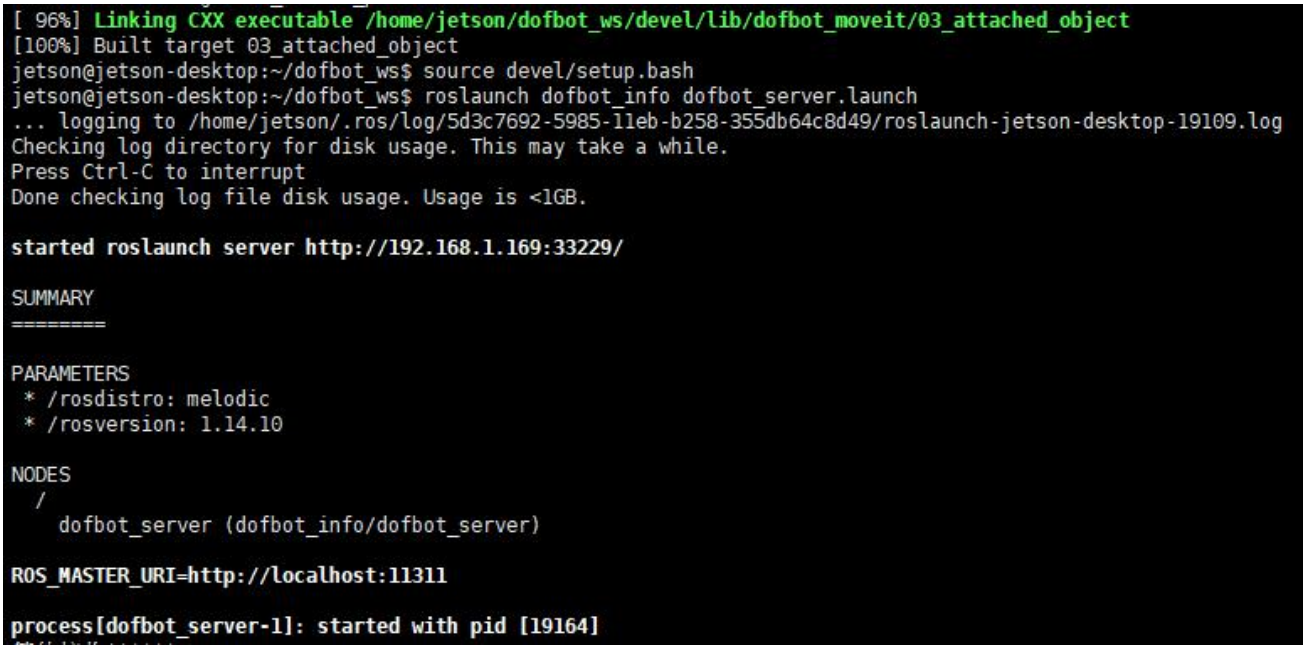
1. Before starting color sorting and stacking function, you must start the reverse solution server and keep running.
Input following command:

```
cd ~/dofbot_ws/    # Entering Workspace
catkin_make      # compile
source devel/setup.bash    # Update the system environment
roslaunch dofbot_info dofbot_server.launch    # Start the server terminal node
```

As shown below.







2. HSV calibration

Because the color recognition is different in different environments, it is best to perform HSV calibration before starting color sorting.
More Details, please check [Color Calibration] course.

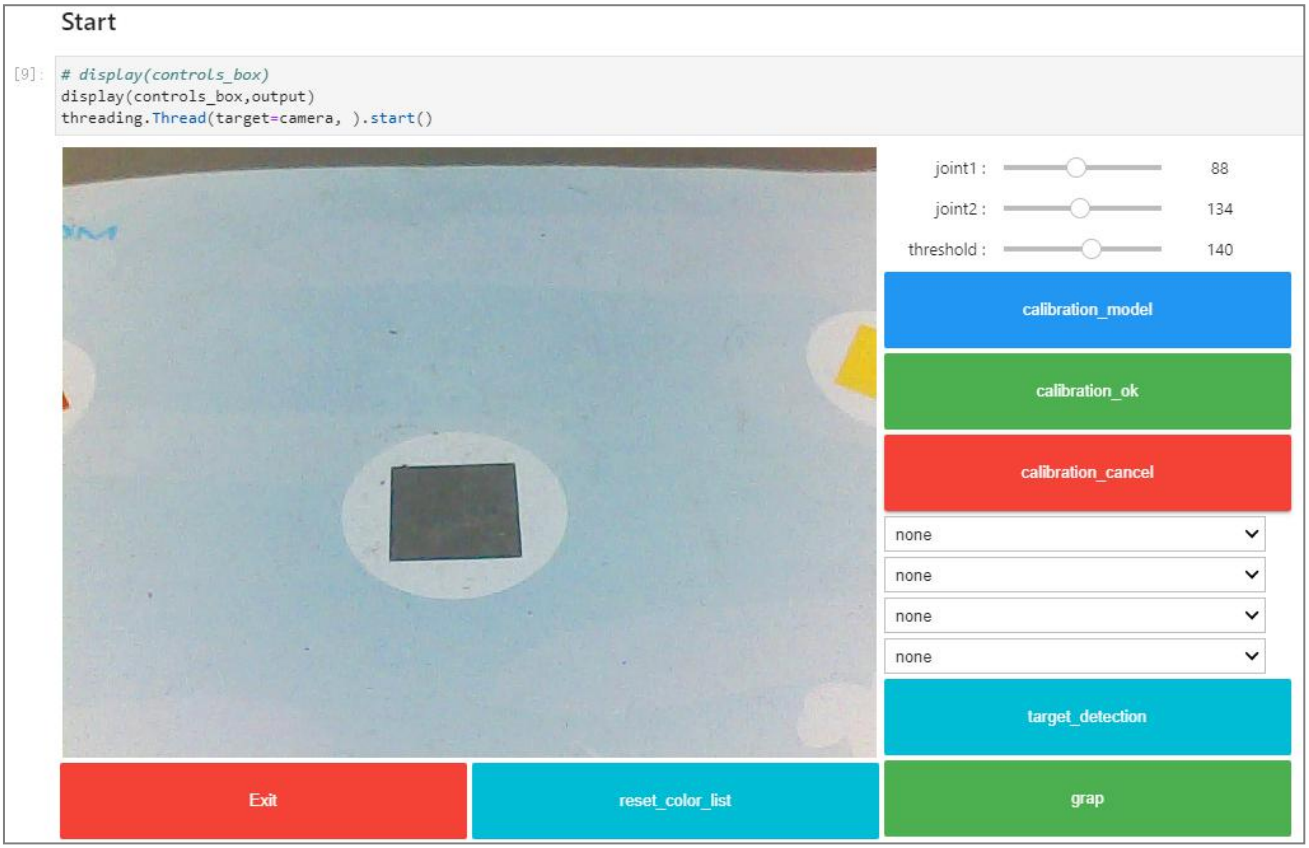
3.Box calibration

After the color calibration is completed, box calibration is required to obtain the position information of the block in the box.

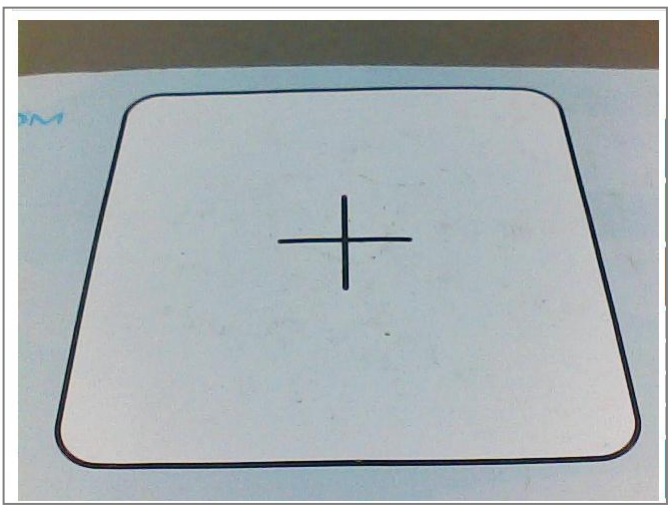
More Details, please check [Visual positioning] course.

4. Running color sorting program

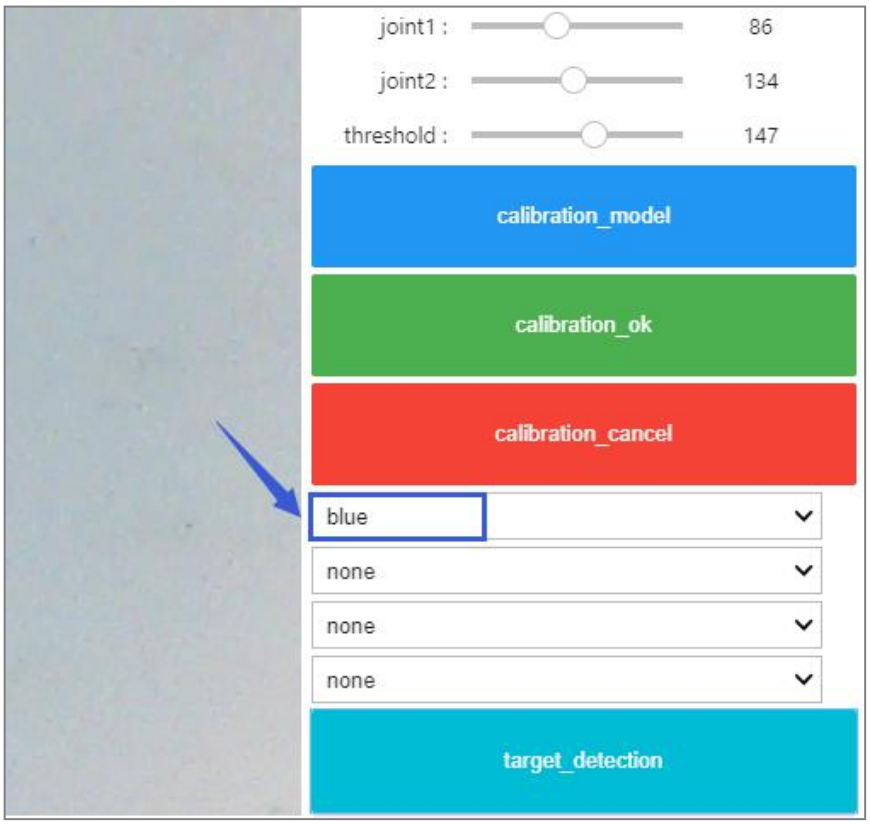
After running the program, you will see the interface as shown below.



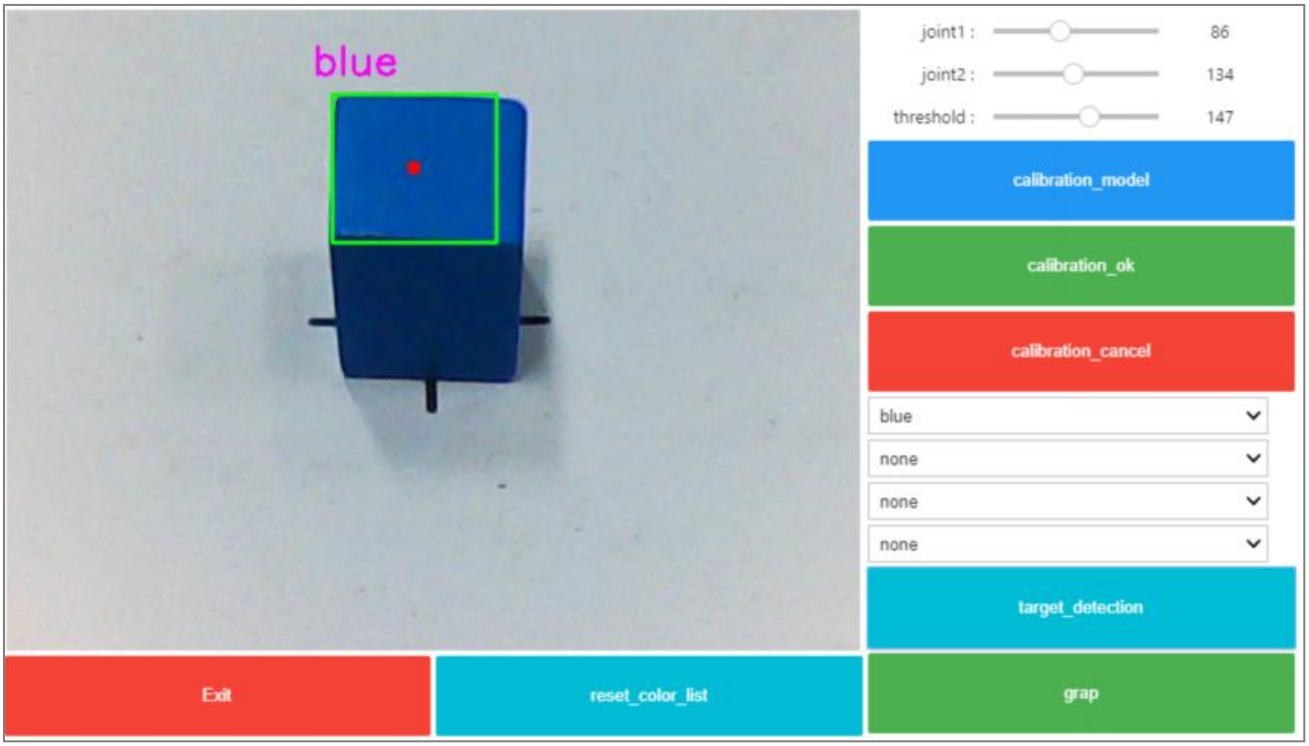
4.1 Place map as shown below.



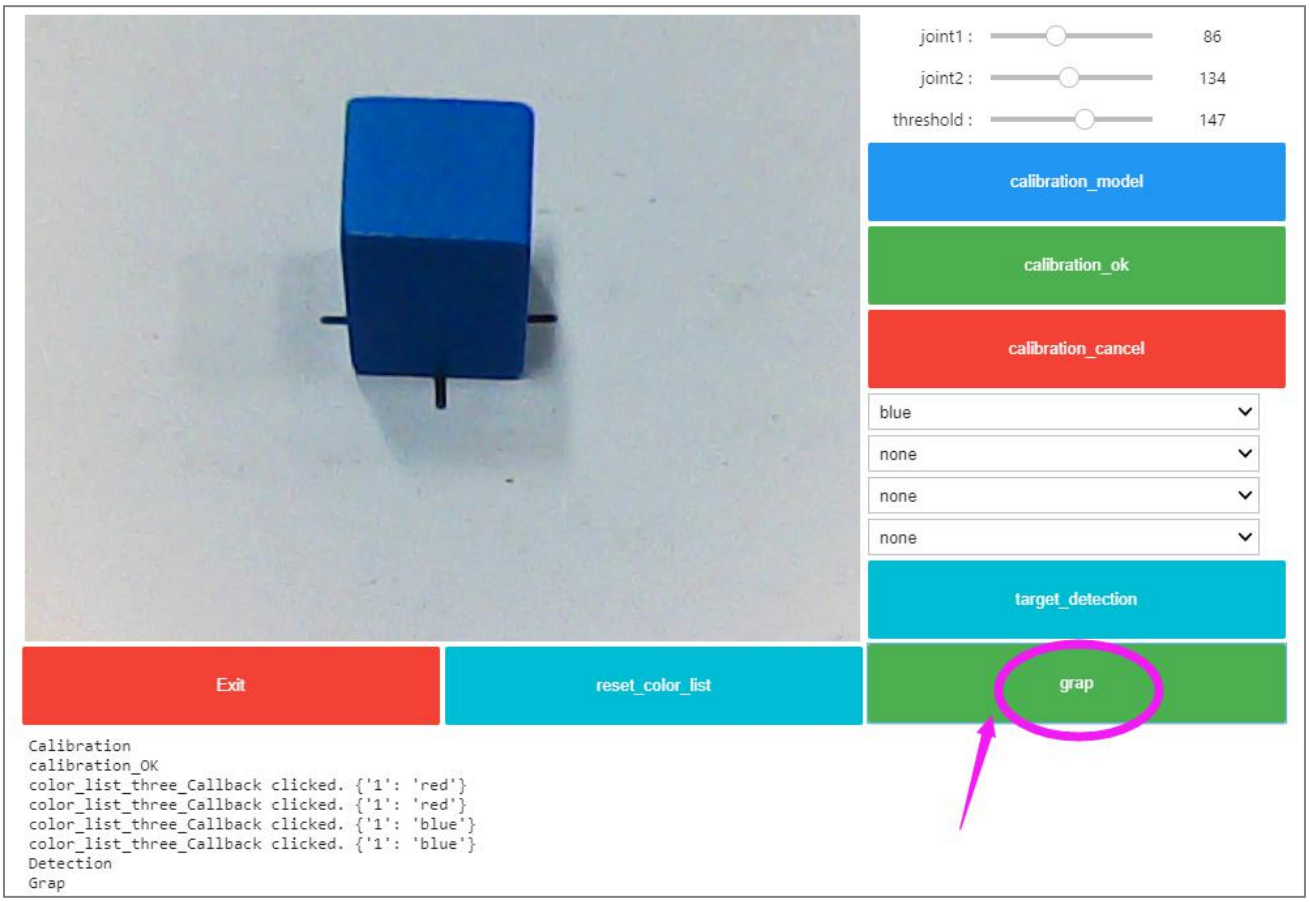
4.2 After the [HSV calibration] and [box calibration] is completed. Select the color in the color option box on the right side, as shown below.



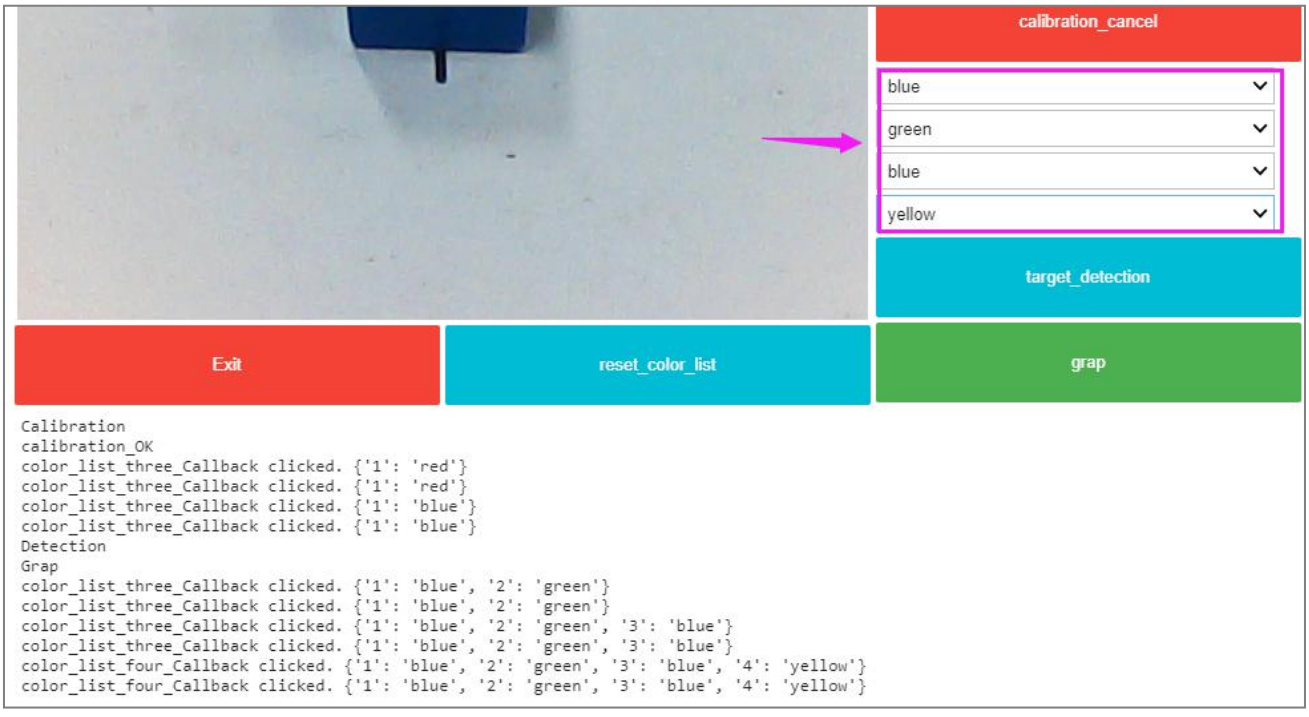
4.3 After the color selection is completed, click the [target_detection] button to call the color recognition function, and mark the recognized block.



4.4 Click the [grap] button to sort out the block.



4.5 You can also choose four color order, as shown below.



4.6 Click the [reset_color_list] button to clear the selected color order.

4.3 Color stacking

The procedure is similar to [color sorting].