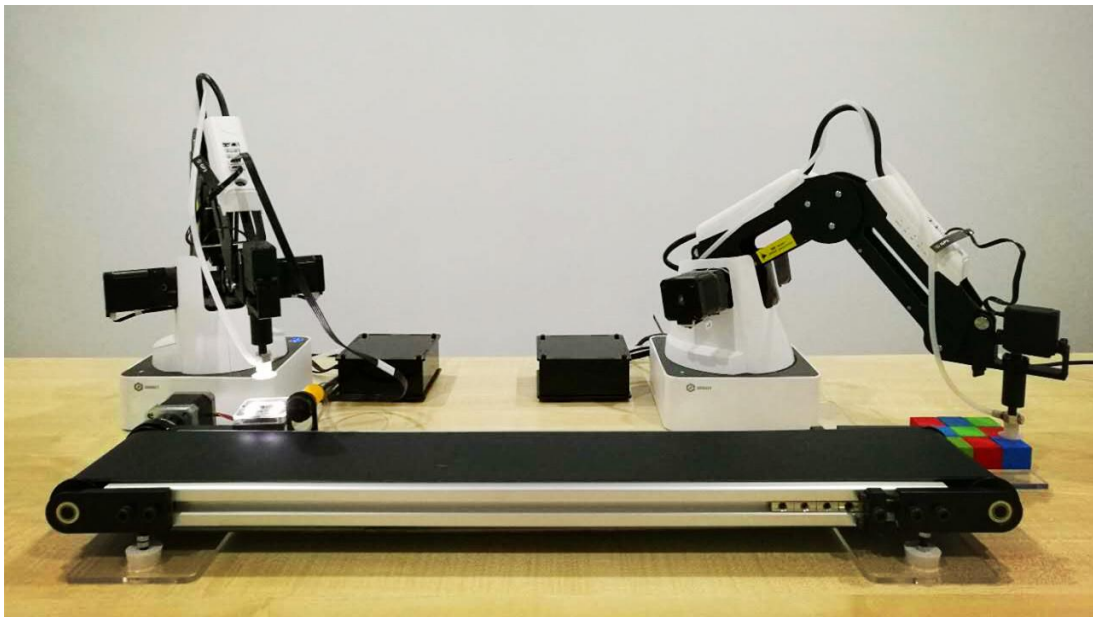




Conveyor Belt Instructions

AN01010101 V1.11 Date: 2017/08/09



Revised History

Version	Date	Reason
V1.10	2017/05/16	Create a document
V1.11	2017/08/09	Update the information of the new version sensor

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Overview of Conveyor Belt Kit:

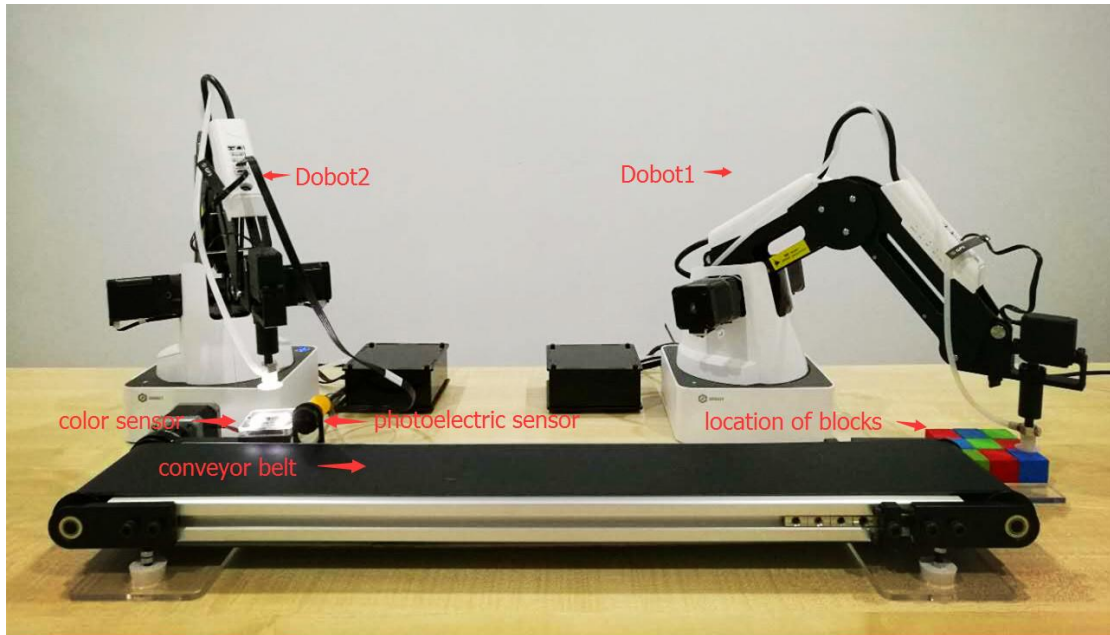


Figure 1.1 Overview of Conveyor Belt Kit

Put 3 attached acrylic boards as shown below to keep the conveyor belt and Dobot Magician at a fixed position. Put the wood blocks randomly near the acrylic board.

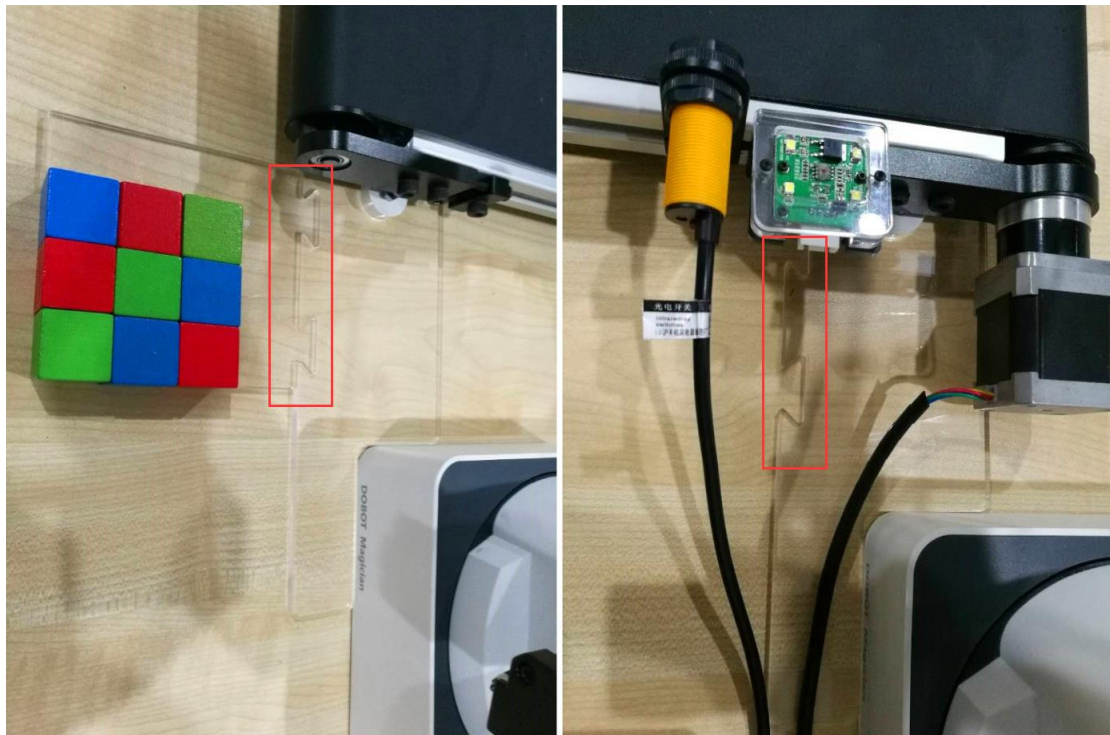


Figure 1.2 The location of Acrylic Boards

1. Hardware

1.1 Conveyor Belt Kit



Figure 1.3 The accessories of the Conveyor Belt

Notice: Please turn off the Dobot completely first before plugging or unplugging external modules, such as Bluetooth, WIFI, Stick controller, Infrared sensor, Color sensor etc... Not powering down the Dobot before doing so may damage or break your Dobot! Note that only once the status light completely turns off, the Dobot has powered down.

The correct operational order is shown below:

- Plug the Bluetooth module, Wifi module, Joystick, Infrared sensor, Color sensor first.
- Then, power on the Dobot.
- You will hear short beeping sounds. This is normal! It means that the module has finished initializing.
- Please refer to the User Manual from our website to control the Dobot Magician.

1.1.1 Installation Steps

1 Connect the motor wire to interface **Stepper1** on the main control box of the Dobot1.



Figure 1.4 Connecting the motor wire

2 Connect the color sensor to the GP1/GP2/GP4/GP5 of Dobot2.
(Take GP4 as an example here):

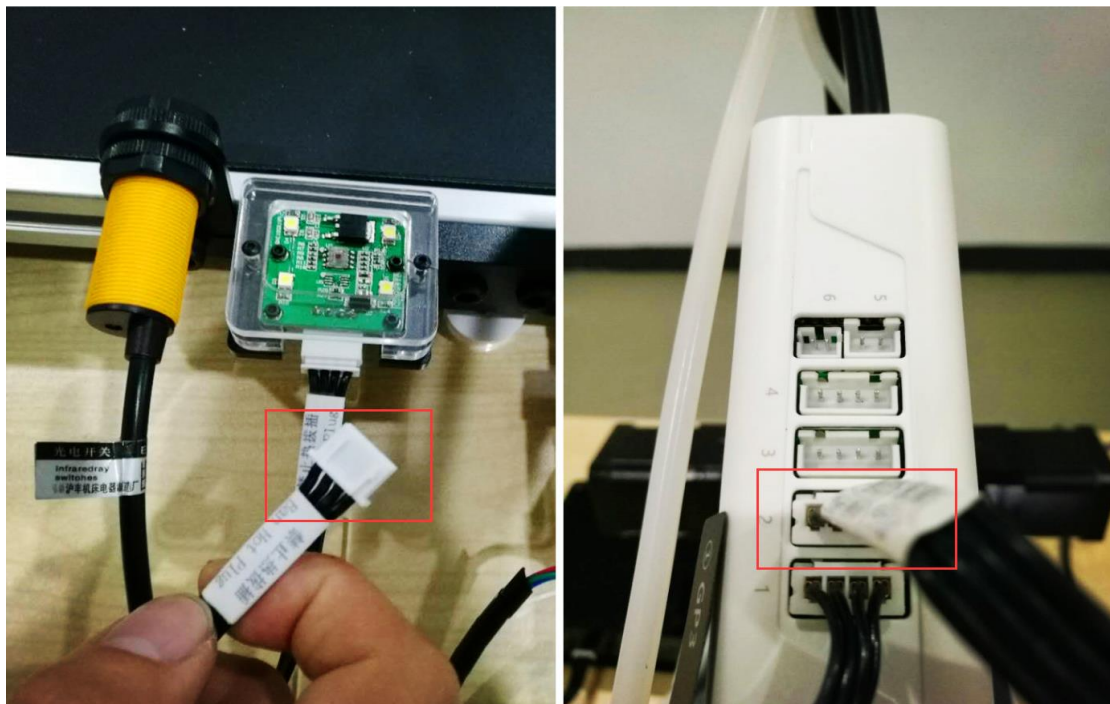


Figure 1.5 Color sensor connection

3 Connect the photoelectric sensor to the GP1/GP2/GP4/GP5 of Dobot2
(Take GP2 as an example here):



Figure 1.6 The photoelectric sensor connection

1.1.2 Overall wiring diagram

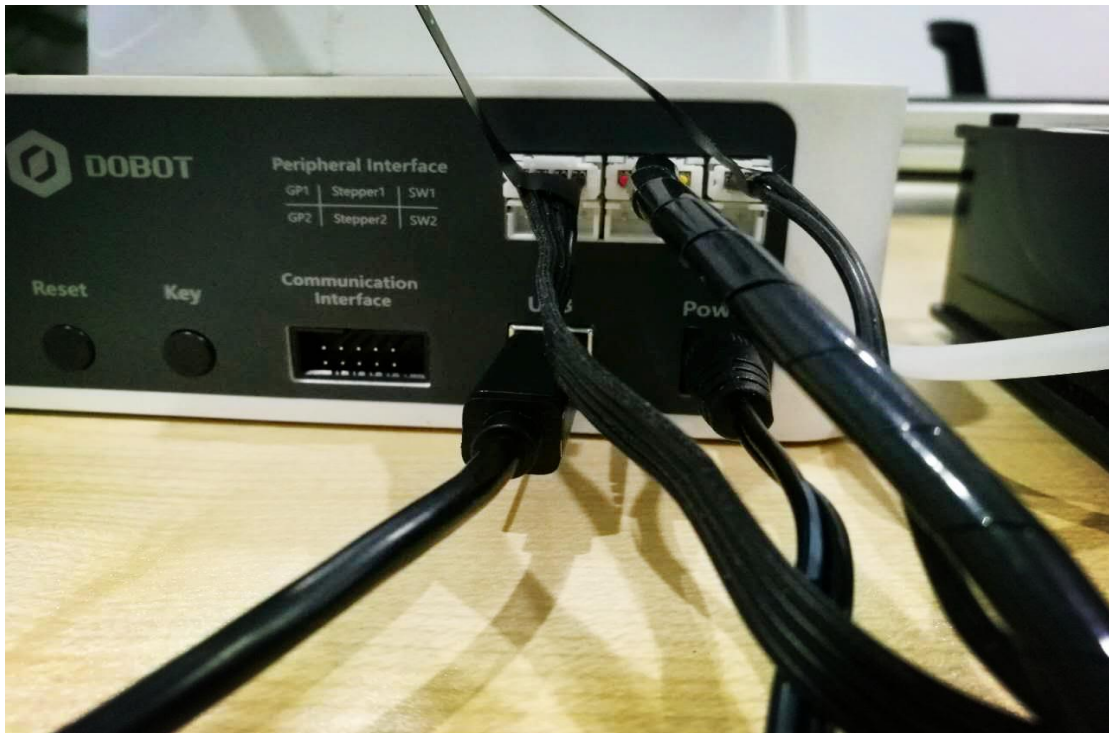


Figure 1.7 The wiring diagram of Dobot1

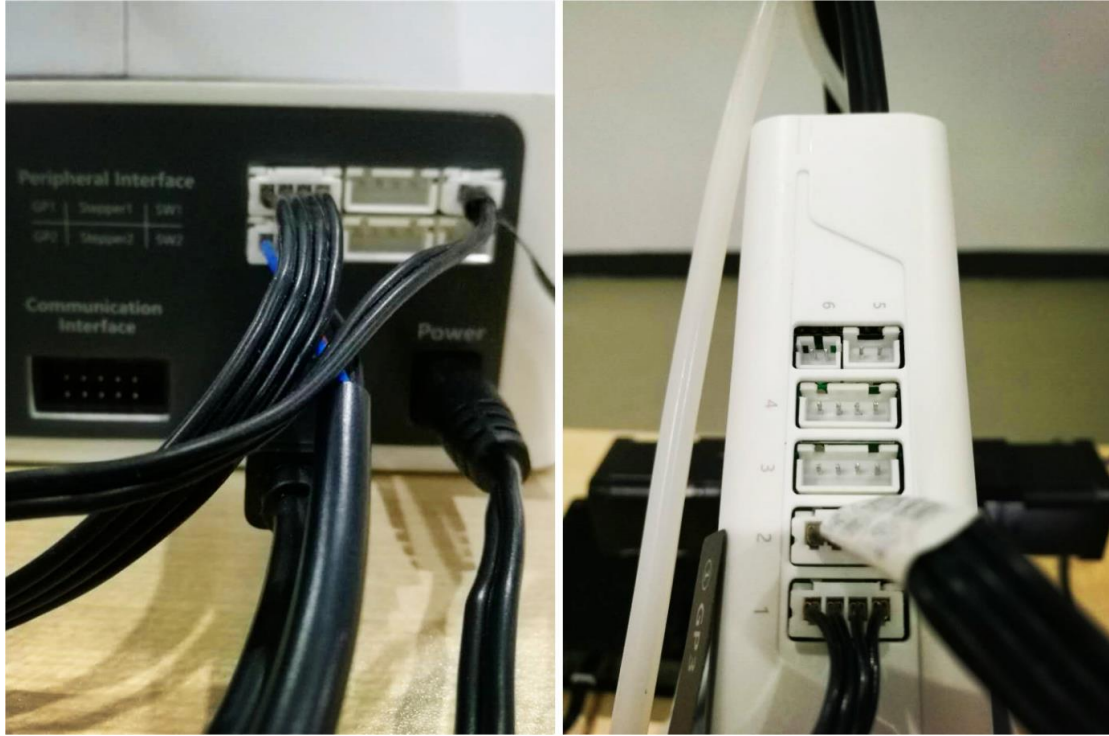


Figure 1.8 The wiring diagram of Dobot2

2. Software

2.1 Conveyor Belt Picking & Sorting Demo

2.1.1 Install software

Download DobotstudioV1.4.11 and install it.

<http://www.dobot.cc/downloadcenter/dobot-magician.html#most-download>

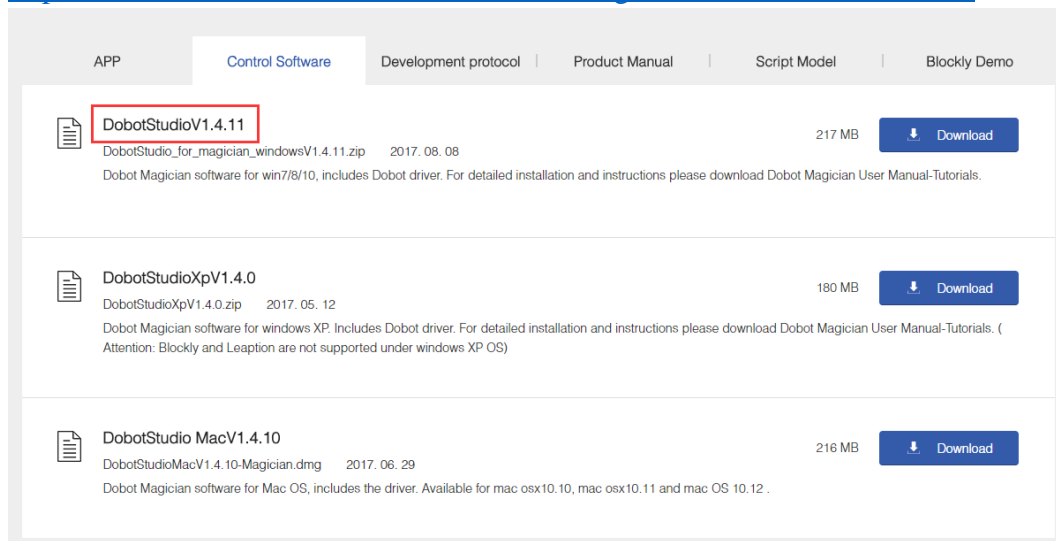


Figure 2.1 The download interface for the software

2.1.2 Open the software

When the software has finished installing, please connect the two Dobot arms to the computer. Make sure to open two Dobotstudio interfaces. Open the interface:



Figure 2.2 The opening interface of the software

2.1.3 Import the blockly demos for picking and sorting

Put the two Blockly demo programs for picking and sorting into the bystore folder. The save path is shown below:

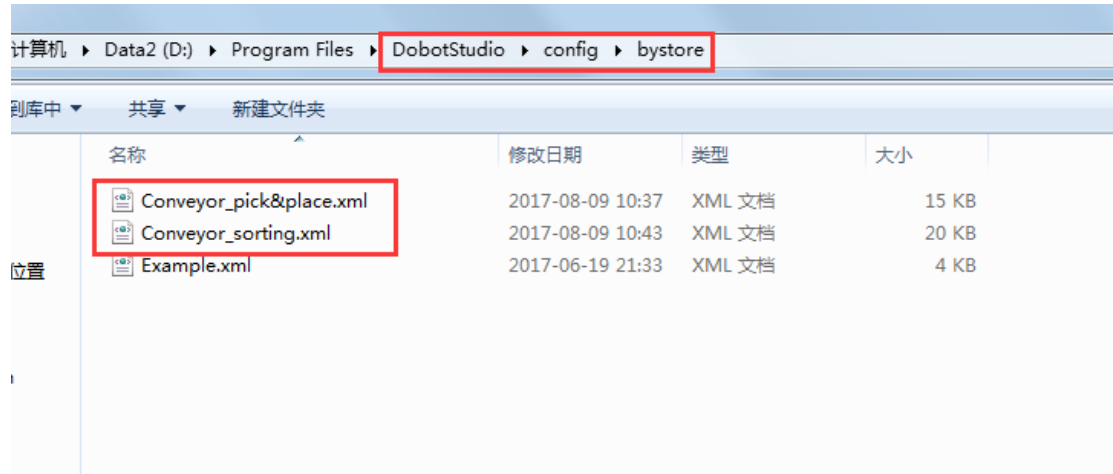


Figure 2.3 The save path of Blockly demos

2.1.4 Start running the picking and sorting demos

Open the Dobot Studio and program through the Blockly to carry out picking and sorting.

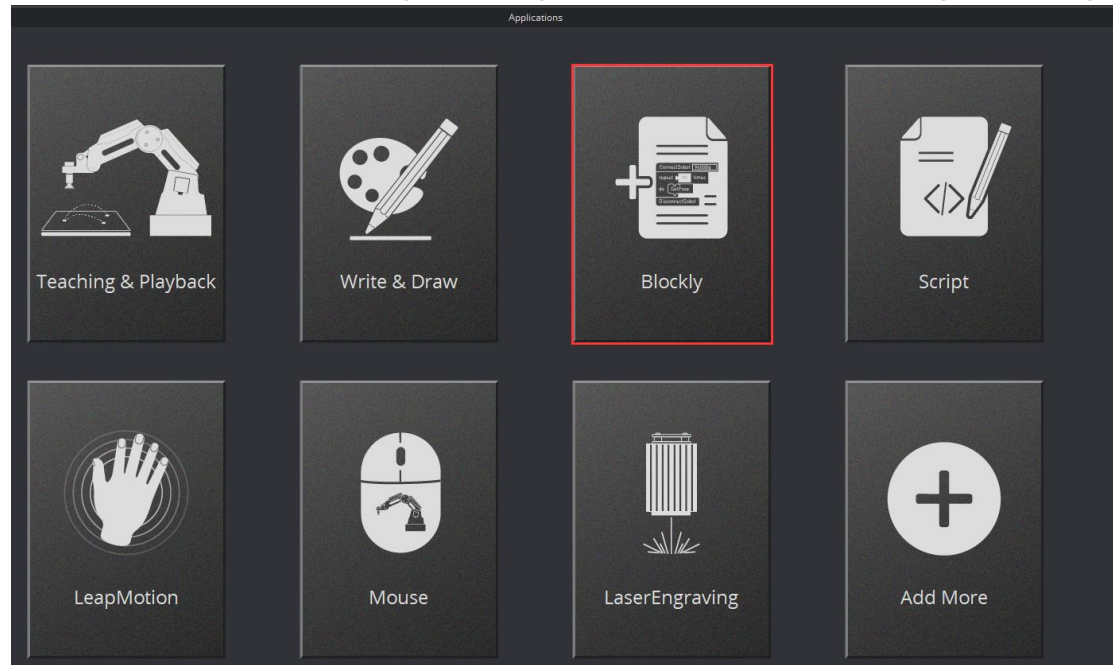


Figure 2.4 Click “Blockly”

Dobot1 will select the picking program, and Dobot2 will select the sorting program.

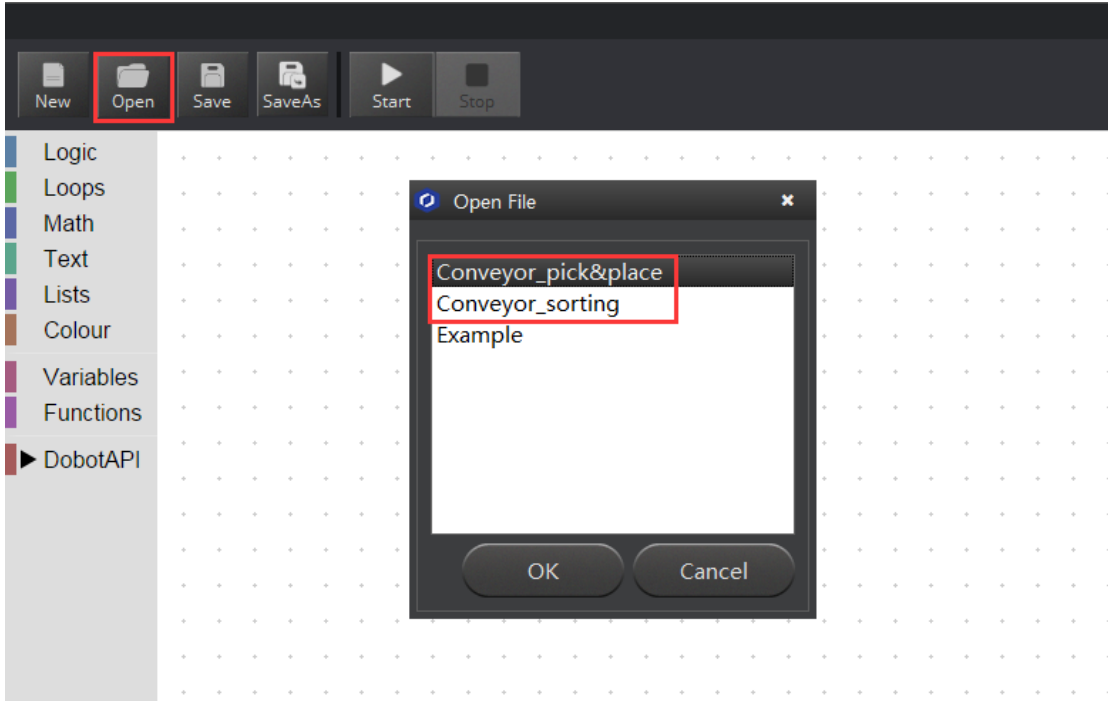


Figure 2.5 Open the two Blockly demos

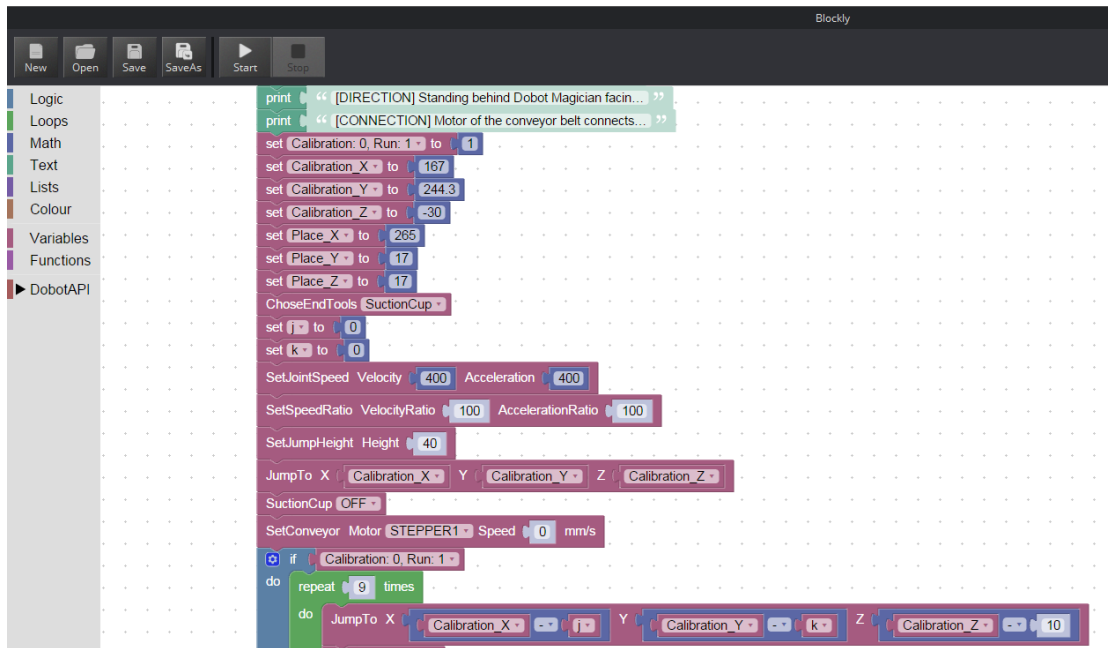


Figure 2.6 Picking Program

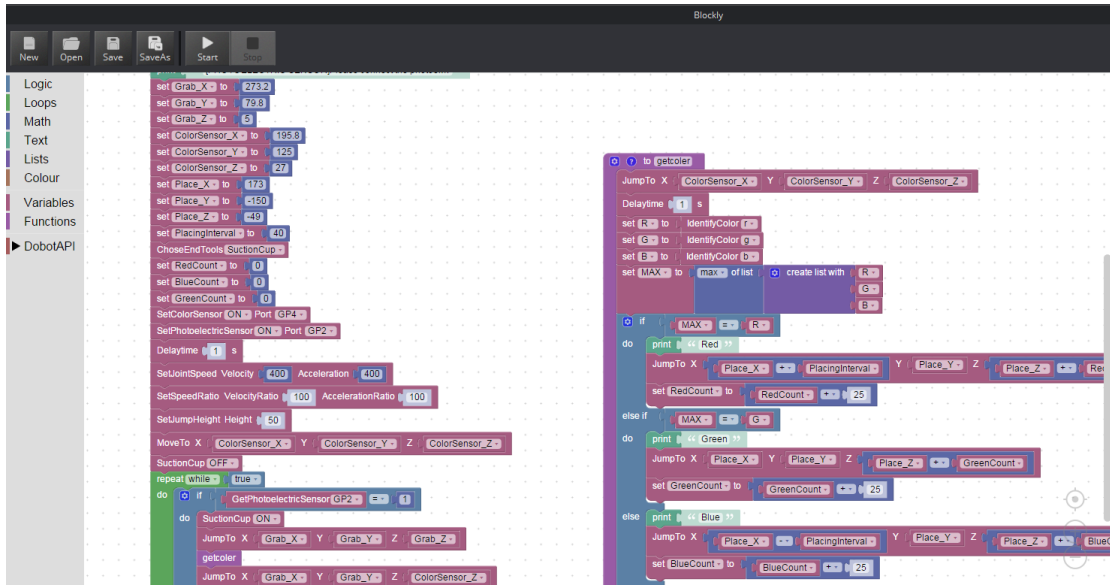


Figure 2.7 Sorting Program

3. Position Adjustment

3.1 Adjust the picking and placing positions of Dobot1

3.1.1 Adjust the picking position

Press the Unlock button to move Dobot1 to the first block and press the suction cup on the block.



Figure 3.1 The picking position

The operation panel in DobotStudio will record the values of X, Y, Z coordinates automatically. Write the values of the XYZ coordinates in the blanks.

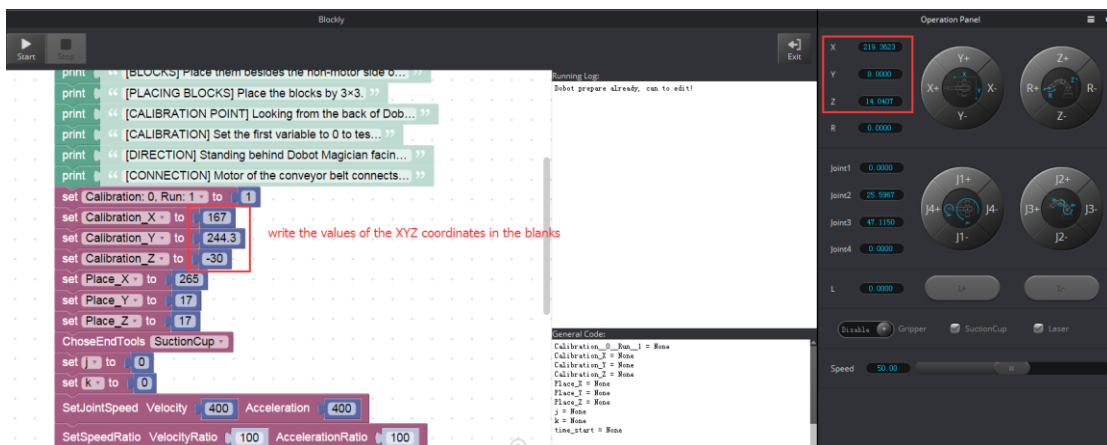


Figure 3.2 Modify the X, Y, Z coordinates in the Blockly demo

3.1.2 Adjust the placing position

Tick Suction Cup, then press the Unlock button to move the block to the conveyor belt.

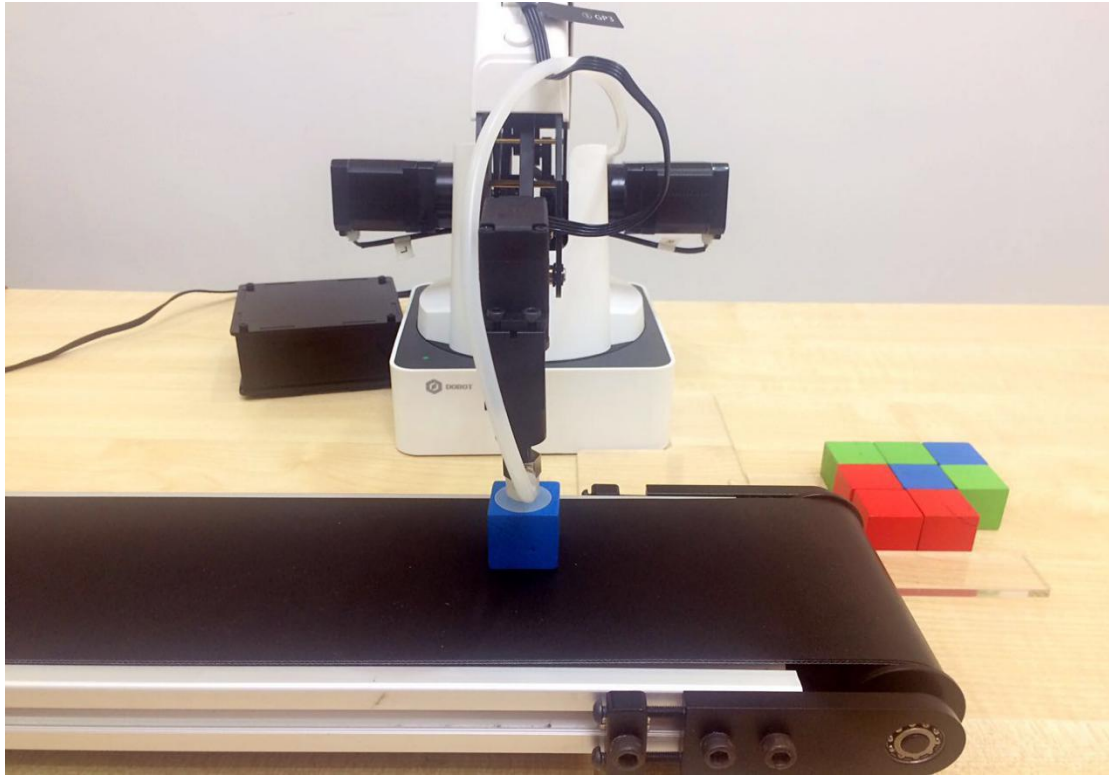


Figure 3.3 The placing position

The operation panel of DobotStudio will record the values of X, Y, Z coordinates automatically. Afterwards, write the values of the XYZ coordinates in the blanks.

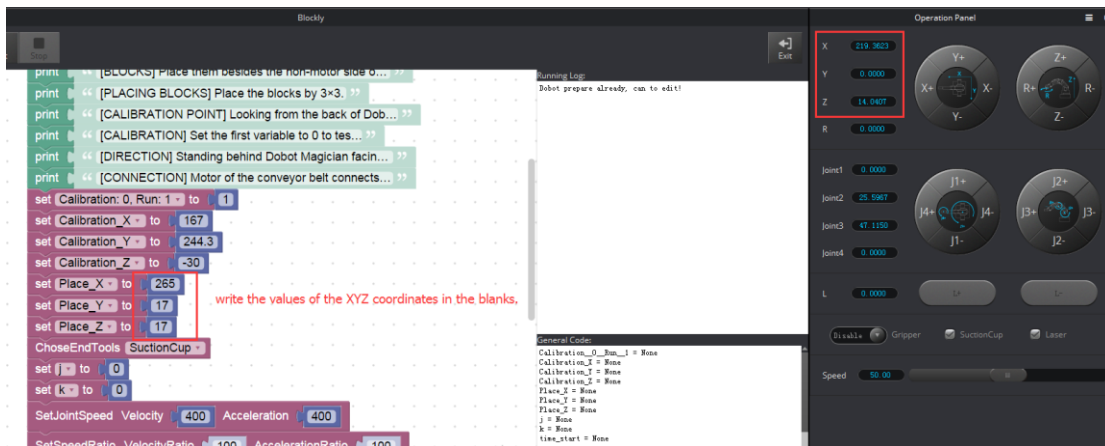


Figure 3.4 Modify the X, Y, Z coordinates in Blockly demo

3.2 Adjust the sorting positions of Dobot2

3.2.1 Adjust the picking position

Press the Unlock button to move Dobot1 to the block and press the suction cup on the block.



Figure 3.5 The picking position

The operation panel of Dobot Studio will record the values of X, Y, Z coordinates automatically, write the values of the XYZ coordinates in the blanks.

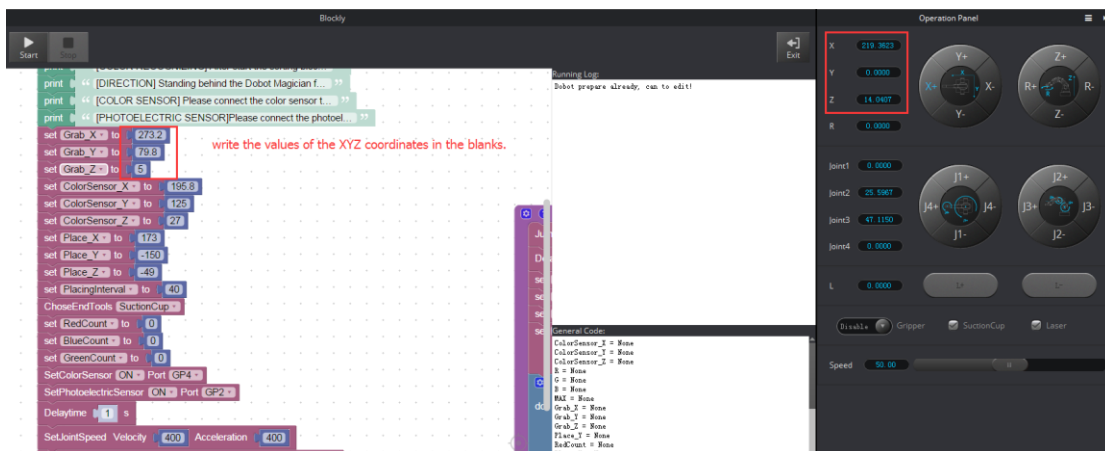


Figure 3.6 Modify the X, Y, Z coordinates in Blockly demo

3.2.2 Adjust the color-identified position

Tick Suction Cup, then press the Unlock button and put the block above the color sensor.
 Note: The distance between the color sensor and block shouldn't be too high or too low.



Figure 3.7 The color-identified position

The operation panel of DobotStudio will record the values of X, Y, Z coordinates automatically. Afterwards, write the values of the XYZ coordinates in the blanks.

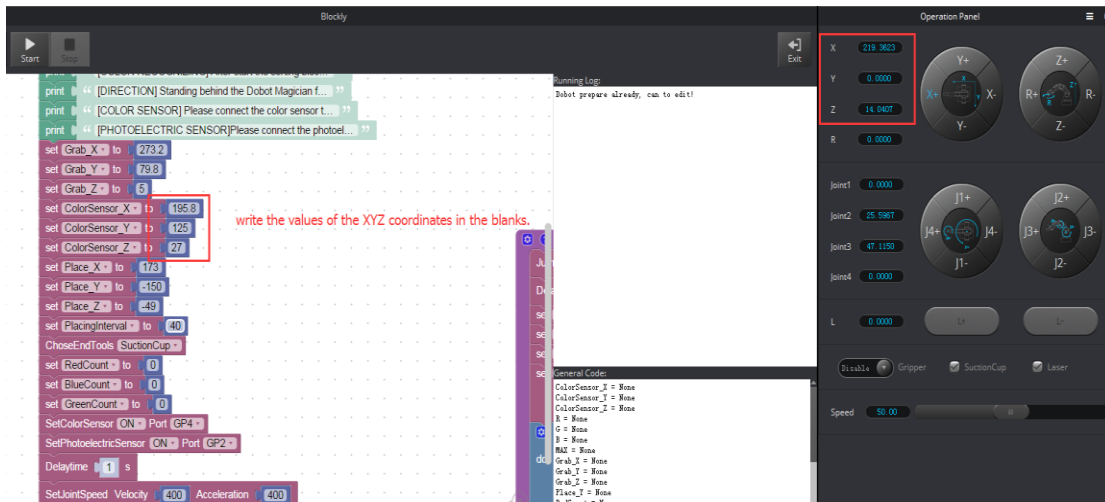


Figure 3.8 Modify the X, Y, Z coordinates in Blockly demo

3.2.3 Adjust the placing position

Press the Unlock button and move the block to the placing position.

Note: Don't place the Dobot Magician in an area where its movement will be limited.



Figure 3.9 The placing position

The operation panel of DobotStudio will record the values of X, Y, Z coordinates automatically. Afterwards, write the values of the XYZ coordinates in the blanks.

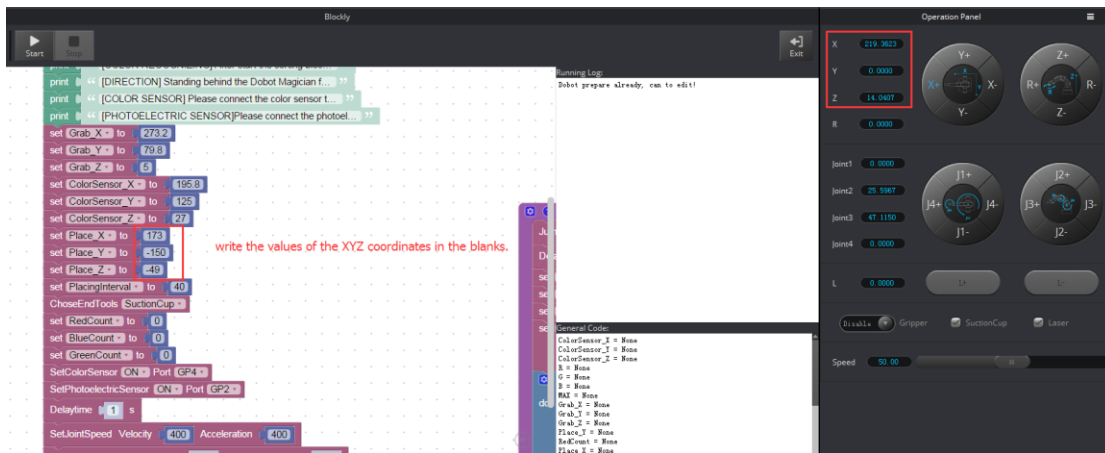


Figure 3.10 Modify the X, Y, Z coordinates in Blockly demo

After adjusting the positions, click “Save”. Then, click “Start” to turn on the conveyor belt.

Note: Please start the sorting demo at first, then start the pick & place demo.