



DOBOT

Przewodnik użytkownika

Podręcznik użytkownika linii produkcyjnej do Dobot Magician

Issue: V1

Date: 2019-03-26

ShenZhen Yuejiang Technology Co., Ltd.

1. Conveyor Belt Kit - Informacje ogólne

Zestaw Conveyor Belt zawiera przenośnik taśmowy, czujnik koloru i czujnik fotoelektryczny, jak pokazano na zdjęciu 1.1.



Zdjęcie 1.1 Conveyor Belt Kit.

⚠ NOTICE

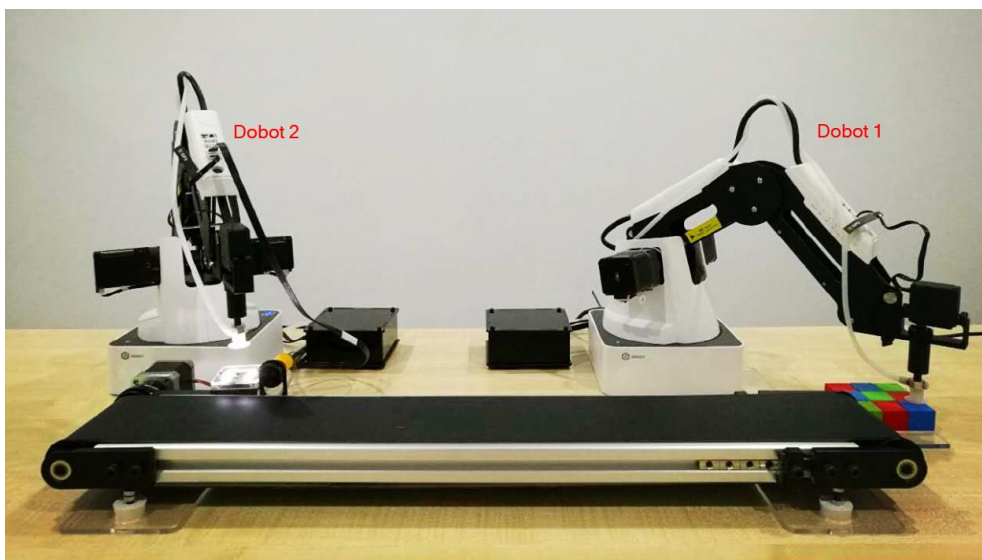
Należy całkowicie wyłączyć Dobot Magician przed podłączeniem lub odłączeniem modułów zewnętrznych takich jak: czujnik podczerwieni, czujnik koloru, itd. W przeciwnym razie może to spowodować uszkodzenie robota Dobot Magician. Zgaśnięcie diody LED oznacza całkowite wyłączenie urządzenia Dobot Magician.

Kolejność przeprowadzanych kroków:

- Zamontuj czujnik fotoelektryczny i czujnik koloru.
- Włącz zasilanie Dobot Magician, buzzer zabrzęczy trzy razy, wskazując, że moduł zakończył inicjalizację.
- Szczegółowe informacje na temat urządzenia Dobot Magician można znaleźć w podręczniku użytkownika.

2. Podłączenie urządzenia

W tym temacie opisano sposób podłączenia zestawu Conveyor Belt Kit. Połączenie pokazane w tym rozdziale jest dostępne dla urządzeń Dobot Magician V1 i Dobot Magician V2, a do przedstawienia przykładu połączenia użyjemy urządzenia Dobot Magician V1, jak pokazano na rysunku 2.1.



Zdjęcie 2.1. Przykład połączenia.

NOTE

Ramię robota Dobot 1 służy do pobierania klocków, a Dobot 2 do ich sortowania.

2.1 Instalacja Conveyor Belt

Podłącz przewód silnika Conveyor Belt do interfejsu **Stepper1** w podstawie Dobot.

1.



Zdjęcie 2.2. Podłączenie Conveyor Belt.

2.2 Instalacja czujnika koloru

Podłącz przewód zasilający czujnika koloru do interfejsu GP1, GP2, GP4 lub GP5 w urządzeniu Dobot 2 (w tym dokumencie jako przykład przyjęto interfejs GP2).

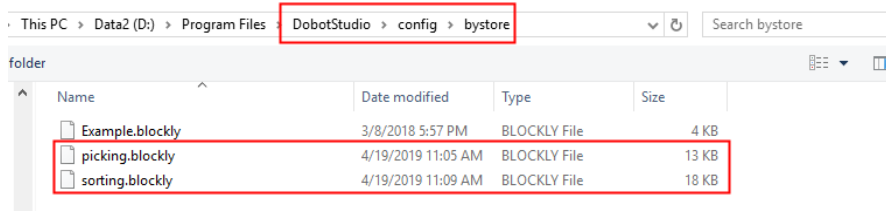


Figure 3.3 Save demos

Step 2. Launch two DobotStudio clients, and open **Blockly** module and import the picking demo and the sorting demo respectively. As shown in Figure 3.4 and Figure 3.5.

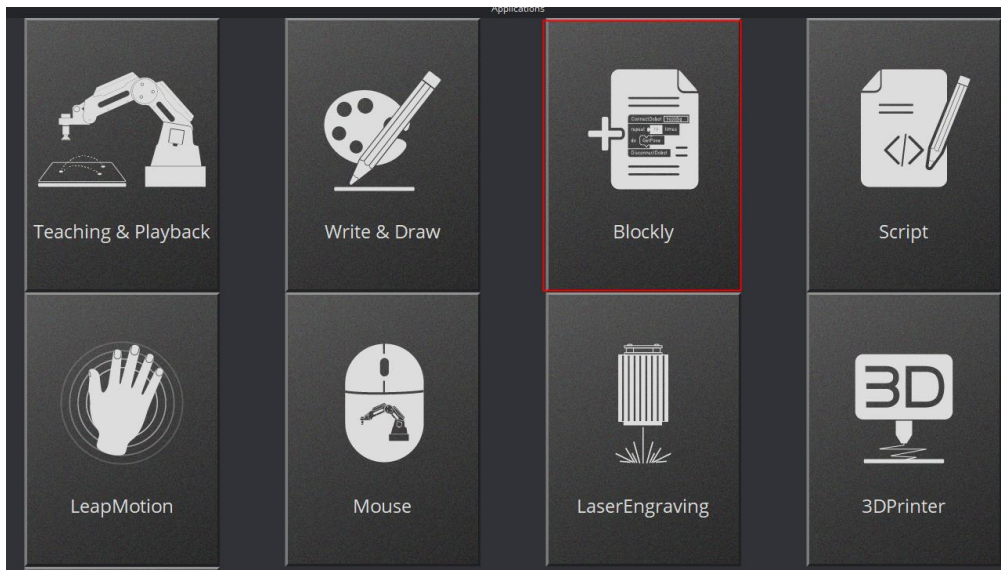


Figure 3.4 Open Blockly module

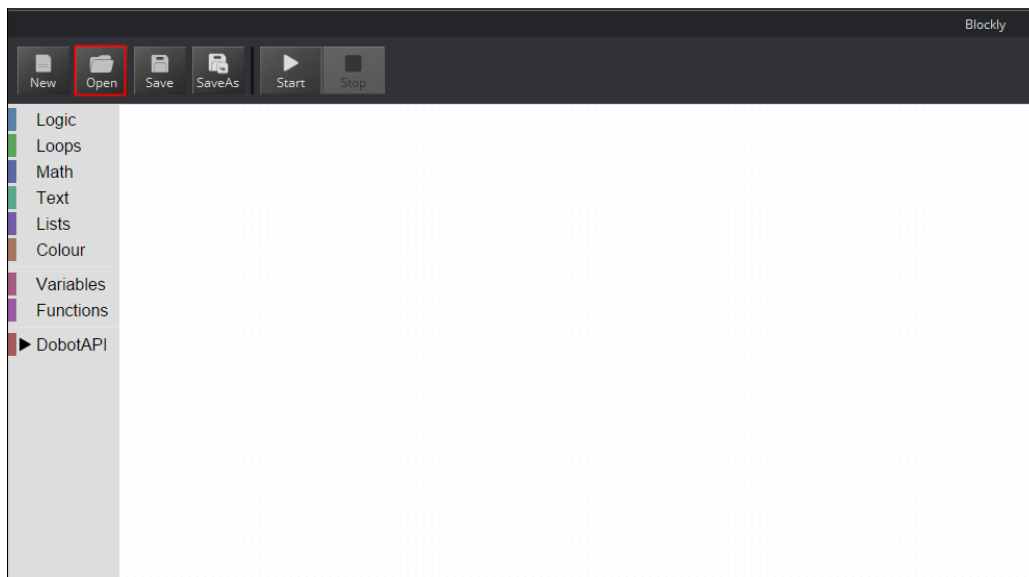


Figure 3.5 Import demo

Step 3. If the Dobot Studio client imports the picking demo, connect it to the Dobot 1, otherwise,

connect it to the Dobot 2. As shown in Figure 3.6 and Figure 3.7.

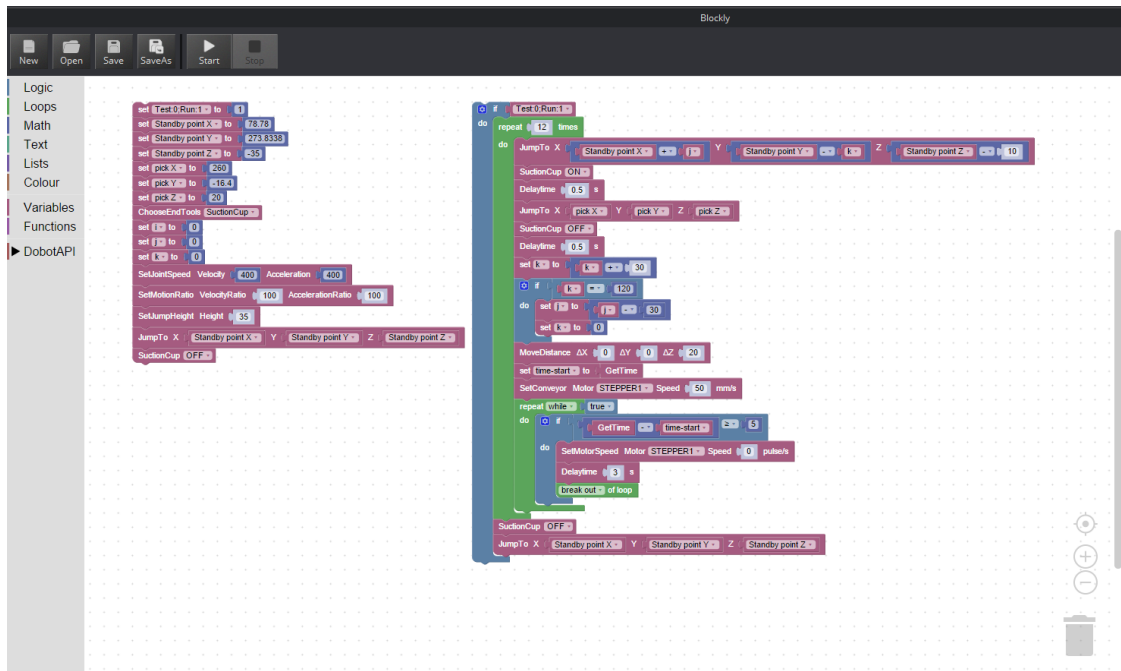


Figure 3.6 Import the picking demo

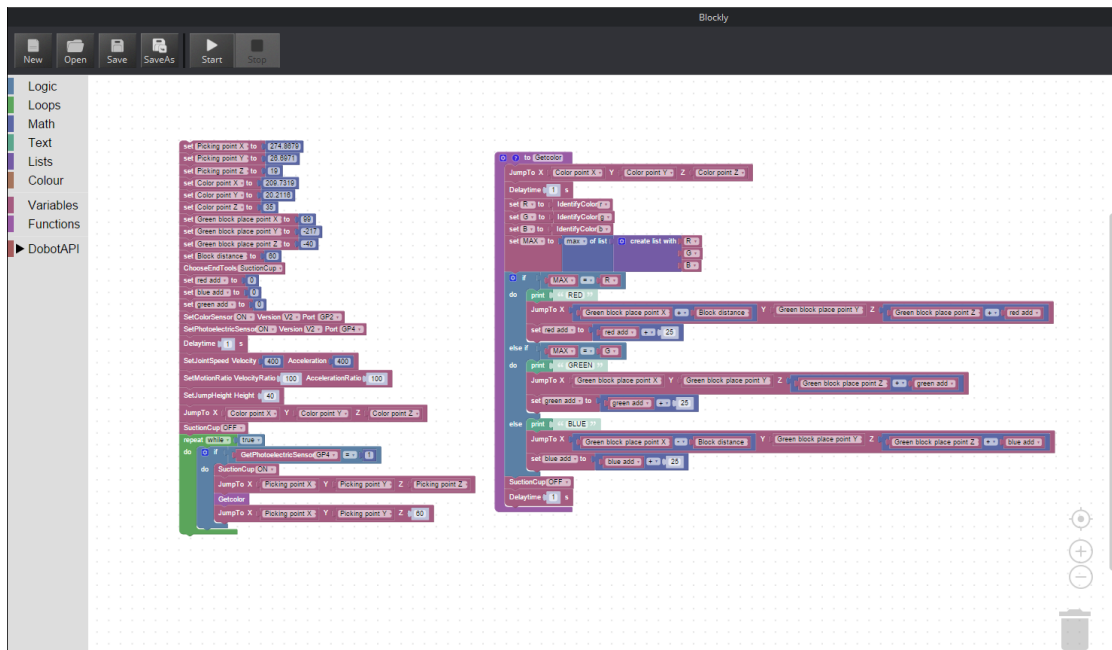


Figure 3.7 Import the sorting demo

4. Position Adjustment

4.1 Adjusting Picking and Placing Positions of Dobot 1

- Adjusting picking position
 1. Press and hold down the **Unlock** button on the forearm to move the Dobot 1 to make suction cup on the block. As shown in Figure 4.1.



Figure 4.1 Picking position

NOTE

You can move the Dobot 1 by the DobotStudio to make the suction cup on the center of the block.

2. The operation panel on the DobotStudio will record the values of X, Y, Z axes automatically, and write the values of the X, Y, Z axes in the picking demo as shown in Figure 4.2.

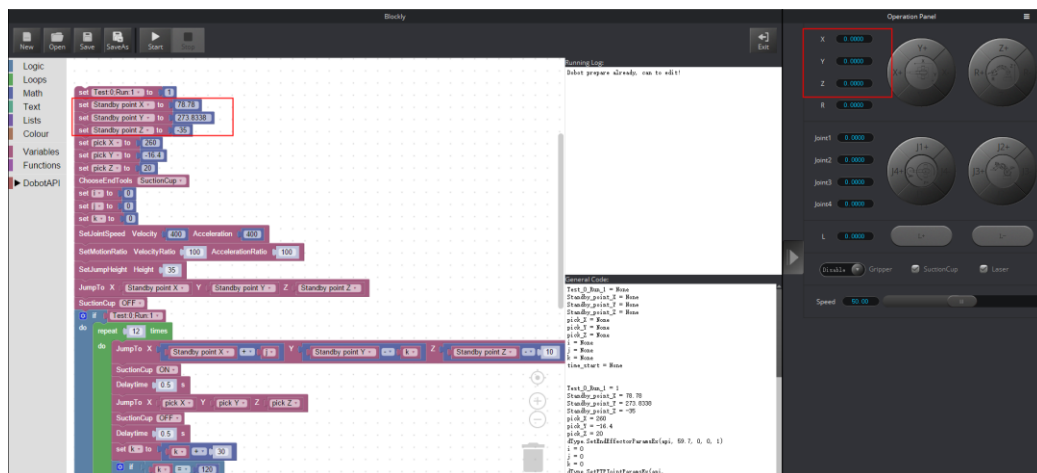


Figure 4.2 Modify the picking position

- Adjusting the Placing Position
 1. Select **SuctionCup** to pick up the blocks, and then press and hold down the **Unlock** button to move the Dobot 1 to make the blocks on the conveyor belt. As shown in Figure 4.3.

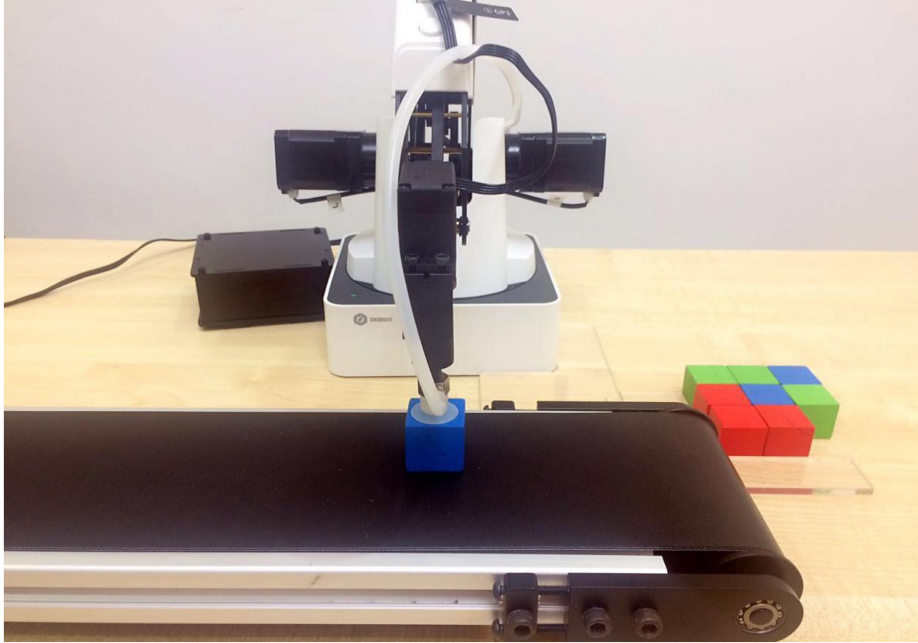


Figure 4.3 Adjust Placing position

2. Unselect **SuctionCup** to put down blocks on the conveyor belt. The operation panel on the DobotStudio will record the values of X, Y, Z axes automatically, and write the values of the X, Y, Z axes in the picking demo as shown in Figure 4.4.

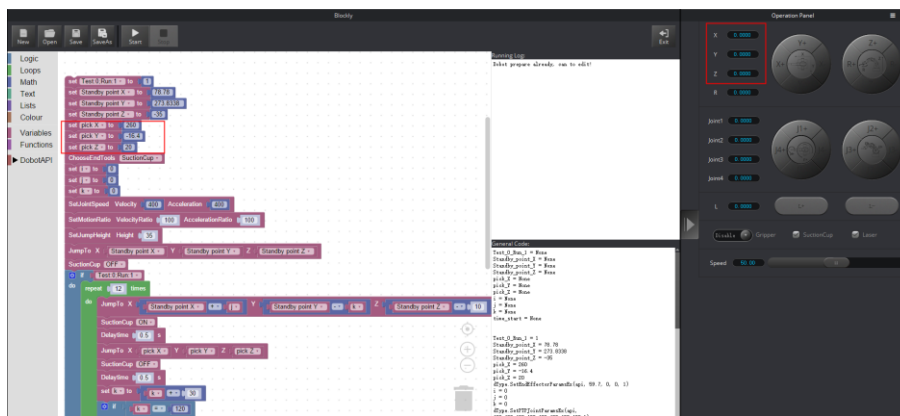


Figure 4.4 Modify the placing position

- Adjusting the stopping position

Control the conveyor belt move a distance by setting the speed and time in the picking demo to make these blocks in a position where is in the workspace of the Dobot 2.

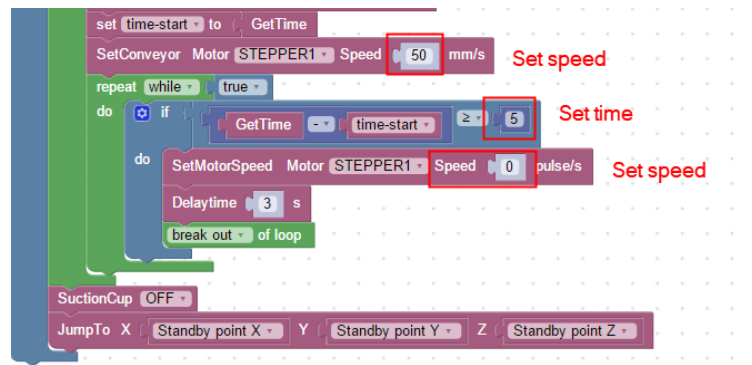


Figure 4.5 Adjust the stopping position

4.2 Adjusting Sorting Position of Dobot 2

- Adjust picking position
 1. Press and hold down the **Unlock** button on the forearm to move the Dobot 2 to make the suction cup on the center of the block. As shown in Figure 4.6.



Figure 4.6 Adjust picking position

NOTE

You can move the Dobot 2 by the DobotStudio to make the suction cup on the center of the block.

2. The operation panel in DobotStudio will record the values of X, Y, Z axes automatically, and write the values of the X, Y, Z axes in the sorting demo as shown in Figure 4.7.

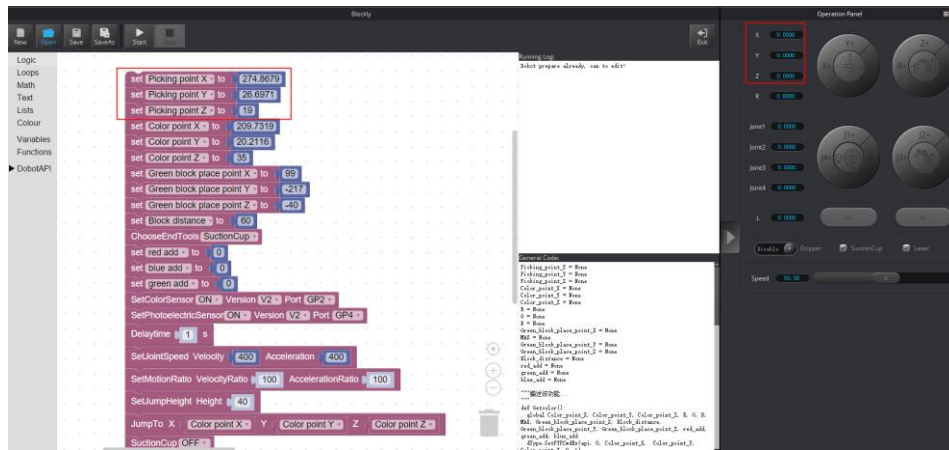


Figure 4.7 Modify picking position

- Adjust color-identified position
 1. Select **SuctionCup** to pick up the block, and then press and hold down the **Unlock** button to move the Dobot 2 to make the block above the color sensor. The distance range between the color sensor and block should be 5mm to 10mm. As shown in Figure 4.8.



Figure 4.8 Adjust color-identified position

2. The operation panel on the DobotStudio will record the values of X, Y, Z axes automatically, and write the values of the X, Y, Z axes in the sorting demo as shown in Figure 4.9.

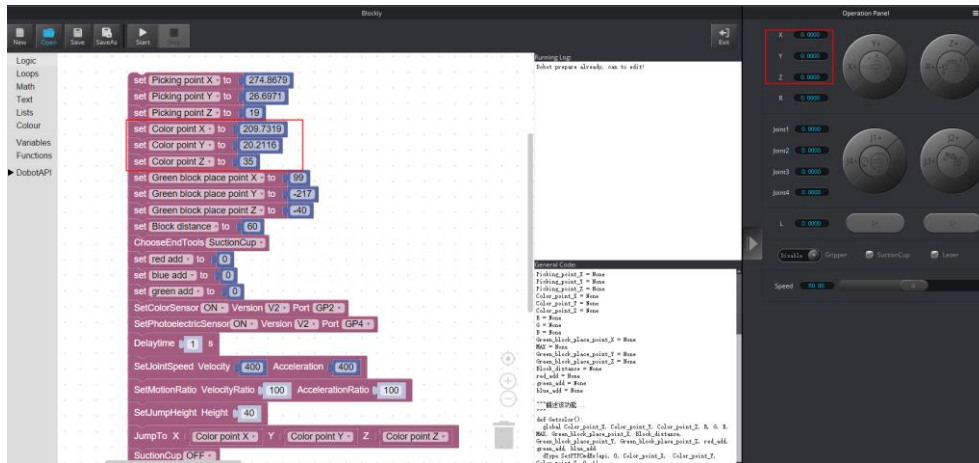


Figure 4.9 Modify color- identified position

- Adjust placing position
 1. Press and hold down the **Unlock** button to move the Dobot 2 to make the block on a placing position. As shown in Figure 4.10.



Figure 4.10 A placing position

NOTE

Make sure that this position is in the workspace of the Dobot Magician.

2. The operation panel on the DobotStudio will record the values of X, Y, Z axes automatically, and write the values of the X, Y, Z axes in the sorting demo as shown in Figure 4.11.

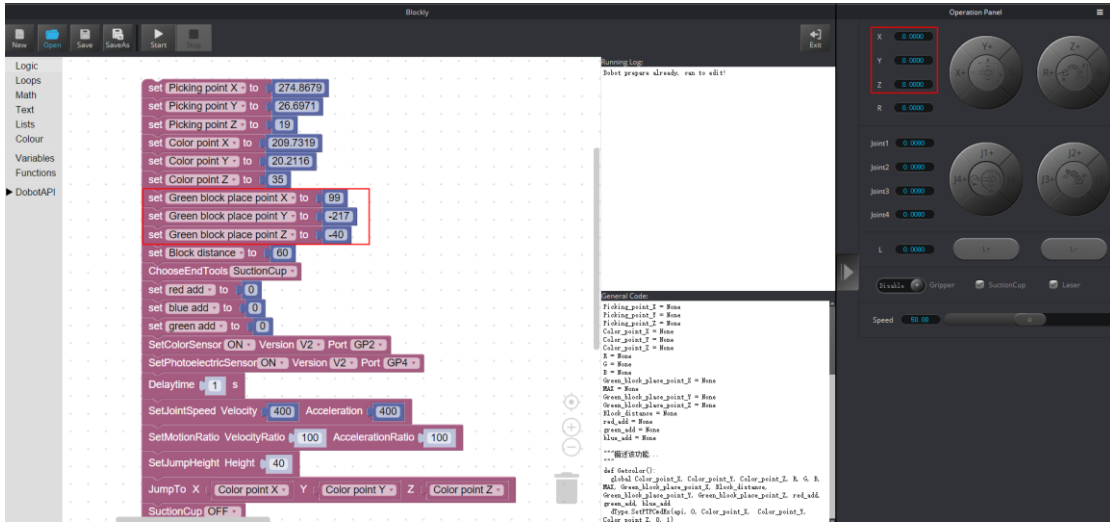


Figure 4.11 Modify placing position

3. Click **Save** to save the settings.

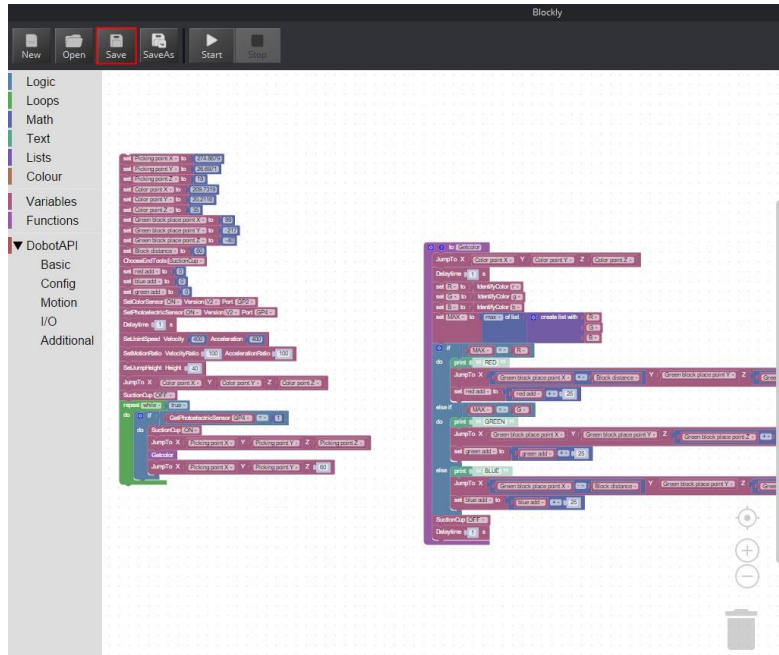


Figure 4.12 Save the settings

5. Run the Conveyor Belt

1. Modify 0 to 1 in the **Test:0; Run:1** module when running the picking demo as shown in Figure 5.1.

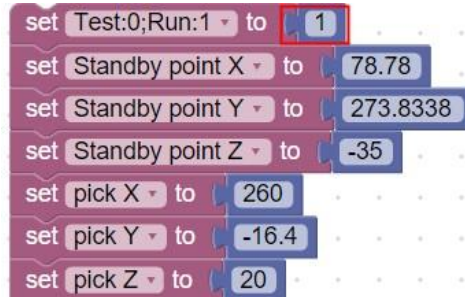


Figure 5.1 Modify 0 to 1

2. Click **Start** to run the Dobot 2 first, and then run the Dobot 1.

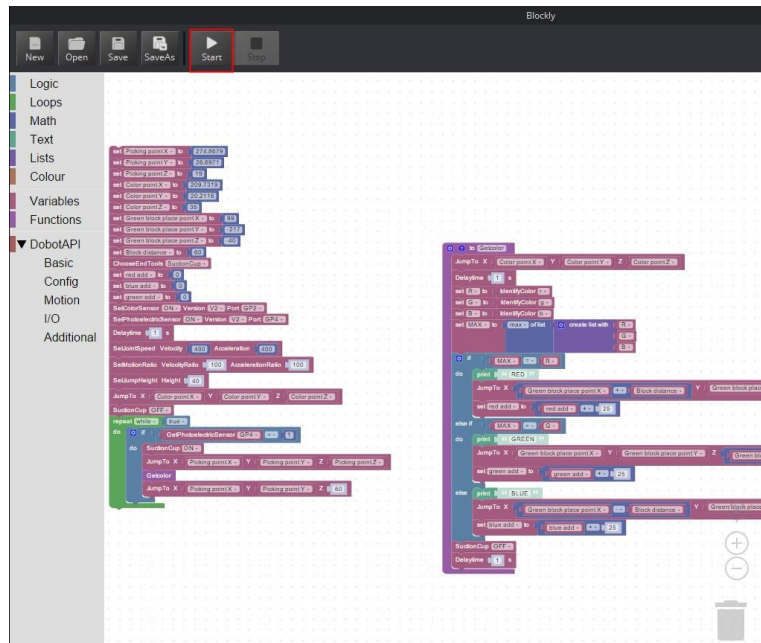


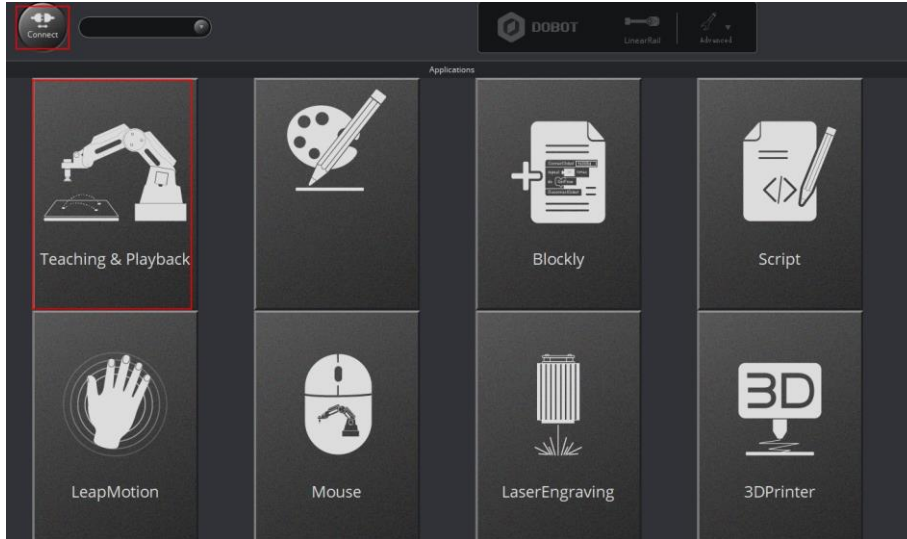
Figure 5.2 Start the Dobot 2

6. Precautions

- You need to reset Dobot Magician before running the conveyor belt, adjust and save positions after 20s. Reset Dobot Magician again, and run conveyor belt after 20s.
- The homing point should be set higher to avoid crash. If Dobot Magician loses step, you need to operate homing procedure again.

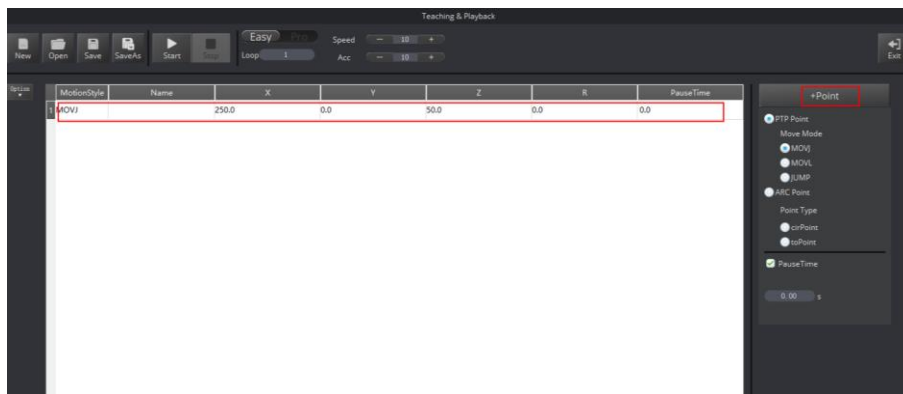
Appendix A Setting home position

Step 1. Open DobotStudio, connect Dobot Magician and click **Teaching&Playback** as shown in Attach Figure 6.1.



Attach Figure 6.1 Teaching&Playback

Step 2. Click **+ point** to save a point of which the axes X, Y, Z, R are 250, 0, 50, 0 respectively. You can set the point based on site requirements.

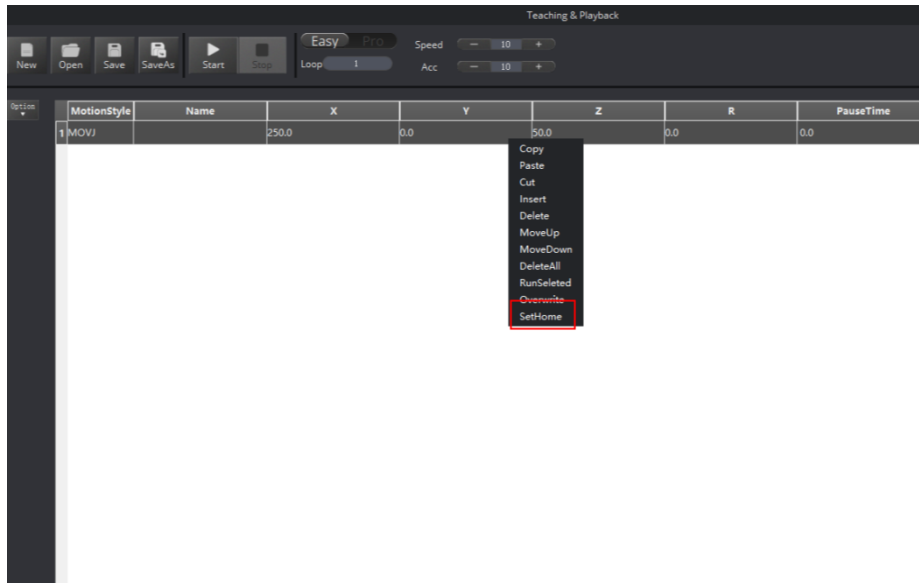


Attach Figure 6.2 Add Point

NOTE

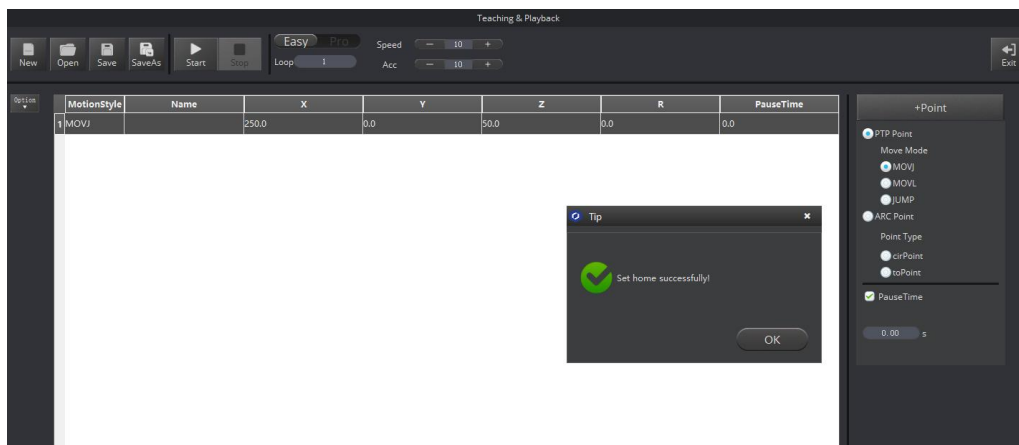
Make sure that this position is in the workspace of the Dobot Magician.

Step 3. Select this point and right-click **SetHome**. As shown in Attach Figure 6.3.



Attach Figure 6.3 Set home position

Step 4. If the settings are successful, it will pop up a tip as shown Attach Figure 6.4, click **OK**. Click **Home** to check whether the setting is available, if not, please set the homing position again after pressing down the reset key on base of Dobot Magician.



Attach Figure 6.4 Setting tip