CROWPI 2

Operating Manual

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Product info

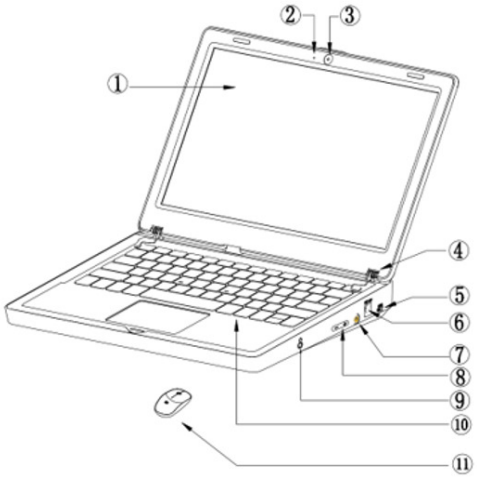
CrowPi 2 combines ARDUINO UNO（or other development board） and a range of common sensors, it’s just as useful for learning about STEAM education and setting up as a portable laptop. No matter you are one of fans of MAKER, a STEAM educator, or someone who wants to experience something interesting, CrowPi 2 will be your best choice!

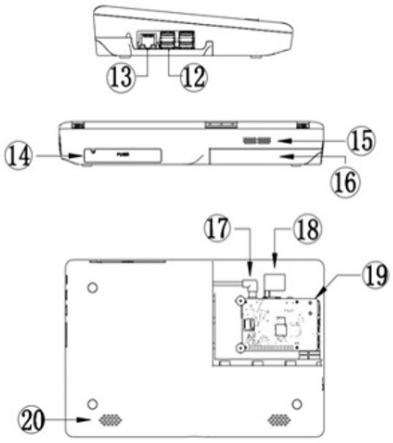
Main features

1. 11.6-inch 1920*1080 IPS screen
2. Sleek body made out of environmentally-friendly material, portable for on-the-go use
3. Wireless keyboard detaches from body or stays connected via magnet
4. Convert between playing and learning in second
5. Get started via one-step installation (development board)
6. 2-MP camera, microphone, and stereo output built in
7. Switch between projects using one button and get creative using development board GPIO pins, all of which connect to the onboard sensors or function as independent out puts
8. All-in-one board includes all necessary sensors for learning hardware and software
9. Self-developed software for learning Scratch, Python, AI, and Minecraft step-by-step via an engaging dialogue teaching mode
10. Offline account management for saving learning progress and achievements and c onveniently continuing education

The main parameters

A : Structure





1 : 11.6 -inch 1920 * 1080 resolution screen

2 : Microphone

3 : Two-megapixel camera

4 : Shaft

5 : 5V USB power supply port

6 : DC 12V power supply port

7 : Power button

8 : Volume +/- brightness +/-

9: 3.5mm headphone jack

10: Removable wireless keyboard (Optional)

11 : Wireless mouse (Optional)

12 : USB port

13 : network port

14 : Storage bin

15 : Cooling hole

16: installation groove

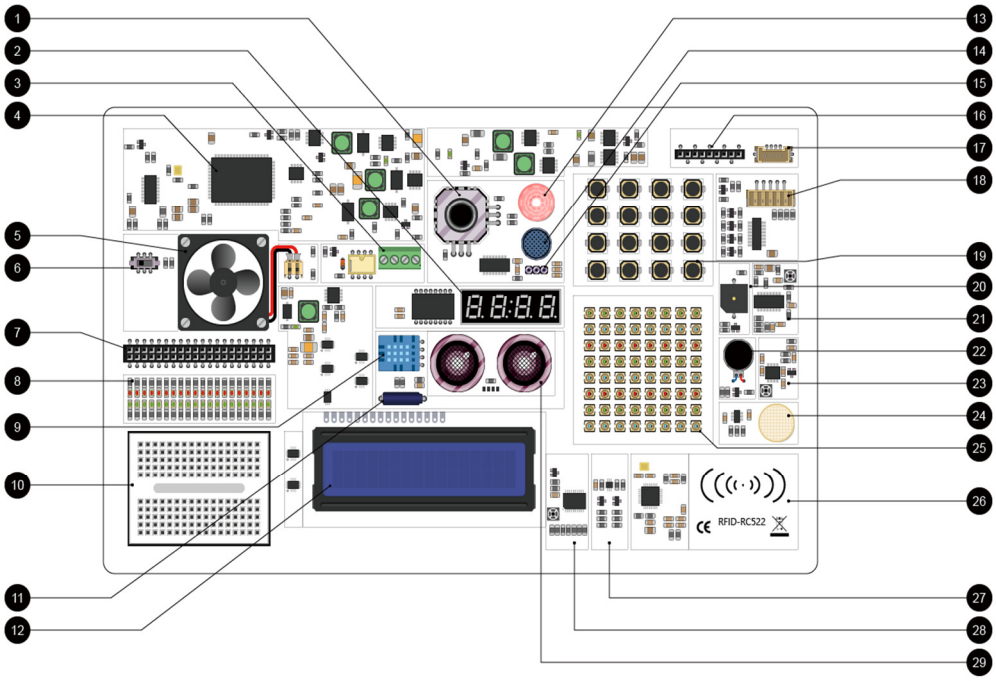
17: power supply head (reserved)

18: HDMI

19 : ARDUINO UNO fixed position

20 : Speakers

B: Development board



*1 Thumb joystick

*2 Segment
*3 Relay
*4 Screen driver
*5 cooling fan
*6 GPIO toggle switch
*7 40 pin gpio socket
*8 IO indicator LED
*9 DHT11
*10 Breadboard
*11 Tilt switch
*12 1602 LCD display
*13 PIR motion sensor
*14 Sound sensor
*15 IR receiver
*16 IO /ADC/IIC/UART interface
*17 9G servo port
*18 Step motor port
*19 4*4 button matrix
*20 Buzzer

*21 PIR sensitivity adjustment
*22 Vibration motor
*23 Sound sensor sensitivity adjustment
*24 Touch sensor
*25 8*8 RGB LED matrix
*26 RC522 RFID module (**NFC induction area**)
*27 Light sensor
*28 LCD1602 lightness adjustment
*29 Ultrasonic sensor

C : Conventional accessories

Power supply x1

Screwdriver x1

Infrared remote control x1

IR receiver x1

Stepper motor x1

TF Card Reader x1

Motor + small fan x1

Servo x1

Manual x1

RFID white card + tag x1

Crowtail -moisture sensor(with cable) x1

Components Pack x1

D: Specifications

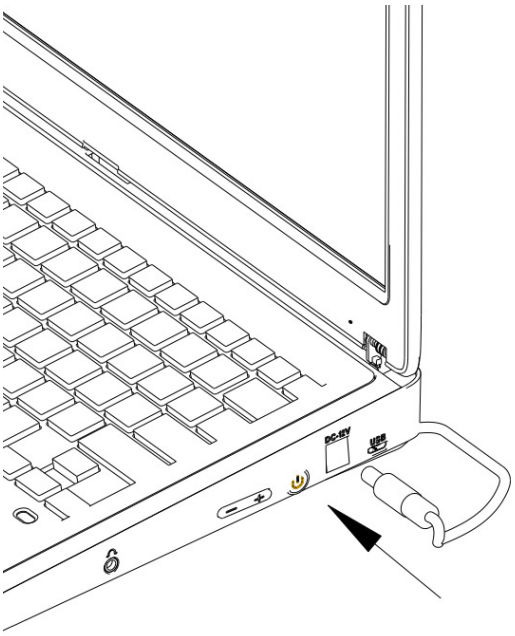
Model	Crowpi2
Dimensions	291(L)*190(W)*46(H)mm
Weight	1.3kg
Screen	11.6-inch 1920*1080 IPS screen

Camera	2 Megapixels camera with microphone
Power supply	DC12V / USB 5V power supply
Power port	Micro USB/ DC
Keyboard (Optional)	2.4G wireless
Mouse (Optional)	2.4G wireless
Audio output	Stereo speaker
Volume adjustment	Support
Screen brightness adjustment	Support
Induction screen function	Support
Audio port	3.5mm headphone jack
Compatibility	Compatible with ARDUINO UNO/ or other development board
Other function	Storage box (power bank box)
Supporting operation system	Raspbian, Ubuntu, CentOS, Windows IOT, Kali, Pidora, ArchLinux, FreeBSD, Kodi, OpenWrt, RISC OS, RetroPie, LAKKA, Recalbox, LibreELEC, OSMC
Module list:	1. Joystick 2. Segment LED 3. Relay 4. Cooling fan 5. Switch converts connection between sensors and controller 6. GPIO pin socket 7. GPIO indicate LED 8. DHT11 temperature and humidity sensor 9. Breadboard 10. Tilt sensor 11. Hall sensor 12. PIR motion sensor 13. PIR sensitivity adjustment 14. Sound sensor 15. IR receiver 16. I/O/IIC/ADC/UART extension port

	17. 9G servo 18. Stepper motor 19. LCD1602 display 20. 4x4 button matrix 21. Buzzer 22. Vibration motor 23. Touch sensor 24. 8x8 RGB matrix 25. RC522 RFID sensing part 26. Moisture sensor 27. Light sensor 28. Ultrasonic sensor 29. Screen driver 30. Basic components pack 31. LCD1602 brightness adjustment
Certification	CE, FCC, RoHS

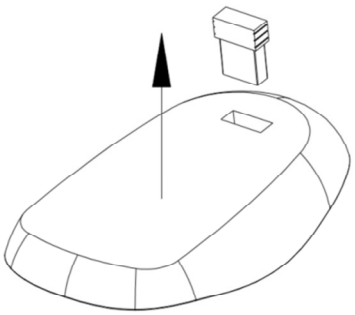
How to use

Connect the power supply, Use the 12V power supply in the accessories , insert the DC round head into the DC12V power supply port

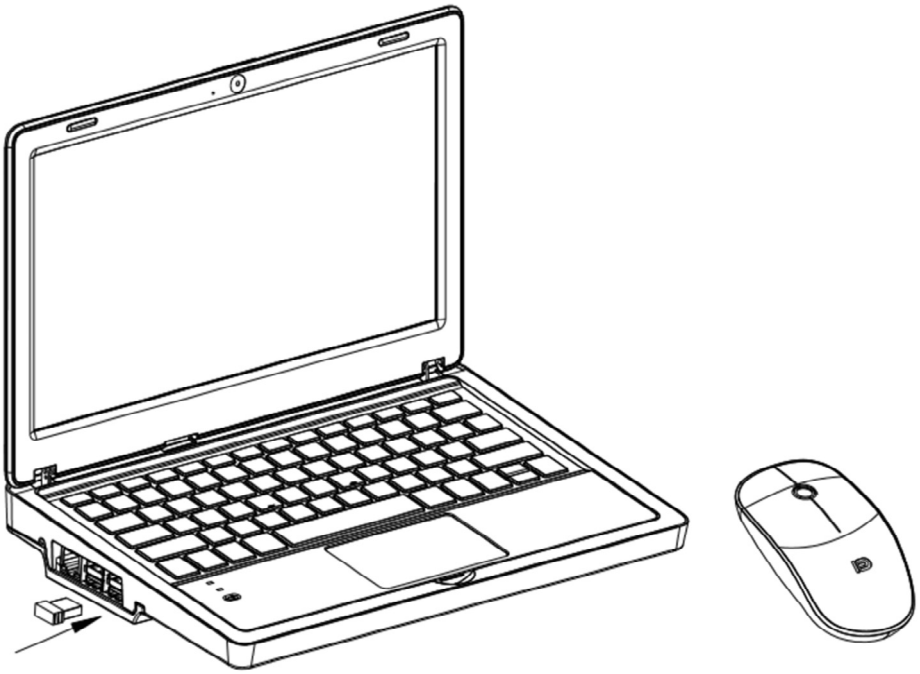


Keyboard and mouse

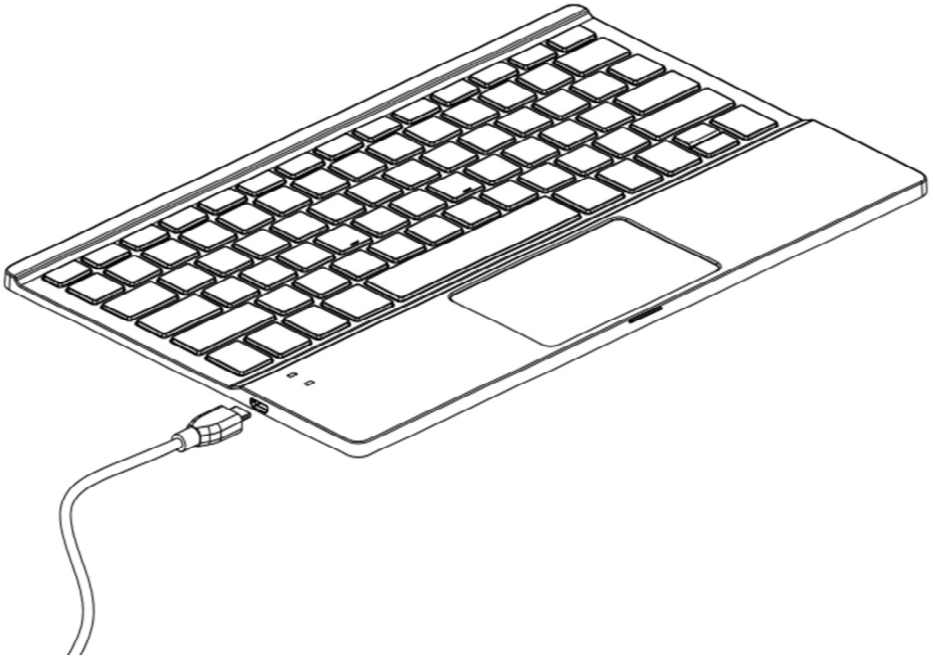
1. Remove the wireless receiver in the mouse compartment



2. Insert any USB port

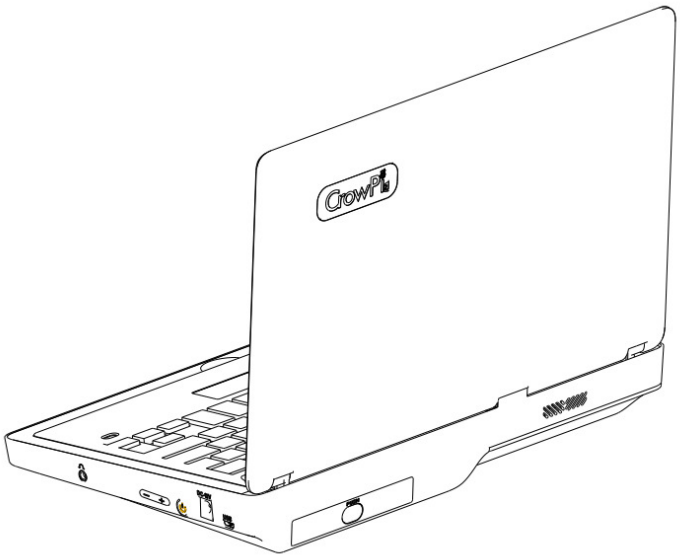


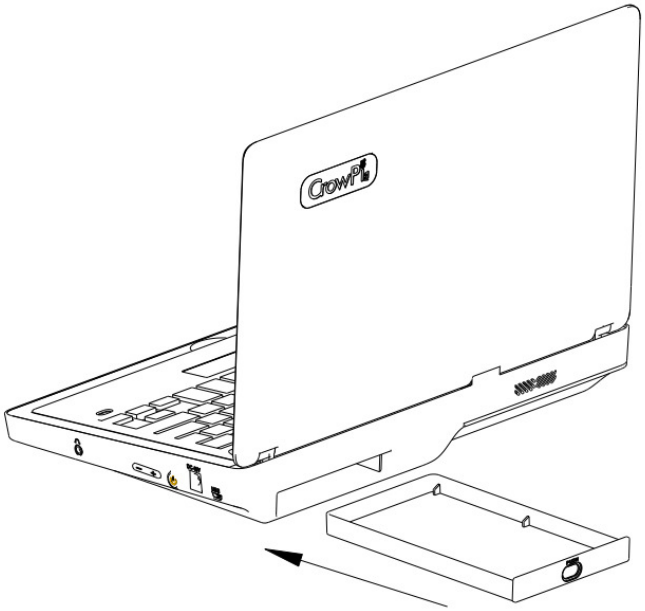
3. Get started
4. When your keyboard is run out of power, please use micro usb cable to power it, and you can replace the battery of mouse if it run out of power.



Storage bin

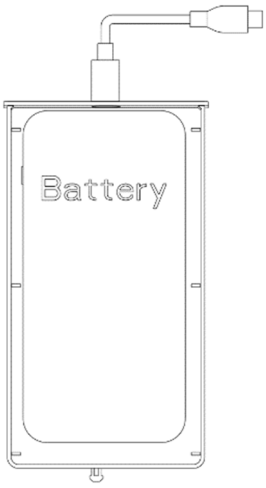
Use your finger to open and close the storage compartment



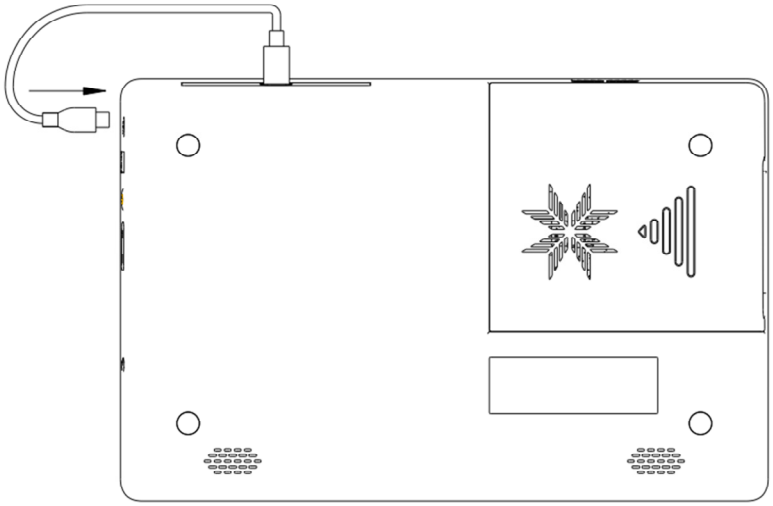


Power bank

1: Install 5v power bank
a: Open the storage compartment, put the powerbank into the compartment, insert the wire through the wire hole, and then push it into device.



b: access to 5V micro USB port



2 : Press the power button

Screen brightness adjustment

First press the + button to enter the backlight brightness adjustment, continue to press + brightness to increase, press - brightness to decrease.

Volume adjustment

First press the - key to enter the volume adjustment, continue to press + volume to increase, press - volume to decrease.

FAQ

1. Unable to boot
Make sure you are using the correct charger and that the SD card is inserted into the development board

2. The module or sensor on the PCBA board cannot be used
Please make sure that GPIO toggle switch have been switched to A successfully.

3. The wireless keyboard cannot be used
Please ensure that the power is sufficient, and ensure that the wireless transmitter is plugged into the USB port of the development board

4.The screen goes black and crashes
Please check whether the high-current peripheral is mounted to cause insufficient power supply.

5. camera and microphone does not work
Please check if USB is connected .

6. Unable to connect to the network
Please turn on the wireless network or connect to the
development board Ethernet network port.

Precautions

Do not use in humid environment
Do not use an unsuitable power supply to power the device
Do not approach heat sources
Do not bend the keyboard and screen

Software

This is a software specially designed for Crowpi2 users, which integrates scratch, python programming and adaptation tutorials, Micro: bit and Arduino compilation environment, and sometimes the most popular programming game Minecraft. In addition, it also takes into account the video and audio entertainment function, which not only allows you to play small python games, but also has a built-in player to play audio and video files.
Even if you want to learn about some of the hottest ai-related projects of recent years -- face recognition and voice recognition -- we've provided you with examples to get you started.

Parts

Part name		Function
Learning	Python lessons	Let users quickly master the knowledge of python programming and software and hardware interaction
	Scratch lessons	Let users quickly master the knowledge of scratch programming and software and hardware interaction
Projects		20 small applications designed for quick familiarity with Crowpi2 hardware features
Minecraft		Use game Minecraft to open the door to python programming world for children, teaching in fun
AI		Get the most popular knowledge of AI- face recognition and speech recognition
Python		Built-in python programming client
Game		Experience the fun of simple Mini Game python write and develop your child's brain

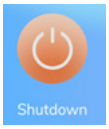
Micro: bit	Makecode entry which is designed for Micro: bit programming
Scratch	Built-in Scratch Visual Programming Client
Arduino	Built-in Arduino programming IDE

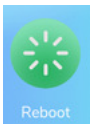
Main page and User Settings

Dashboard

The page is the main software page, click on the corresponding module area to enter the corresponding section.

Click on the upper left corner to return to the desktop. Click on the top right corner to pop up the shutdown window.

Click 

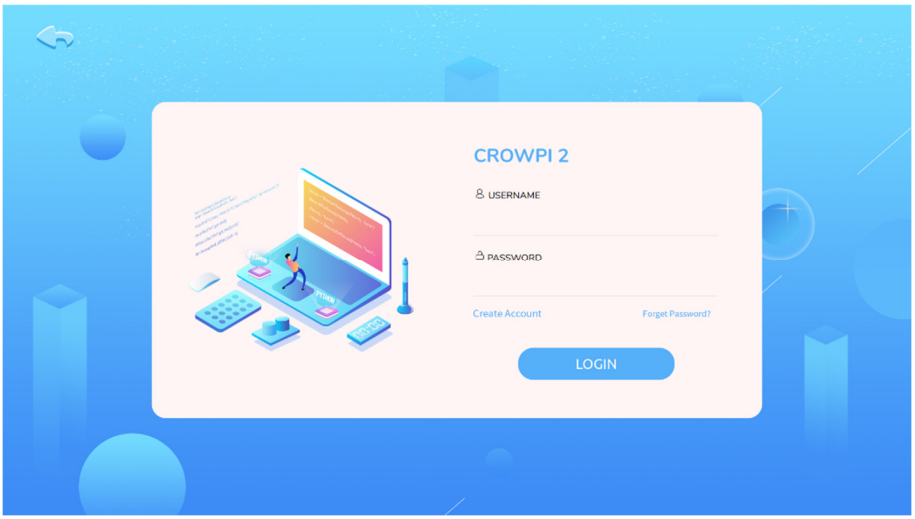
shutdown the device or 

to reboot.

Create and login accounts

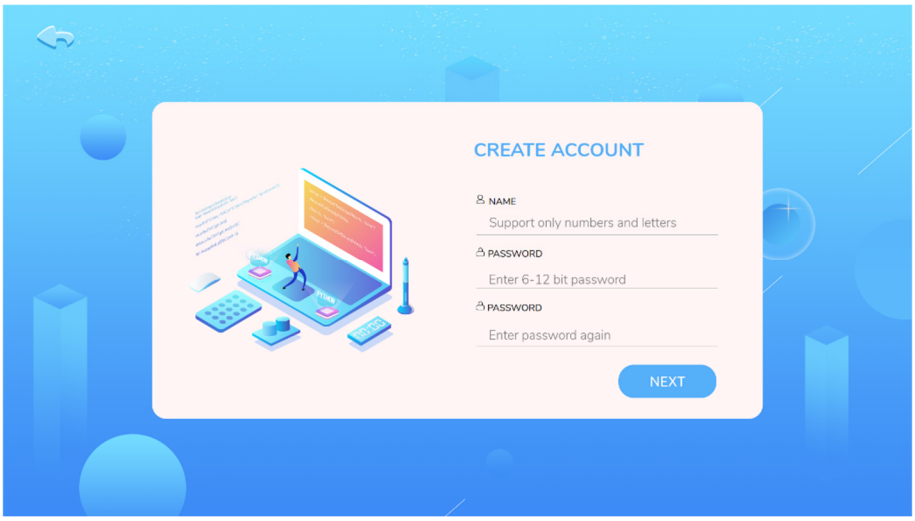
Click on the top left user button

Enter account login page, click go back to the previous step.



The first time you use the software you need to register a new account

Click Create Account to create a new user account. Then go to the page shown in the image below, click back to the previous step

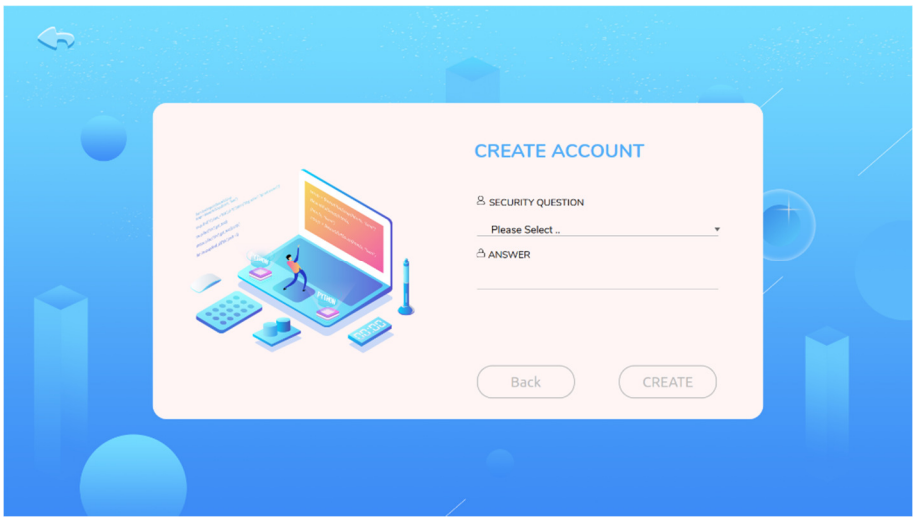


Enter Name, only support numbers and letters

Enter Password, limit the number of characters to 6-12 bits

Reconfirm the password entered in the second step, Click NEXT

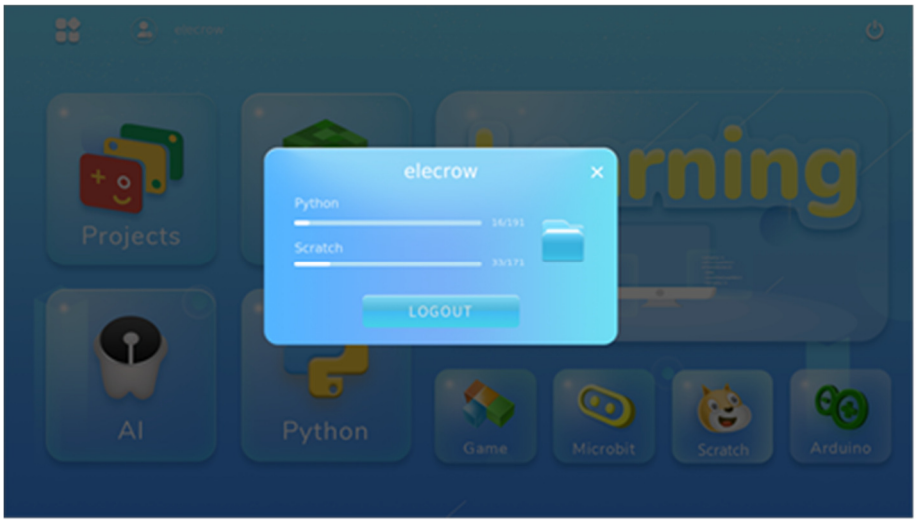
Set up secret questions and answers, click CREATE to complete account creation



Go back to the login page and enter the username and password you just set up

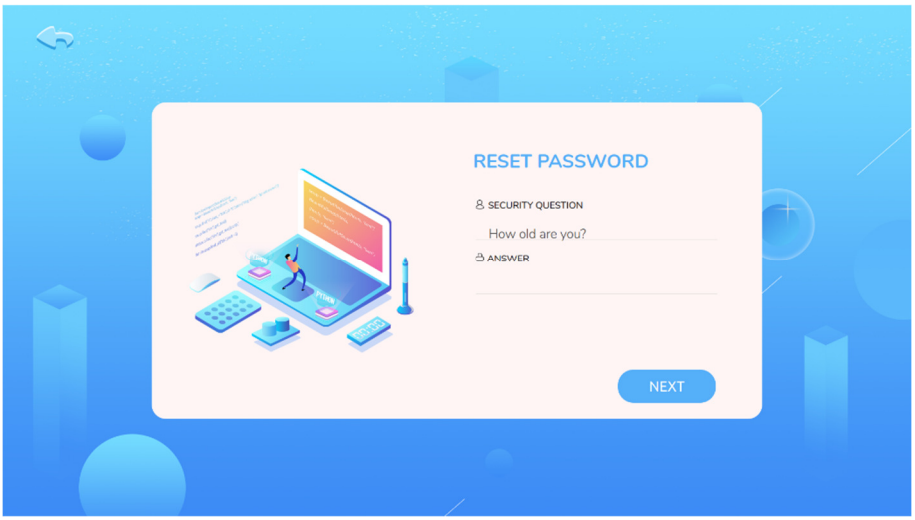
Then click LOGIN to sign in.

Once you've successfully logged in, click on the user icon, pop up a personal user window, where you can view the progress of your course and your private folder. Click LOGOUT to log out of your account.

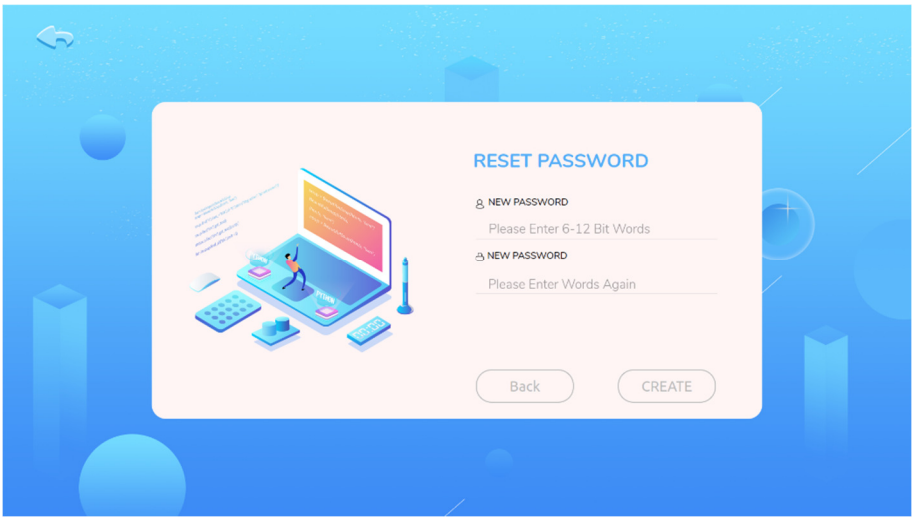


Forget password

If you forget your password, click Forget Password? on the login page to go to the password reset page, click back to the previous step.



Enter the secret question and answer, click NEXT to the next step, click back to previous step.



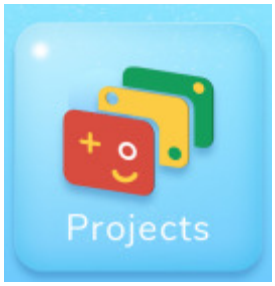
Enter the new password and confirm it twice, click CREATE complete password reset, go back to the login page and log in with the new password.

Operation Process

Learning

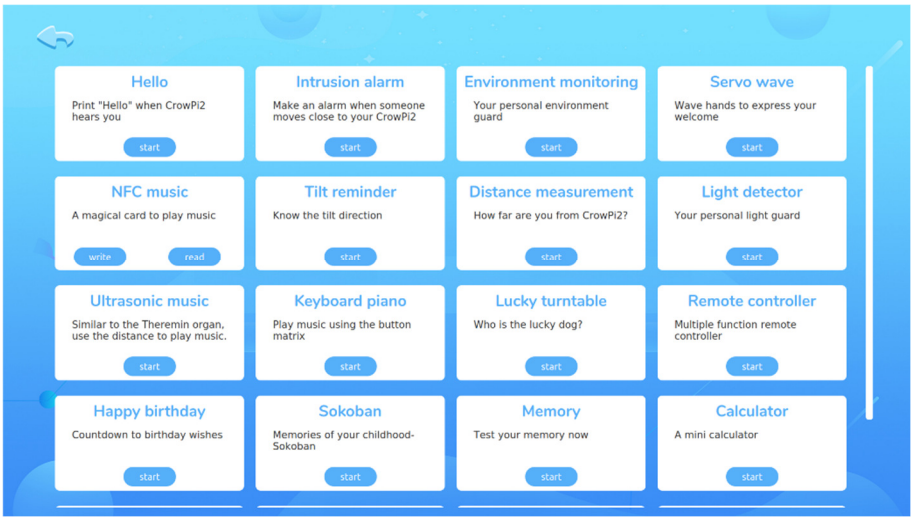
Integrated Scratch and python teaching resources, providing users with step-by-step tutorials to learn Scratch programming and python programming.

Projects



We provide 20 kinds of project use cases for users to quickly experience software and hardware interactions, understand the functions supported by the hardware that comes with the device.

Click on the icon to go to the projects selection page, as shows:

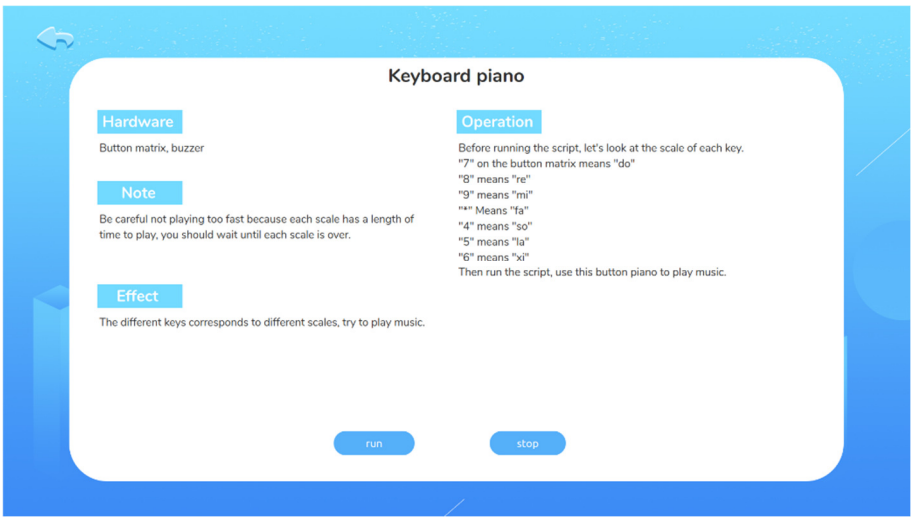


You can run the corresponding project with click the start

Attention:

In the NFC music project, put the NFC card onto the nfc induction area first, then click write to write the number of music, click read , then put the nfc card onto the induction area again.

In the Keyboard Piano project, click on the icon and go to the following page for details

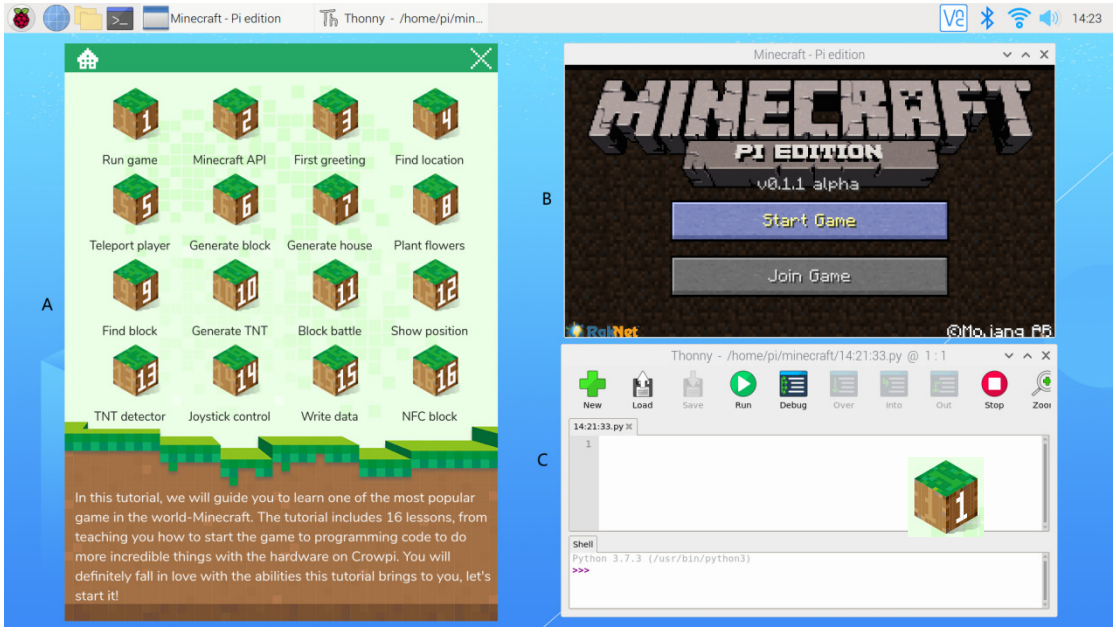


After the reference instructions, click Run to run the program, click stop to stop running.

Minecraft

Minecraft- the classic Minecraft raspbian version that combines gaming with programming.

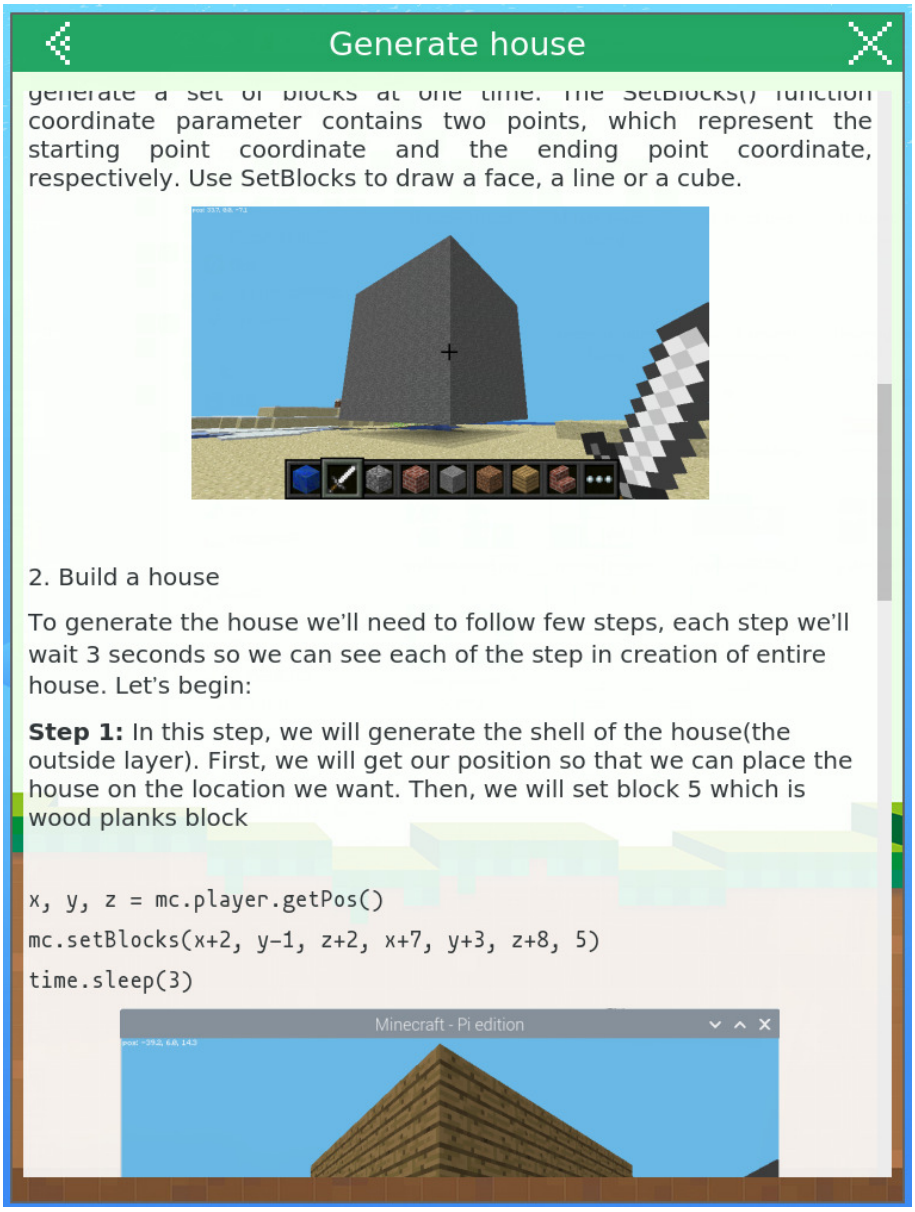
Click on the icon and enter the desktop, pop up the Minecraft game window, the python programming client and the minecraft course teaching window. As shown in the figure below：



Zone A: Minecraft 16 course selection interface, click on the corresponding icon to enter the course, click back to the Dashboard page, click close the window.

Zone B: Mincecraft Game Client

Zone C: Python programming client, which can change game interactions by entering code according to the course guidance in zone A. Course page:



Drag the scroll bar on the right to browse and learn lessons

Click back on the course selection page and click to close the window.

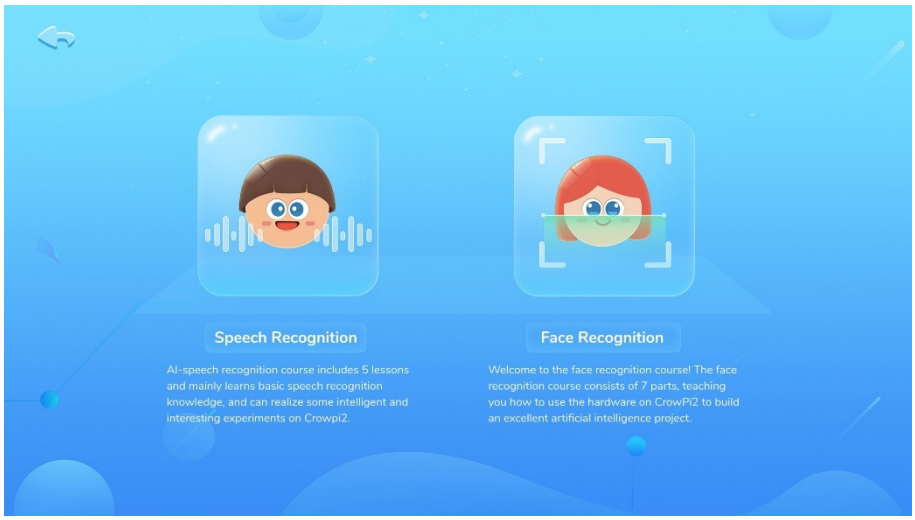
AI

Enter AI Studies, divided into Face Recognition Speech and Recognition

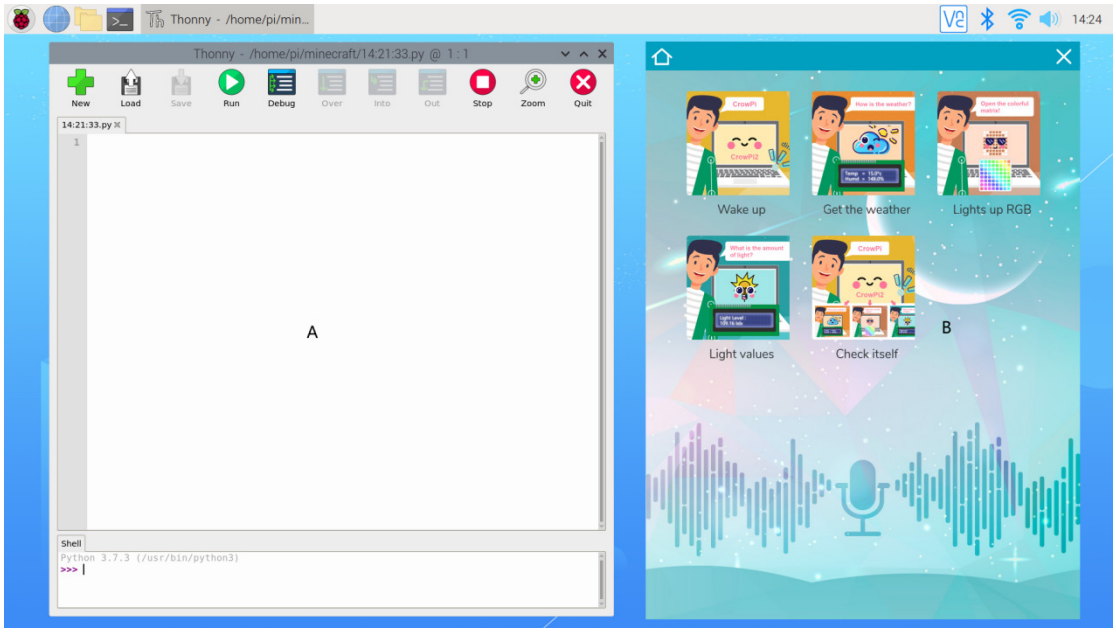
Face recognition : Seven face recognition courses allow you to master the simple principles of face recognition and simulate the application of preliminary scenes.

Speech Recognition : Five speech recognition courses, quickly master the setting of speech

recognition wake-up words, call API , voice and hardware interaction and other content.



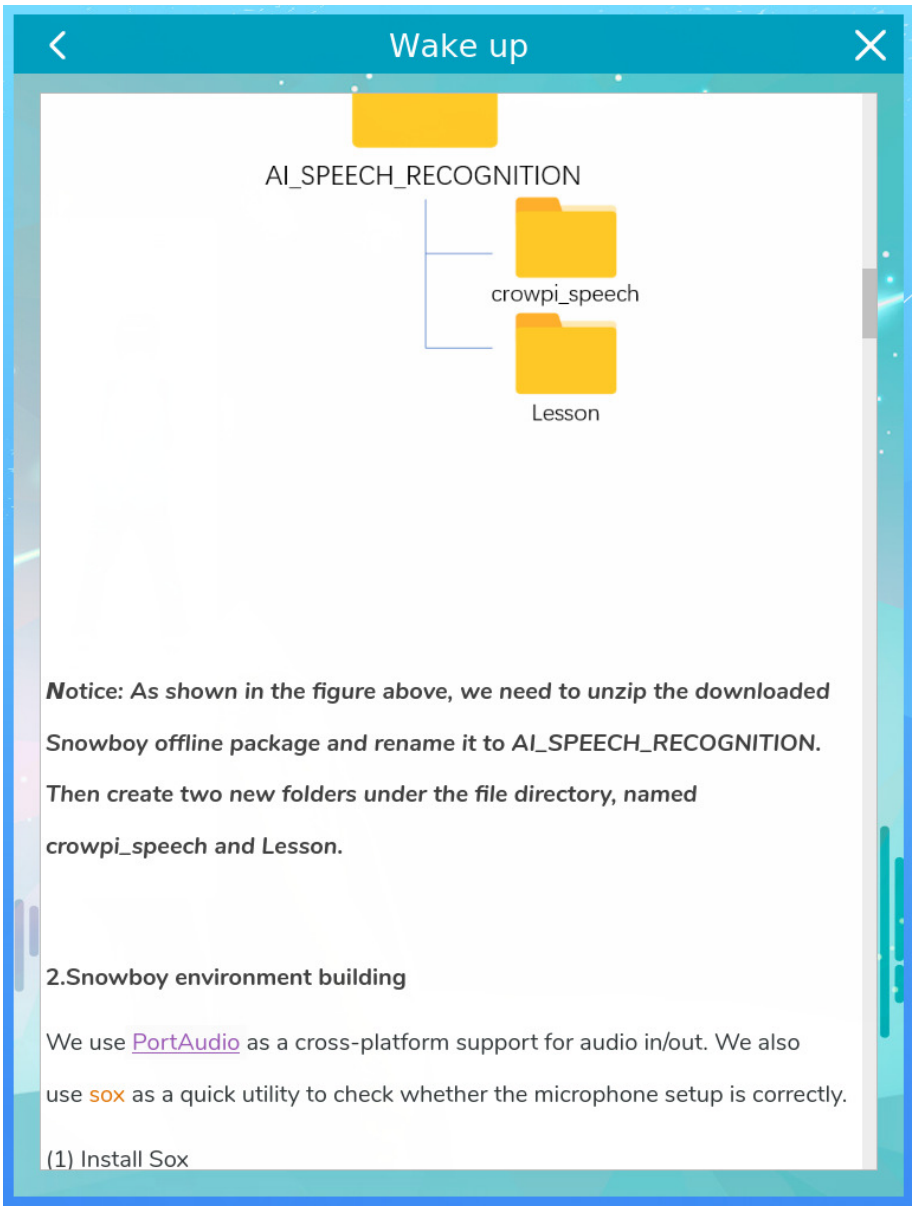
Click to enter speech recognition learning. Go back to the desktop and pop up the following two windows



Zone A on the left is the Python programming client, and zone B on the right is the speech recognition course selection window for a total of 5 lessons.

Click back to the dashboard page and click to close the window.

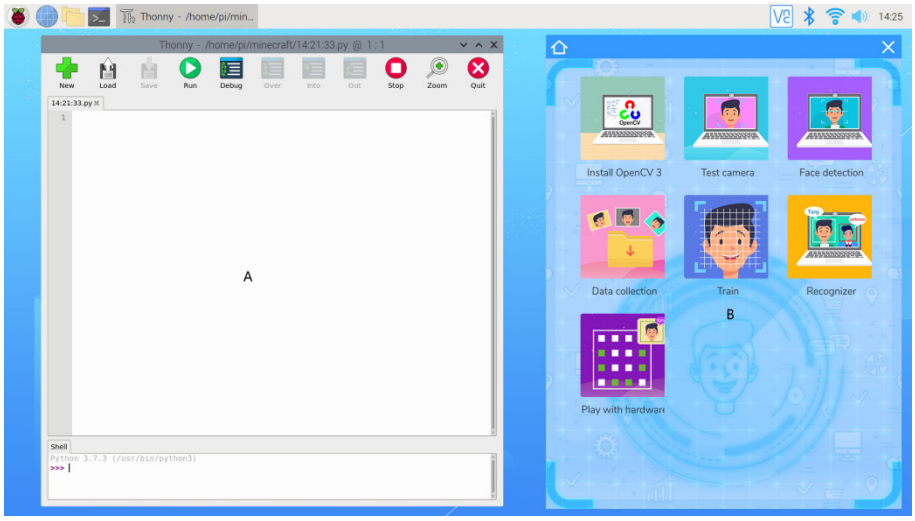
Click on the corresponding course icon to access the course instruction page:



Drag the scroll bar on the right to browse and learning

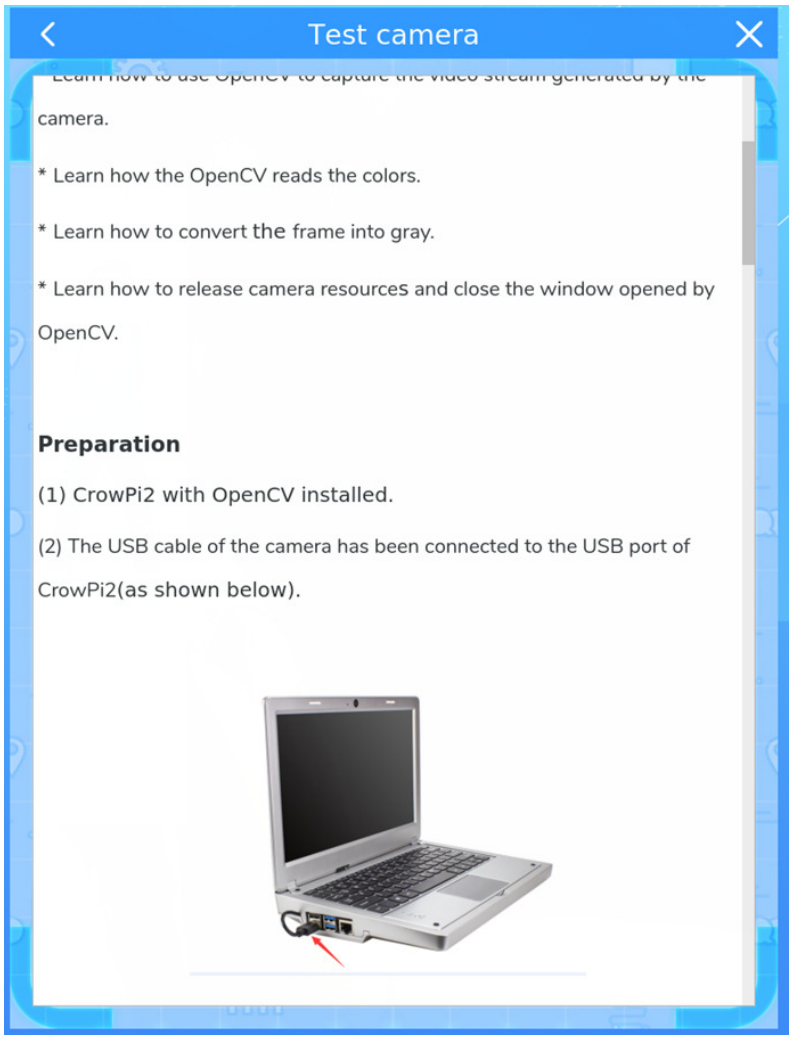
Click to go back to the previous page, click to close window.

Click to enter face recognition learning. Return to the desktop and pop up the following two windows.



Zone A on the left is the Python programming client, and the right area B is the Face Recognition Course Selection Window for a total of 7 lessons.

Click go back to the dashboard page and click to close window. Click on the corresponding course icon to access the course instruction page:



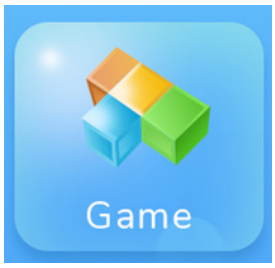
Drag the scroll bar on the right to browse and learning

Click to go back to the previous page, click to close window.

Python

Python programming - integrate the Python IDE for the convenience of Python developers
Click on the icon to return to the desktop and open the python programming client:

Game



Pygame-18 games written by python, users who is familiar with python can DIY games.

Micro: bit

Micro: bit programming - Makecode for Micro: bit visual programming.

Scratch

Scratch programming - integrated Scratch 3 software, learn to use visual programming.

Arduino

Arduino programming - a programming IDE designed for Arduino.