Learning Series

Drawing board



This is a building-block programming robotics kit. The kit
various sensors such as sound sensitivity, color, touch, photoelectric, lantern, ultrasonic, camera and a wealth of building blocks.Students can use their imagination to build a variety of building block robots, and use graphical programming programming software to program the robot and experience the joy of hands-on creation.

Learning Target

01

Knowledge goal

Learn about the various hardware devices in the equipment package, and learn to look at hardware devices and installation software.

02

Ability goal

Understand the concept of the program, the simple operation of hardware and software.

03

Emotional attitudes and values

Familiar with the basic operation of hardware and software, cultivate standardized practice.

Learning Target

01

Learning focus

Master the basic operations of RCU.

02

Learning difficulties

Understand the concept of programming and perform software operations.

Contents

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Course Introduction



Course Introduction



Can you make a robot with only hardware or software alone?

Good classmates, we got a rough understanding of the hardware and software related knowledge in the last lesson. So what are the hardware of the equipment we are learning to use now? What about software?

Course Introduction



Drawing board

Meet the Art Board

The robot in this lesson is called “Painting Board”, which uses the screen of the main controller as the “painting board” tool to present the effect of writable painting. In addition, this lesson will also learn about the interface introduction and operation of the main controller.

Let's learn together.

Teaching New Knowledge



Teaching New Knowledge

Hardware in the 2108 package:

Controller—(e6)RCU (with memory);

Output equipment - large motor, medium motor, led;

Input devices - touch sensors, ultrasonic sensors, color sensors, photoelectric sensors.

In this lesson we will talk about RCU first.



Teaching New Knowledge

RCU function: RCU can store and process various program and signal data, and complete the corresponding work through the input/output port. In addition, a buzzer and a sound sensor are embedded in the RCU.

We roughly divided the appearance of the RCU into several parts: ports, buttons, interfaces, and power slots.



Teaching New Knowledge

Used for 1 port: There are 8 ports on the RCU, which are M1-4, which are used to connect the motor; P1-8 is used to connect the remaining electronic components; type-C port, connect RCU and computer, and use when charging.



Teaching New Knowledge

Buttons:



This is the download button, the computer program wants to download to RCU, you need to click the download button (start RCU disk) to download;

It is the power button. When pressed, RCU can be turned on, and pressed again to turn off. Press halfway to restart, usually you need this action to restore to the program after downloading the program.

Operation interface is the run key, select the corresponding program in RCU, press this button can run the program. The program that was last downloaded is run by default when there is no selection.

Teaching New Knowledge

3 operation interface: divided into four parts: program application, built-in test, data modification and system setup. Here we will first understand the first part - program application, and the rest will be explained later. Program application: There are 4 icons on the top, which are run, select program, program download and audio download.

The function of the "Run" icon is the same as the "Run" button we introduced above, because the RCU screen can touch the screen, we can click the icon or press the button when we need to run;

"Select Program" opens to display the list of programs that have been used before, you can click on the page to find the program you need;

"Program download" is the same as the "Download" key;

Click “Audio Download” to open the RCU feature disk to save the audio file.



Teaching New Knowledge

4 power supply slot:

The power supply slot is on the back of the RCU. The general robot uses an ordinary dry battery or a rechargeable battery. Here, the integrated lithium battery is used. When charging, connect the USB port to the computer or the power adapter; the other end is connected to the type-C port.



Task Practice



Task Practice



Assembly requirements

1. stable structure
2. focus is right
3. shape match

Checkin g Effect



Test Effect



Review the learning content and deepen your impression.

Question 1

What is the name of the robot made today?

Question 2

What hardware does the robot use today?

Question 3

How to restart rcu?

Test Effect



Homework

1. Please ask the students to call the program routine of the "Painting Board" robot and run it!

2. Organize the divergent imagination and explain the demonstration according to your own works, such as the name of the work, the source of the inspiration, what is the most satisfactory place for the design, and the mutual comments between the works!

Thank you for watching !

BE STEM READY

