Learning Series

Batting robot



This robotics kit is a building block programming robot developed by Joinmax. The kit is equipped with 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 software to program the robot and experience the joy of hands-on creation.

Learning Target

01

Knowledge goal

The concept and application of servo motor, the operating principle of servo motor

02

Ability goal

Correct understanding and can tell the principle of the servo motor.

03

Emotional attitudes and values

Understand the use of power and intuitively feel the charm of mechanical development.

Learning Target

01

Learning focus

The operating principle of the servo motor.

02

Learning difficulties

The difference between servo motor and DC motor.

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Course Introduction



Course Introduction

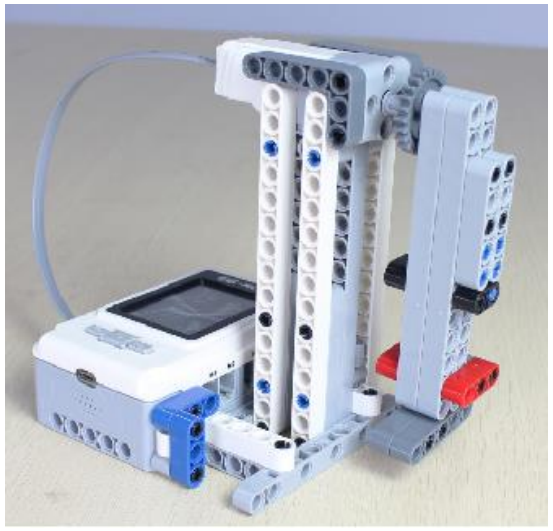


Do you know which famous batting sports?

Batting is the movement of a person who participates in sports with a racket, bat, club or hand. The hitting distance is related to the angle of the shot, the contact area, and the strength. There are many ways to hit the ball and skills. The higher the competition, the higher the requirements for the batter.

Let's learn the batting robot together!

Course Introduction



Shock absorber

Know the shock absorber

The robot in this lesson is called "Balling Robot". The RCU and the beam are used as bases under the robot to maintain balance. And our medium-sized motor acts as a swing joint point, responsible for swinging the strength and angle of the bat.

Let's learn together.

Teaching New Knowledge



Teaching New Knowledge

[Servo motor] (servo motor) is an engine that controls the operation of mechanical components in a servo system, and is an auxiliary motor indirect transmission.

The word Servo was derived from Slave, referring to the slave. The mechanical power of the servo motor was correctly exercised according to human orders, so the name was taken.



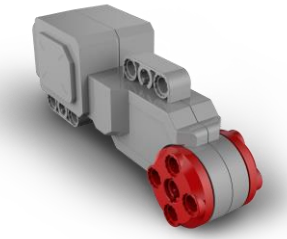
The most intuitive difference between the servo motor and the DC motor is the working area. The working angle of the DC motor is 360°, and the working angle of the servo motor is limited, and its working range is determined by the structure and function of the mechanical device itself.

Teaching New Knowledge

The servo motor can control the speed and the position accuracy is very accurate. It can convert the voltage signal into torque and speed to drive the control object.



The servo motor is divided into two major categories: DC and AC servo motor. Its main feature is that when the signal voltage is zero, there is no rotation phenomenon, and the rotation speed decreases uniformly with the increase of the torque.

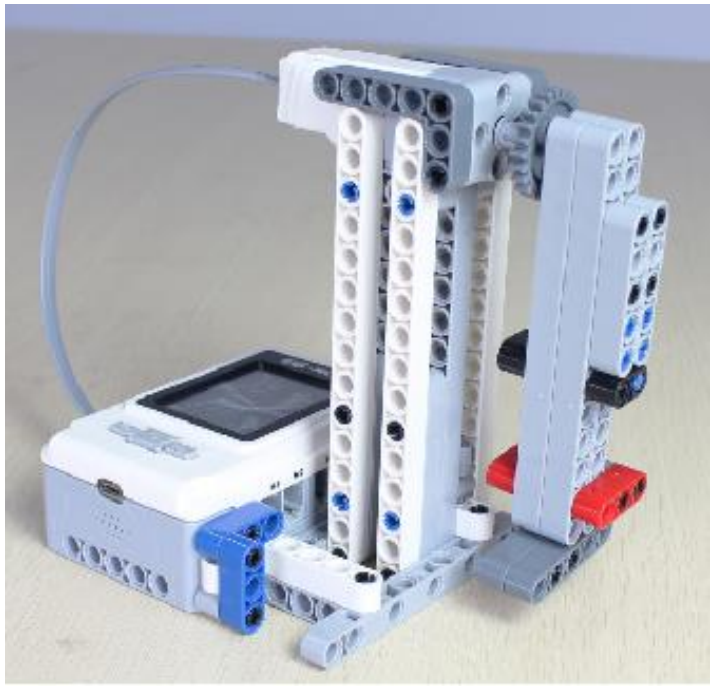


Our motors are DC servo motors, medium motors and large motors can be used as servo motors, and the range of angles of rotation can be controlled by programming.

Task Practice



Task Practice



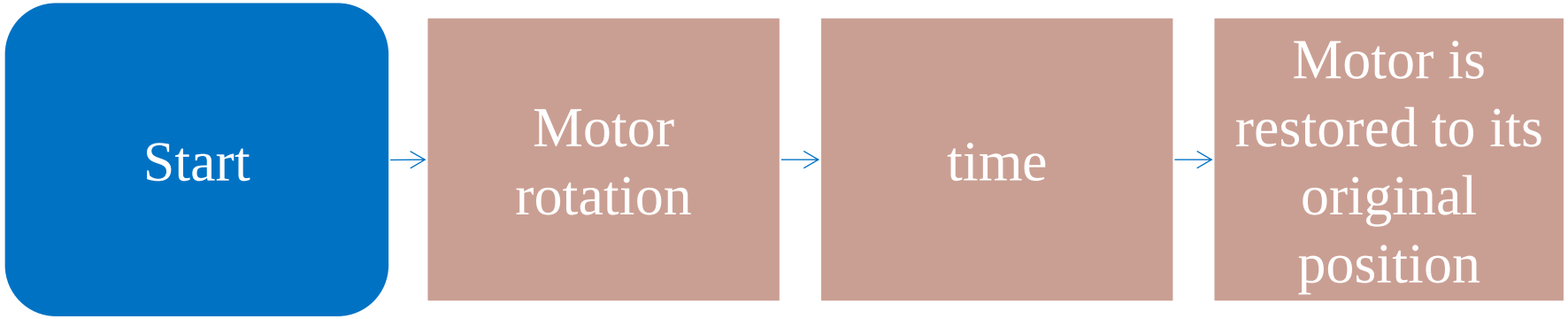
Assembly requirements

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

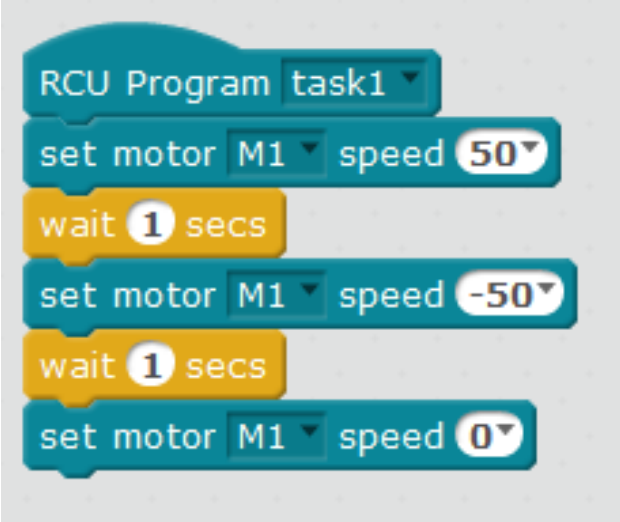
Programming and Debugging



Programming and Debugging



Programming and Debugging



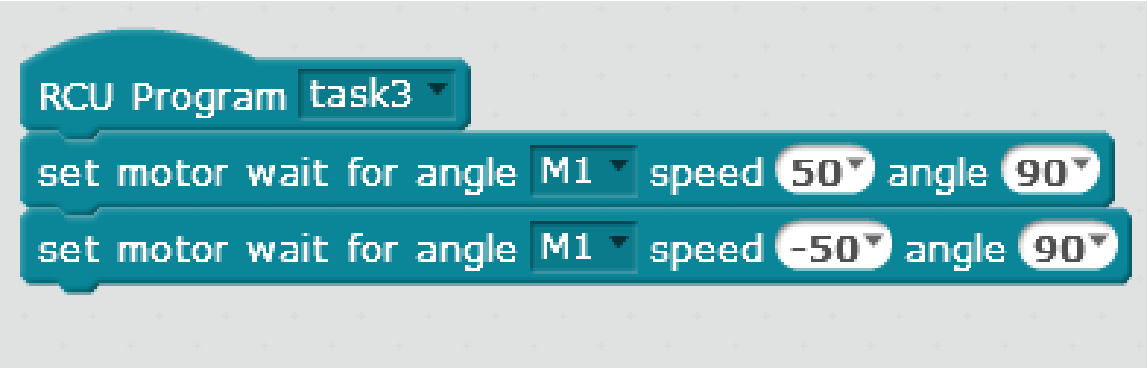
1. Control the ball swinging arm with the previously set "Set Motor Speed" module.

Programming and Debugging



2. Optimize the program and replace the “Set Motor Speed” module with the “Set Servo Motor” module.

Programming and Debugging



3. Continue to optimize the program and replace “Set Servo Motor Module” with “Wait for Servo Motor Module”.

Checking Effect



Test Effect



Review the learning content and deepen your impression.

Question 1

What is the difference between setting the servo motor and waiting for the servo motor?

Question 2

What is the difference between a servo motor and a motor speed module?

Question 3

How can today's robots make the hitting effect better?

Thank you for watching

BE STEM READY

