Learning Series

Axe 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

Learn to use it.

02

Ability goal

Familiar with the servo control method, master the coding value programming.

03

Emotional attitudes and values

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

Learning Target

01

Learning focus

Master the numerical control of the motor and code values.

02

Learning difficulties

Flexible use of servo motors, code values and power modules.

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Course Introduction



Course Introduction



Everyone has already thought about how the servo motor and the axe fit together?

In the first few lessons, we learned a lot about the conventional knowledge of servo motors. The understanding of servo motors has not stopped simply in simple sports. That class teacher assigned a task to everyone, using the knowledge we have learned, design a robot according to the characteristics of the motor.

Course Introduction



axe

Knowabout the axe

This robot is designed with emphasis on the design of the large motor and the axe. It can be used as a reference according to the physical reminder device. After the completion, the programming of the axe device is combined. You can challenge it!

Teaching New knowledge



Teaching New Knowledge

Axe

1. Type: tool
2. Direction: Slash
3. Structure: Work space
4. Shape: axe shape

Teaching New Knowledge

Equipment matching:

1. Electronic components: RCU, large motor

2. Shape: the axe part highlights

3. Other: RCU because of the larger size, can be used as a base, if the axe is heavier, you need to consider the stability of the base

Task Practice



Task Practice



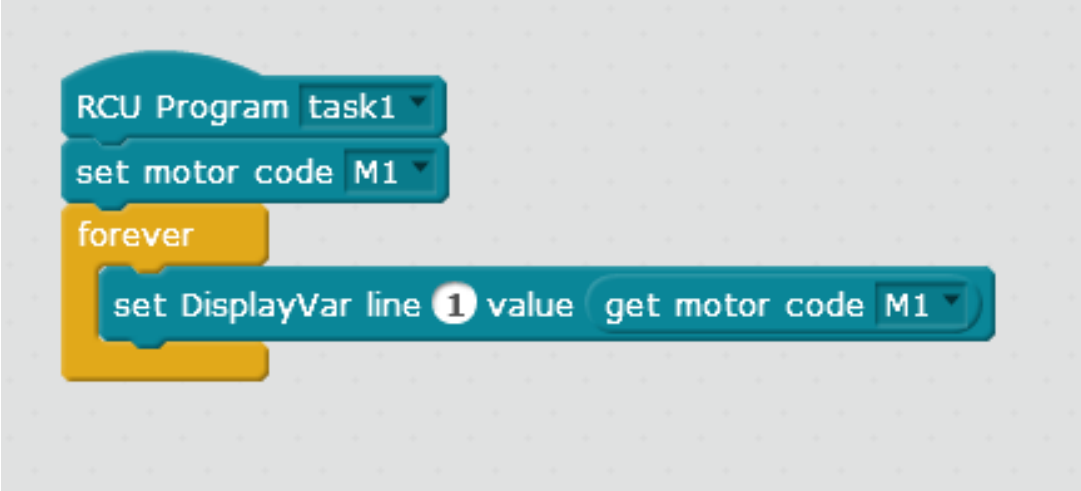
Assembly requirements

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

Programming and Debugging



Programming and Debugging



1. Test the workspace.

Conclusion: Observe the motor's swingable space and record the speed of the swing and the range of code values.

Programming and Debugging



2. Test the appropriate running speed.

Conclusion: Based on the conclusion 1, the servo angle of the most suitable axe robot is tested.

Programming and Debugging

Because the structure of the robot itself is limited, the servo motor needs people to give it an angle limit. We call this the [working range], which is the working range of the servo motor. The working range of the servo motor of different machine structures is different.

* Do not exceed the working angle of the servo motor. Otherwise, the beam mounted on the servo motor will perform unnecessary work and cause permanent wear/heat to the gear inside the servo motor, which will seriously burn the motor.



Checking 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 materials are used in today's robots?

Question 3

How to increase the degree of robot slash?

Thank you for watching

BE STEM READY

