BE STEM READY Learning

Tracking car



This robotics course introduces programming, sensors and motion.

The kit is equipped with various sensors such as sound sensitivity, color sensor, touch sensor, photoelectric sensor, color light, ultrasonic, camera and many building blocks parts. Students can build various building block robots with their imagination, and use graphical programming software to program the robot and experience the joy of hands-on creation.

Learning Target

01

Knowledge goal

Human - machine interaction concept, understand the definition and function of interaction.

02

Ability goal

It can sort out the whole human-computer interaction process and achieve interactive effect by reasonable programming for robots.

03

Emotional attitudes and values

Learn to think in essence.

Learning Target

01

Learning focus

The concepts and uses of human-computer interaction.

02

Learning difficulties

Interactive programming is carried out for light tracking characteristics.

Contents

01 Course Introduction

02 Teaching New Knowledge

03 Design Assembly

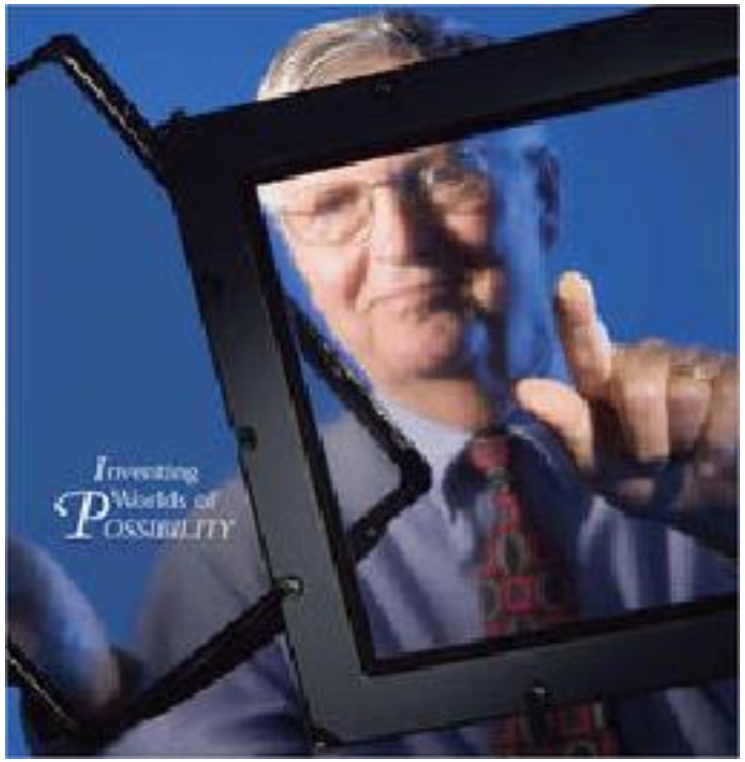
04 Programming and Debugging

05 Test Effect

Course Introduction



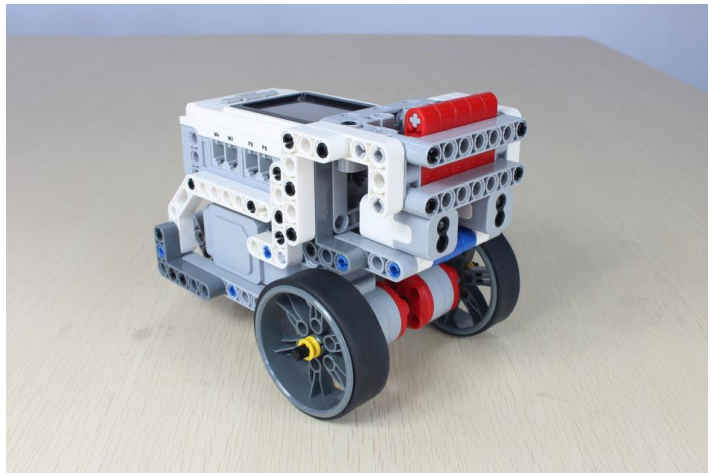
Course Introduction



Do you know how the sorting system works?

Robots are made up of various metal, plastic and electronic components. They seem cold and emotionless, but are people really treated coldly when using electronic products? In the process of we use electronic products should be very comfortable, because electronic products brought us all kinds of help, meet some of our demand, let us work/life more relaxed, happy, simple. Here we learn together.

Course Introduction



Tracking car

Recognize the Tracking car

The robot in this lesson is called "light car". The double photosensitive sensor is used to judge the strong light measurement and control the car to the light source. The light source can be moved. Humans and robots can communicate through light sources. Here we learn together.

Teaching New Knowledge



Teaching New Knowledge

So why are robots so enthusiastic when we start our gadgets with welcome words and specific instructions? This is often designed by our programmers. The etiquette and guidance work is done by programmers through a variety of electronic components together and then stored in the CPU, multiple selection of judgment to provide a variety of services to meet human needs.

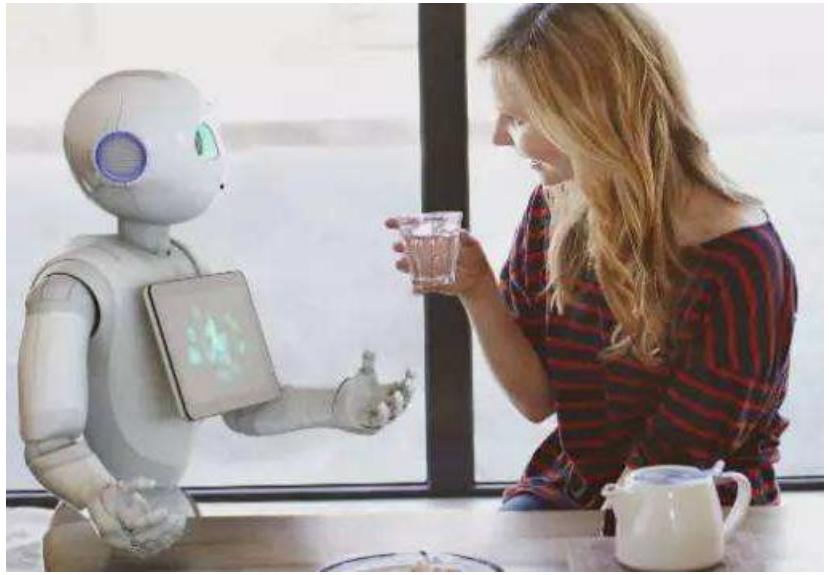


Teaching New Knowledge

[Human-Computer Interaction] (simply HCI or HMI)

It is a study of the interaction relationship between systems and users. The system can be a wide variety of machines or computerized systems and software. The HMI interface usually refers to the parts visible to the user. Users communicate with the system through the HMI interface and operate.

Small as the radio playback button, as large as the instrument board on the aircraft, or the control room of the power plant. The interface is designed to include a user understanding of the system (the mental model) for the availability or user friendliness of the system.



Teaching New Knowledge

[Human-machine interaction]

The human-computer interaction function of the operating system is an important factor that determines the "friendliness" of the computer system.

Human-machine interaction function is mainly completed by external equipment with input and output and corresponding software.

The software corresponding to these devices is part of the operating system providing human-computer interaction functions.

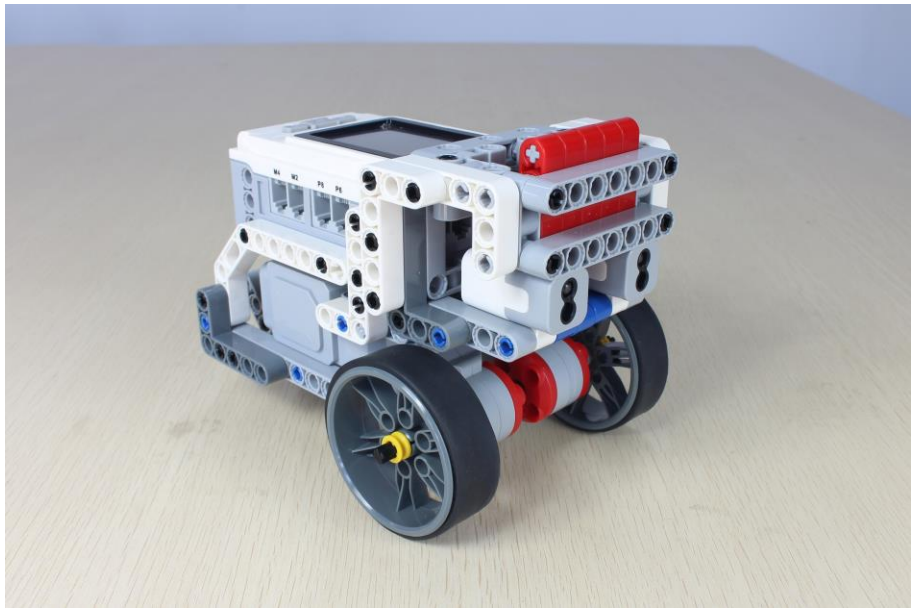
The main role of the human-computer interaction part is to control the operation and understanding of the relevant equipment and execute the various commands and requirements coming from the human-computer interactive equipment.

Early human-computer interaction facilities were keyboard displays. The operator enters the command via the keyboard, and the operating system immediately performs the command and displays the results via the display. The order entered may be interpreted in different ways, but each one is clear and unique.

Design Assembly



Design Assembly



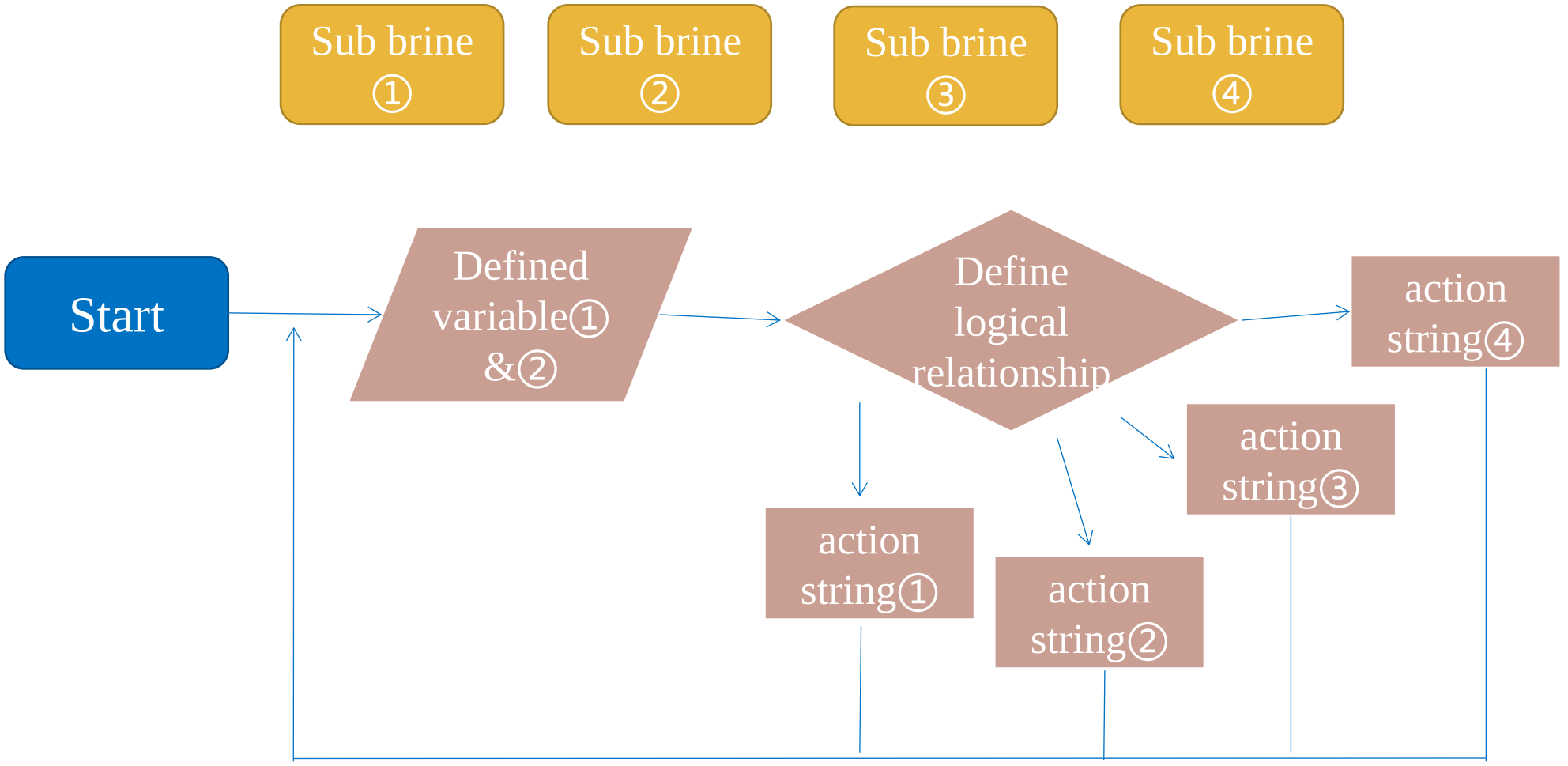
Assembly requirements

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

Programming and Debugging

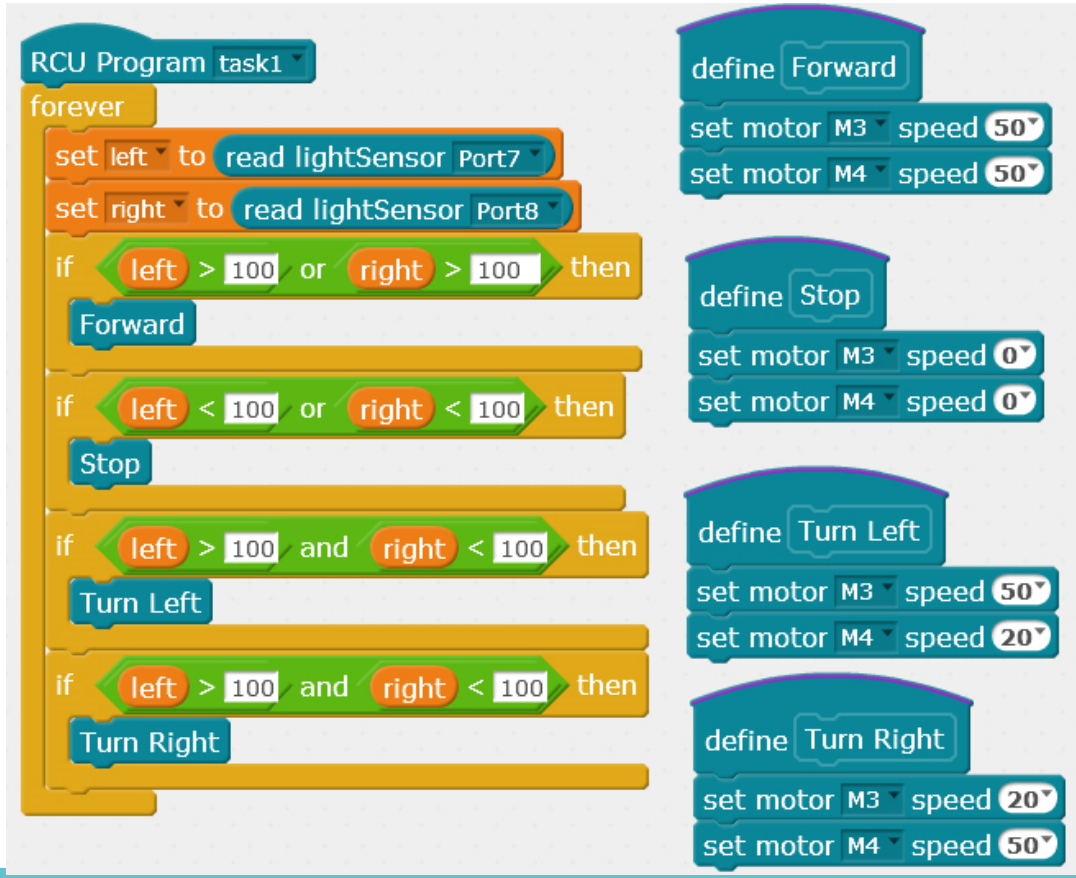


Programming and Debugging



Programming and Debugging

1. According to the structure of the tracking car, complete its program debugging.



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 hardware do today's robots use?

Question 3

Is there any way to improve the efficiency of the light tracking car?

Thank you for watching

BE STEM READY

