Robotics Learning Series

Dancing Robot



This robotics kit is a building-block programming system developed by Joinmax. 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

Knowledge of variables and how to use variables for calculations.

02

Ability goal

Familiar with the use of color sensor module, master the basic operation of variables.

03

Emotional attitudes and values

Learn to think in essence.

Learning Target

01

Learning focus

Master the basic usage of color sensor.

02

Learning difficulties

Flexible application of knowledge of variables and their operations.

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Course Introduction



Course Introduction



Do you know what dances there are in Spain?

There are many types of Spanish dance. The main one is Flamenco, an art form originating in the Andalusia region of southern Spain. It includes song, music and dance. There are 50 kinds of Flamenco music, each with its own rhythm pattern. Flamenco dance is an improvised dance with no fixed movements and relies on the emotional interaction between the dancer and the singer, the accompanist and the audience.

Course Introduction



Dancing Robot

Meet the Dancing Robot

In this lesson, the robot is called "Dance". Spain has a very famous traditional dance, whether it's flamenco or bullfight, which is very infectious. Let's make a dancing robot today and try to imitate this traditional Spanish dance. Here we learn together.

Teaching New Knowledge



Teaching New Knowledge

Logic [and], [or], [not]

Logic [and] is one of the two logical variable operations, often two propositions. It satisfies: the result is true if and only if the truth values of its two variables are both true.



Logic [or] is one of the two logical variable operations, often are the two propositions. It satisfies that the result is false if and only if the truth values of both of its variables are false.



Logic [not] refers to the opposite of the original value.

For example: "!" 0 "the logical expression has a value of 1. (this number is 0, judgment, is the expression has a value of 1)"! 1" The value of this logical expression is 0.



Teaching New Knowledge

Random number



The computer is a very precise thing. The calculation and generation of results always follow the original mechanism setting. On the other hand, the computer is also a little "rigid" and "unable" to produce random and probabilistic events. But now we still can according to the nature of the random number set out similar functions, pseudo random number. Pseudo random number is calculated using the deterministic algorithm from [0, 1] is uniformly distributed random number sequence. It is not really random, but has statistical characteristics similar to random numbers, such as uniformity, independence, etc.

Design Assembly



Design Assembly



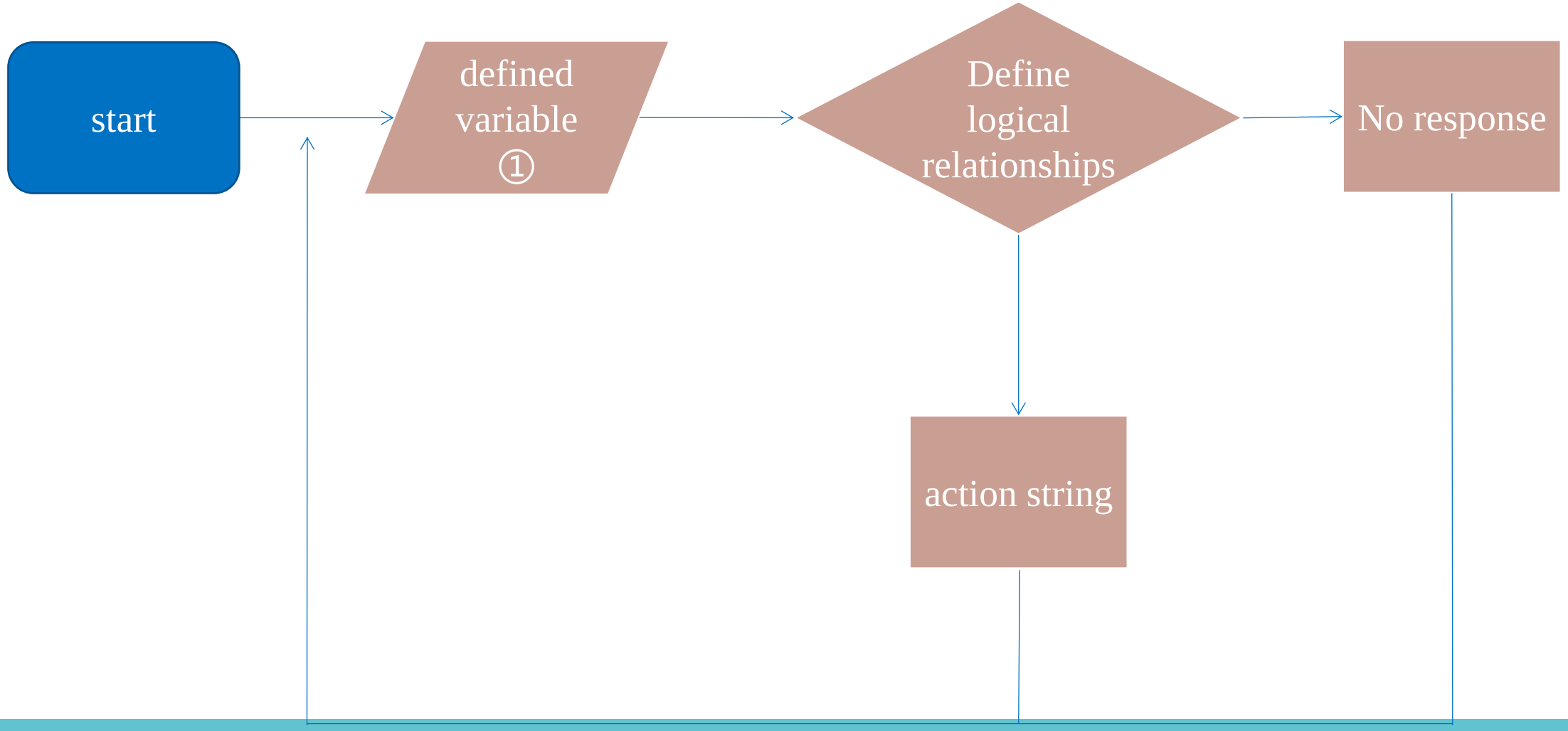
Assembly requirements

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

Programming and Debugging

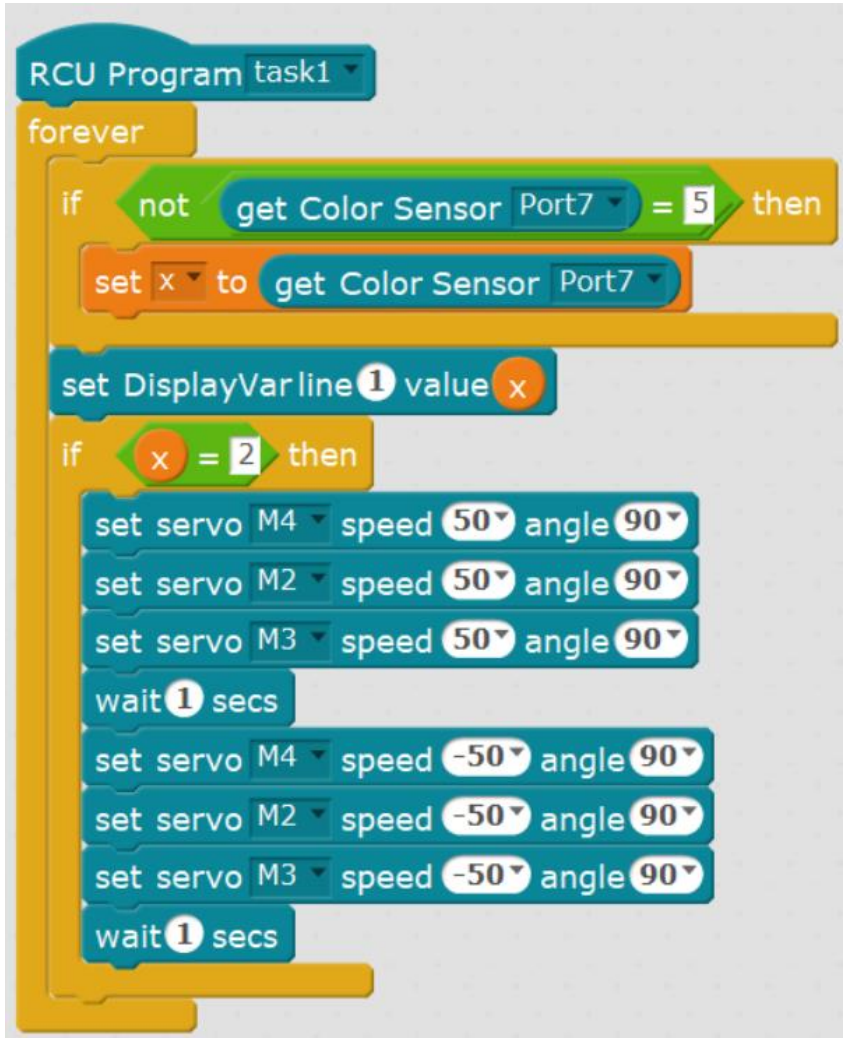


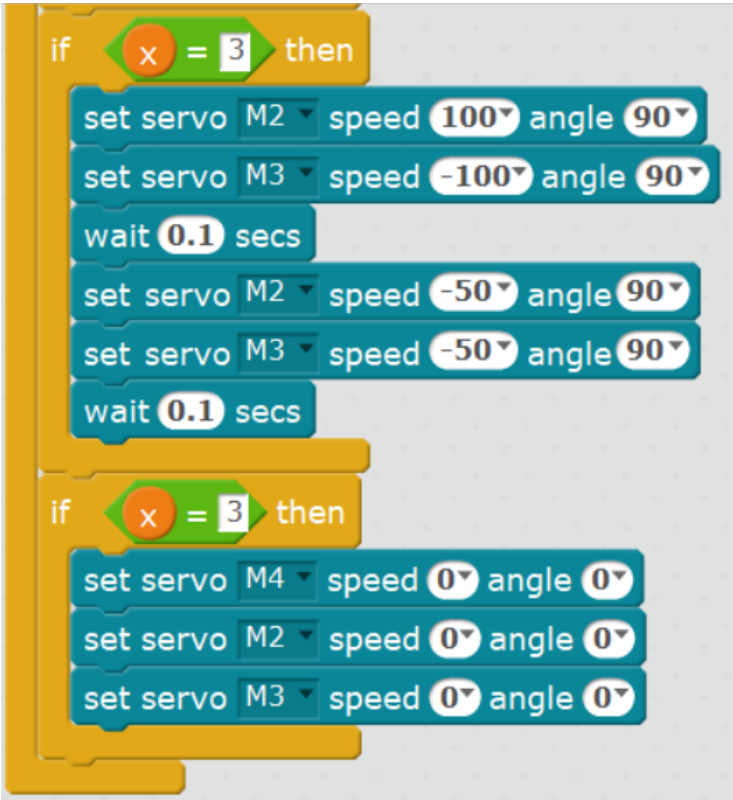
Programming and Debugging



Programming and Debugging

1. Dancing program, which makes use of calculation and logical relations to make the dancing robot make different rhythms.





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

What else is special about Spain?

Thank you for watching

Dancing Robot Lesson

