



Track Trolley (2)





Target

- Learn the setup mode and precautions for using two grayscale sensors.
- Learn how to use two grayscale sensors to complete line-following actions.
- Understand the correspondence between states and actions, and better understand the concept of control.





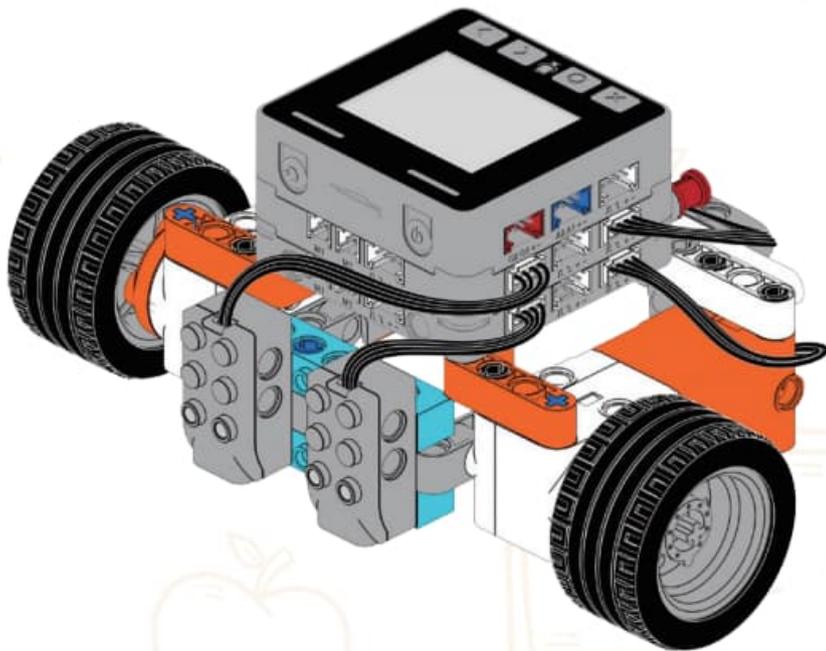
01 Assembly



Assembly

14

See Lesson 9
for complete
instructions





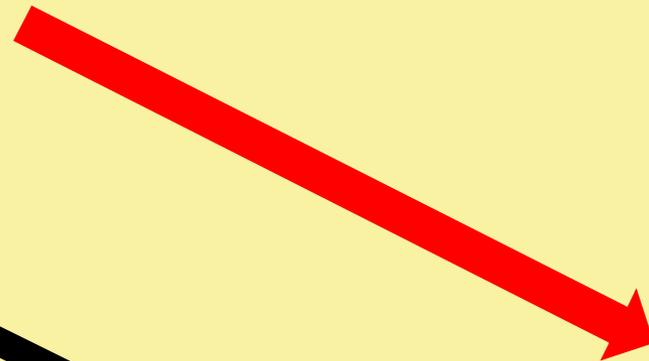
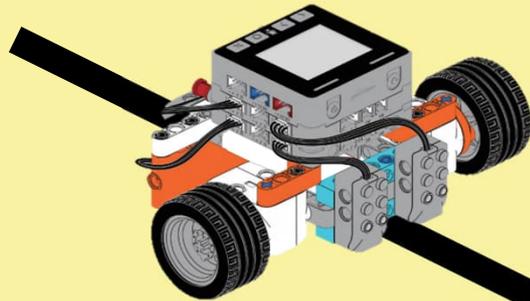
02 Task





Task

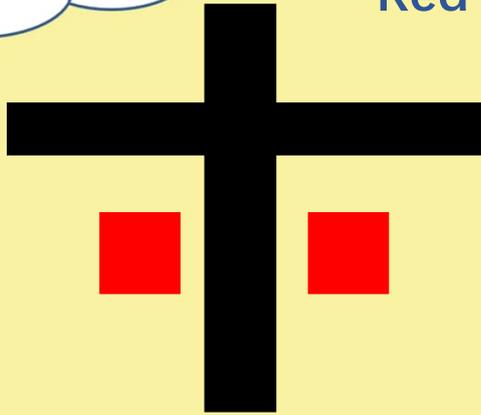
- Task 1: Use two grayscale sensors to follow a black line.



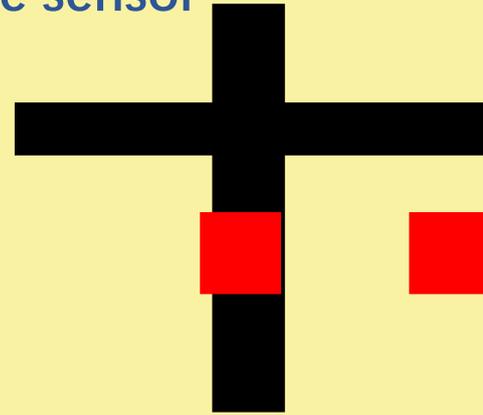
Coding Technique 1

Red represents grayscale sensor

A

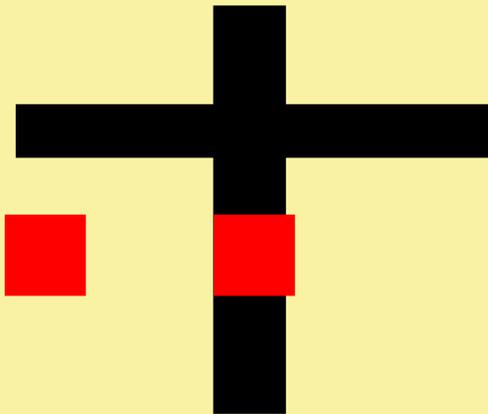


B

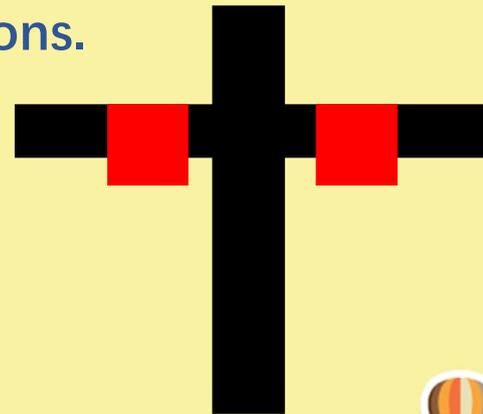


Observe the four states of the grayscale sensors and consider the corresponding actions.

C



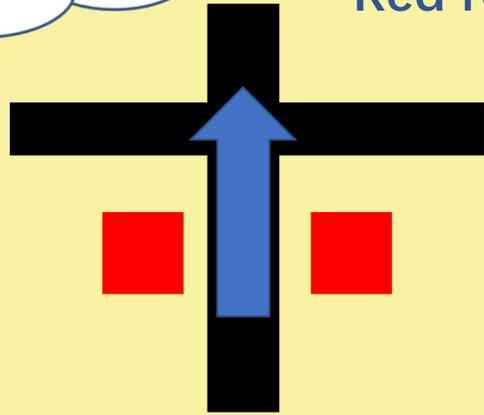
D



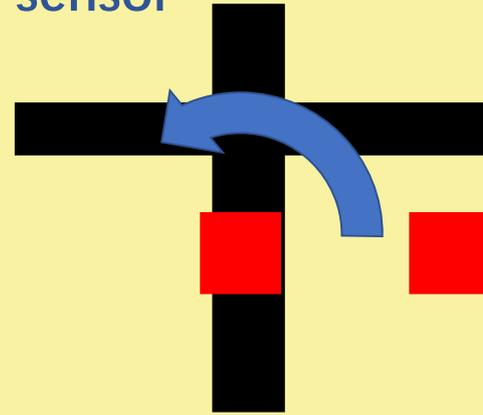
Coding Technique 1

Red represents grayscale sensor

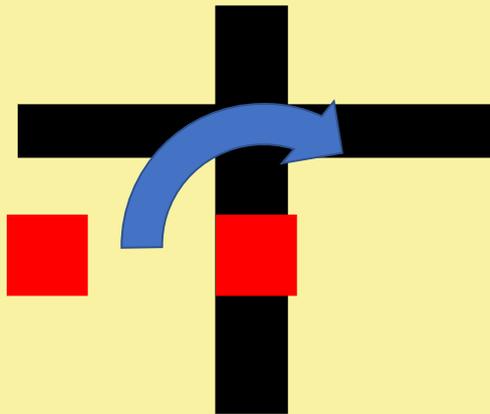
A



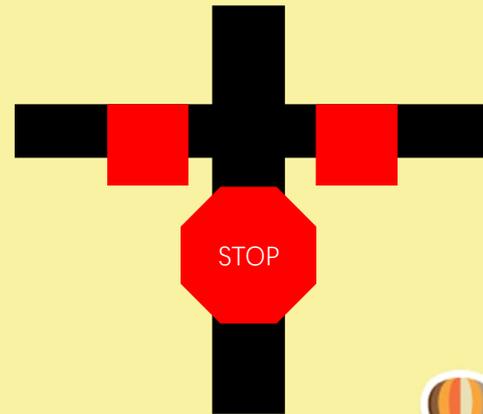
B



C



D



Task

```
when clicked
  if single channel line tracker 1#'s value < 23 then
    if single channel line tracker 2#'s value < 23 then
    else
  else
    if single channel line tracker 2#'s value < 23 then
    else
```

A
B
C
D

First, understand the corresponding four state judgments



Task

Referrable program

Action: Forward

Action: Turn left

Action: Turn right

Action: Stop



```
when clicked
  if single channel line tracker 1# 's value < 23 then
    if single channel line tracker 2# 's value < 23 then
      set 1# ext servo to keep running at 30 % power on anticlockwise
      set 2# ext servo to keep running at 30 % power on clockwise
    else
      set 1# ext servo to keep running at 0 % power on anticlockwise
      set 2# ext servo to keep running at 30 % power on clockwise
  else
    if single channel line tracker 2# 's value < 23 then
      set 1# ext servo to keep running at 30 % power on anticlockwise
      set 2# ext servo to keep running at 0 % power on clockwise
    else
      set 1# ext servo to keep running at 0 % power on anticlockwise
      set 2# ext servo to keep running at 0 % power on clockwise
```

Use Power Mode



Additional Task

Additional task: Optimize your parameters to increase the overall speed of the robot.

Tip: You can increase the turning angle to help with sharp turns, and try testing on the competition field.

