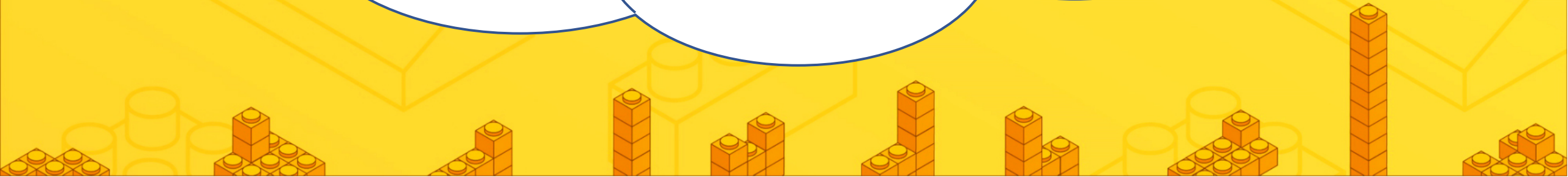




Track Trolley (2)

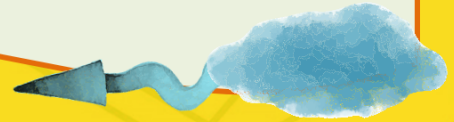


Target

- **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.**

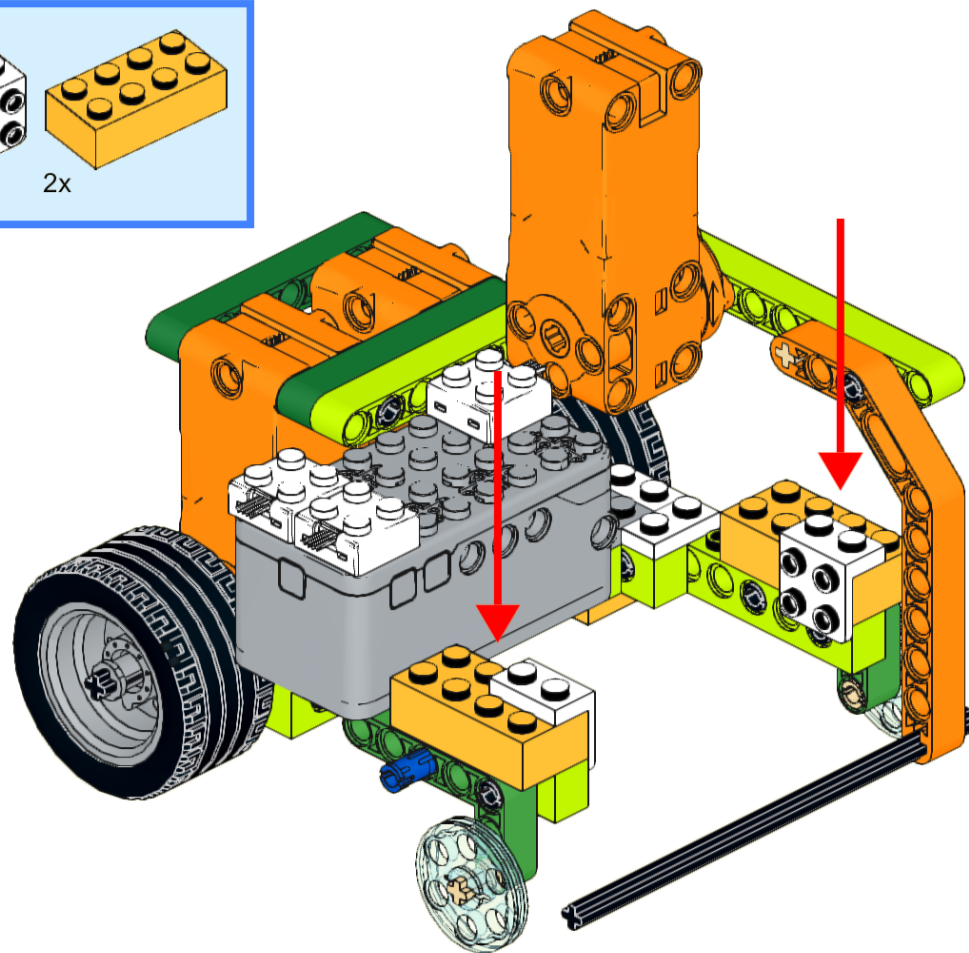
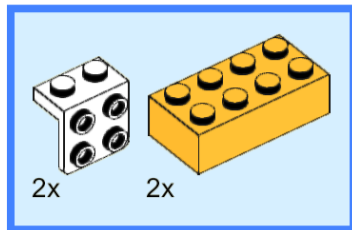


01 Assembly



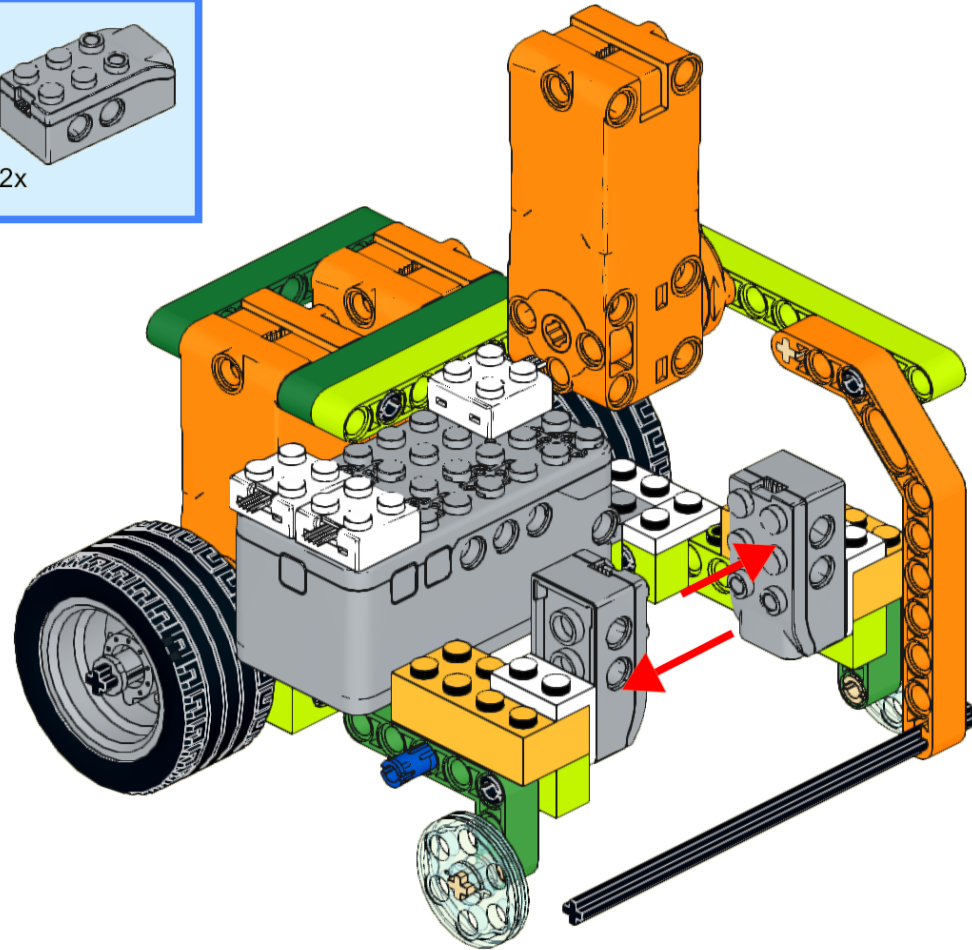
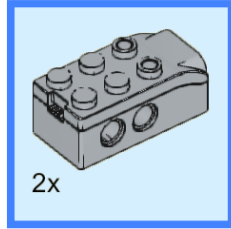
两个灰度传感器

27



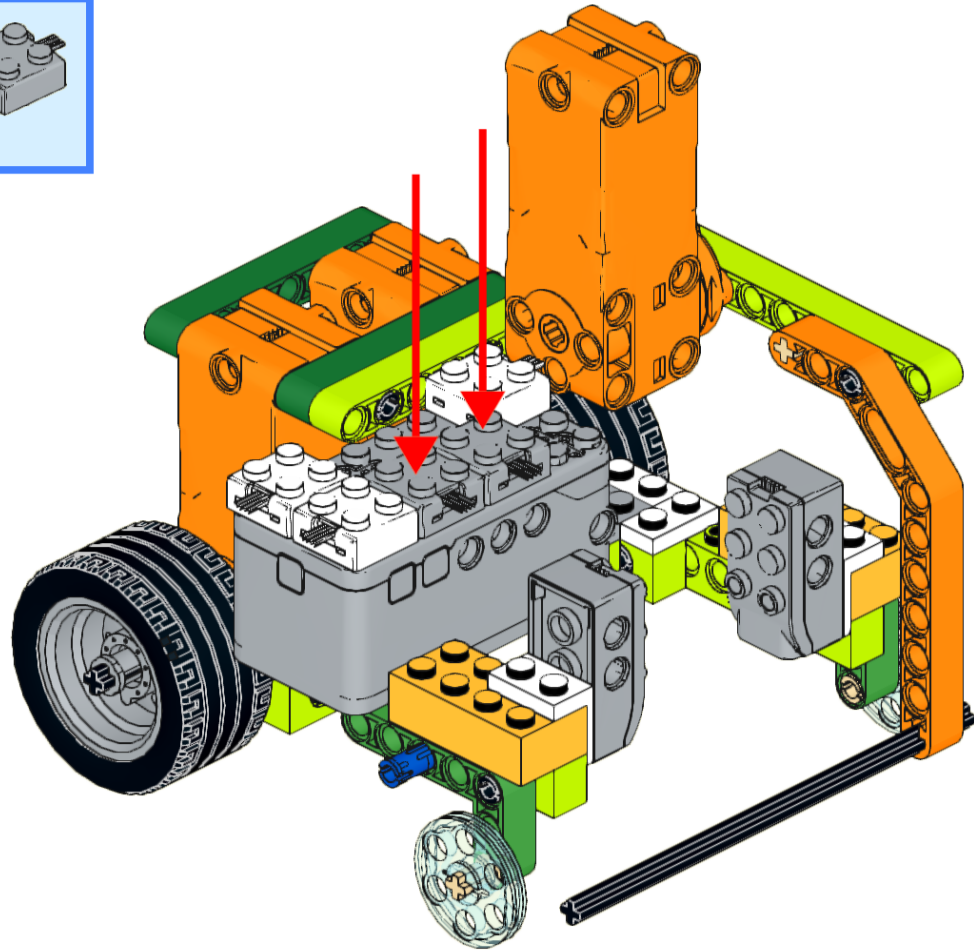
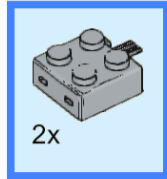
Two grayscale sensors

28



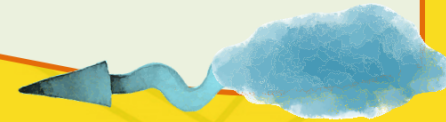
Two grayscale sensors

29





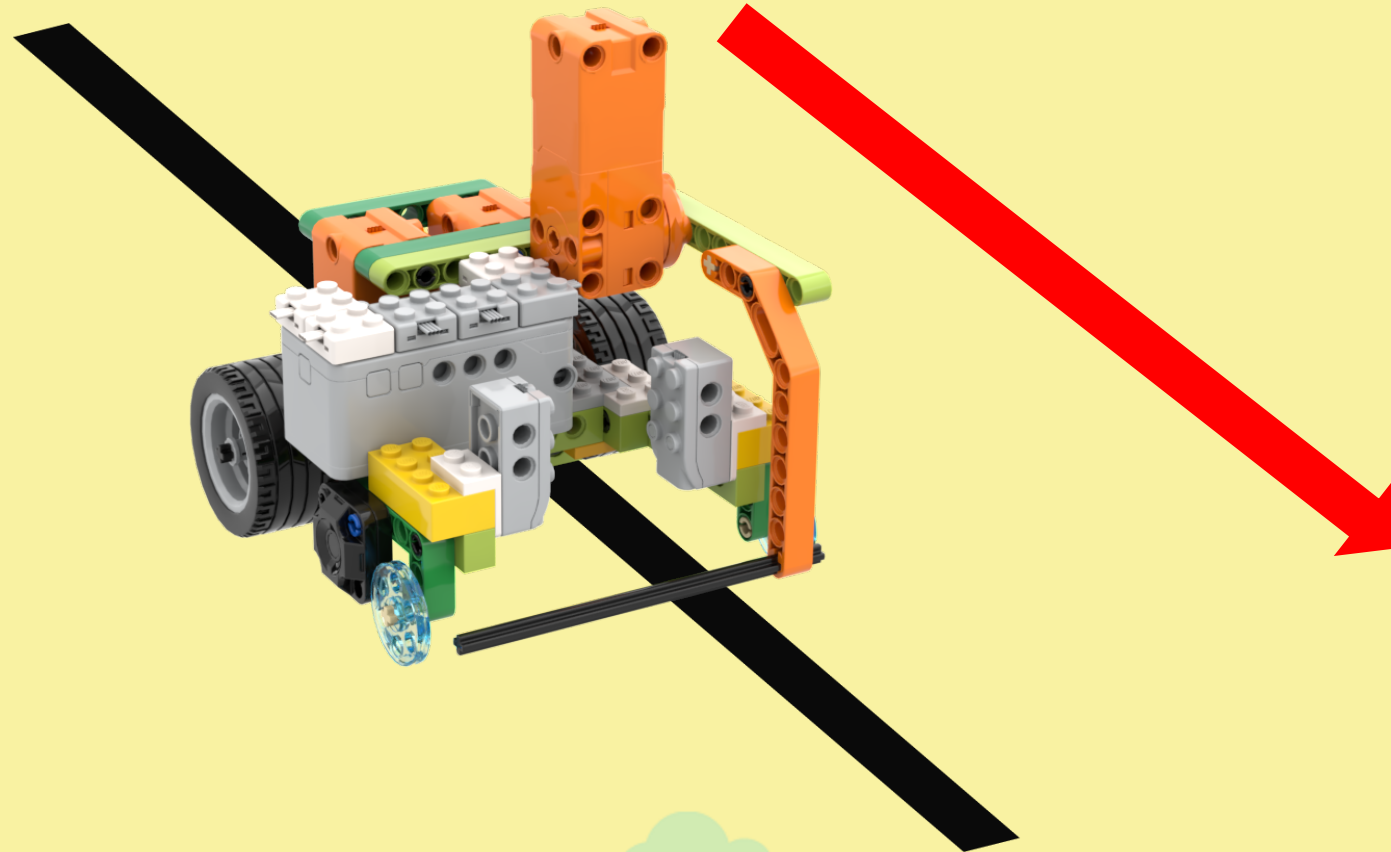
02 Task





Task

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

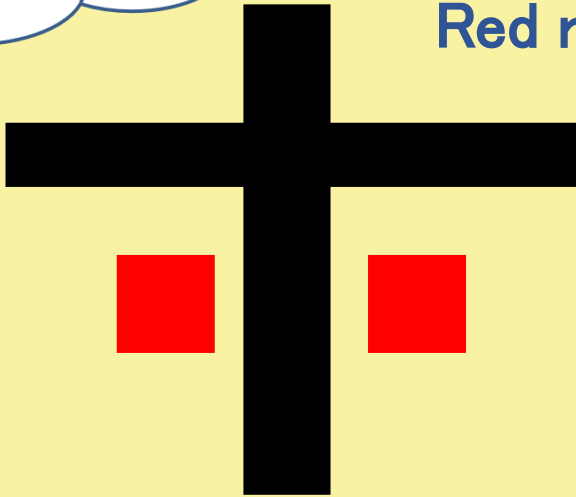


Coding Technique 1

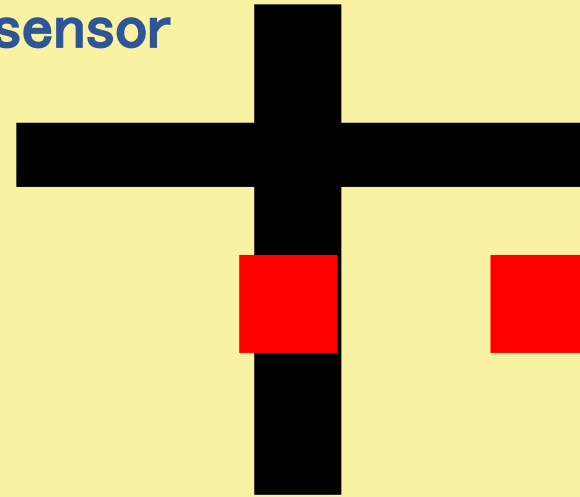


Red represents grayscale sensor

A

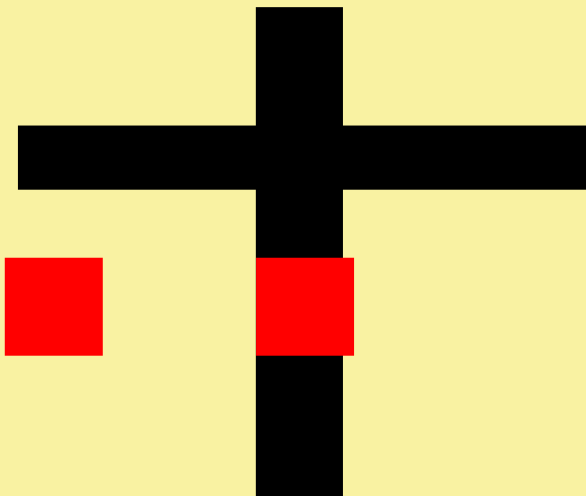


B

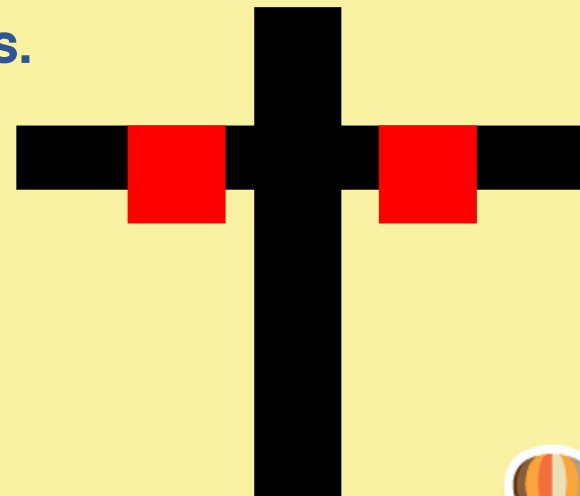


Observe the four states of the grayscale sensors and consider the corresponding actions.

C



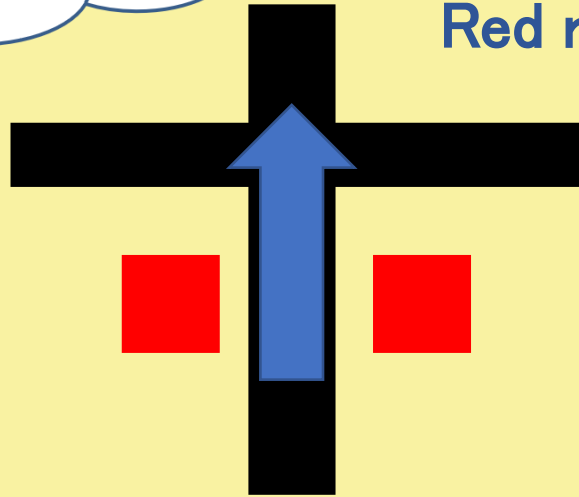
D



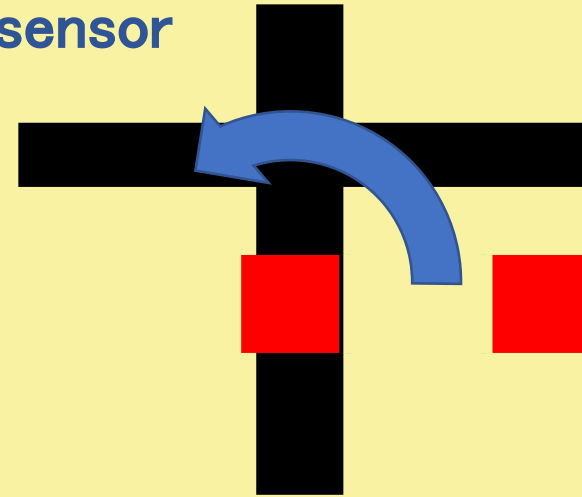
Coding Technique 1

Red represents grayscale sensor

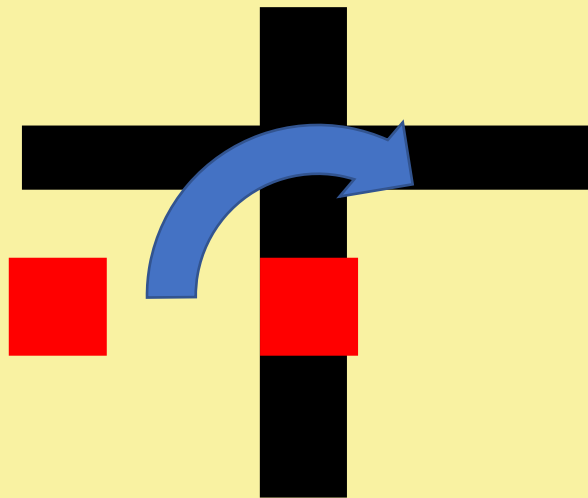
A



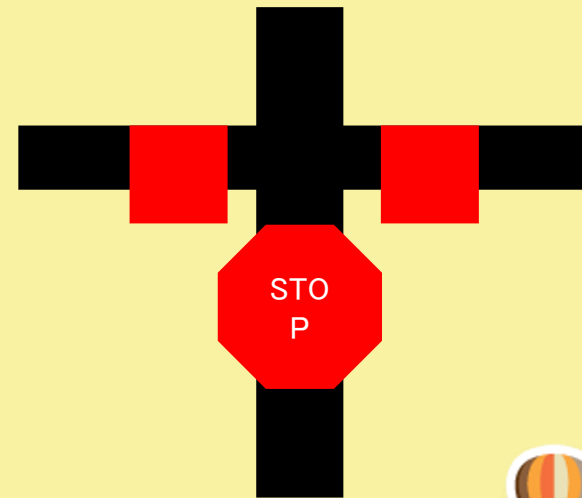
B



C



D





Task

```
when clicked
  if 1# single channel line tracker's value < 23 then
    if 2# single channel line tracker's value < 23 then
      else
    else
      if 2# single channel line tracker'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
  forever
    if 1# single channel line tracker's value < 23 then
      if 2# single channel line tracker's value < 23 then
        set 1# ext servo to keep running at 30 (-100~100)% power on anticlockwise
        set 2# ext servo to keep running at 30 (-100~100)% power on clockwise
      else
        set 1# ext servo to keep running at 0 (-100~100)% power on anticlockwise
        set 2# ext servo to keep running at 30 (-100~100)% power on clockwise
    else
      if 2# single channel line tracker's value < 23 then
        set 1# ext servo to keep running at 30 (-100~100)% power on anticlockwise
        set 2# ext servo to keep running at 0 (-100~100)% power on clockwise
      else
        set 1# ext servo to keep running at 0 (-100~100)% power on anticlockwise
        set 2# ext servo to keep running at 0 (-100~100)% 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.

