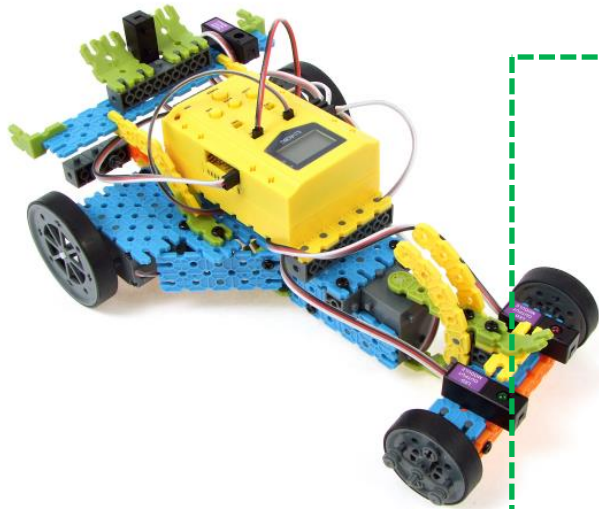
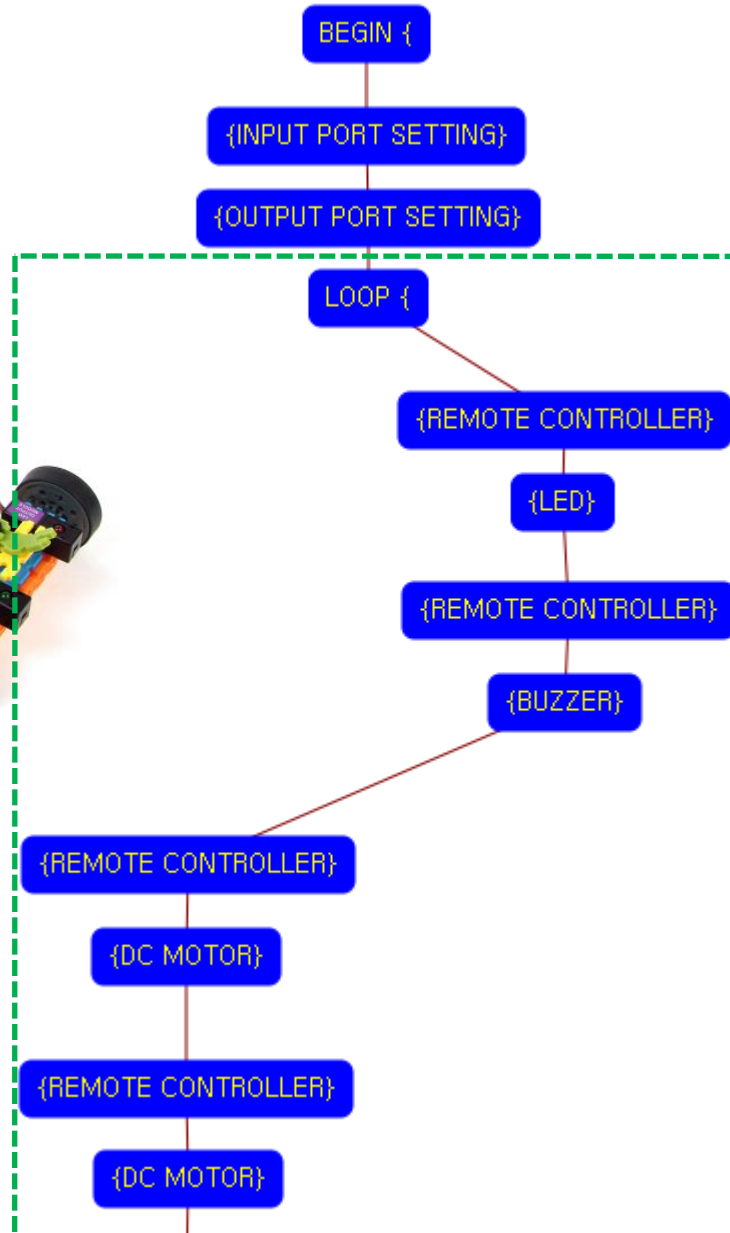


EQ-ROBO Programming : Racing car



Input: Remote signal receiver
Output: DC motor, Servo motor
LED, Buzzer
Work: Driving, LED flashing,
Buzzer beeping



Program begin

Input port setting

Output port setting

LOOP starting point (Repeat the command)



Case 1

Key of remote controller :
RIGHT UP
LEDs are flashing



Case 2

Key of remote controller :
RIGHT DOWN
Buzzer is beeping



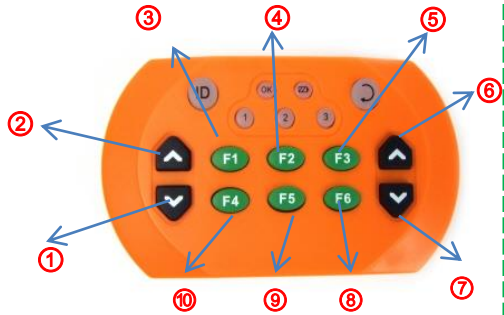
Case 3

Key of remote controller :
LEFT UP
Car goes forward

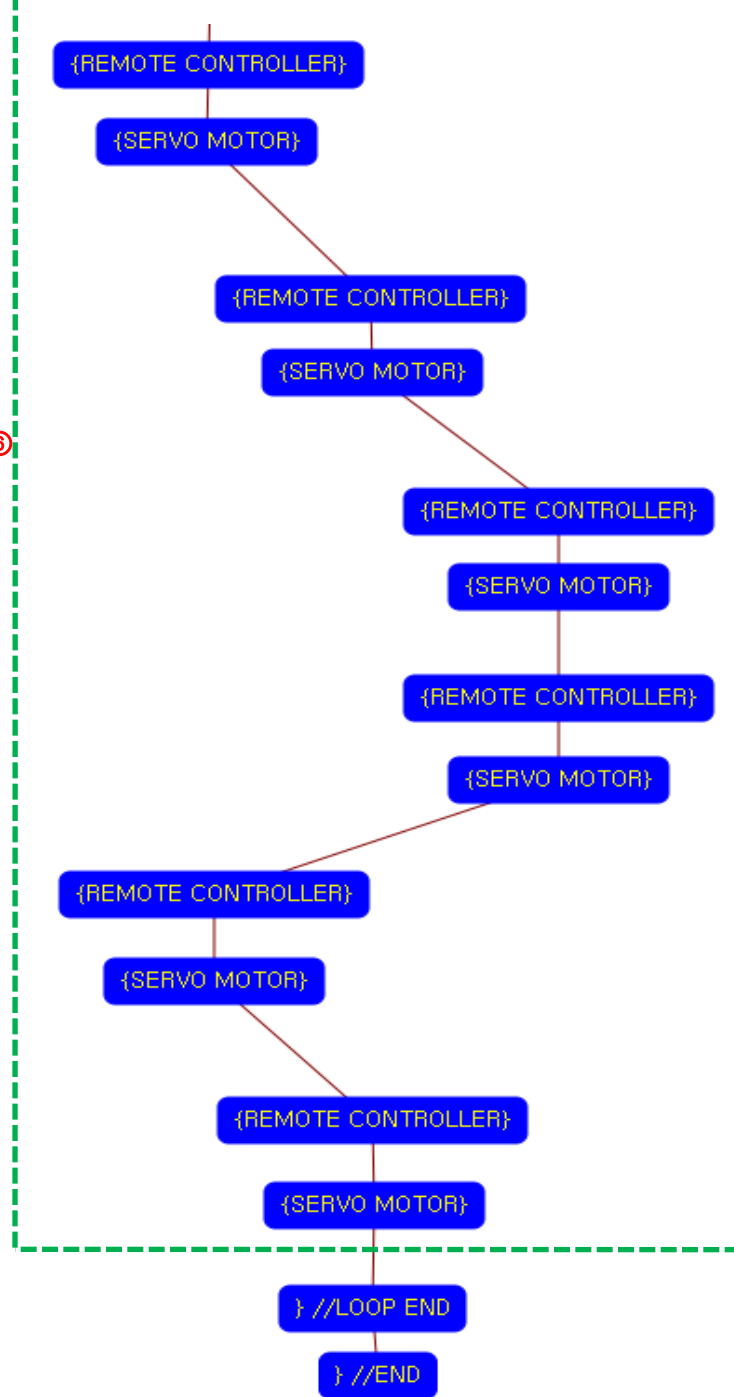


Case 4

Key of remote controller :
LEFT DOWN
Car goes backward



- ① Go backward
- ② Go forward
- ③ F/wheels to the left 20 degree
- ④ F/wheels to the front
- ⑤ F/wheels to the right 20 degree
- ⑥ LED flashing
- ⑦ Buzzer beeping
- ⑧ F/wheels to the right 60 degree
- ⑨ F/wheels to the front
- ⑩ F/wheels to the left 60 degree



F1 Case 5
Key of remote controller : F1
Turning the front wheels to the left 20 degree.

F2 Case 6
Key of remote controller : F2
Positioning the front wheels to the front side.

F3 Case 7
Key of remote controller : F3
Turning the front wheels to the right 20 degree.

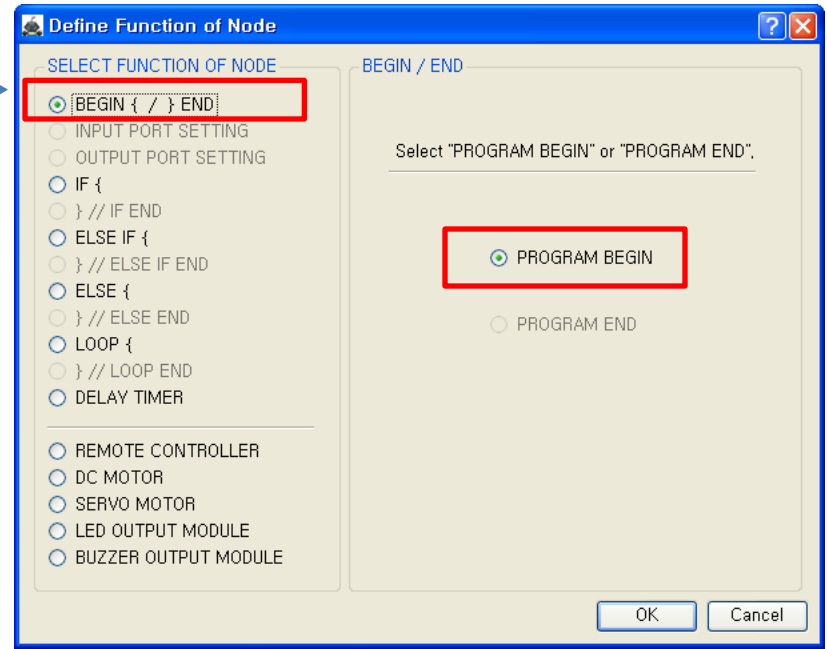
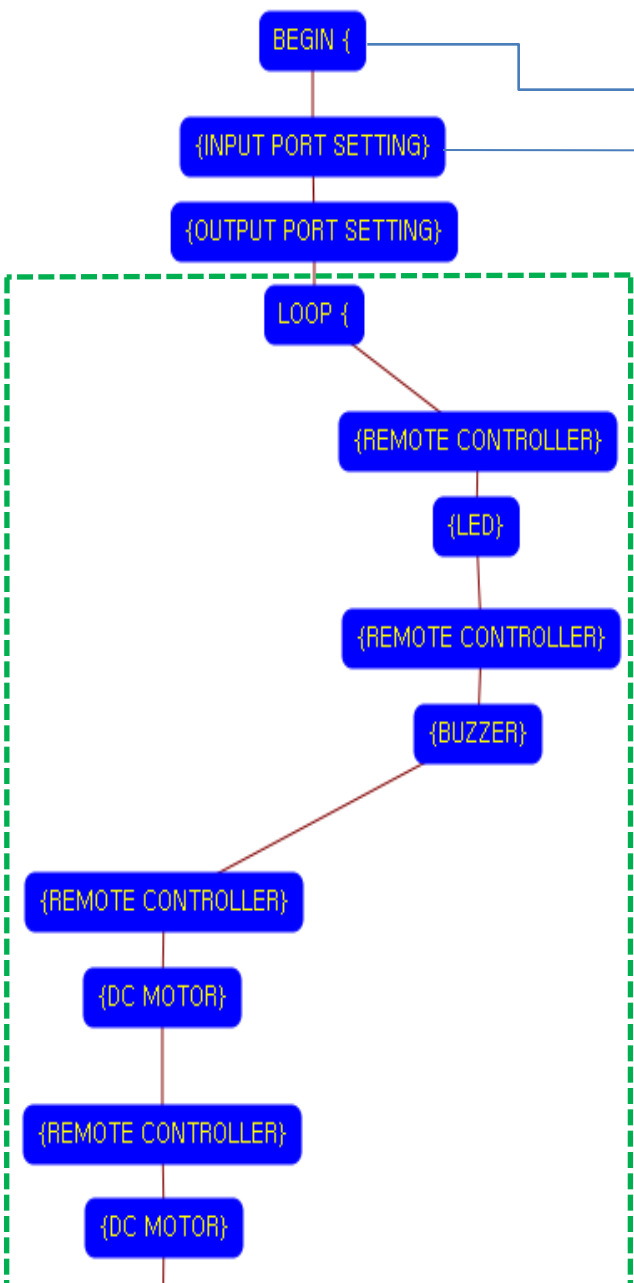
F6 Case 8
Key of remote controller : F6
Turning the front wheels to the right 60 degree.

F4 Case 9
Key of remote controller : F4
Turning the front wheels to the left 60 degree.

F5 Case 10
Key of remote controller : F2
Positioning the front wheels to the front side.

} //LOOP END

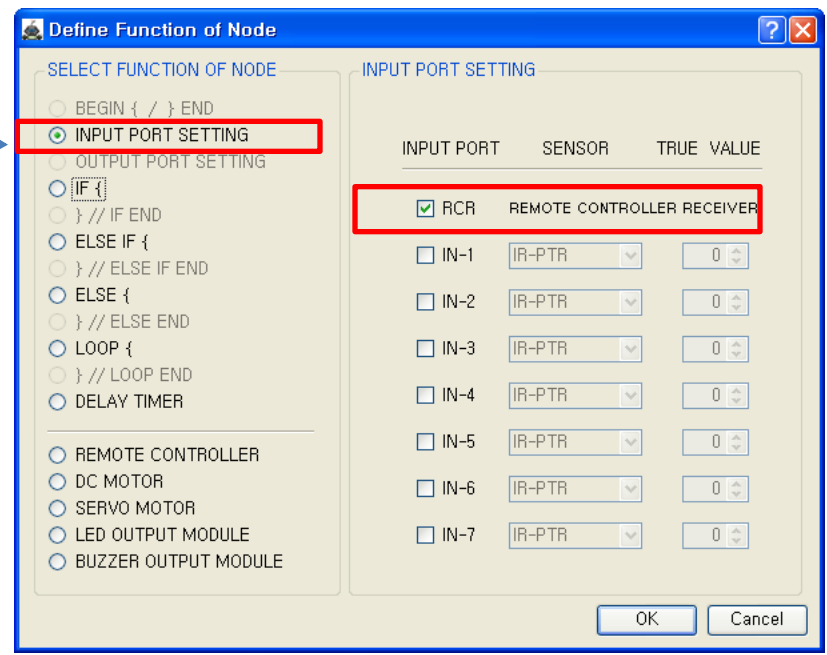
} //END



This means that program begins from here.

You have to place this node at the first of program.

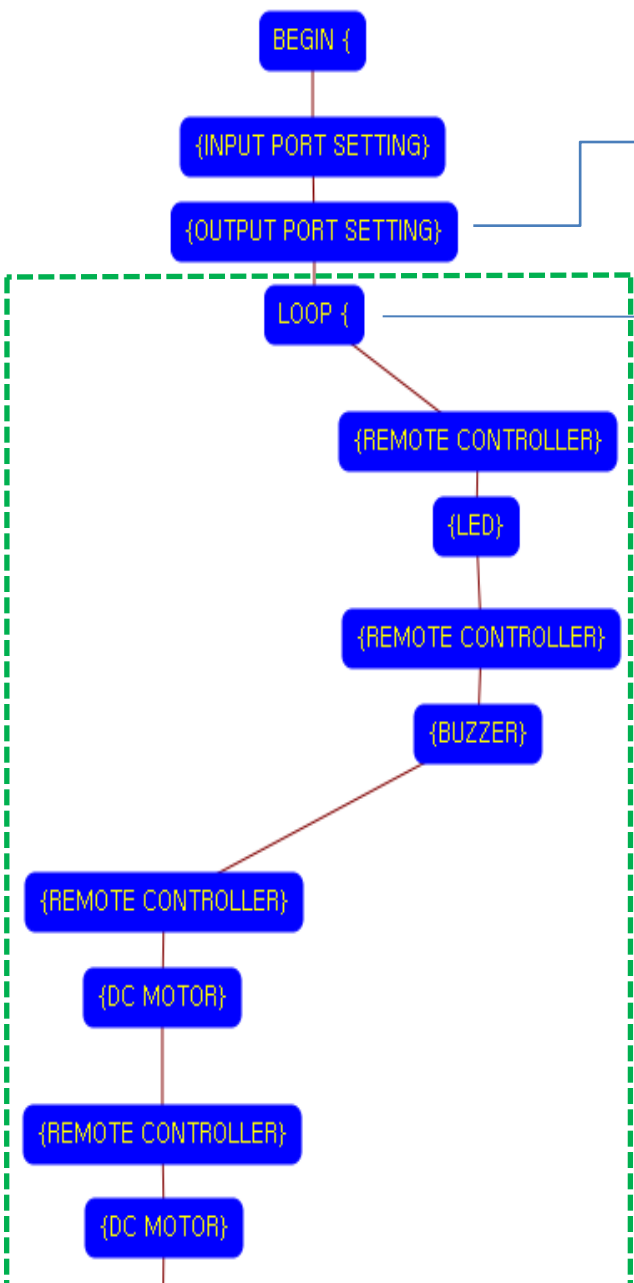
"PROGRAM END" is not active because you did not define "PROGRAM BEGIN" yet.



This model use 1 remote control receiver module as input device.

You have to connect the remote control receiver to the RCR input port of main board. And check the RCR in software to use.

If the real connection of sensors are different to the setting on software, it will make robot to wrong operation.



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER
- REMOTE CONTROLLER
- DC MOTOR
- SERVO MOTOR
- LED OUTPUT MODULE
- BUZZER OUTPUT MODULE

OUTPUT PORT SETTING

OUTPUT PORT	MODULE	INITIAL VALUE
<input checked="" type="checkbox"/> OUT-1	GREEN LED	0
<input checked="" type="checkbox"/> OUT-2	RED LED	0
<input checked="" type="checkbox"/> OUT-3	BUZZER	0
<input checked="" type="checkbox"/> OUT-4	SERVO MOTOR	90
<input type="checkbox"/> OUT-5	RED LED	0
<input type="checkbox"/> OUT-6	RED LED	0
<input type="checkbox"/> OUT-7	RED LED	0

OK Cancel

You have to connect LEDs to the OUT-1 and OUT2, buzzer is to the OUT-3, the Servo motor to the OUT-4 output port of main board. The initial values of Servo motors are to be 90.

If the real connection of output modules are different to the setting on software, it will make robot to wrong operation.

Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER
- REMOTE CONTROLLER
- DC MOTOR
- SERVO MOTOR
- LED OUTPUT MODULE
- BUZZER OUTPUT MODULE

LOOP BEGIN ~

LOOP BEGIN COMMAND

[ID] : Sequence Number (Automatically assigned),
[REPEAT TIME] : Select "REPEAT TIME".

[ID]

[REPEAT TIME]

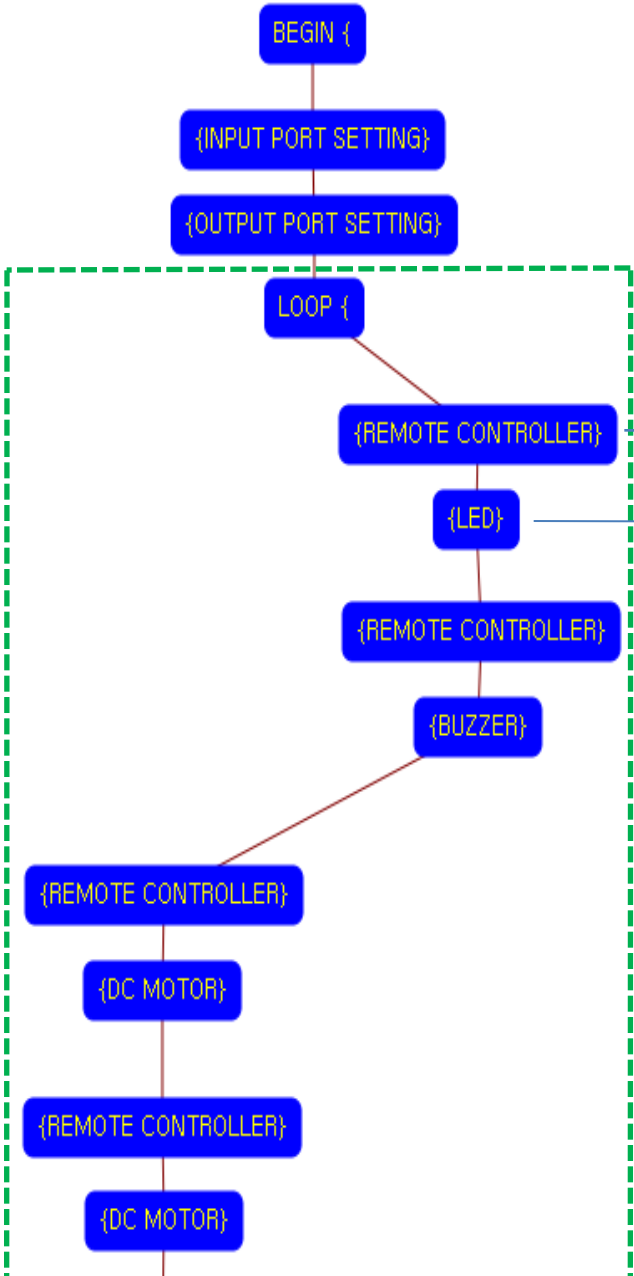
OK Cancel

LOOP command is used to repeat the commands.

"REPEAT TIME" is the repeat number you want. If you want permanent repetition, you have to set "0".

ID is automatically assigned. You have to set the same ID at "LOOP END".

Automatically assigned ID is different according to the sequence of making nodes.



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER
- REMOTE CONTROLLER**
- DC MOTOR
- SERVO MOTOR
- LED OUTPUT MODULE
- BUZZER OUTPUT MODULE

RREMOTE CONTROLLER

[DIRECTION KEY]

LEFT UP **RIGHT UP**

LEFT DOWN RIGHT DOWN

[DIRECTION MIXED KEY]

LEFT UP + RIGHT UP

LEFT UP + RIGHT DOWN LEFT DOWN + RIGHT UP

LEFT DOWN + RIGHT DOWN

[FUNCTION KEY]

F1 F2 F3

F4 F5 F6

OK Cancel

Set the "RIGHT UP" key of remote controller.



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER
- REMOTE CONTROLLER
- DC MOTOR
- SERVO MOTOR
- LED OUTPUT MODULE**
- BUZZER OUTPUT MODULE

LED OUTPUT MODULE

OUTPUT PORT	On TIME	Off TIME	REPEAT
<input checked="" type="checkbox"/> OUT-1	5	5	1
<input checked="" type="checkbox"/> OUT-2			
<input type="checkbox"/> OUT-3			
<input type="checkbox"/> OUT-4			
<input type="checkbox"/> OUT-5			
<input type="checkbox"/> OUT-6			
<input type="checkbox"/> OUT-7			

[On TIME] : Select the LED ON time
[Off TIME] : Select the LED OFF time

5 : 0.5 seconds
10 : 1.0 seconds
15 : 1.5 seconds
20 : 2.0 seconds

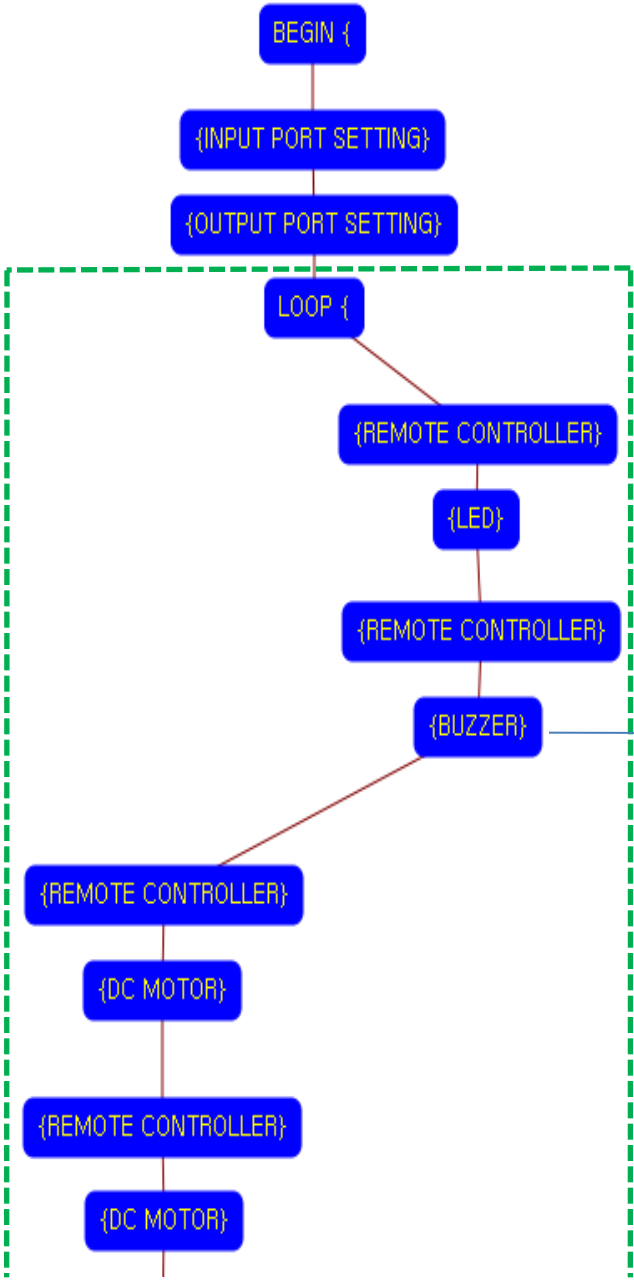
[REPEAT] : Select the REPEAT times (0 ~ 10)

OK Cancel

If the "RIGHT UP" key is pressed, the LEDs are flashing like as followings.

LED modules(OUT-1, OUT-2) are turn on 0.5 seconds and turn off 0.5 seconds for 1 times.

On TIME : On time of LED
Off TIME: Off time of LED
REPEAT: Repetition number



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER
- REMOTE CONTROLLER
- DC MOTOR
- SERVO MOTOR
- LED OUTPUT MODULE
- BUZZER OUTPUT MODULE

RREMOTE CONTROLLER

[DIRECTION KEY]

LEFT UP RIGHT UP

LEFT DOWN **RIGHT DOWN**

[DIRECTION MIXED KEY]

LEFT UP + RIGHT UP

LEFT UP + RIGHT DOWN LEFT DOWN + RIGHT UP

LEFT DOWN + RIGHT DOWN

[FUNCTION KEY]

F1 F2 F3

F4 F5 F6

OK Cancel

Set the "RIGHT DOWN" key of remote controller



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER
- REMOTE CONTROLLER
- DC MOTOR
- SERVO MOTOR
- LED OUTPUT MODULE
- BUZZER OUTPUT MODULE

BUZZER OUTPUT MODULE

OUTPUT PORT	On TIME	Off TIME	REPEAT
<input type="checkbox"/> OUT-1	5	5	1
<input type="checkbox"/> OUT-2			
<input checked="" type="checkbox"/> OUT-3			
<input type="checkbox"/> OUT-4			
<input type="checkbox"/> OUT-5			
<input type="checkbox"/> OUT-6			
<input type="checkbox"/> OUT-7			

[On TIME] : Select the LED ON time
 [Off TIME] : Select the LED OFF time

5 : 0,5 seconds
 10 : 1,0 seconds
 15 : 1,5 seconds
 20 : 2,0 seconds

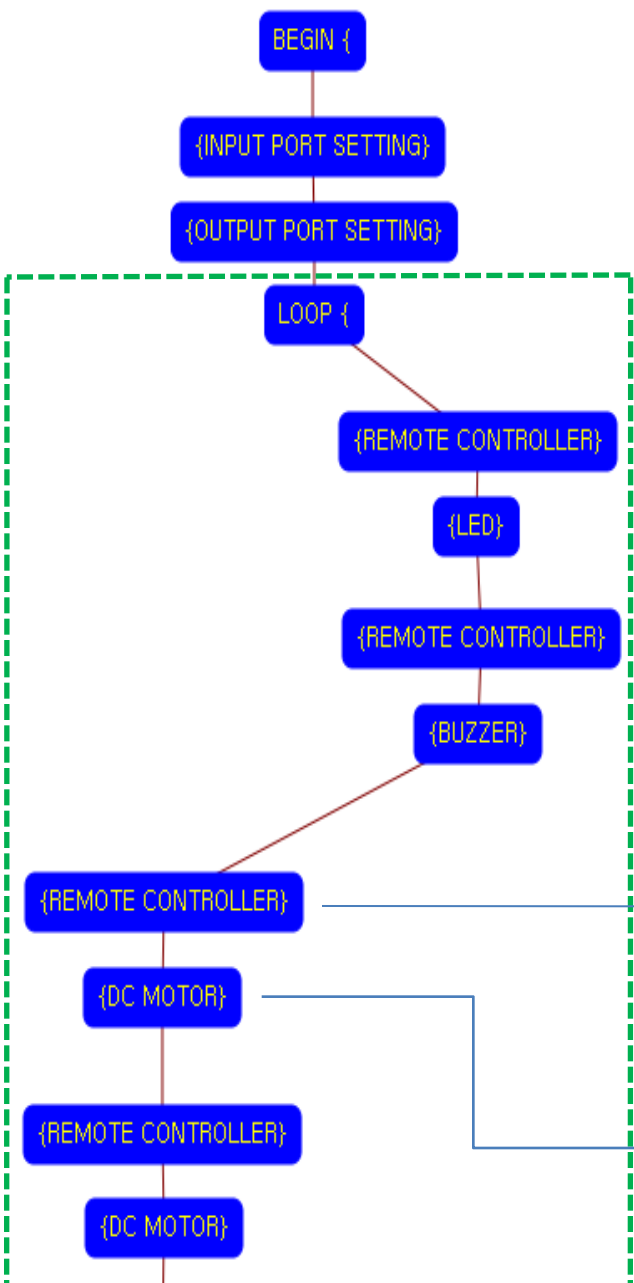
[REPEAT] : Select the REPEAT times (0 ~ 10)

OK Cancel

If the "RIGHT DOWN" key is pressed, the buzzer is beeping like as followings.

The Buzzer module(OUT-3) turns on 0.5 seconds and turns off 0.5 seconds for 1 times.

On TIME : On time of LED
 Off TIME: Off time of LED
 REPEAT: Repetition number

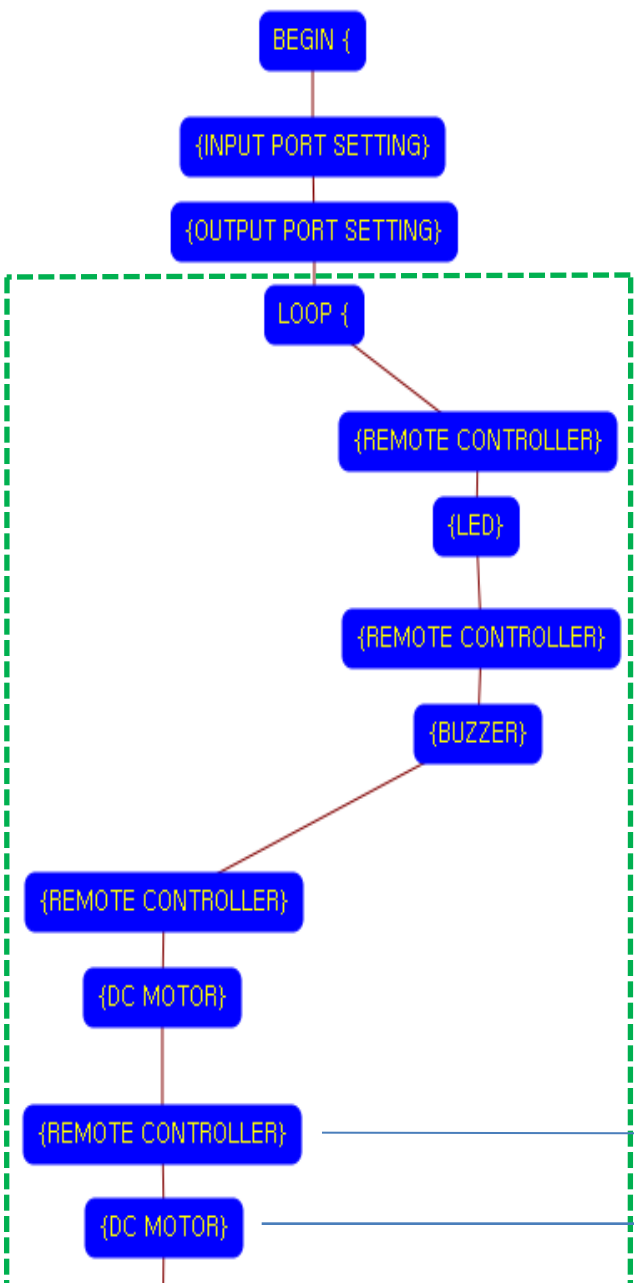


Set the "LEFT UP" key of remote controller.



Left DC Motor
 - Direction : Forward
 - Speed : 100
 - Running Time : 1
 Right DC Motor
 - Direction : Forward
 - Speed : 100
 - Running Time : 1
 → Robot goes forward during 0.1 second

Although the setting value of running time is 0.1 seconds, the robot is going forward continuously during the "LEFT UP" key is pressed.



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER

REMOTE CONTROLLER

[DIRECTION KEY]

LEFT UP RIGHT UP

LEFT DOWN RIGHT DOWN

[DIRECTION MIXED KEY]

LEFT UP + RIGHT UP

LEFT UP + RIGHT DOWN LEFT DOWN + RIGHT UP

LEFT DOWN + RIGHT DOWN

[FUNCTION KEY]

F1 F2 F3

F4 F5 F6

OK Cancel

Set the "LEFT DOWN" key of remote controller.



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER

DC MOTOR

DC MOTOR CONTROL COMMAND

[DIRECTION] : Select "FORWARD" or "BACKWARD".

[SPEED] : Select Rotational Speed (0 ~ 100).

[RUNNING TIME] : Select Time (0.1 ~ 80.0 sec.)

[LEFT DC MOTOR] [RIGHT DC MOTOR]

[DIRECTION] [DIRECTION]

BACKWARD BACKWARD

[SPEED] [SPEED]

100 100

[RUNNING TIME]

1

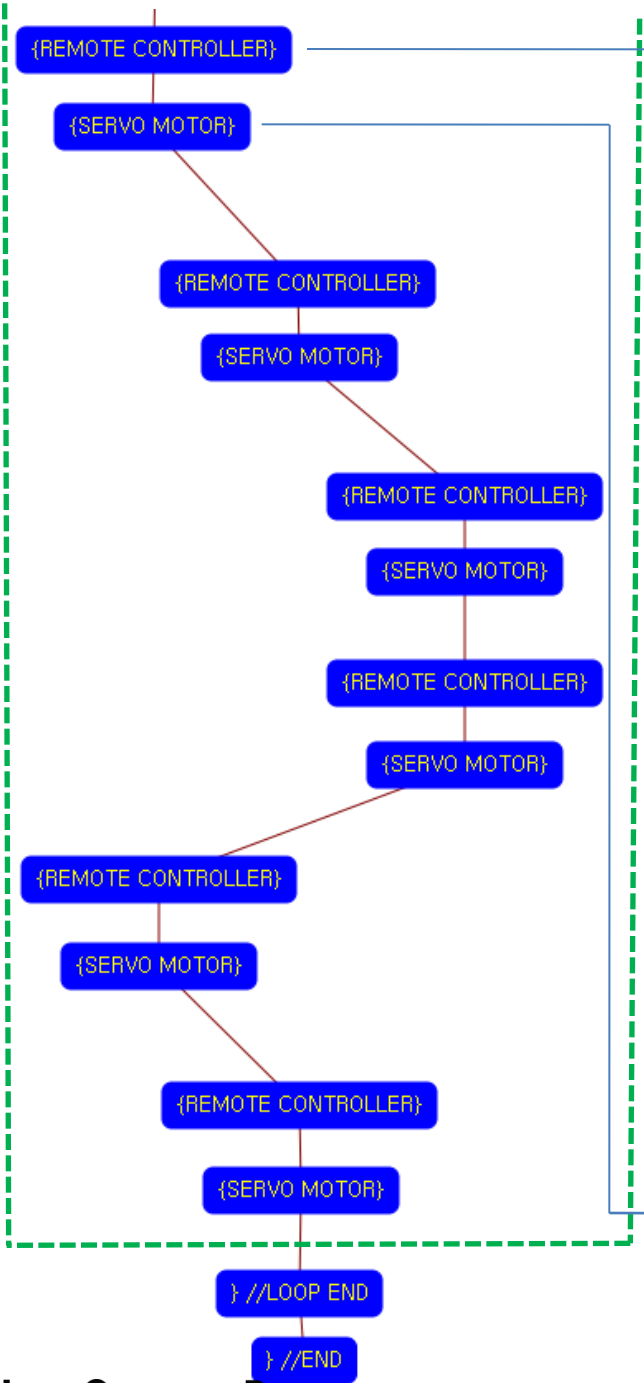
OK Cancel

Left DC Motor
 - Direction : Backward
 - Speed : 100
 - Running Time : 1

Right DC Motor
 - Direction : Backward
 - Speed : 100
 - Running Time : 1

→ Robot goes backward during 0.1 second

Although the setting value of running time is 0.1 seconds, the robot is going backward continuously during the "LEFT DOWN" key is pressed.



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER

RTREMOTE CONTROLLER

[DIRECTION KEY]

LEFT UP RIGHT UP

LEFT DOWN RIGHT DOWN

[DIRECTION MIXED KEY]

LEFT UP + RIGHT UP

LEFT UP + RIGHT DOWN LEFT DOWN + RIGHT UP

LEFT DOWN + RIGHT DOWN

[FUNCTION KEY]

F1 F2 F3

F4 F5 F6

OK Cancel

Set the "F1" key of remote controller.



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER

SERVO MOTOR

OUTPUT PORT SERVO MOTOR ANGLE

OUT-1 0

OUT-2 0

OUT-3 0

OUT-4 110

OUT-5 0

OUT-6 0

OUT-7 0

REMOTE CONTROLLER

SERVO MOTOR

LED OUTPUT MODULE

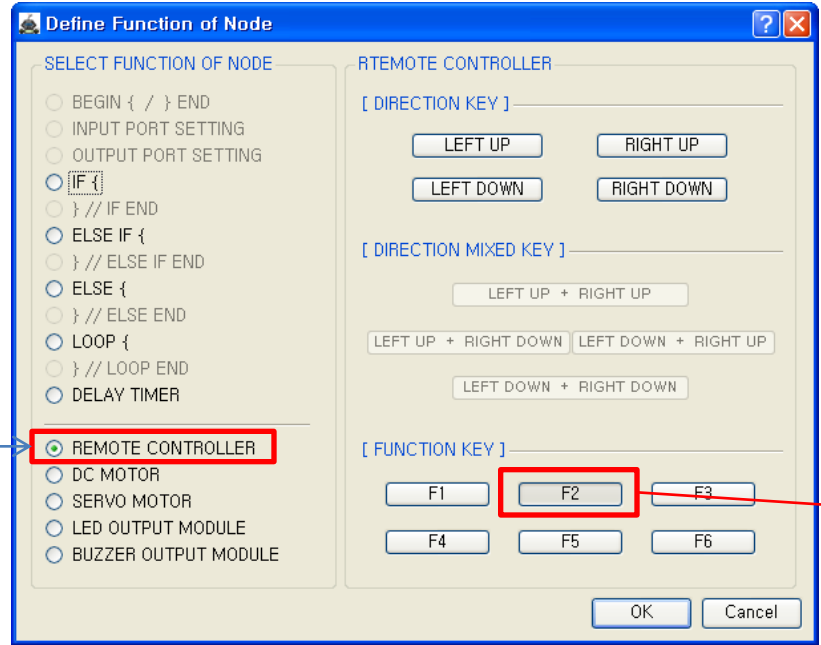
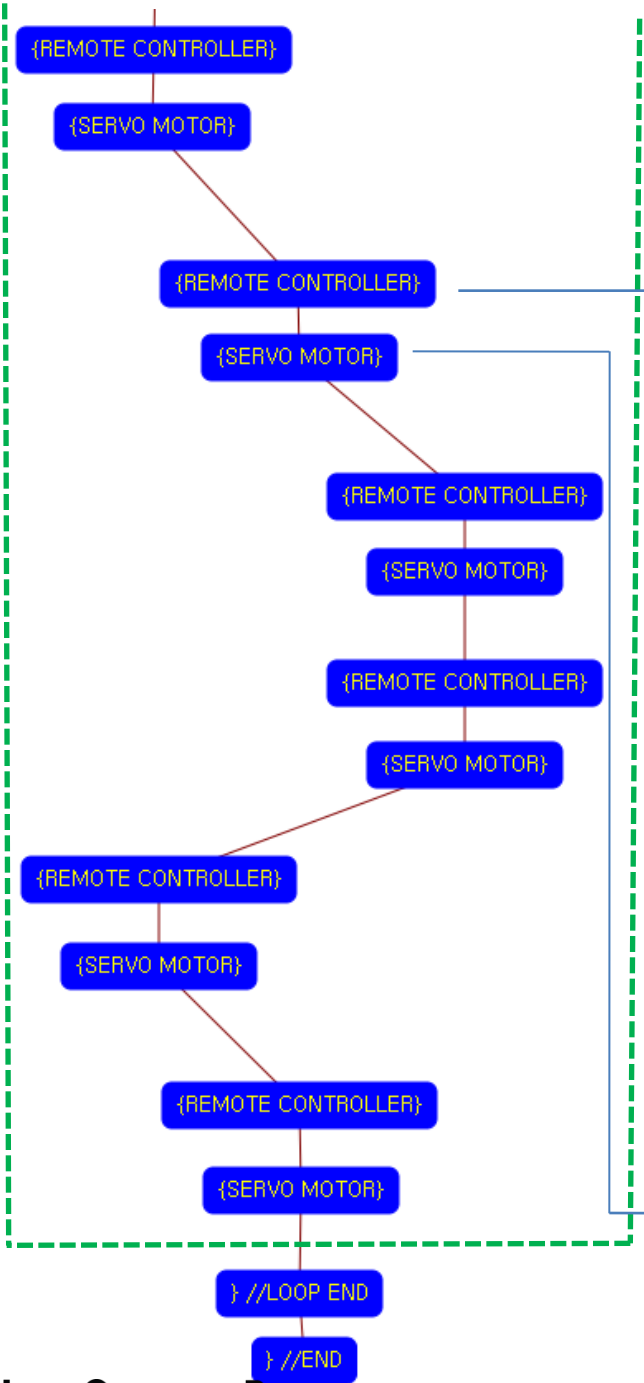
BUZZER OUTPUT MODULE

OK Cancel

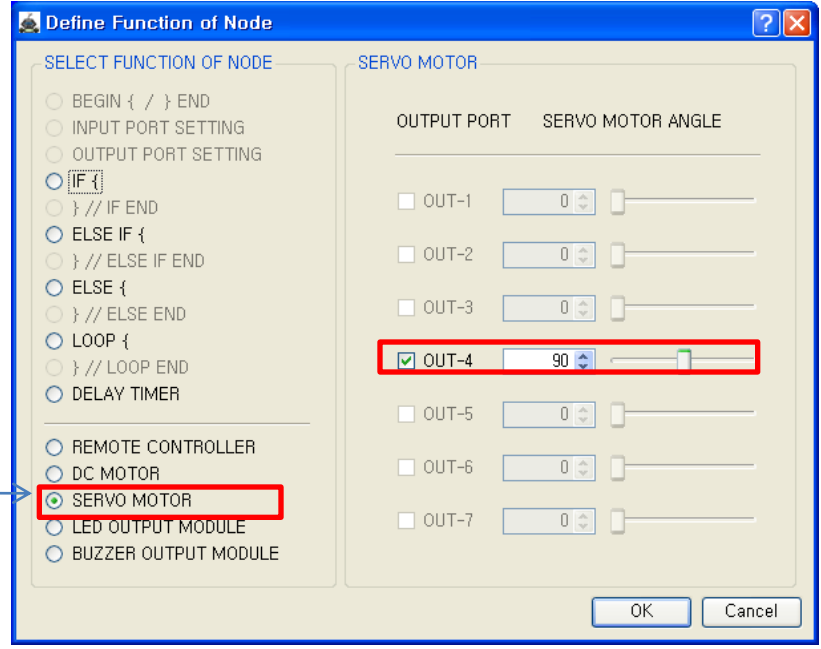
If the "F1" key is pressed, the servo motor(OUT-4) sets to the 110 degree.

This make turning the front wheels to the left 20 degree.

(If the servo motor assembly is different with the assembly manual, the servo motor operation is different also)



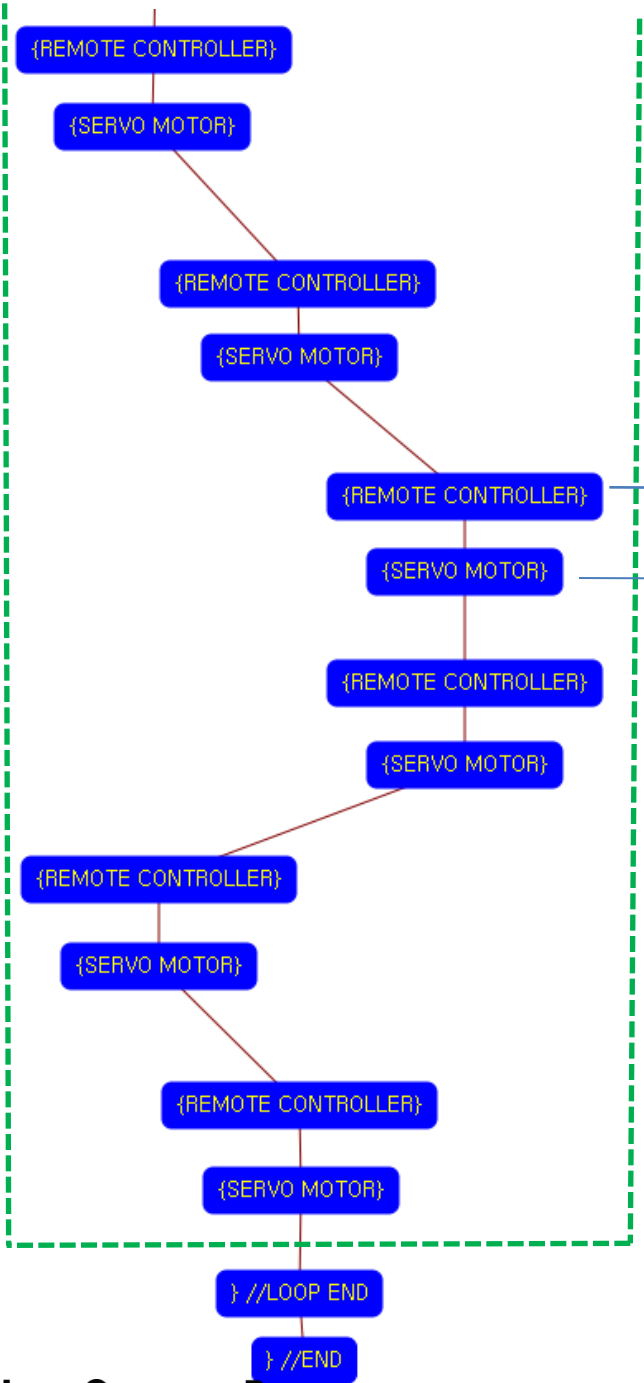
Set the "F2" key of remote controller.



If the "F2" key is pressed, the servo motor(OUT-4) sets to the 90 degree.

This make turning the front wheels to the front side.

(If the servo motor assembly is different with the assembly manual, the servo motor operation is different also)



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER

REMOTE CONTROLLER

- DC MOTOR
- SERVO MOTOR
- LED OUTPUT MODULE
- BUZZER OUTPUT MODULE

RREMOTE CONTROLLER

[DIRECTION KEY]

LEFT UP RIGHT UP

LEFT DOWN RIGHT DOWN

[DIRECTION MIXED KEY]

LEFT UP + RIGHT UP

LEFT UP + RIGHT DOWN LEFT DOWN + RIGHT UP

LEFT DOWN + RIGHT DOWN

[FUNCTION KEY]

F1 F2 F3

F4 F5 F6

OK Cancel

Set the "F3" key of remote controller.



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER

SERVO MOTOR

- REMOTE CONTROLLER
- DC MOTOR
- SERVO MOTOR
- LED OUTPUT MODULE
- BUZZER OUTPUT MODULE

SERVO MOTOR

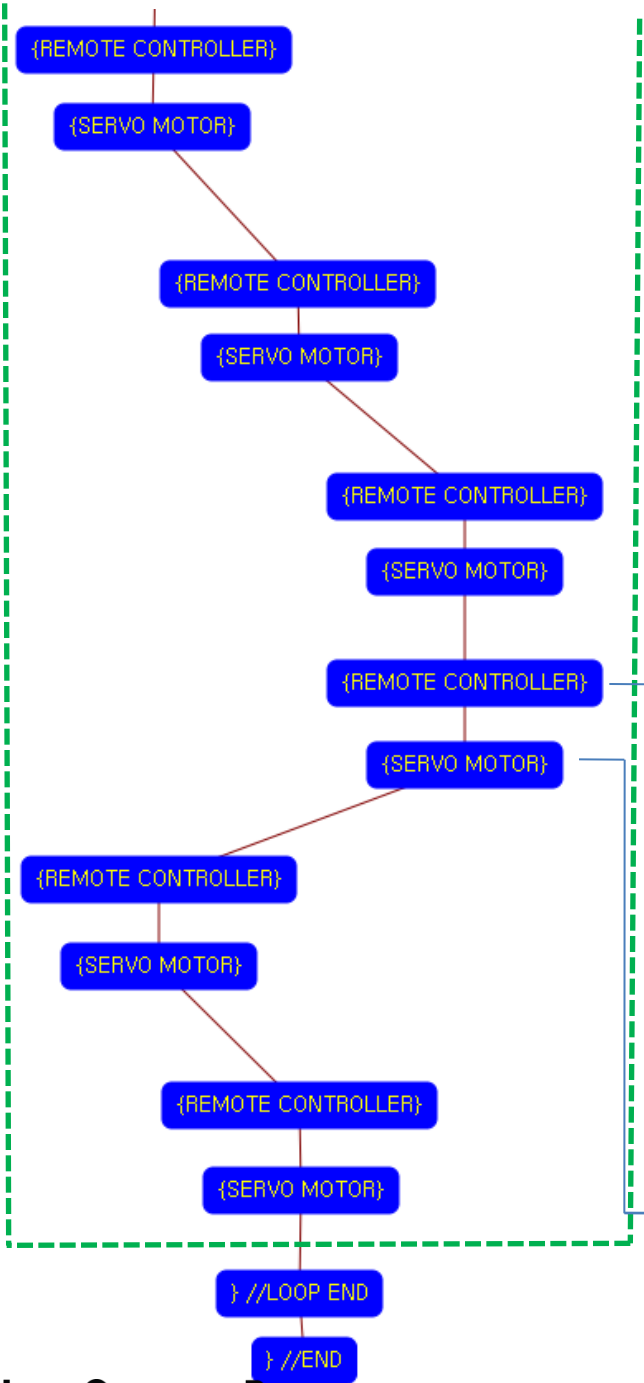
OUTPUT PORT	SERVO MOTOR ANGLE
<input type="checkbox"/> OUT-1	0
<input type="checkbox"/> OUT-2	0
<input type="checkbox"/> OUT-3	0
<input checked="" type="checkbox"/> OUT-4	70
<input type="checkbox"/> OUT-5	0
<input type="checkbox"/> OUT-6	0
<input type="checkbox"/> OUT-7	0

OK Cancel

If the "F3" key is pressed, the servo motor(OUT-4) sets to the 70 degree.

This make turning the front wheels to the right 20 degree.

(If the servo motor assembly is different with the assembly manual, the servo motor operation is different also)



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER

REMOTE CONTROLLER

- DC MOTOR
- SERVO MOTOR
- LED OUTPUT MODULE
- BUZZER OUTPUT MODULE

RREMOTE CONTROLLER

[DIRECTION KEY]

LEFT UP RIGHT UP

LEFT DOWN RIGHT DOWN

[DIRECTION MIXED KEY]

LEFT UP + RIGHT UP

LEFT UP + RIGHT DOWN LEFT DOWN + RIGHT UP

LEFT DOWN + RIGHT DOWN

[FUNCTION KEY]

F1 F2 F3

F4 F5 **F6**

OK Cancel

Set the "F6" key of remote controller.



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER

SERVO MOTOR

- REMOTE CONTROLLER
- DC MOTOR
- SERVO MOTOR
- LED OUTPUT MODULE
- BUZZER OUTPUT MODULE

SERVO MOTOR

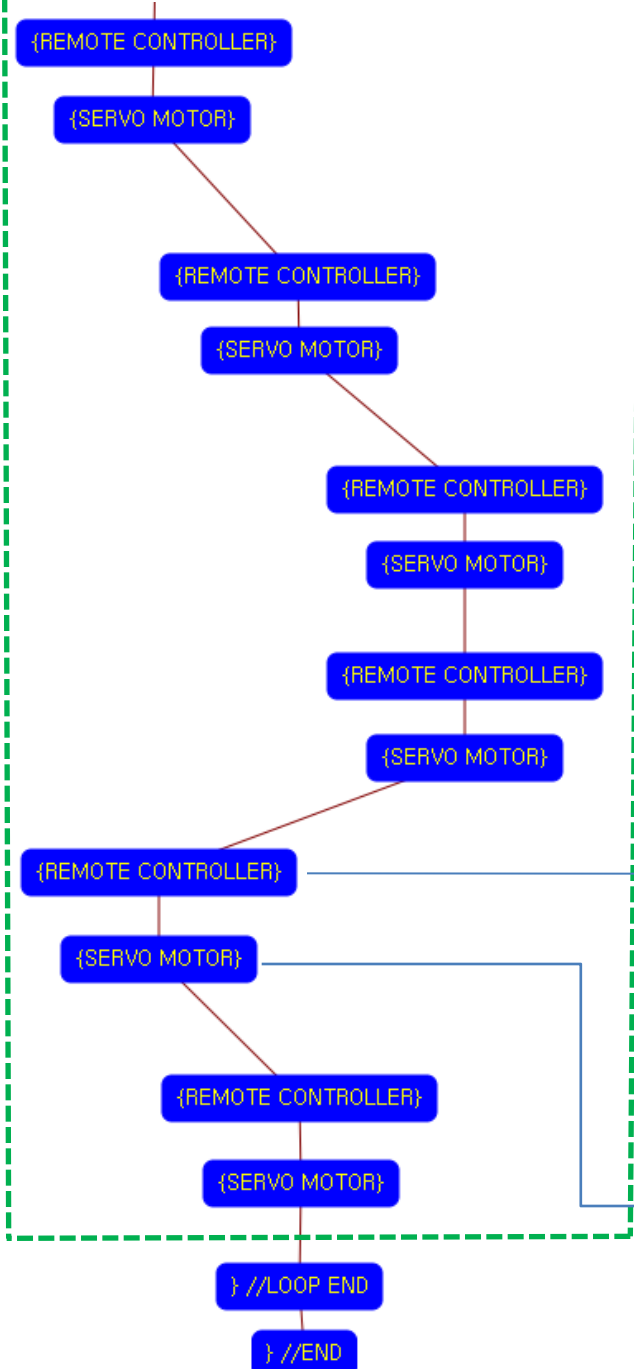
OUTPUT PORT	SERVO MOTOR ANGLE
<input type="checkbox"/> OUT-1	0
<input type="checkbox"/> OUT-2	0
<input type="checkbox"/> OUT-3	0
<input checked="" type="checkbox"/> OUT-4	30
<input type="checkbox"/> OUT-5	0
<input type="checkbox"/> OUT-6	0
<input type="checkbox"/> OUT-7	0

OK Cancel

If the "F6" key is pressed, the servo motor(OUT-4) sets to the 30 degree.

This make turning the front wheels to the right 60 degree.

(If the servo motor assembly is different with the assembly manual, the servo motor operation is different also)



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER
- REMOTE CONTROLLER
- DC MOTOR
- SERVO MOTOR
- LED OUTPUT MODULE
- BUZZER OUTPUT MODULE

RTREMOTE CONTROLLER

[DIRECTION KEY]

LEFT UP RIGHT UP

LEFT DOWN RIGHT DOWN

[DIRECTION MIXED KEY]

LEFT UP + RIGHT UP

LEFT UP + RIGHT DOWN LEFT DOWN + RIGHT UP

LEFT DOWN + RIGHT DOWN

[FUNCTION KEY]

F1 F2 F3

F4 F5 F6

OK Cancel

Set the "F4" key of remote controller.



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER
- REMOTE CONTROLLER
- DC MOTOR
- SERVO MOTOR
- LED OUTPUT MODULE
- BUZZER OUTPUT MODULE

SERVO MOTOR

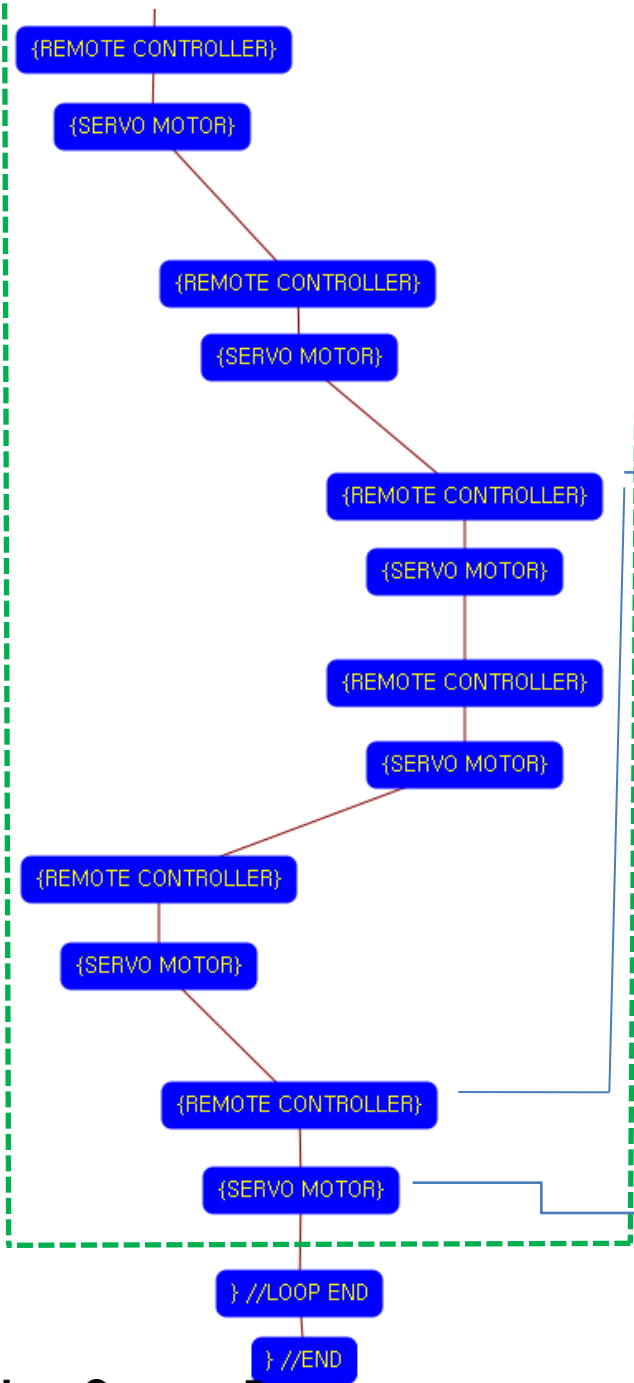
OUTPUT PORT	SERVO MOTOR ANGLE
<input type="checkbox"/> OUT-1	0
<input type="checkbox"/> OUT-2	0
<input type="checkbox"/> OUT-3	0
<input checked="" type="checkbox"/> OUT-4	150
<input type="checkbox"/> OUT-5	0
<input type="checkbox"/> OUT-6	0
<input type="checkbox"/> OUT-7	0

OK Cancel

If the "F1" key is pressed, the servo motor(OUT-4) sets to the 150 degree.

This make turning the front wheels to the left 60 degree.

(If the servo motor assembly is different with the assembly manual, the servo motor operation is different also)



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER

REMOTE CONTROLLER

[DIRECTION KEY]

LEFT UP RIGHT UP

LEFT DOWN RIGHT DOWN

[DIRECTION MIXED KEY]

LEFT UP + RIGHT UP LEFT UP + RIGHT DOWN LEFT DOWN + RIGHT UP LEFT DOWN + RIGHT DOWN

[FUNCTION KEY]

F1 F2 F3 F4 F5 F6

OK Cancel

Set the "F5" key of remote controller.



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER

SERVO MOTOR

OUTPUT PORT SERVO MOTOR ANGLE

OUT-1 0

OUT-2 0

OUT-3 0

OUT-4 90

OUT-5 0

OUT-6 0

OUT-7 0

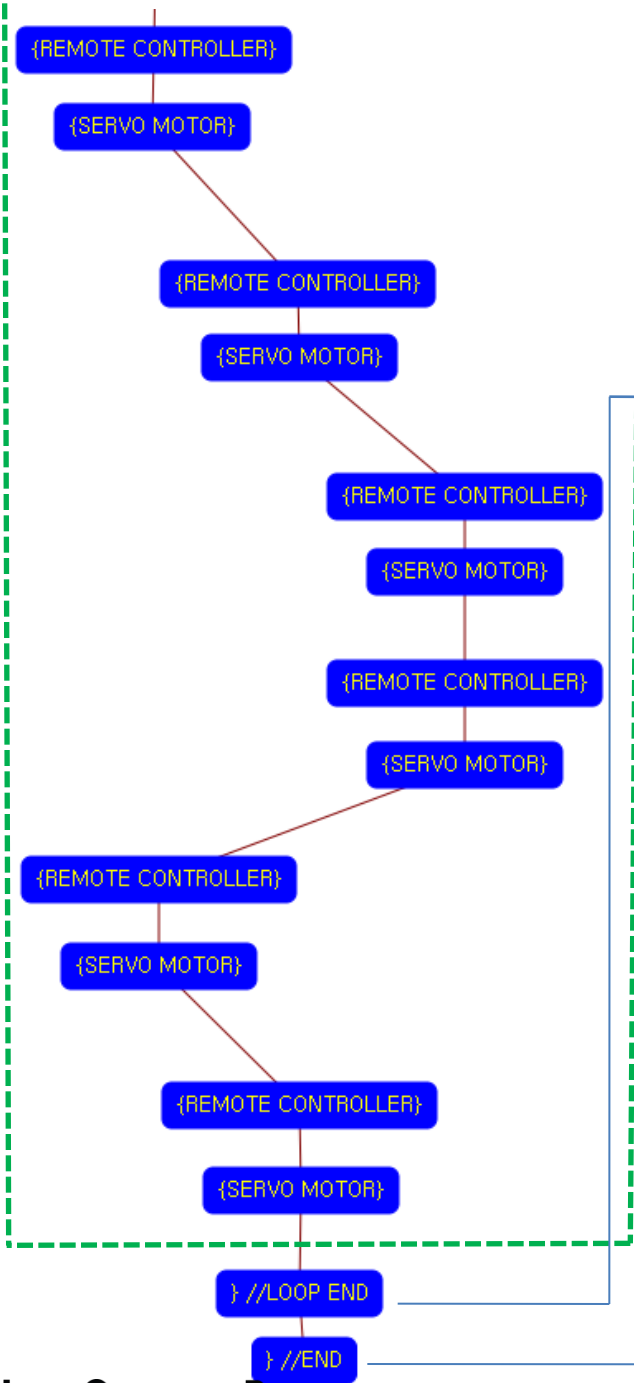
REMOTE CONTROLLER DC MOTOR SERVO MOTOR LED OUTPUT MODULE BUZZER OUTPUT MODULE

OK Cancel

If the "F5" key is pressed, the servo motor(OUT-4) sets to the 90 degree.

This make turning the front wheels to the front side.

(If the servo motor assembly is different with the assembly manual, the servo motor operation is different also)



Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER

REMOTE CONTROLLER

DC MOTOR

SERVO MOTOR

LED OUTPUT MODULE

BUZZER OUTPUT MODULE

~ LOOP END

LOOP END COMMAND

[ID] : Sequence Number (Manually assigned).

[ID] 4

OK Cancel

The end point of "LOOP {" repetition command.

You have to assigned the ID of paired "LOOP {" repetition command.

(It is necessary to know that which "LOOP {" among the many "LOOP {" repetition commands in program.

Define Function of Node

SELECT FUNCTION OF NODE

- BEGIN { / } END
- INPUT PORT SETTING
- OUTPUT PORT SETTING
- IF {
- } // IF END
- ELSE IF {
- } // ELSE IF END
- ELSE {
- } // ELSE END
- LOOP {
- } // LOOP END
- DELAY TIMER

REMOTE CONTROLLER

DC MOTOR

SERVO MOTOR

LED OUTPUT MODULE

BUZZER OUTPUT MODULE

BEGIN / END

Select "PROGRAM BEGIN" or "PROGRAM END".

PROGRAM BEGIN

PROGRAM END

OK Cancel

This means that program ends hear.

You have to place this node at the end of program.

"PROGRAM BEGIN" is not active because you already define at the program.

To run the robot, it is necessary to download the program into the robot. (Refer to download manual)