EQ-ROBO Programming : Boxing robot

BEGIN {

{INPUT PORT SETTING}

{OUTPUT PORT SETTING}

LOOP {

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

Program begin

Input port setting

Output port setting

LOOP starting point (Repeat the command)

Case 1
Key of remote controller : F2
Robot go forward

Case 2
Key of remote controller : F5
Robot go backward

Case 3
Key of remote controller : F4
Robot spin left

Case 4
Key of remote controller : F6
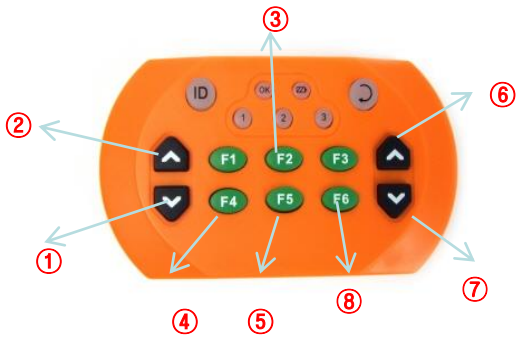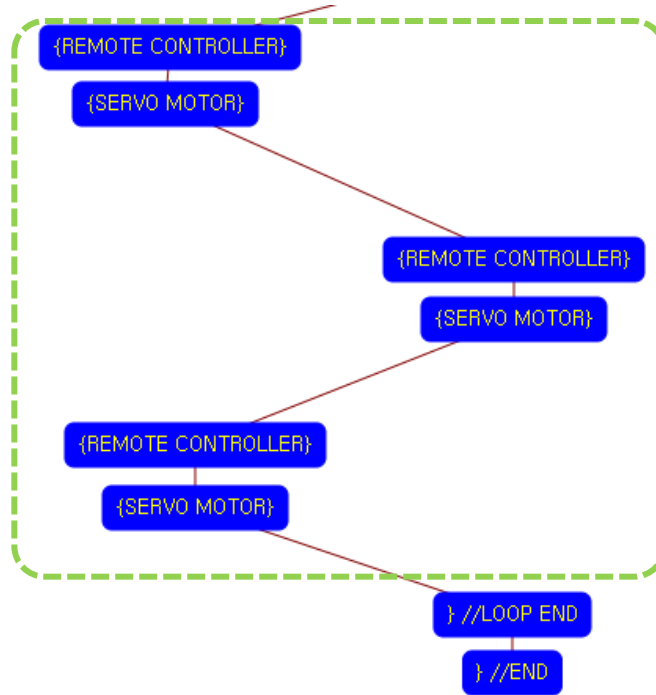Robot spin right

Case 5
Key of remote controller
 : RIGHT UP
Right hand is punching

Input: Remote signal receiver
Output: DC motor, Servo motor
Work: Moving, Left/Right punching

{REMOTE CONTROLLER}

{SERVO MOTOR}

Case 6
Key of remote controller
 : RIGHT DOWN
Right hand is folding

{REMOTE CONTROLLER}

{SERVO MOTOR}

Case 7
Key of remote controller
 : LEFT UP
Left hand is punching

{REMOTE CONTROLLER}

{SERVO MOTOR}

Case 8
Key of remote controller
 : LEFT DOWN
Left hand is folding

} //LOOP END

LOOP ending point

} //END

Program end

① Left hand folding
② Left hand punching
③ Robot go forward
④ Robot spin left side
⑤ Robot go backward
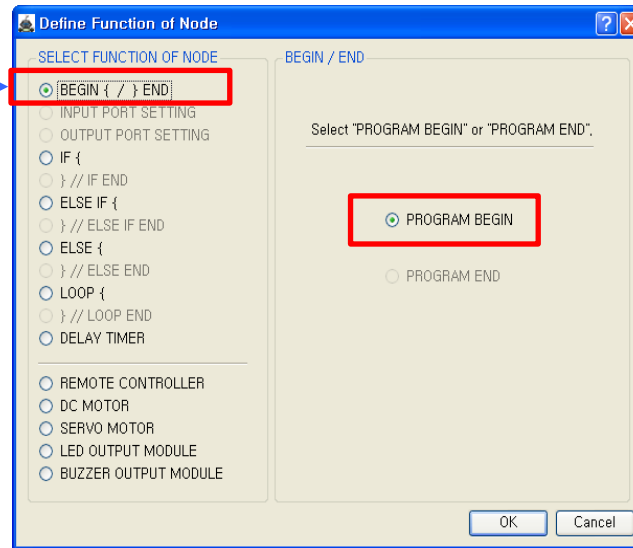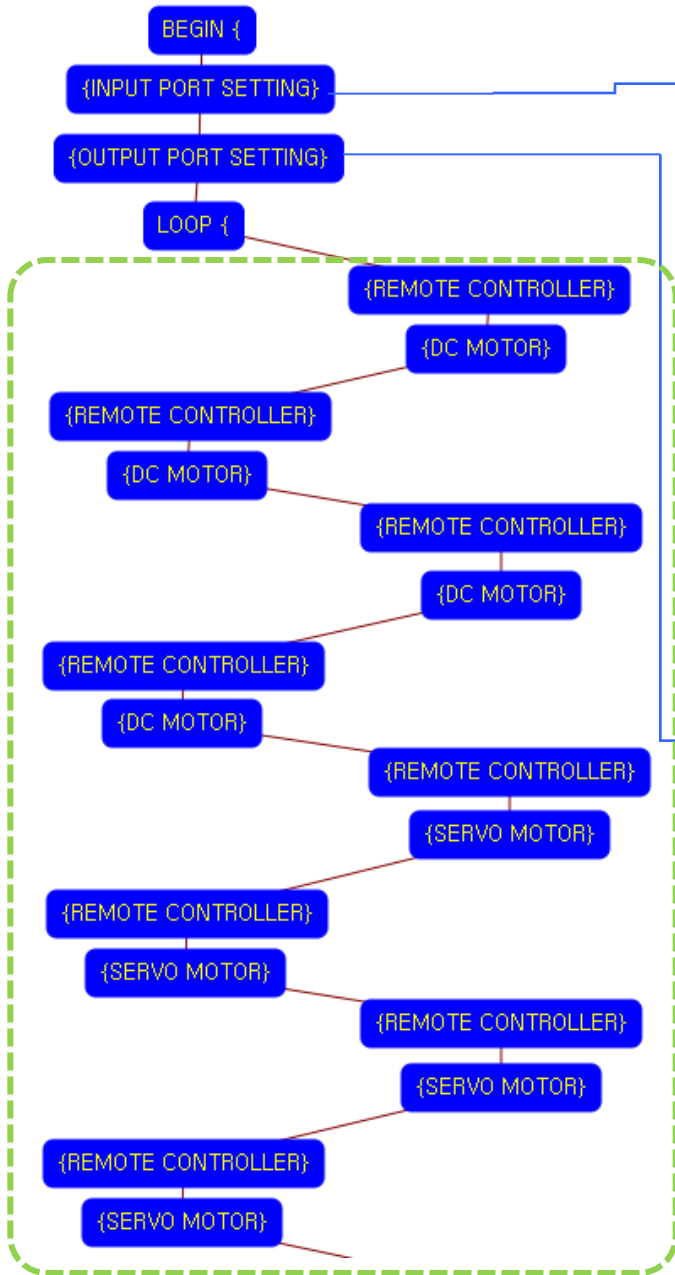⑥ Right hand punching
⑦ Right hand folding
⑧ Robot spin right side

BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {

{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}

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
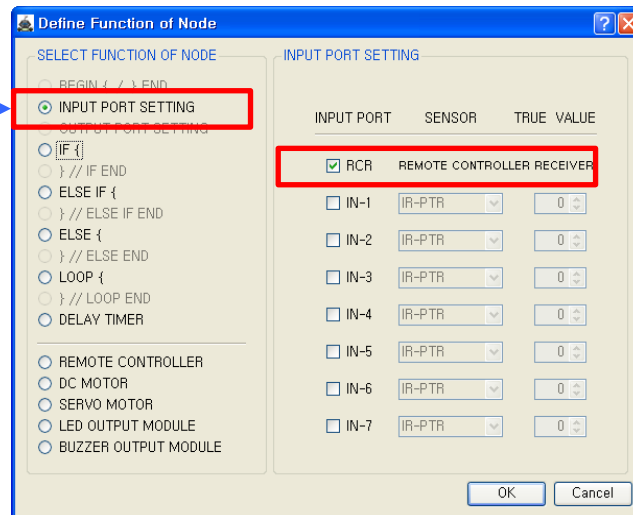
This means that program begins from hear.

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

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

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

INPUT PORT SETTING

INPUT PORT	SENSOR	TRUE	VALUE
☑ RCR	REMOTE CONTROLLER RECEIVER		
☐ IN-1	IR-PTR		0
☐ IN-2	IR-PTR		0
☐ IN-3	IR-PTR		0
☐ IN-4	IR-PTR		0
☐ IN-5	IR-PTR		0
☐ IN-6	IR-PTR		0
☐ IN-7	IR-PTR		0

OK   Cancel

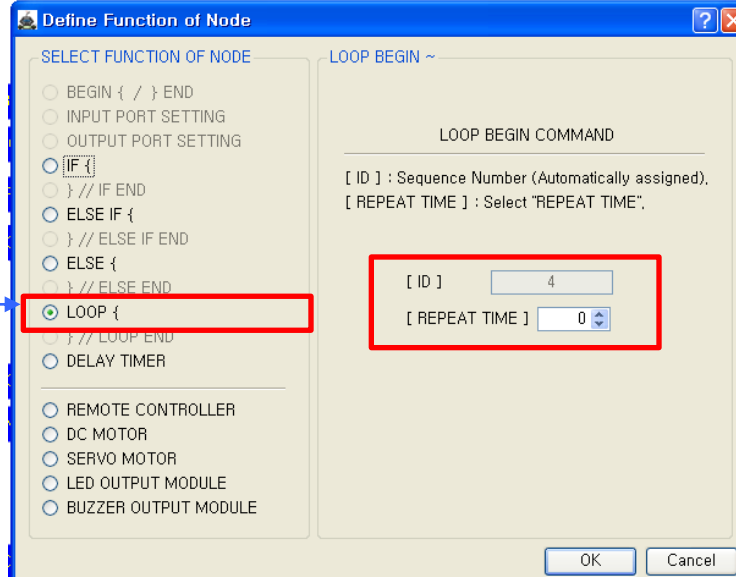This model use 1 remote control receiver module as input device.

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.

BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}

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
☑ OUT-1	SERVO MOTOR	90
☑ OUT-2	SERVO MOTOR	0
☐ OUT-3	RED LED	0
☐ OUT-4	RED LED	0
☐ OUT-5	RED LED	0
☐ OUT-6	RED LED	0
☐ OUT-7	RED LED	0

OK   Cancel

You have to connect the Servo motor to the OUT-1 and Servo motor to the OUT2 output port of main board. The initial values of Servo motors are 90 and 0.

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]   4
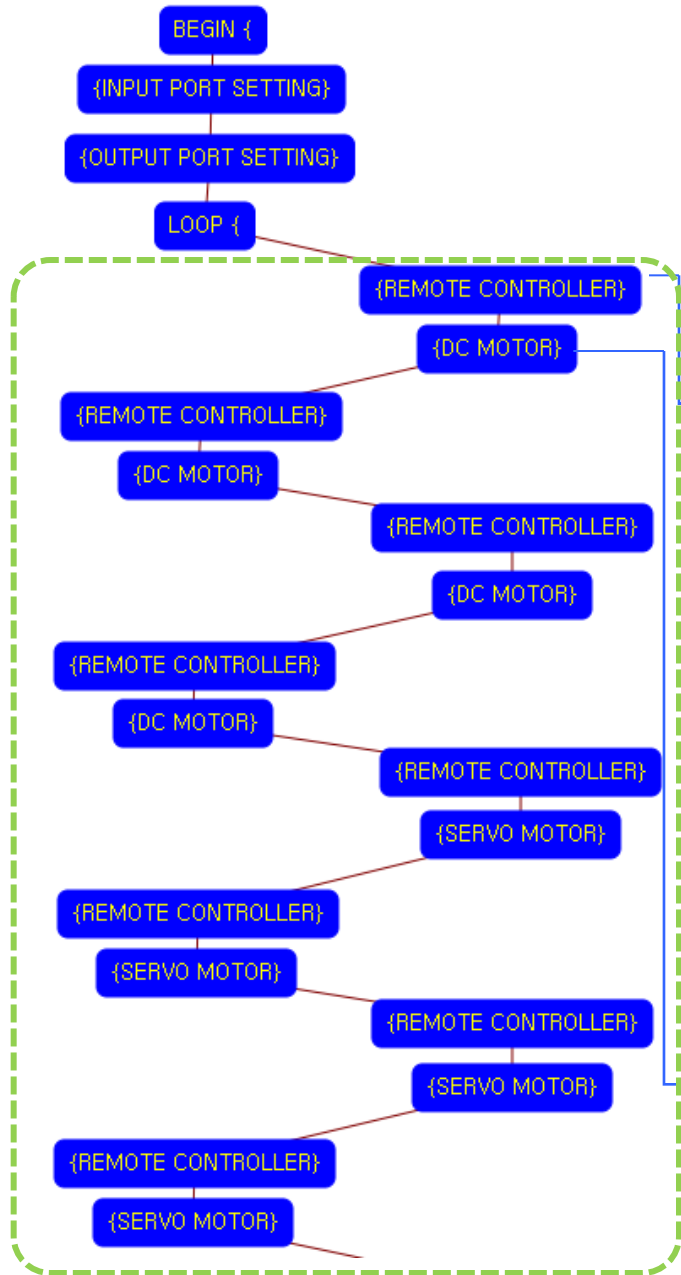[REPEAT TIME]   0

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.

USER **C**REATIVE **R**OBOT

BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {

{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}

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

RTEMOTE 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 "F2" 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

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]
FORWARD   FORWARD

[SPEED]   [SPEED]
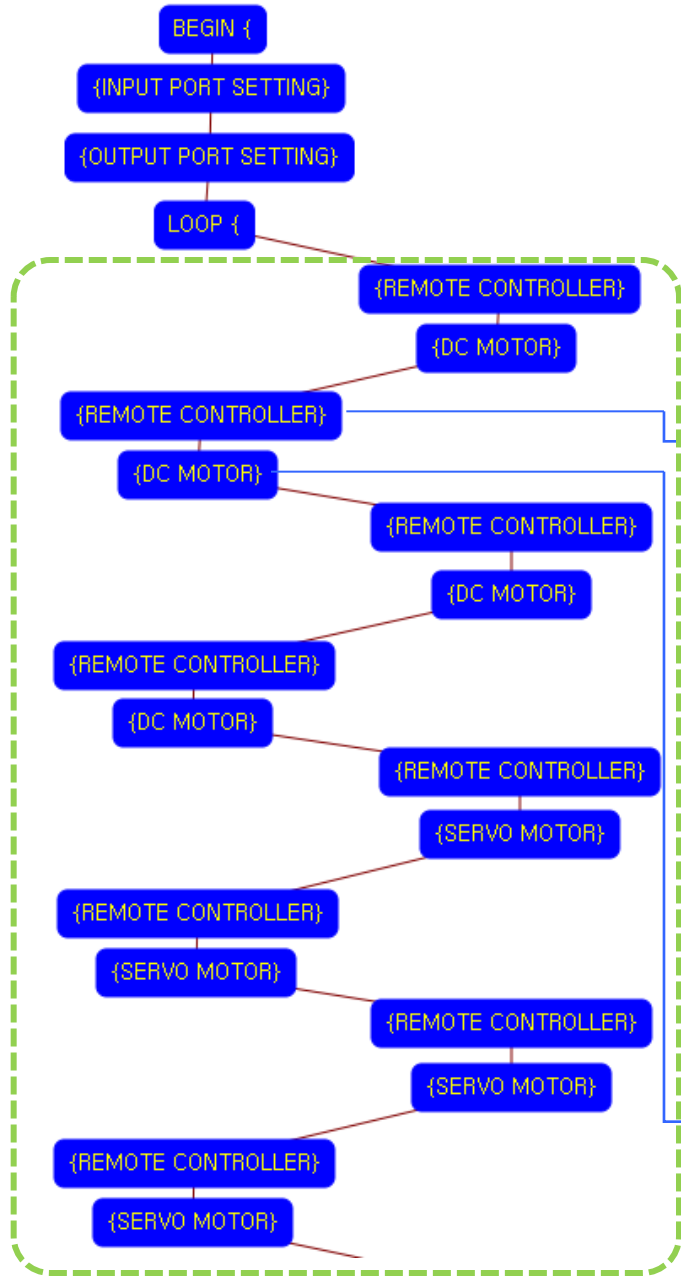100   100

[RUNNING TIME]
1

OK   Cancel

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 "F2" key is pressed.
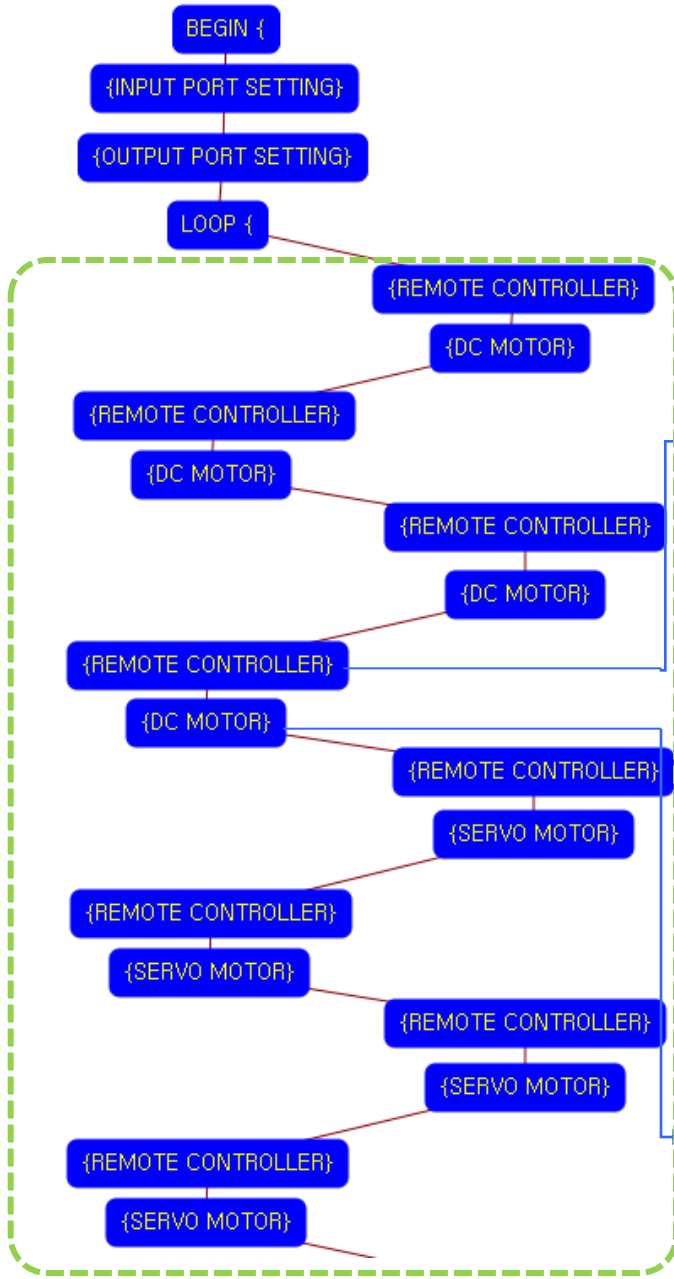
Set the "F5" key of remote controller.

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 "F5" key is pressed.

USER CREATIVE ROBOT

Set the "F4" key of remote controller.

Left DC Motor
- Direction : Backward
- Speed : 100
- Running Time : 1
Right DC Motor
- Direction : Forward
- Speed : 100
- Running Time : 1
➔Robot spins left side during 0.1 second

Although the setting value of running time is 0.1 seconds, the robot is spinning left side continuously during the "F4" key is pressed.

BEGIN {

{INPUT PORT SETTING}

{OUTPUT PORT SETTING}

LOOP {

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

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

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

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]
FORWARD | BACKWARD

[SPEED] | [SPEED]
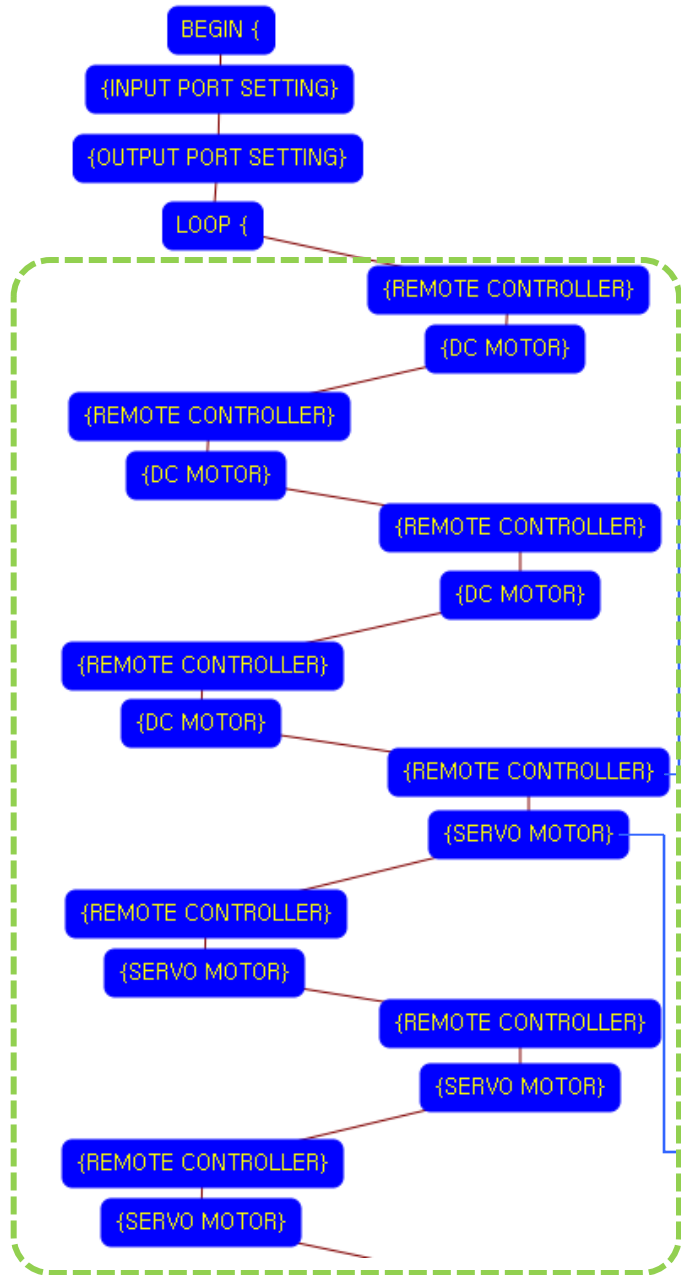100 | 100

[RUNNING TIME]

1

OK   Cancel

Left DC Motor
- Direction : Forward
- Speed : 100
- Running Time : 1
Right DC Motor
- Direction : Backward
- Speed : 100
- Running Time : 1
➔Robot spins right side during 0.1 second

Although the setting value of running time is 0.1 seconds, the robot is spinning right side continuously during the "F6" key is pressed.

USER **C**REATIVE **R**OBOT

BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {

{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{DC MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}
{REMOTE CONTROLLER}
{SERVO MOTOR}

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

RTEMOTE 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

SERVO MOTOR

OUTPUT PORT   SERVO MOTOR ANGLE

☑ OUT-1   90
☐ OUT-2   0
☐ OUT-3   0
☐ OUT-4   0
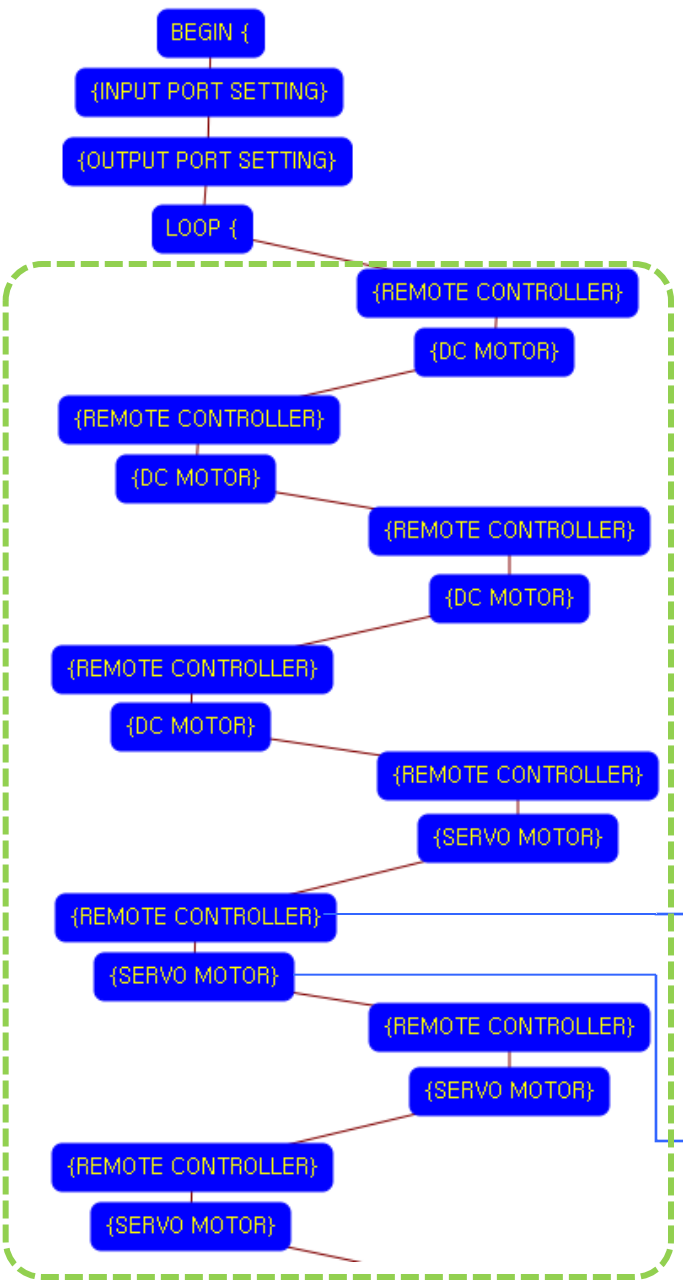☐ OUT-5   0
☐ OUT-6   0
☐ OUT-7   0

OK   Cancel

If the "RIGHT UP" key is pressed, the servo motor (OUT-1) sets to the 90 degree.

This make right hand is punching.

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

User **C**reative **R**obot

Set the "RIGHT DOWN " key of remote controller
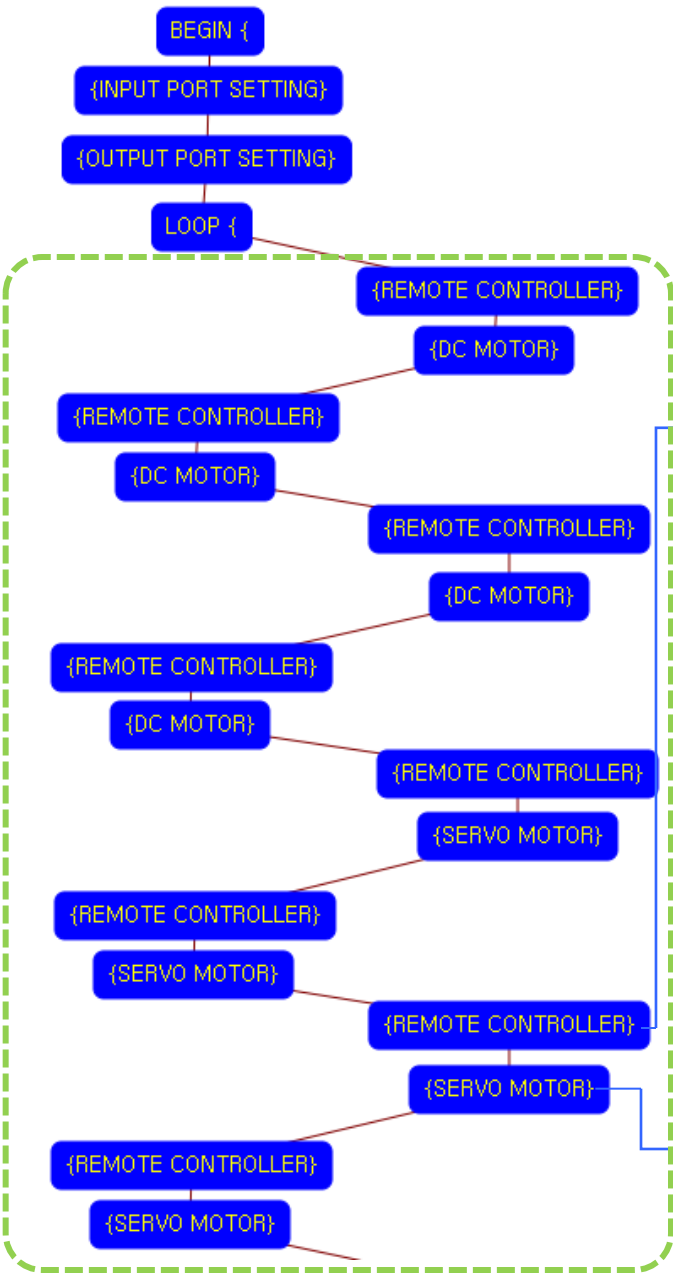
If the "RIGHT DOWN" key is pressed, the servo motor (OUT-1) sets to the 0 degree.

This make right hand is folding.

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

BEGIN {

{INPUT PORT SETTING}

{OUTPUT PORT SETTING}

LOOP {

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

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

RTEMOTE 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 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

SERVO MOTOR

OUTPUT PORT   SERVO MOTOR ANGLE

- ☐ OUT-1   0
- ☑ **OUT-2   0**
- ☐ OUT-3   0
- ☐ OUT-4   0
- ☐ OUT-5   0
- ☐ OUT-6   0
- ☐ OUT-7   0

OK   Cancel

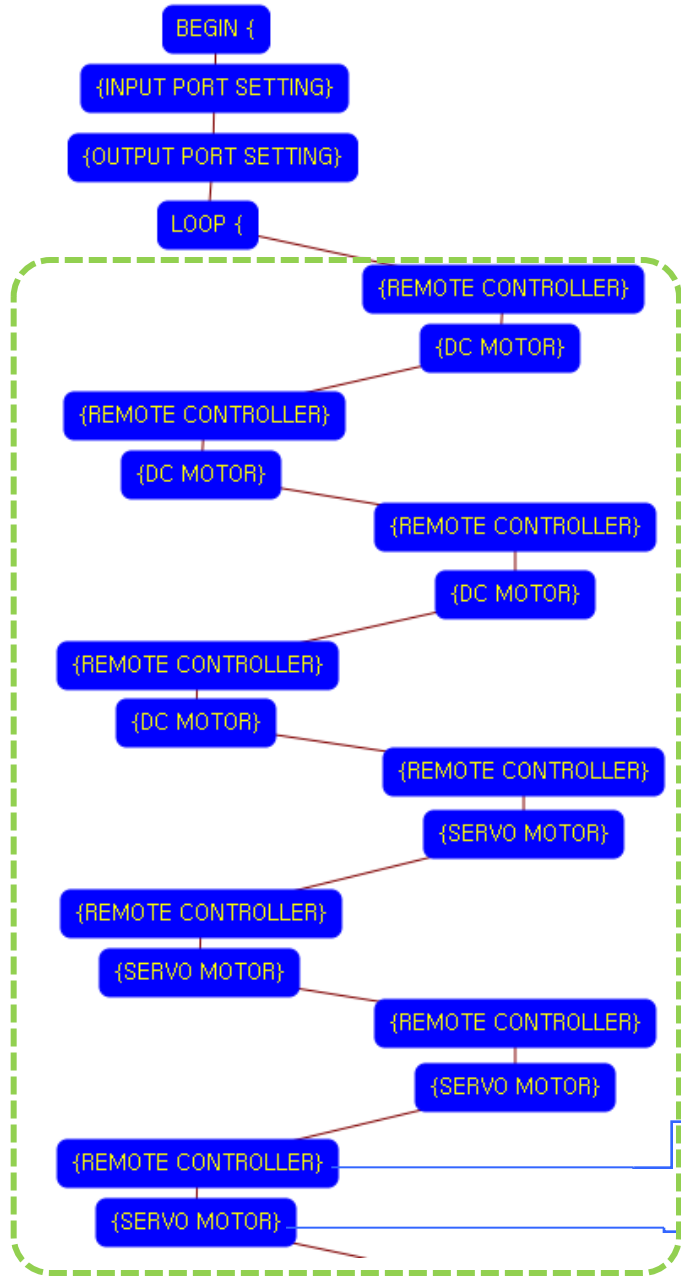
If the "LEFT UP" key is pressed, the servo motor (OUT-2) sets to the 0 degree.

This make left hand is punching.

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

BEGIN {

{INPUT PORT SETTING}

{OUTPUT PORT SETTING}

LOOP {

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

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

RTEMOTE 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

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

SERVO MOTOR

OUTPUT PORT   SERVO MOTOR ANGLE

☐ OUT-1   0

☑ OUT-2   90

☐ OUT-3   0

☐ OUT-4   0

☐ OUT-5   0

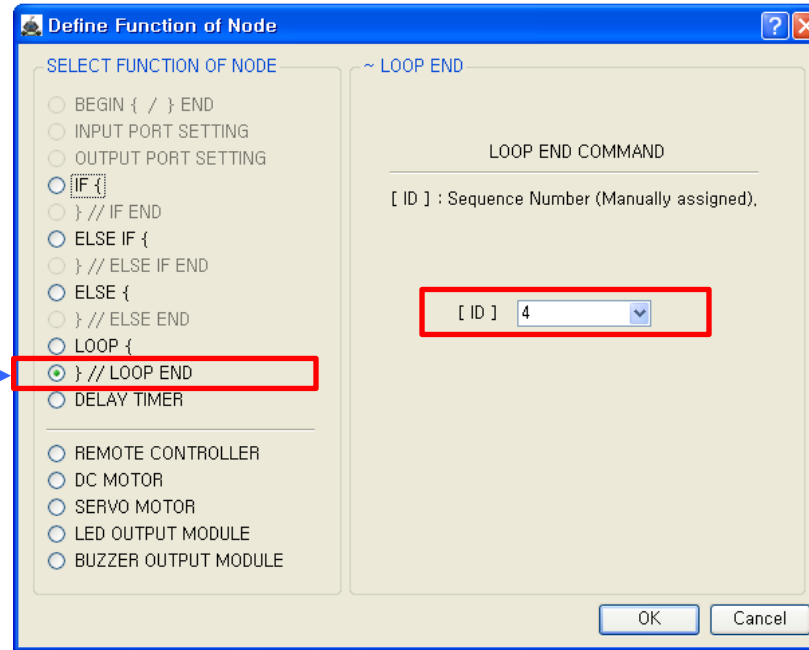☐ OUT-6   0

☐ OUT-7   0

OK   Cancel

If the "LEFT DOWN" key is pressed, the servo motor (OUT-2) sets to the 90 degree.

This make left hand is folding.

(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
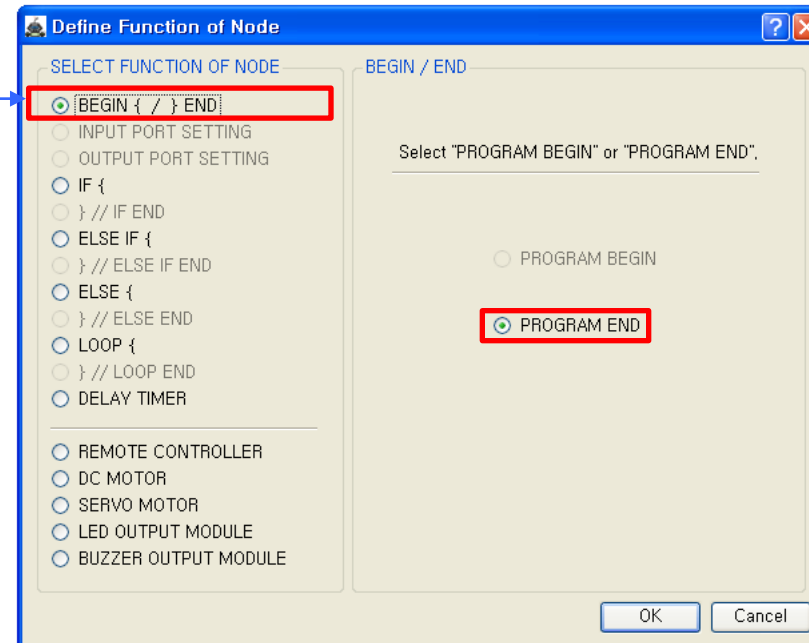
OK   Cancel

} //LOOP END

} //END

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)