EQ-ROBO Programming : bomb Remover Robot

BEGIN {

{INPUT PORT SETTING}

{OUTPUT PORT SETTING}

LOOP {

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

} //LOOP END

} //END

Program begin

Input port setting

Output port setting

LOOP starting point (Repeat the command)

Condition 1
Key of remote controller : LEFT UP
Robot go forwards after LED blinking

Condition 2
Key of remote controller : LEFT DOWN
Robot go backwards after LED blinking

Condition 3
Key of remote controller : RIGHT UP
Robot go forwards left after LED blinking

Condition 4
Key of remote controller : RIGHT DOWN
Robot go forwards right after LED blinking

Condition 5
Key of remote controller : F1
Robot close the robot hand

Condition 6
Key of remote controller : F3
Robot open the robot hand

LOOP ending point
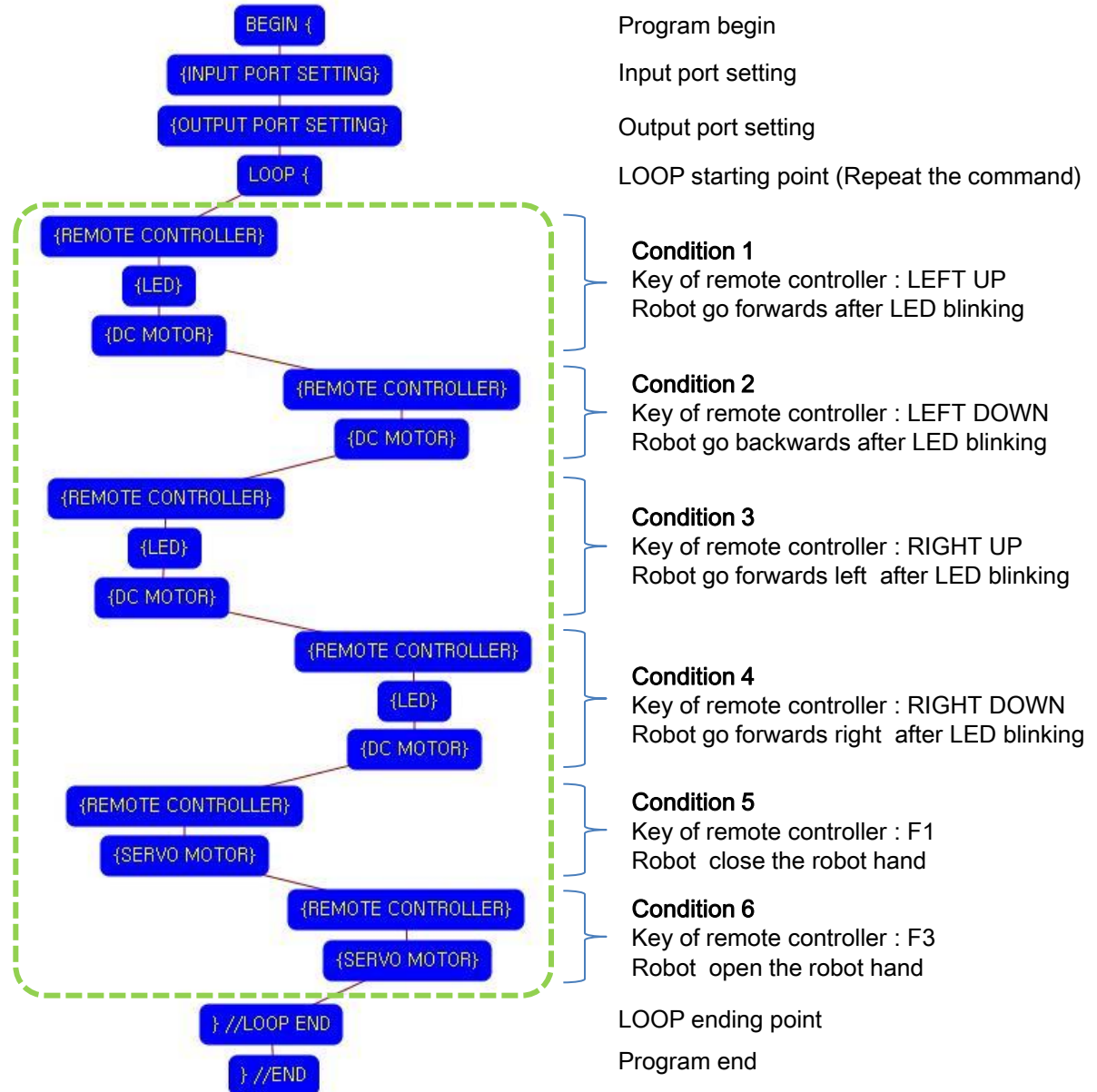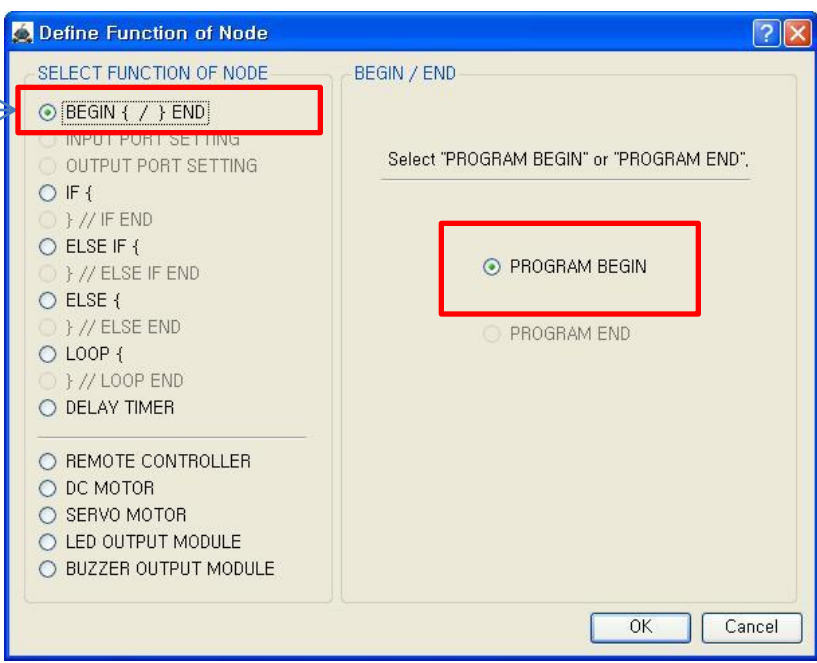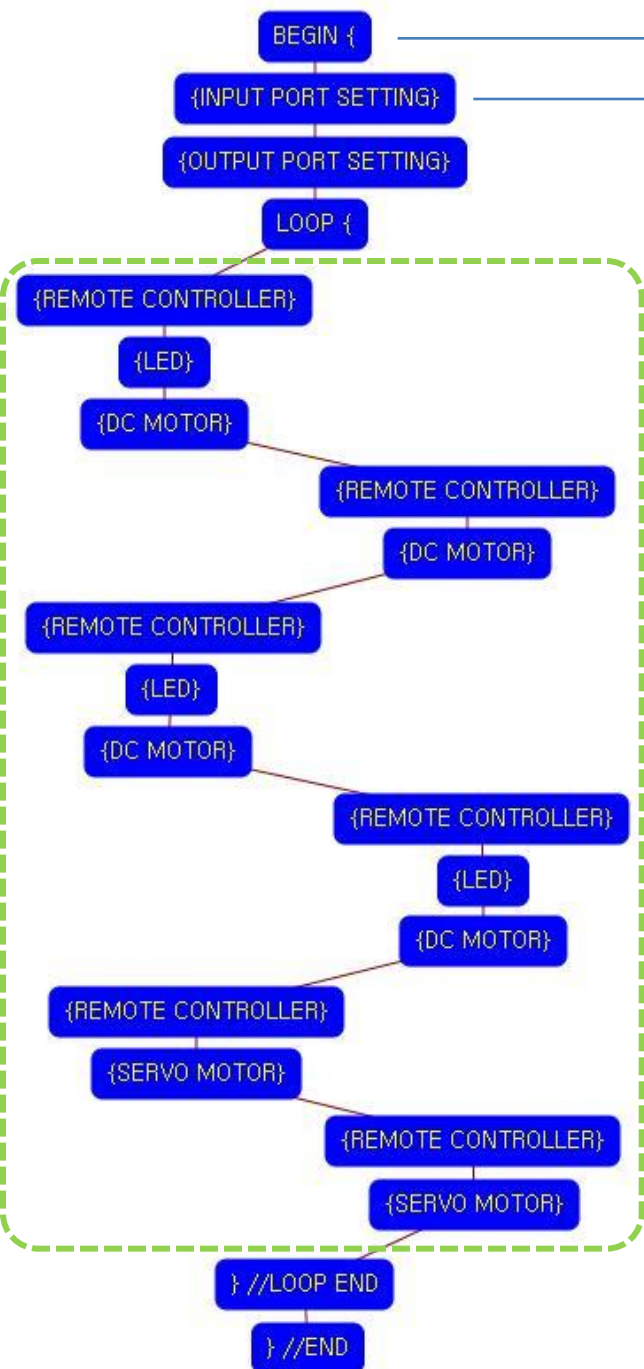
Program end

The robot model is to study the remote controller programming with servo motor and LED module.

You can remove the bomb using the robot hand by servo motor.
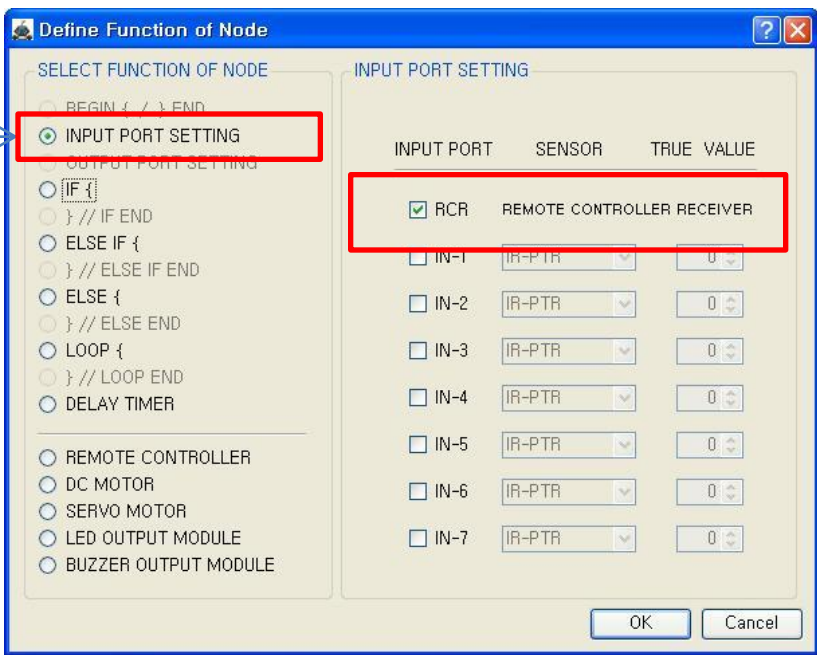
Program name
  : eq2-3-p19_BombRemover.ufc

USER CREATIVE ROBOT

```
BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {
    {REMOTE CONTROLLER}
    {LED}
    {DC MOTOR}
        {REMOTE CONTROLLER}
        {DC MOTOR}
    {REMOTE CONTROLLER}
    {LED}
    {DC MOTOR}
        {REMOTE CONTROLLER}
        {LED}
        {DC MOTOR}
    {REMOTE CONTROLLER}
    {SERVO MOTOR}
        {REMOTE CONTROLLER}
        {SERVO MOTOR}
} //LOOP END
} //END
```

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

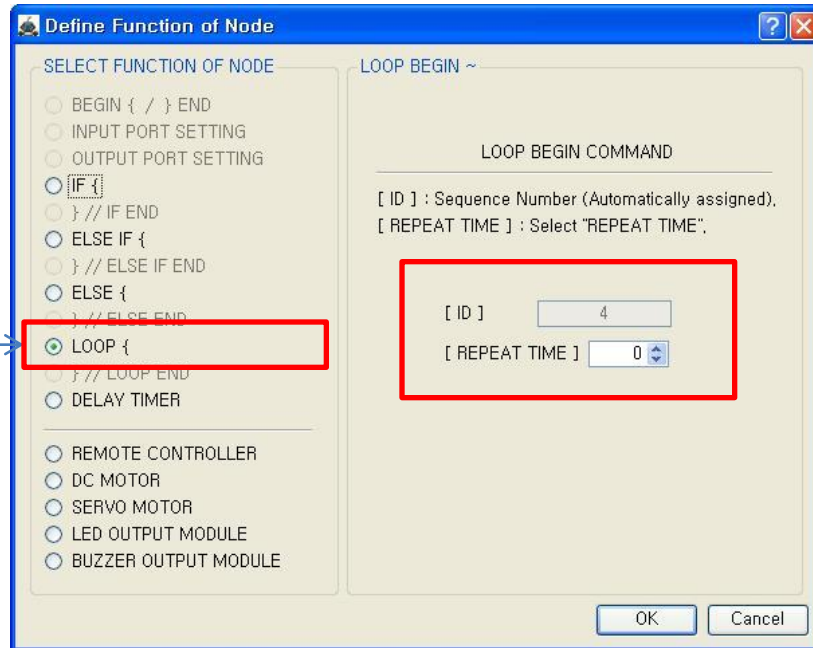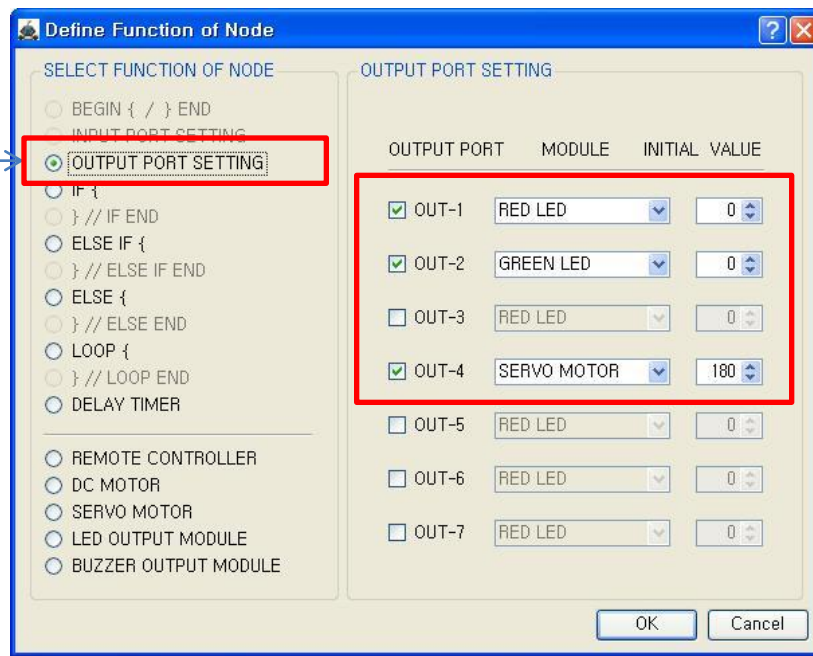This model use 1 remote control receiver module as input device.

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.

Flowchart

```
BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {
    {REMOTE CONTROLLER}
    {LED}
    {DC MOTOR}
    {REMOTE CONTROLLER}
    {DC MOTOR}
    {REMOTE CONTROLLER}
    {LED}
    {DC MOTOR}
    {REMOTE CONTROLLER}
    {LED}
    {DC MOTOR}
    {REMOTE CONTROLLER}
    {SERVO MOTOR}
    {REMOTE CONTROLLER}
    {SERVO MOTOR}
} //LOOP END
} //END
```

Define Function of Node — Output Port Setting

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	RED LED	0
☑ OUT-2	GREEN LED	0
☐ OUT-3	RED LED	0
☑ OUT-4	SERVO MOTOR	180
☐ OUT-5	RED LED	0
☐ OUT-6	RED LED	0
☐ OUT-7	RED LED	0

OK   Cancel

This model use 2 LED modules and 1 Servo Motor as output device.

You have to connect the right ① LED module to the OUT-1 output port and left ② LED module to the OUT-2 output port and Servo motor to the OUT-4 output port of main board. The initial value of Servo motor is to be 180.

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 — Loop

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
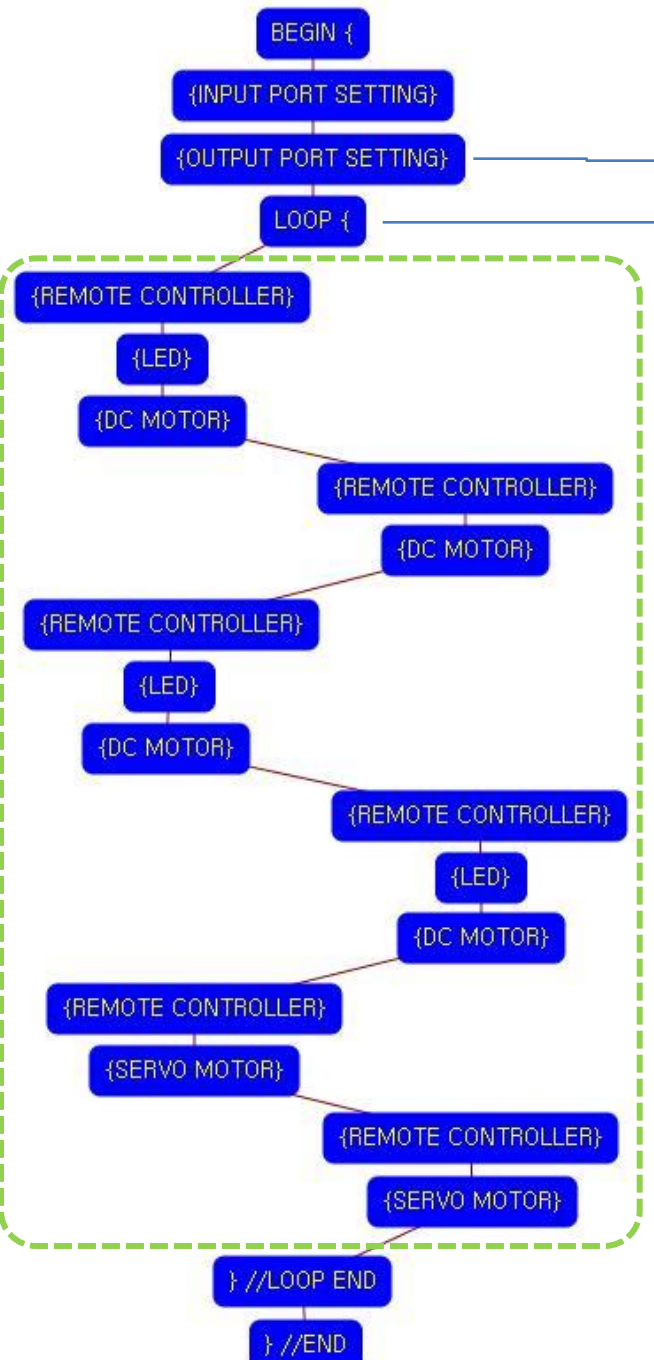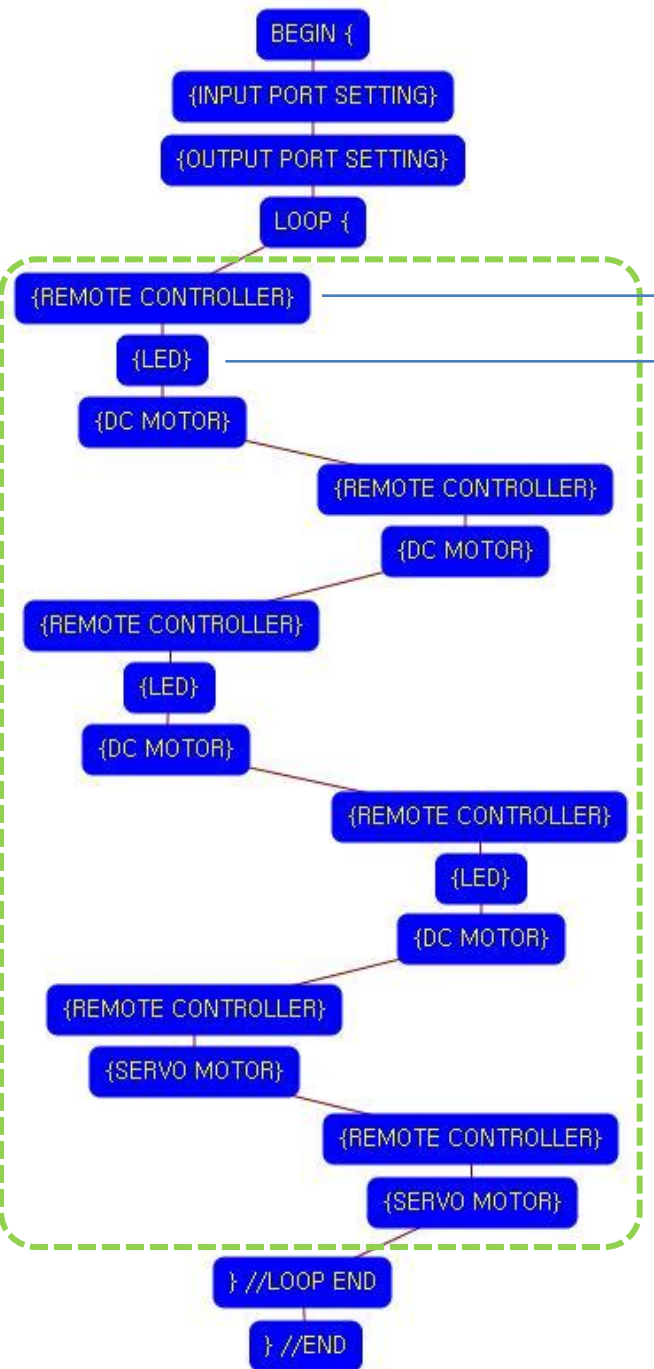[REPEAT TIME]   0

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.

Flowchart (left)

- BEGIN {
- {INPUT PORT SETTING}
- {OUTPUT PORT SETTING}
- LOOP {
  - {REMOTE CONTROLLER}
  - {LED}
  - {DC MOTOR}
  - {REMOTE CONTROLLER}
  - {DC MOTOR}
  - {REMOTE CONTROLLER}
  - {LED}
  - {DC MOTOR}
  - {REMOTE CONTROLLER}
  - {LED}
  - {DC MOTOR}
  - {REMOTE CONTROLLER}
  - {SERVO MOTOR}
  - {REMOTE CONTROLLER}
  - {SERVO MOTOR}
- } //LOOP END
- } //END

Define Function of Node (top dialog)

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 (bottom dialog)

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
	5	5	1

☑ OUT-1   [On TIME] : Select the LED ON time
☑ OUT-2   [Off TIME] : Select the LED OFF time
             5 : 0.5 seconds
OUT-3   10 : 1.0 seconds
OUT-4   15 : 1.5 seconds
           20 : 2.0 seconds
OUT-5
OUT-6   [REPEAT] : Select the REPEAT times
OUT-7   (0 ~ 10)

OK   Cancel

If the "LEFT UP" key is pressed, both of LED module run like as followings.

The right LED module(OUT-1) 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

USER CREATIVE ROBOT

Flowchart:

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

Dialog 1: 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 ~ 8.0 sec.)

[LEFT DC MOTOR]
[DIRECTION]
BACKWARD
[SPEED]
100

[RIGHT DC MOTOR]
[DIRECTION]
BACKWARD
[SPEED]
100

[RUNNING TIME]
1

OK   Cancel

Right text (top):

Both DC Motor
- Direction : Backward
- Speed : 100
- Running Time : 1
➜Robot goes forward during 0.1 second

The DC Motor and Robot runs opposite direction because of the reduction gear transfer .

Dialog 2: 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
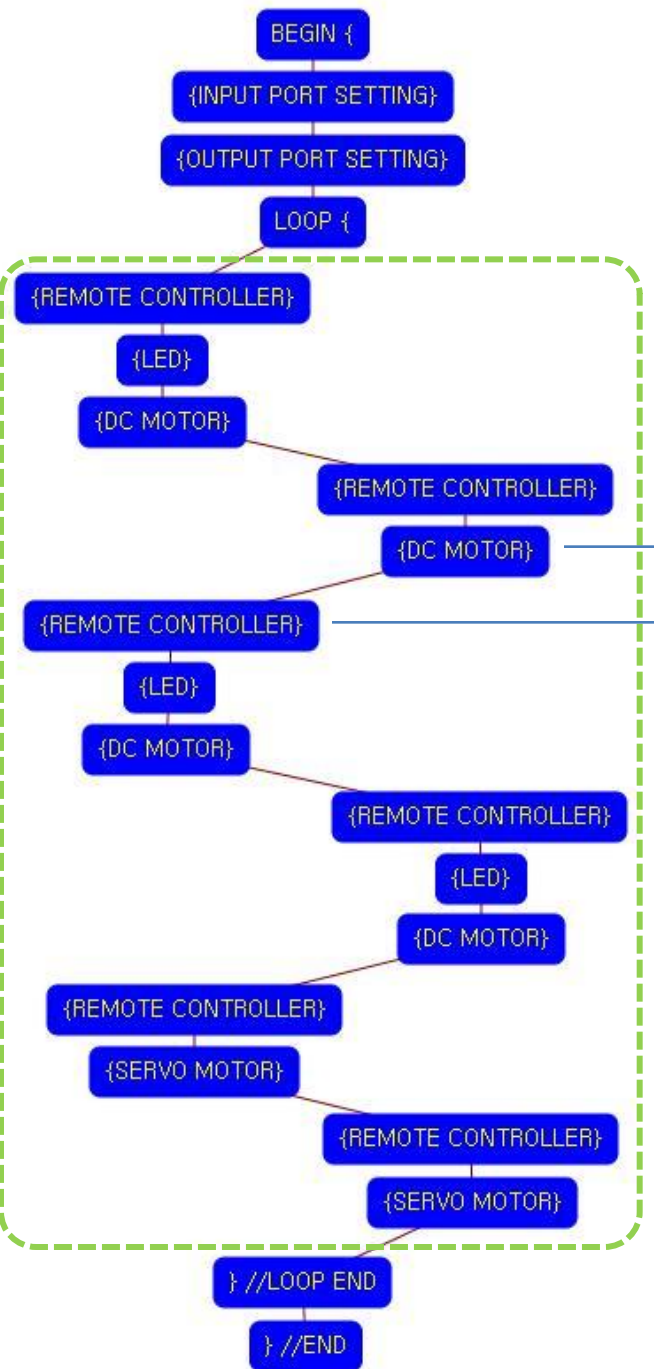LEFT DOWN + RIGHT DOWN

[FUNCTION KEY]

F1   F2   F3
F4   F5   F6

OK   Cancel

Right text (bottom):

Set the "LEFT DOWN " key of remote controller.

Flow Diagram (left)

BEGIN {

{INPUT PORT SETTING}

{OUTPUT PORT SETTING}

LOOP {

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

} //LOOP END

} //END

Define Function of Node (top dialog)

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 ~ 8.0 sec.)

[LEFT DC MOTOR]
[DIRECTION]
FORWARD
[SPEED]
100

[RIGHT DC MOTOR]
[DIRECTION]
FORWARD
[SPEED]
100

[RUNNING TIME]
1

OK   Cancel

Define Function of Node (bottom dialog)

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
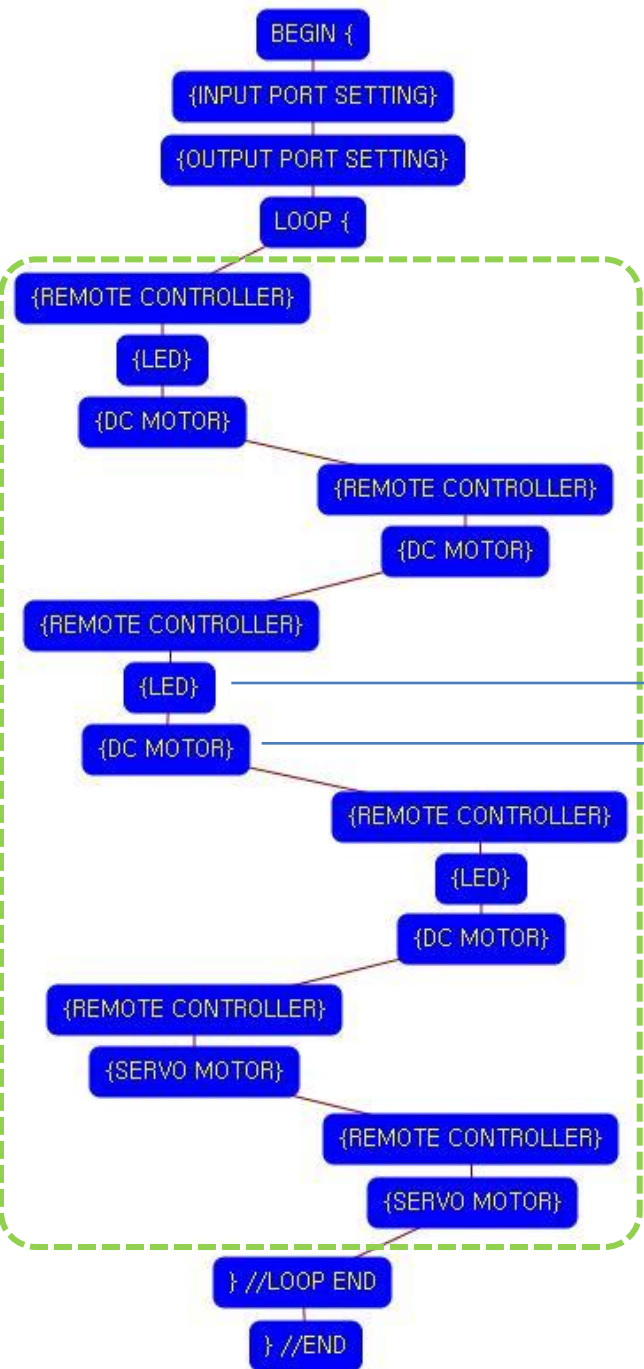
LEFT DOWN + RIGHT DOWN

[FUNCTION KEY]

F1   F2   F3
F4   F5   F6

OK   Cancel

Right column text

If the "LEFT DOWN" key is pressed, both of DC Motor run like as followings.

Both DC Motor
- Direction : Forward
- Speed : 100
- Running Time : 1
➔Robot goes backward during 0.1 second

The DC Motor and Robot runs opposite direction because of the reduction gear transfer .

Set the "RIGHT UP " key of remote controller.

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

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
	5	5	1

☐ OUT-1   [On TIME] : Select the LED ON time
☑ OUT-2   [Off TIME] : Select the LED OFF time
                        5 : 0,5 seconds
☐ OUT-3   10 : 1,0 seconds
☐ OUT-4   15 : 1,5 seconds
                 20 : 2,0 seconds
☐ OUT-5
☐ OUT-6   [REPEAT] : Select the REPEAT times
☐ OUT-7   (0 ~ 10)

OK   Cancel

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 ~ 8,0 sec.)

[LEFT DC MOTOR]   [RIGHT DC MOTOR]
[DIRECTION]   [DIRECTION]
FORWARD ▼   BACKWARD ▼
[SPEED]   [SPEED]
100 ▲▼   100 ▲▼

[RUNNING TIME]
1 ▲▼   ▭

OK   Cancel

If the "RIGHT UP" key is pressed, left LED module runs like as followings.

The left LED module(OUT-2) turns on 0.5 seconds and turns off 0.5 seconds for 1 times.

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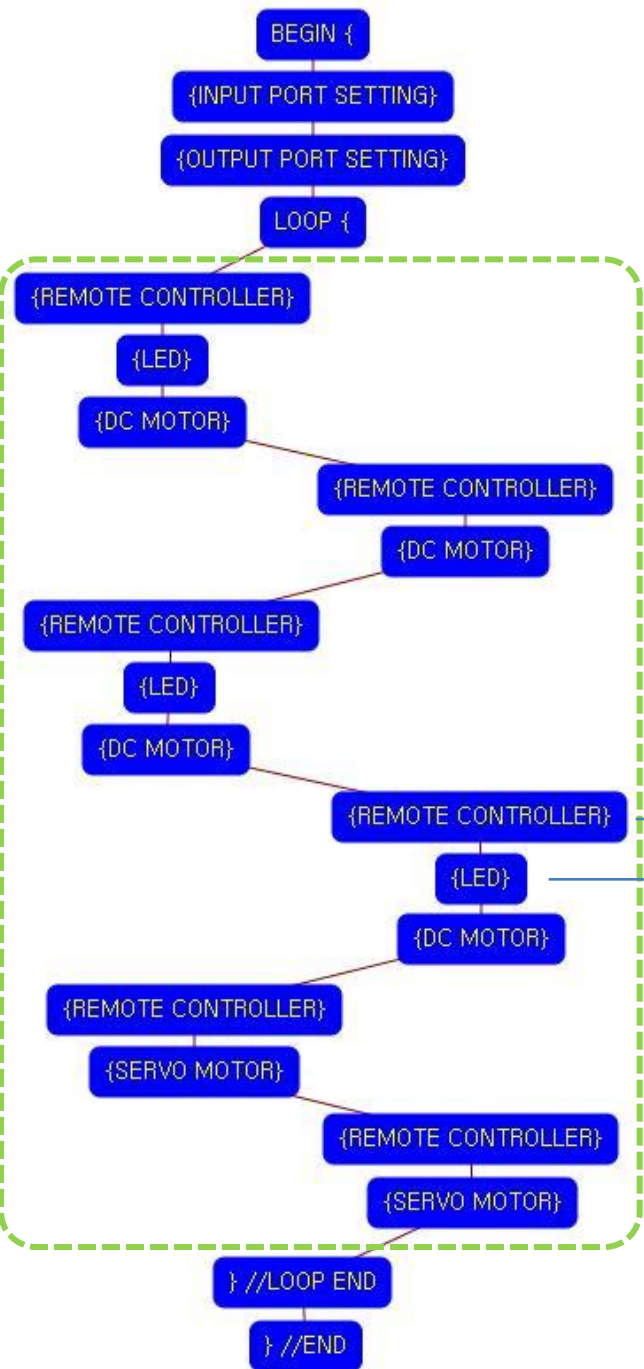Off TIME: Off time of LED
REPEAT: Repetition number

Left DC Motor
- Direction : Forward
- Speed : 100
- Running Time : 1
Right DC Motor
- Direction : Backward
- Speed : 100
- Running Time : 1
➜Robot turns left during 0.1 second

The DC Motor and Robot runs opposite direction because of the reduction gear transfer .

BEGIN {

{INPUT PORT SETTING}

{OUTPUT PORT SETTING}

LOOP {

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

} //LOOP END

} //END

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 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

LED OUTPUT MODULE

OUTPUT PORT	On TIME	Off TIME	REPEAT
	5	5	1

☑ OUT-1   [On TIME] : Select the LED ON time
☐ OUT-2   [Off TIME] : Select the LED OFF time
☐ OUT-3   5 : 0.5 seconds
☐ OUT-4   10 : 1.0 seconds
           15 : 1.5 seconds
☐ OUT-5   20 : 2.0 seconds
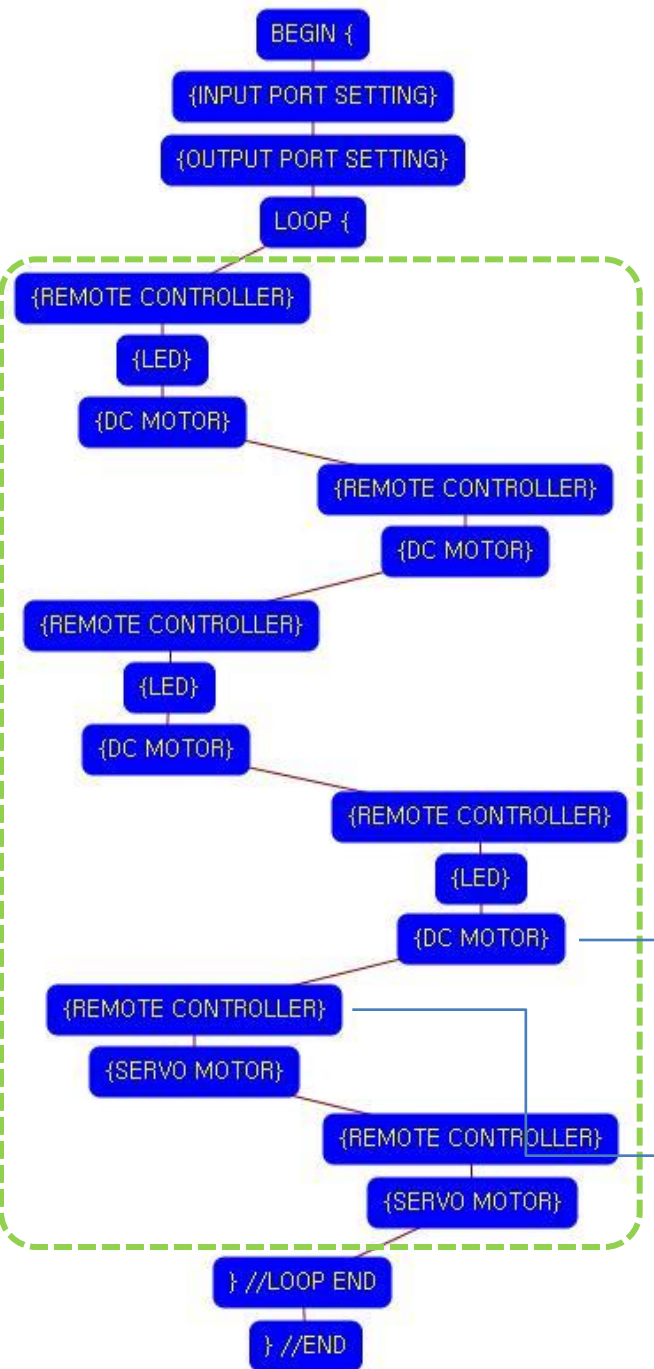☐ OUT-6   [REPEAT] : Select the REPEAT times
☐ OUT-7   (0 ~ 10)

OK   Cancel

If the "RIGHT DOWN" key is pressed, right LED module runs like as followings.

The right LED module(OUT-1) 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

Flowchart:

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

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 ~ 8.0 sec.)

[LEFT DC MOTOR]   [RIGHT DC MOTOR]
[DIRECTION]   [DIRECTION]
BACKWARD ▼   FORWARD ▼
[SPEED]   [SPEED]
100 ▲▼   100 ▲▼

[RUNNING TIME]

1 ▲▼

OK   Cancel

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

The DC Motor and Robot runs opposite direction because of the reduction gear transfer .

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 "F1" key of remote controller.

BEGIN {

{INPUT PORT SETTING}

{OUTPUT PORT SETTING}

LOOP {

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

} //LOOP END

} //END

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	180
☐ OUT-5	0
☐ OUT-6	0
☐ OUT-7	0

OK   Cancel

If the "F1" key is pressed, the servo motor sets to the 180 degree.

This make the robot hand to be closed.
(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

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
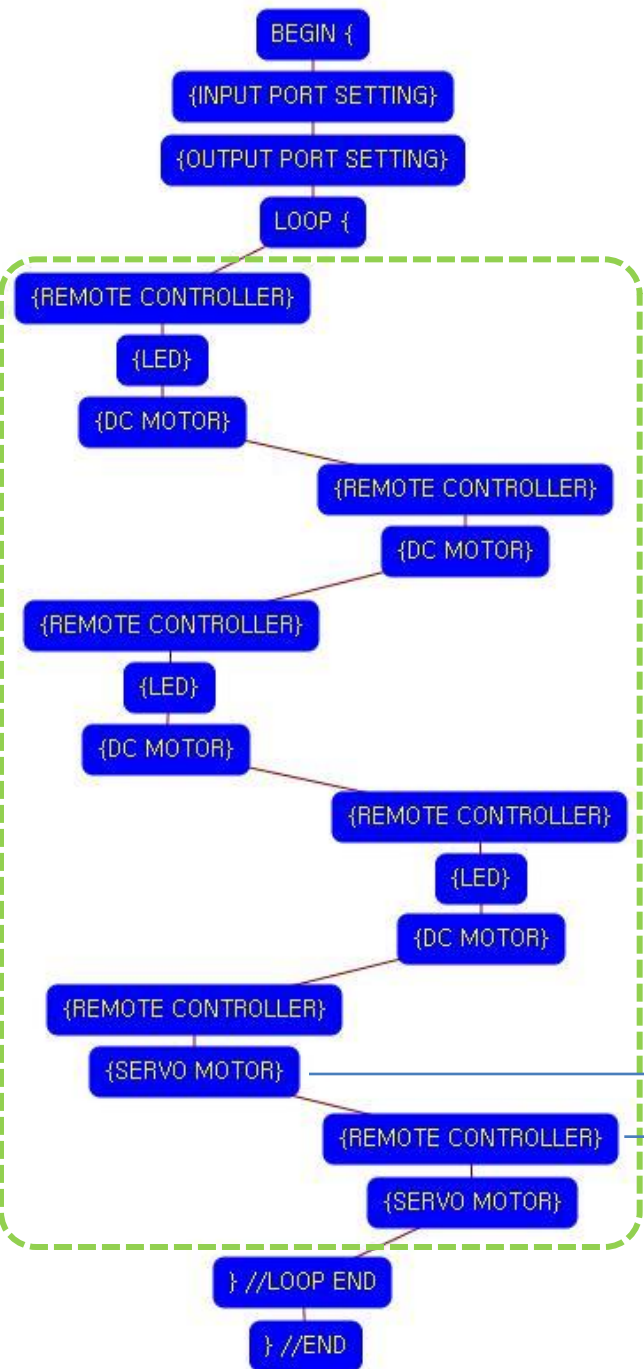
LEFT DOWN + RIGHT DOWN

[FUNCTION KEY]

F1	F2	F3
F4	F5	F6

OK   Cancel

Set the "F3" key of remote controller.

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

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

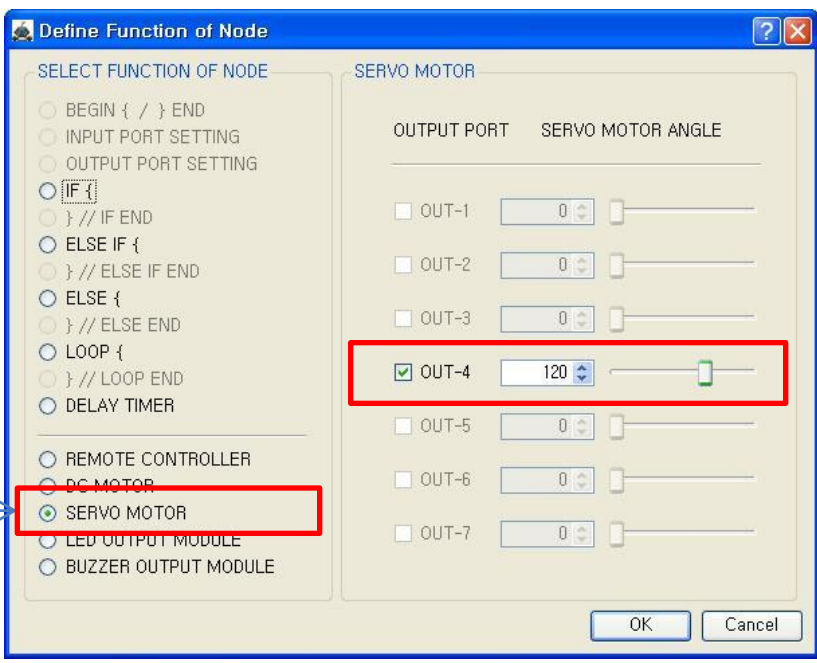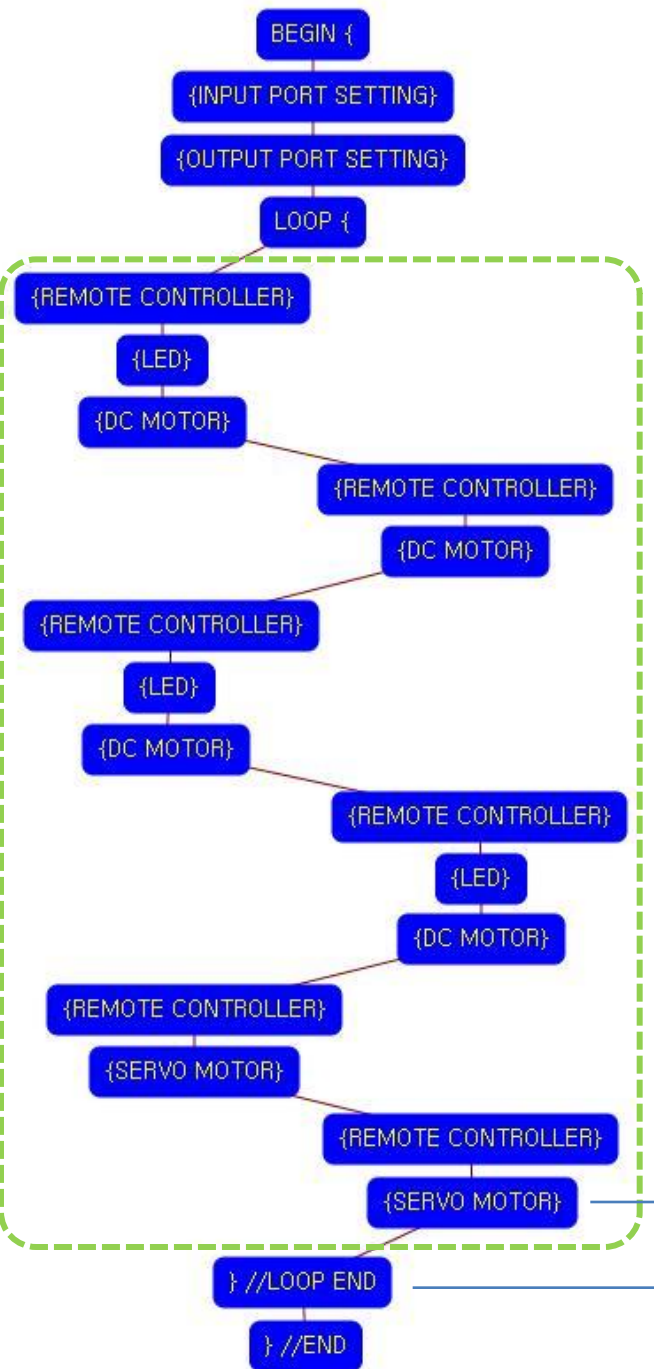| OUTPUT PORT	SERVO MOTOR ANGLE
☐ OUT-1	0
☐ OUT-2	0
☐ OUT-3	0
☑ OUT-4	120
☐ OUT-5	0
☐ OUT-6	0
☐ OUT-7	0

OK   Cancel

If the "F3" key is pressed, the servo motor sets to the 120 degree.

This make the robot hand to be opened.
(If the servo motor assembly is different with the assembly manual, the servo motor operation is different also)
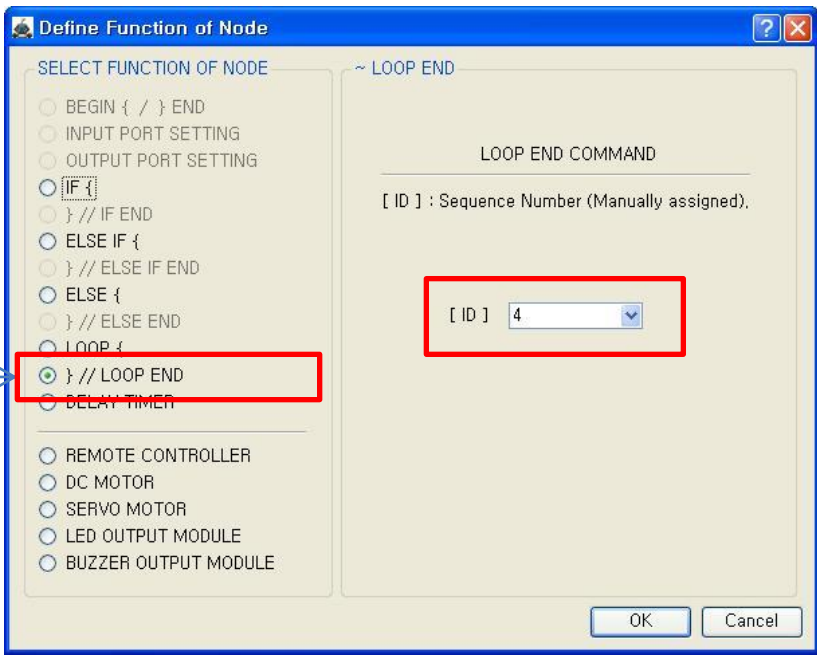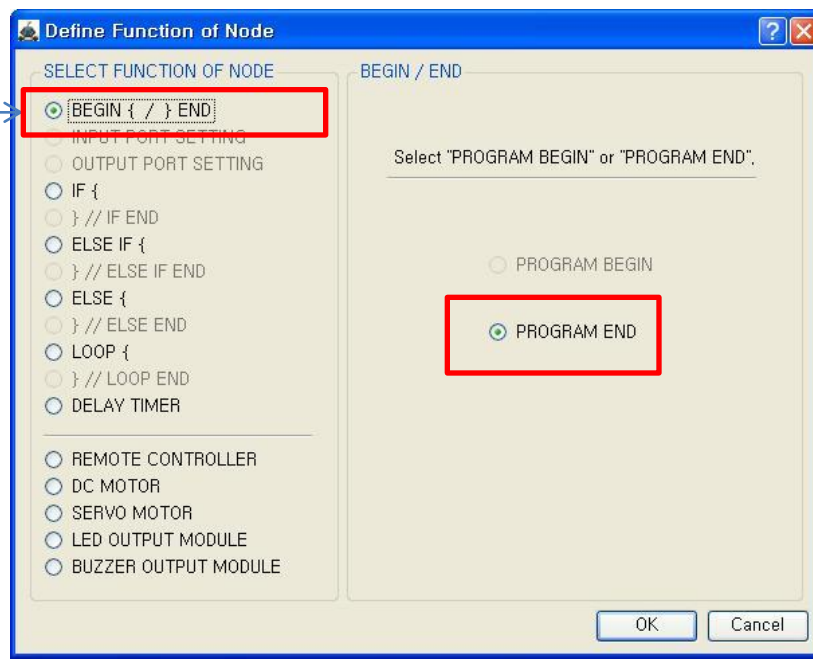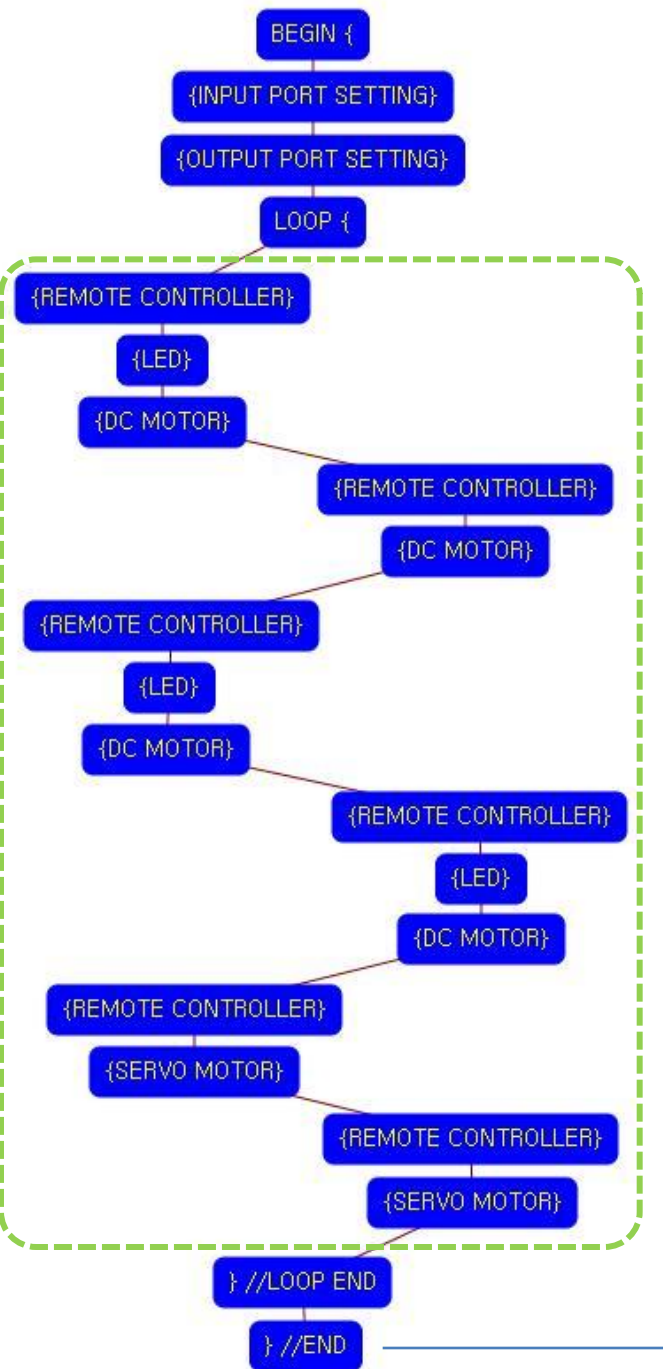
Define Function of Node

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.

BEGIN {

{INPUT PORT SETTING}

{OUTPUT PORT SETTING}

LOOP {

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{DC MOTOR}

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{LED}

{DC MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

{REMOTE CONTROLLER}

{SERVO MOTOR}

} //LOOP END

} //END

Define Function of Node

SELECT FUNCTION OF NODE

BEGIN / END

○ 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

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)

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