BEGIN {

{INPUT PORT SETTING}

{OUTPUT PORT SETTING}

LOOP {

IF {

{DC MOTOR}

{SERVO MOTOR}

} //IF END

ELSE IF {

{DC MOTOR}

{SERVO MOTOR}

} //ELSE IF END

ELSE IF {

{SERVO MOTOR}

{DC MOTOR}

} //ELSE IF END

ELSE IF {

{SERVO MOTOR}

{DC MOTOR}

} //ELSE IF END

} //LOOP END

} //END

Program begin

Input port setting

Output port setting

LOOP starting point (Repeat the command)

Case 1
If the left touch sensor is pressed,
Hanging up the left hand.
(Head is not spinning)

Case 2
If the right touch sensor is pressed,
Hanging up the right hand.
(Head is not spinning)

Case 3
If there is no any touch sensor is not pressed, the both hands are positioned at low position and the head is spinning

Case 4
If there are the both touch sensors are pressed, both hands are hanging up and the head is spinning

LOOP ending point

Program end
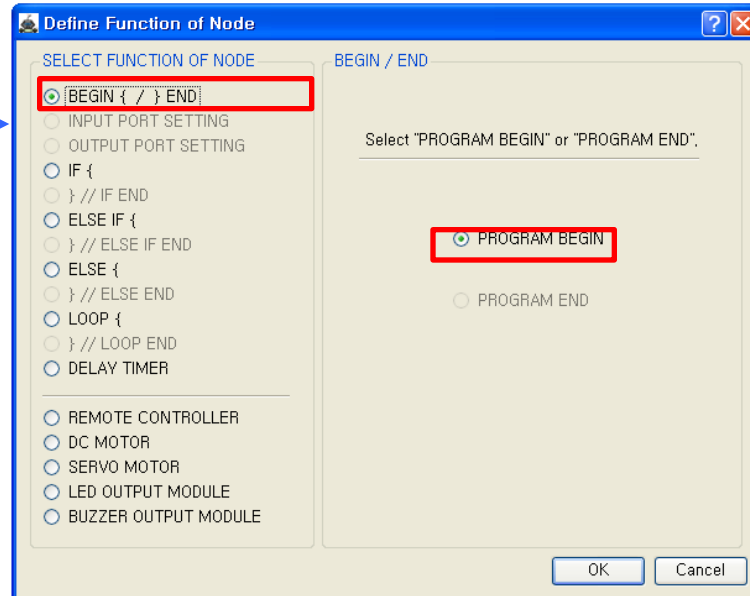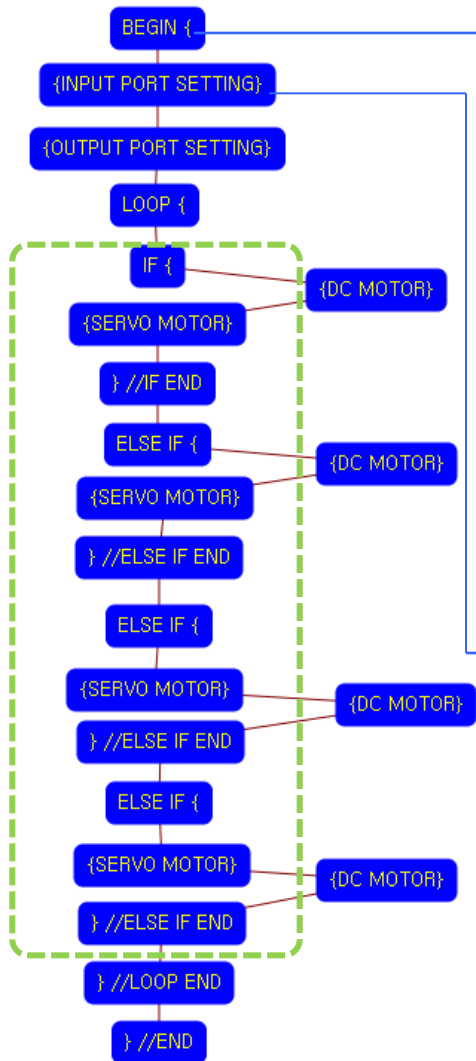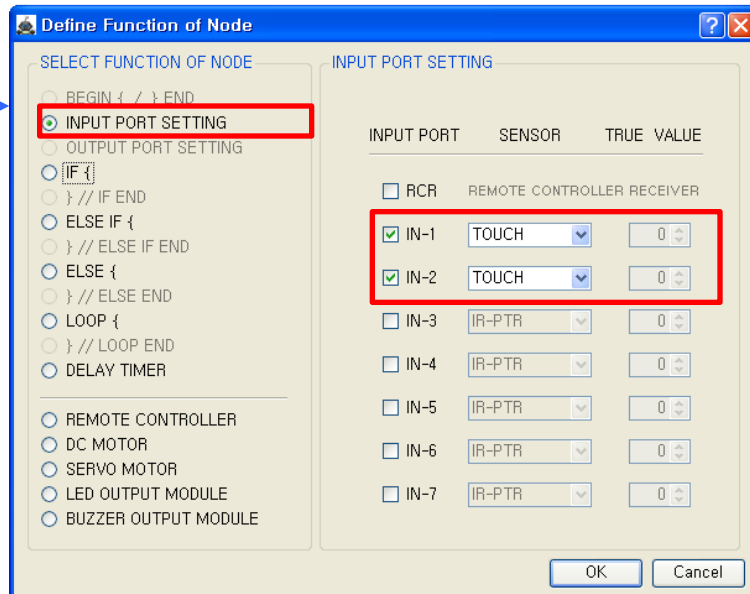
Input: Touch sensor
Output: DC motor, Servo motor
Work: Hanging up right/left hands,
        Head spining

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.

This model use 2 touch sensors as input device.

You have to connect the right side of touch sensor to the IN-1 and left side of touch sensor to the IN-2 input port of main board.
And check the IN-1, IN-2 and select the "TOUCH" in software to use.

If the real connection of sensors are different to the setting on software, it will make robot to wrong operation.
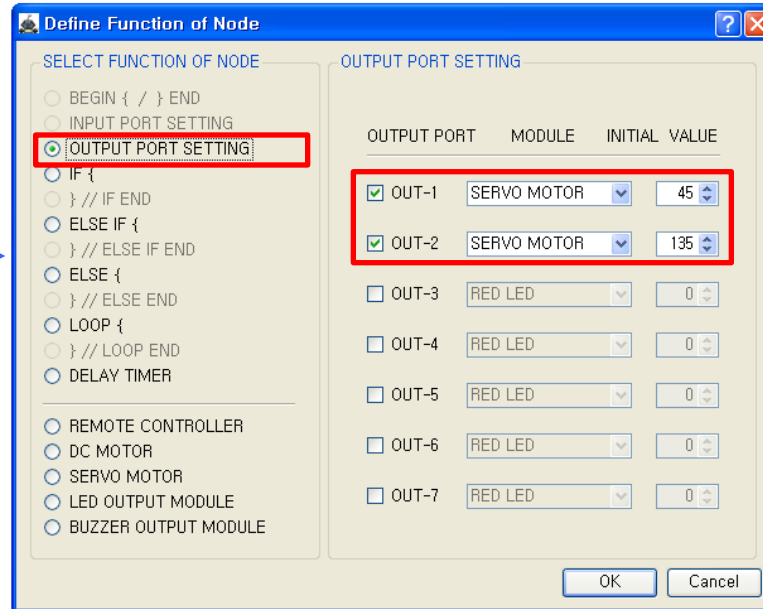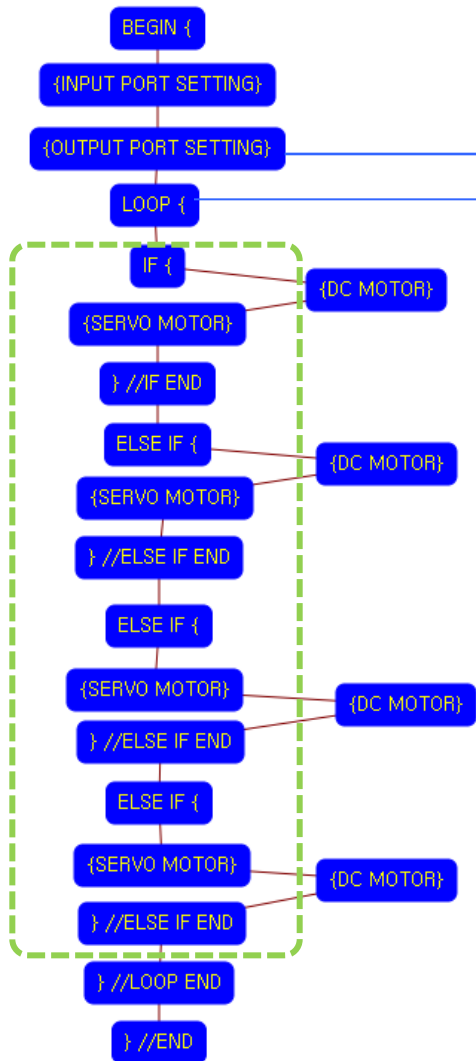
You have to connect the left Servo motor to the OUT-1 and the initial value is 45 and the right Servo motor to the OUT-2 and the initial value is 135.

If the real connection of output modules are different to the setting on software, it will make robot to wrong operation.
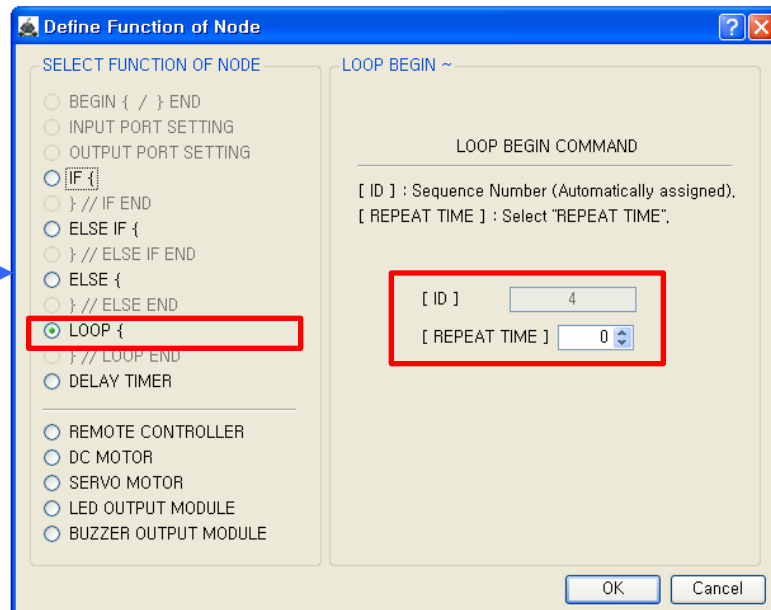
LOOP command is used to repeat the commands.

"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.

BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {
IF {
{SERVO MOTOR}
} //IF END
ELSE IF {
{SERVO MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR}
} //ELSE IF END
} //LOOP END
} //END

{DC MOTOR}
{DC MOTOR}
{DC MOTOR}
{DC MOTOR}

Define Function of Node

SELECT FUNCTION OF NODE

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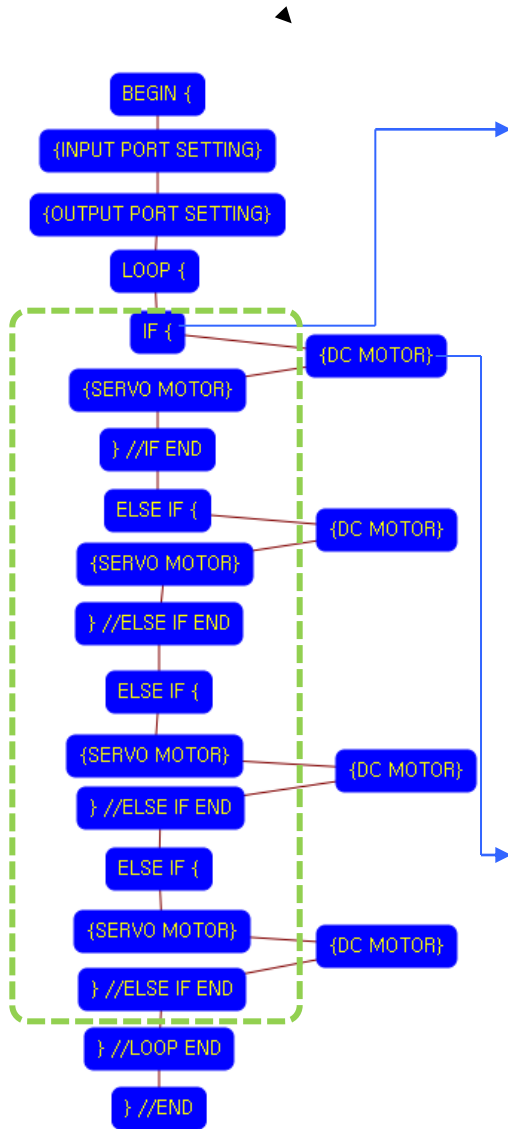◉ IF {
○ } // IF END
○ ELSE IF {
○ } // ELSE IF END
○ ELSE {
○ } // ELSE END
○ LOOP {
○ } // LOOP END
○ DELAY TIMER

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

IF BEGIN ~

IF BEGIN COMMAND

[ID] : Sequence Number (Automatically assigned),
[CONDITION] : Select "AND" or "OR",
[INPUT] : Select INPUT Sensors.

[ID]   5   [CONDITION]   AND

[INPUT]

☐ RCR   ☑ IN-1   ☑ IN-2   ☐ IN-3
              1   0   0

☐ IN-4   ☐ IN-5   ☐ IN-6   ☐ IN-7
   0   0   0   0

OK   Cancel

Input state
 - left touch sensor(IN-1) : pressed
 - right touch sensor(IN-2) : released

If the above condition is satisficed, the following commands which are positioned before "IF END" is running.

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]
      0   0

[RUNNING TIME]

      1

OK   Cancel

Left DC Motor
- Direction : Forward
- Speed : 0
- Running Time : 1
Right DC Motor
- Direction : Forward
- Speed : 0
- Running Time : 1
➜The DC motor is stopping.

BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {
IF {
{DC MOTOR}
{SERVO MOTOR}
} //IF END
ELSE IF {
{DC MOTOR}
{SERVO MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR}
{DC MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR}
{DC MOTOR}
} //ELSE IF END
} //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   135
☑ OUT-2   135
☐ OUT-3   135
☐ OUT-4   135
☐ OUT-5   0
☐ OUT-6   0
☐ OUT-7   0

OK   Cancel

If the left touch sensor is pressed, the left hand is hanging up.

To hanging up the left hand, the value of servo motor is changed from 45 to 135.

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

~ IF END

IF END COMMAND

[ID] : Sequence Number (Manually assigned).

[ID]   5

OK   Cancel
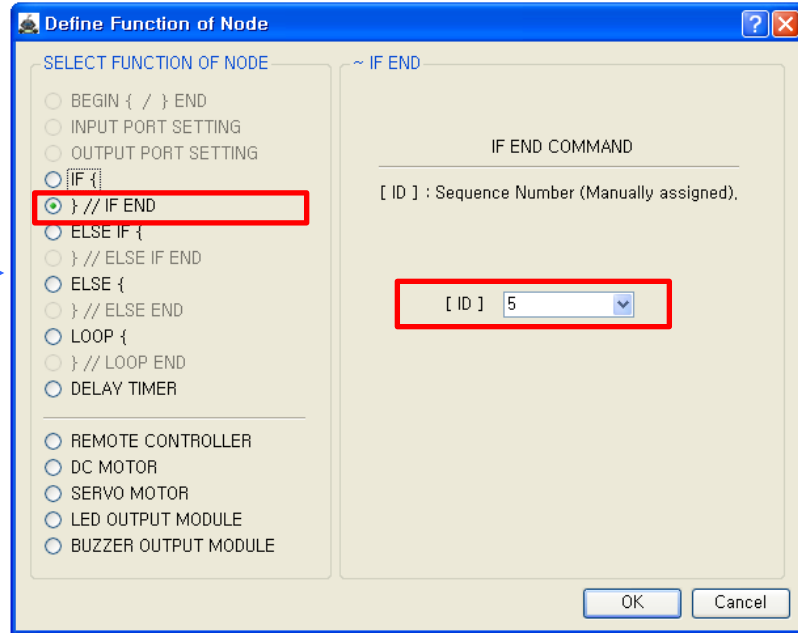
The end point of "IF {" condition command.

You have to assigned the ID of paired "IF {" condition command.

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

Flowchart (left):

BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {
IF {
{SERVO MOTOR} — {DC MOTOR}
} //IF END
ELSE IF {
{SERVO MOTOR} — {DC MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR} — {DC MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR} — {DC MOTOR}
} //ELSE IF END
} //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

ELSE IF BEGIN ~

ELSE IF BEGIN COMMAND

[ID] : Sequence Number (Automatically assigned),
[CONDITION] : Select "AND" or "OR",
[INPUT] : Select INPUT Sensors,

[ID] 8   [CONDITION] AND

[INPUT]

RCR   ☑ IN-1   ☑ IN-2   ☐ IN-3
        0   1

☐ IN-4   ☐ IN-5   ☐ IN-6   ☐ IN-7
  0   0   0   0

OK   Cancel

Right text (top):

If the another condition is exist except previous "IF {" condition, we recommend you to use "ELSE IF {" condition command.

Input state
- left touch sensor(IN-1) : released
- right touch sensor(IN-2) : pressed

If the above condition is satisficed, the following commands which are positioned before "ELSE IF END" is running.

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

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]
0   0
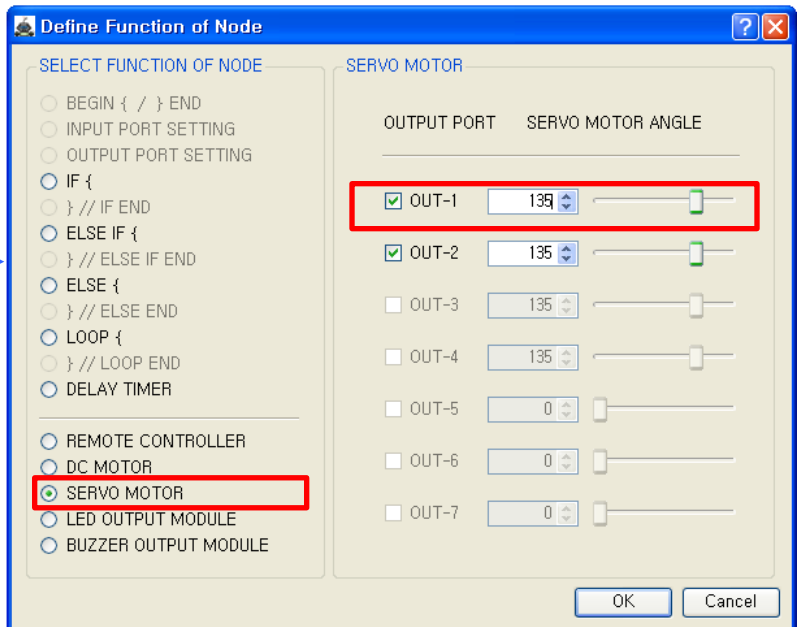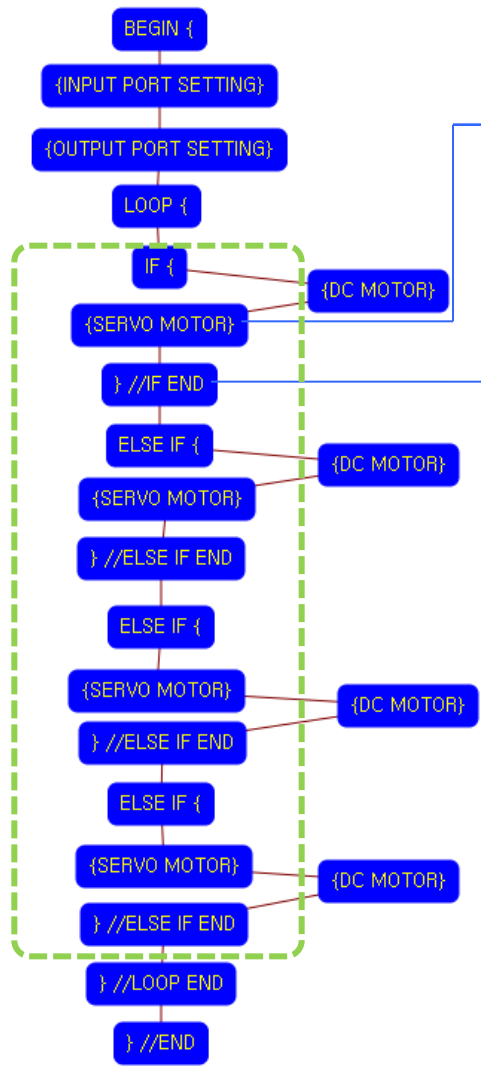
[RUNNING TIME]
1

OK   Cancel

Right text (bottom):

Left DC Motor
- Direction : Forward
- Speed : 0
- Running Time : 1
Right DC Motor
- Direction : Forward
- Speed : 0
- Running Time : 1
➔The DC motor is stopping.

Program Flow (left column):

BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {
IF {
{SERVO MOTOR}
} //IF END
ELSE IF {
{SERVO MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR}
} //ELSE IF END
} //LOOP END
} //END

{DC MOTOR}

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

SERVO MOTOR

OUTPUT PORT   SERVO MOTOR ANGLE

☑ OUT-1   45
☑ OUT-2   45
☐ OUT-3   45
☐ OUT-4   45
☐ OUT-5   0
☐ OUT-6   0
☐ OUT-7   0

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

~ ELSE IF END

ELSE IF END COMMAND

[ID] : Sequence Number (Manually assigned),

[ID]   8

OK   Cancel

Right column text:

If the right touch sensor is pressed, the right hand is hanging up.

To hanging up the right hand, the value of servo motor is changed from 135 to 45.

The end point of "ELSE IF {" condition command.

You have to assigned the ID of paired "ELSE IF {" condition command.

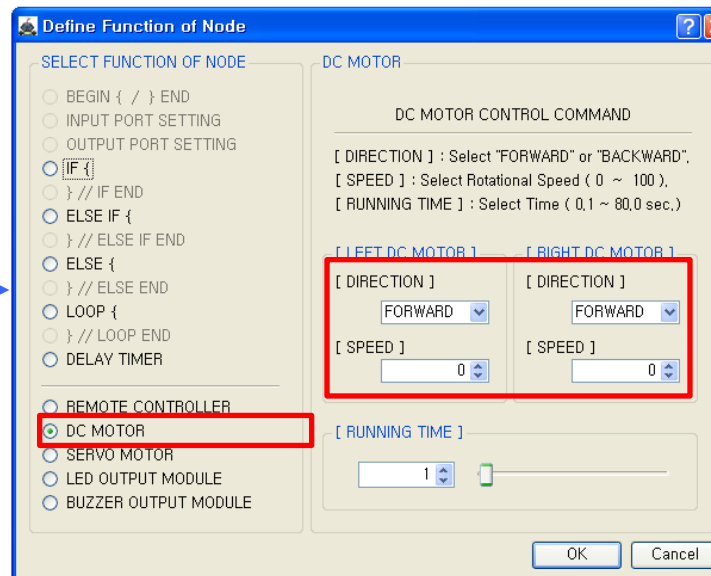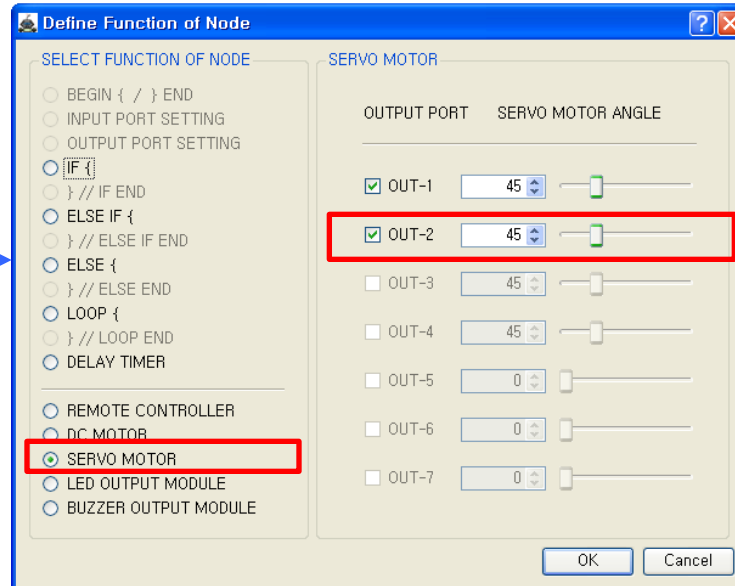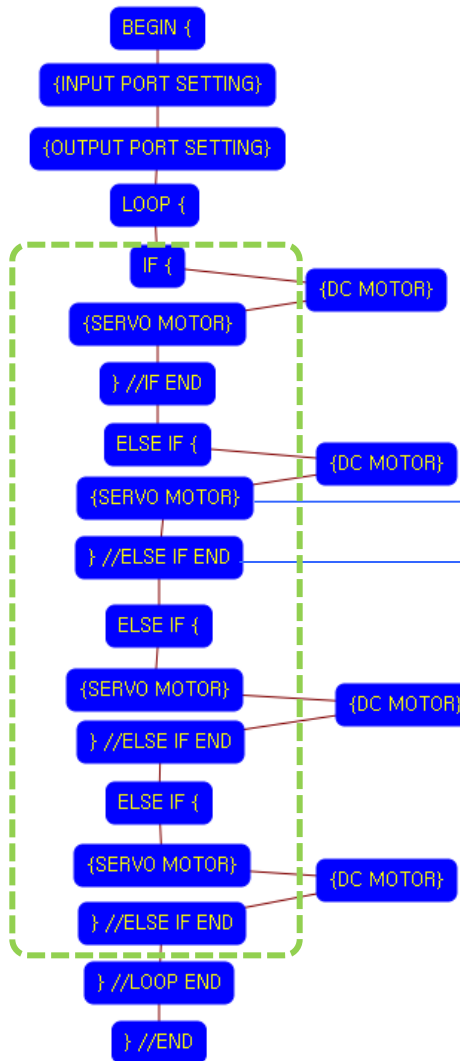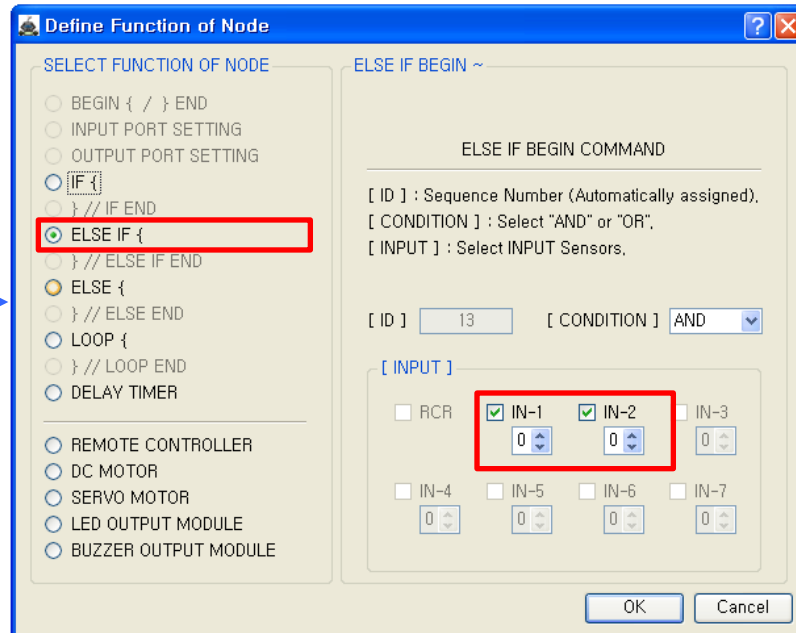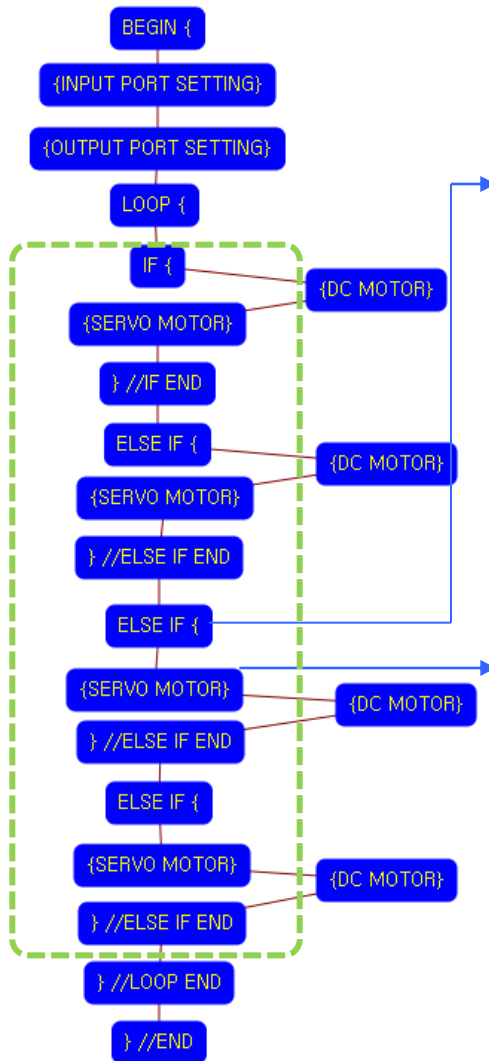(It is necessary to know that which "ELSE IF {" among the many "ELSE IF {" condition commands in program.

Flowchart (left):
BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {
IF {
{SERVO MOTOR}
{DC MOTOR}
} //IF END
ELSE IF {
{SERVO MOTOR}
{DC MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR}
{DC MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR}
{DC MOTOR}
} //ELSE IF END
} //LOOP END
} //END

Dialog (top): 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

ELSE IF BEGIN ~

ELSE IF BEGIN COMMAND

[ID] : Sequence Number (Automatically assigned),
[CONDITION] : Select "AND" or "OR",
[INPUT] : Select INPUT Sensors,

[ID] 13   [CONDITION] AND

[INPUT]
☐ RCR   ☑ IN-1   ☑ IN-2   ☐ IN-3
          0   0   0
☐ IN-4   ☐ IN-5   ☐ IN-6   ☐ IN-7
  0   0   0   0

OK   Cancel

Dialog (bottom): 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   45
☑ OUT-2   135
☐ OUT-3   45
☐ OUT-4   135
☐ OUT-5   0
☐ OUT-6   0
☐ OUT-7   0

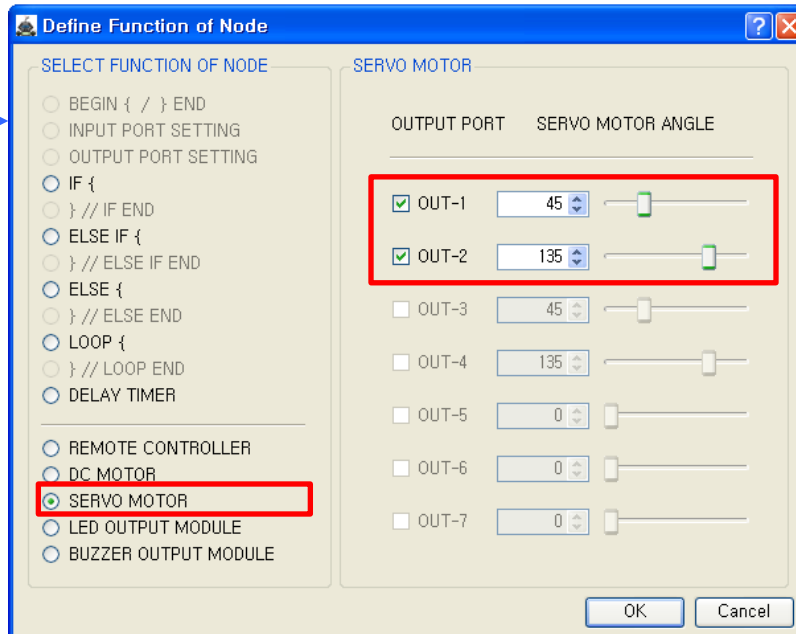OK   Cancel

Right-side text:

If the another condition is exist except previous "IF {" & "ELSE IF {" condition, we recommend you to use "ELSE IF {" condition command.
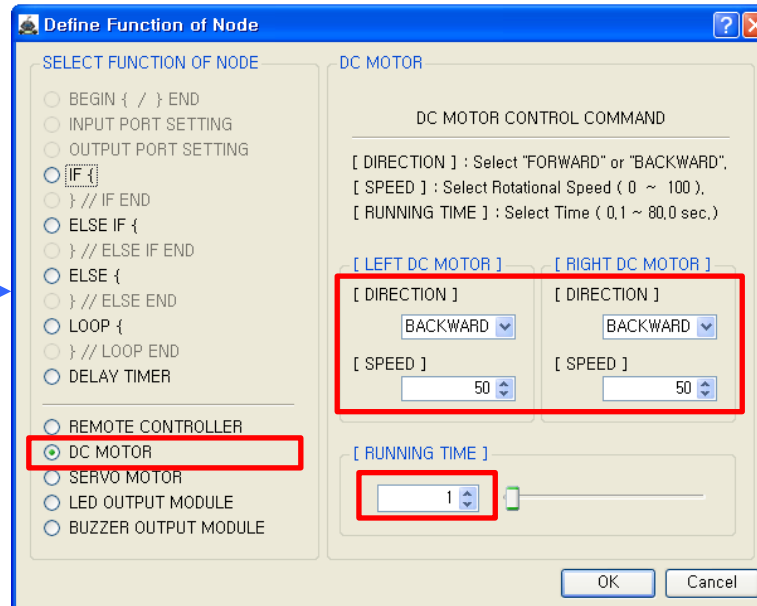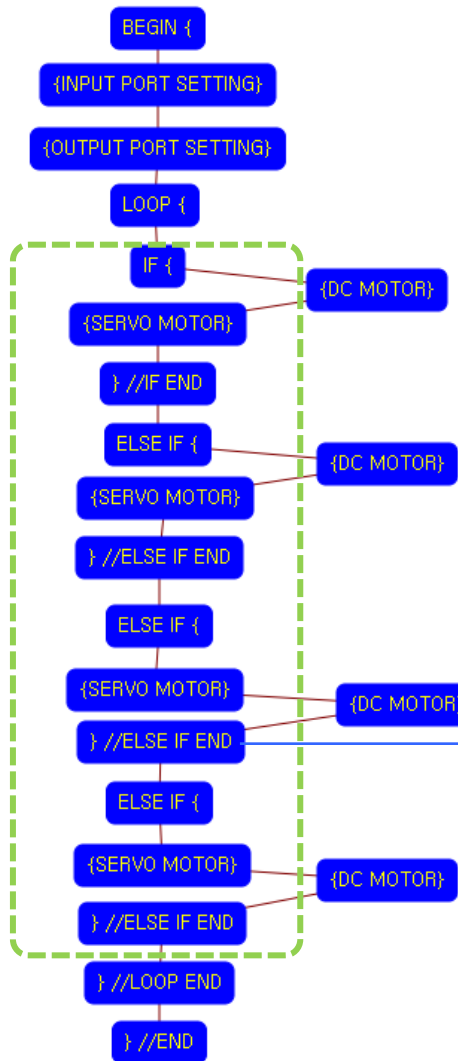
Input state
 - left touch sensor(IN-1) : released
 - right touch sensor(IN-2) : released

If the above condition is satisficed, the following commands which are positioned before "ELSE IF END" is running.

If all the touch sensors are released, the both hands are positioned at bottom side like as initial position.
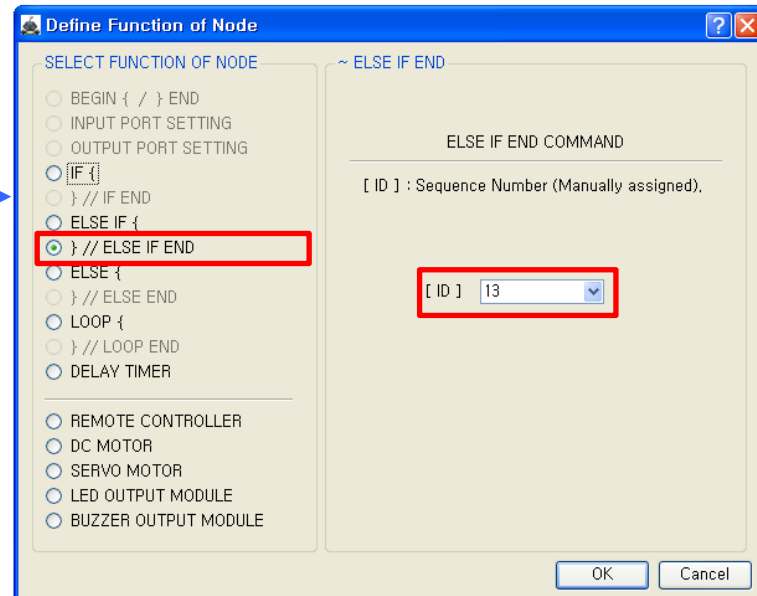
BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {
IF {
{SERVO MOTOR}
} //IF END
ELSE IF {
{SERVO MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR}
} //ELSE IF END
} //LOOP END
} //END

{DC MOTOR}
{DC MOTOR}
{DC MOTOR}
{DC 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

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]
50   50

[RUNNING TIME]
1

OK   Cancel

Left DC Motor
- Direction : Backward
- Speed : 50
- Running Time : 1
Right DC Motor
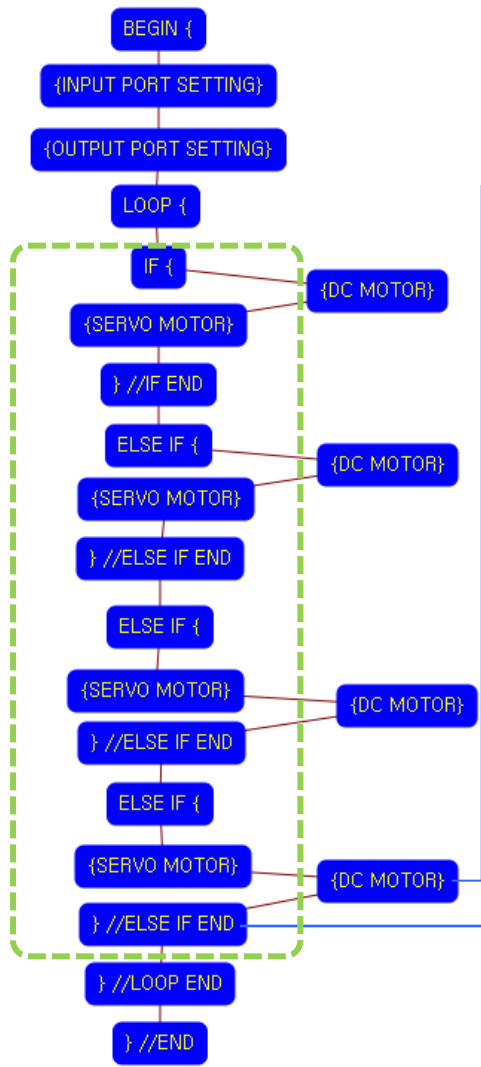- Direction : Backward
- Speed : 50
- Running Time : 1
➔The DC motor is backward running.

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

~ ELSE IF END

ELSE IF END COMMAND

[ID] : Sequence Number (Manually assigned),

[ID]   13

OK   Cancel

The end point of "ELSE IF {" condition command.

You have to assigned the ID of paired "ELSE IF {" condition command.

(It is necessary to know that which "ELSE IF {" among the many "ELSE IF {" condition commands in program.

BEGIN {
{INPUT PORT SETTING}
{OUTPUT PORT SETTING}
LOOP {
IF {
{SERVO MOTOR} — {DC MOTOR}
} //IF END
ELSE IF { — {DC MOTOR}
{SERVO MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR} — {DC MOTOR}
} //ELSE IF END
ELSE IF {
{SERVO MOTOR} — {DC MOTOR}
} //ELSE IF END
} //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

ELSE IF BEGIN ~

ELSE IF BEGIN COMMAND

[ID] : Sequence Number (Automatically assigned),
[CONDITION] : Select "AND" or "OR",
[INPUT] : Select INPUT Sensors.

[ID] 16   [CONDITION] AND

[INPUT]

RCR   ☑ IN-1   ☑ IN-2   ☐ IN-3
        1   1   0

☐ IN-4   ☐ IN-5   ☐ IN-6   ☐ IN-7
  0   0   0   0

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

SERVO MOTOR

OUTPUT PORT   SERVO MOTOR ANGLE

☑ OUT-1   135
☑ OUT-2   45
☐ OUT-3   135
☐ OUT-4   45
☐ OUT-5   0
☐ OUT-6   0
☐ OUT-7   0

OK   Cancel

If the another condition is exist except previous "IF {" & "ELSE IF {" condition, we recommend you to use "ELSE IF {" condition command.

Input state
- left touch sensor(IN-1) : pressed
- right touch sensor(IN-2) : pressed

If the above condition is satisficed, the following commands which are positioned before "ELSE IF END" is running.

If all the touch sensors are pressed, the both hands are hanging up.

Left DC Motor
- Direction : Forward
- Speed : 50
- Running Time : 1
Right DC Motor
- Direction : Forward
- Speed : 50
- Running Time : 1
➔The DC motor is forward running.

The end point of "ELSE IF {" condition command.

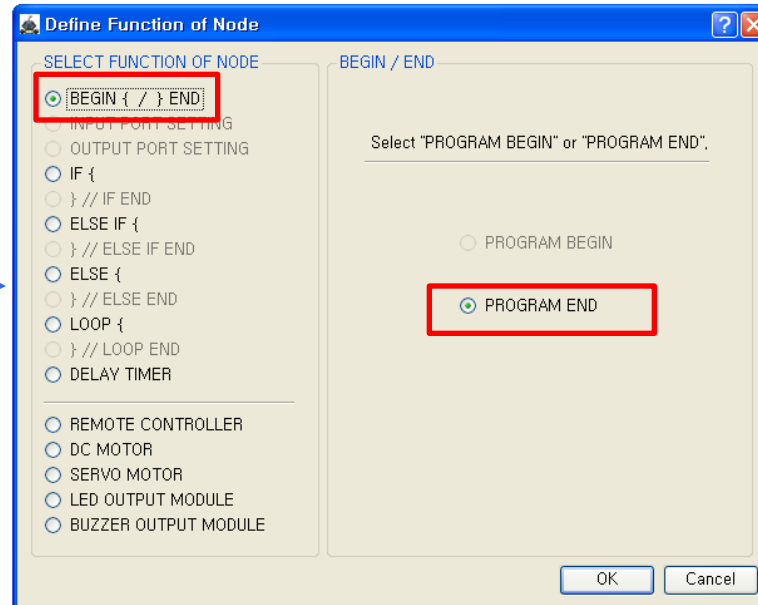You have to assigned the ID of paired "ELSE IF {" condition command.

(It is necessary to know that which "ELSE IF {" among the many "ELSE IF {" condition commands in program.
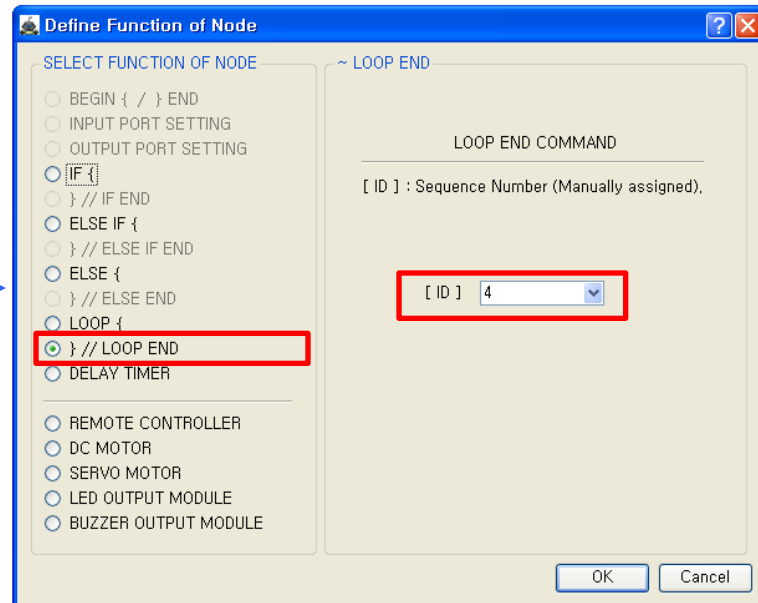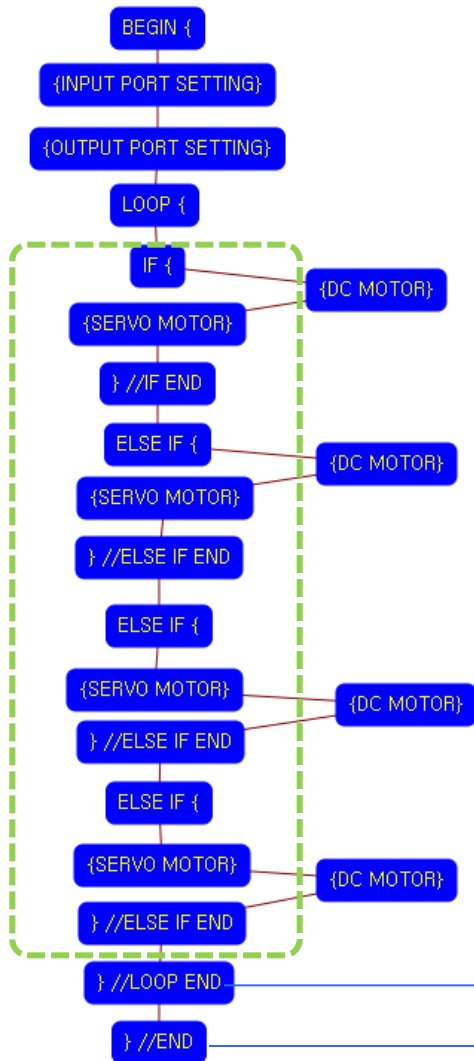
The end point of "LOOP {" repetition command.

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.

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)