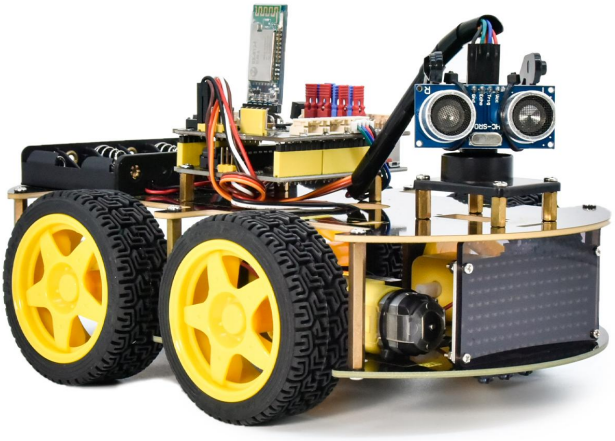
Project 16 Bluetooth Speed Control Smart Car

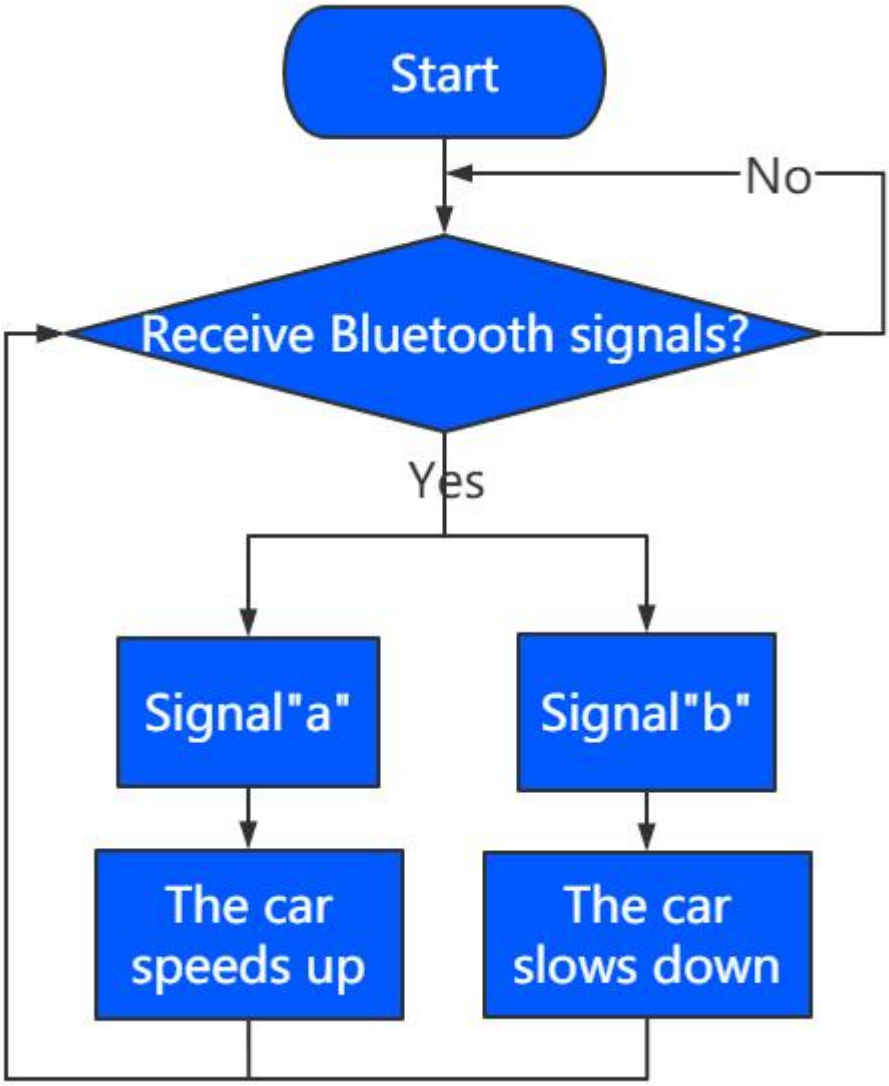




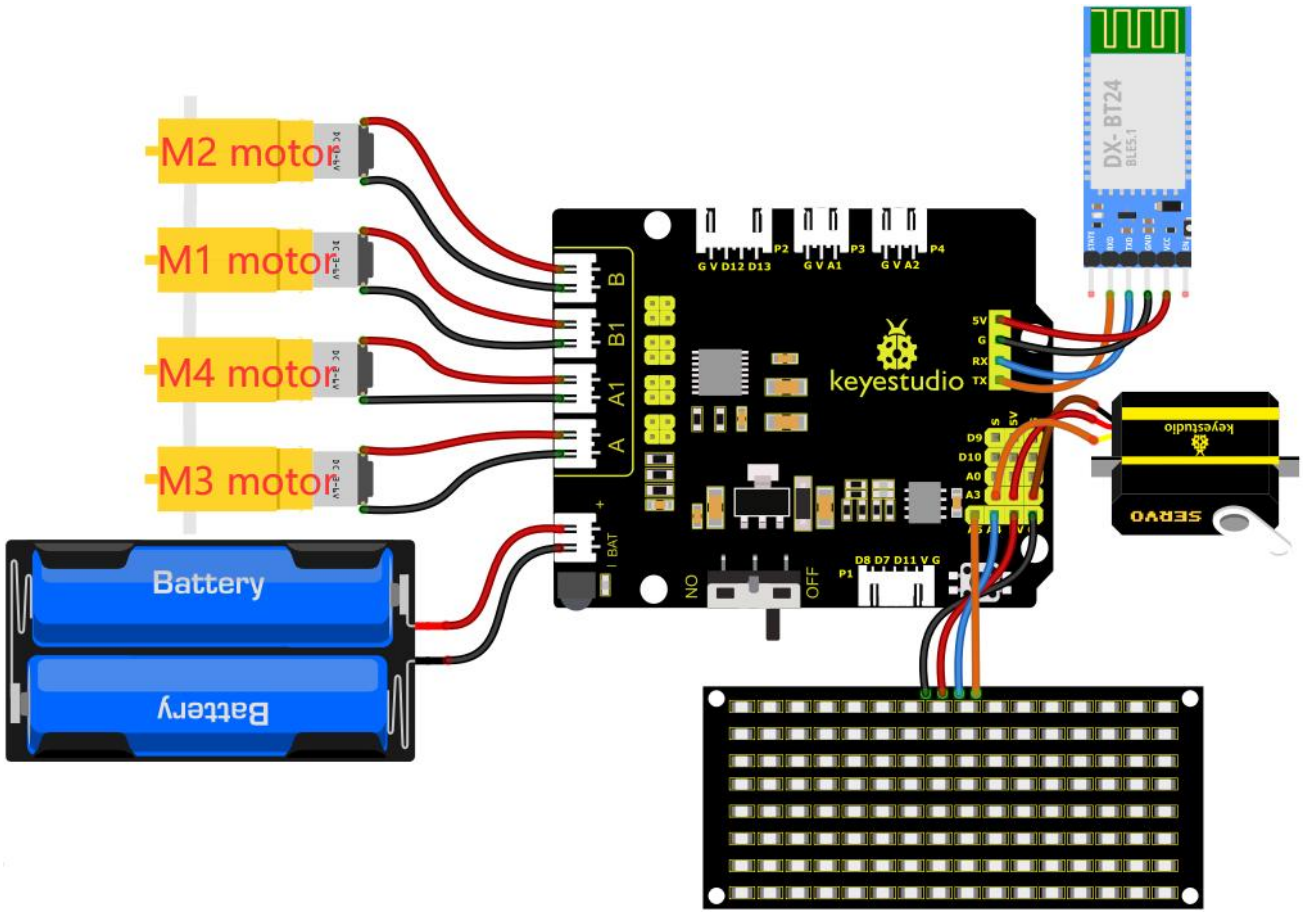
1.Description

In this project, we will use a Bluetooth to adjust the speed of the smart car. We empower to define a variable speeds and change it to change the speed of the smart car.

2.Flow Chart


Start
No
Receive Bluetooth signals?
Yes
Signal"a"
Signal"b"
The car speeds up
The car slows down

3.Wiring Diagram



1. GND, VCC, SDA and SCL of the 8*8 LED board are connected to G (GND), V (VCC), A4 and A5 of the expansion board.

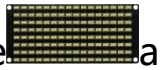
2. The RXD, TXD, GND and VCC of the Bluetooth module are respectively connected to TX, RX, G and 5V on the 8833 motor driver expansion board, while the STATE and BRK pins of the Bluetooth module do not need to be connected.

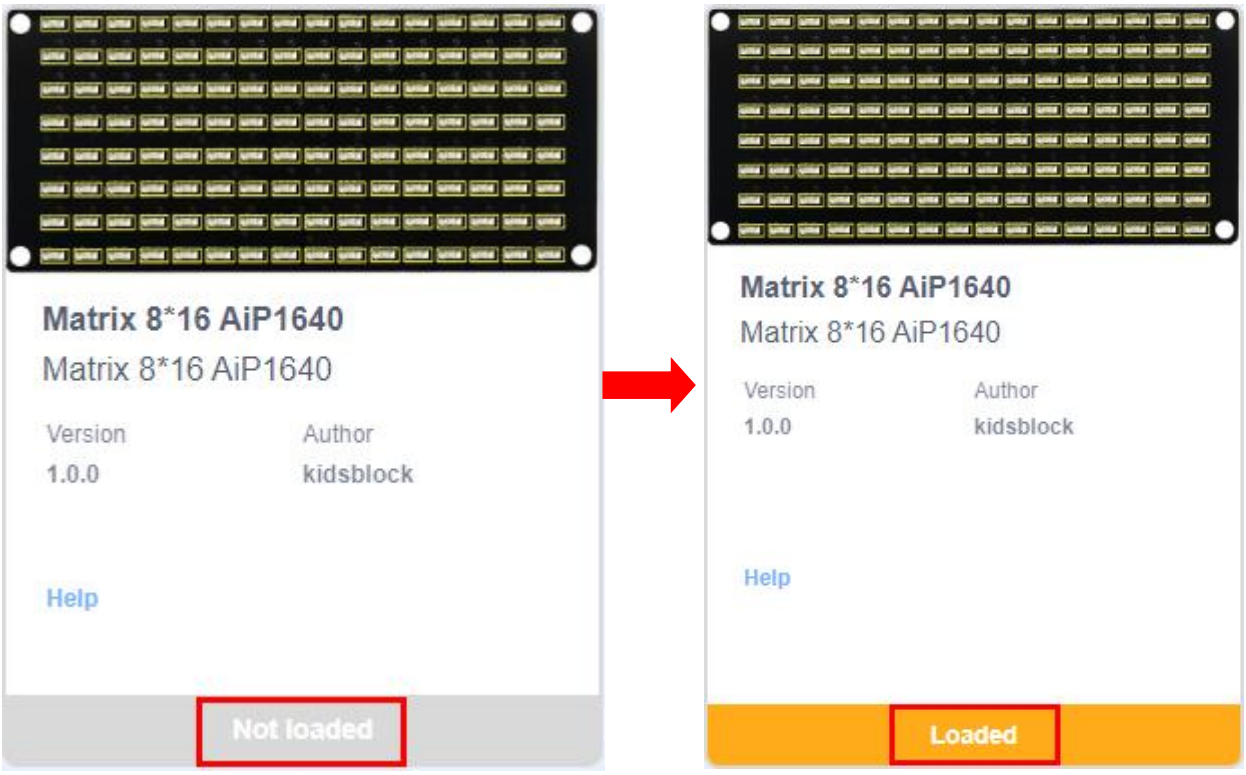
3. The servo is connected to G, V and A3. The brown wire is interfaced with Gnd(G), the red wire is interfaced with 5V(V) and the orange wire is interfaced with A3.

4. The power is connected to the BAT port

4.Test Code

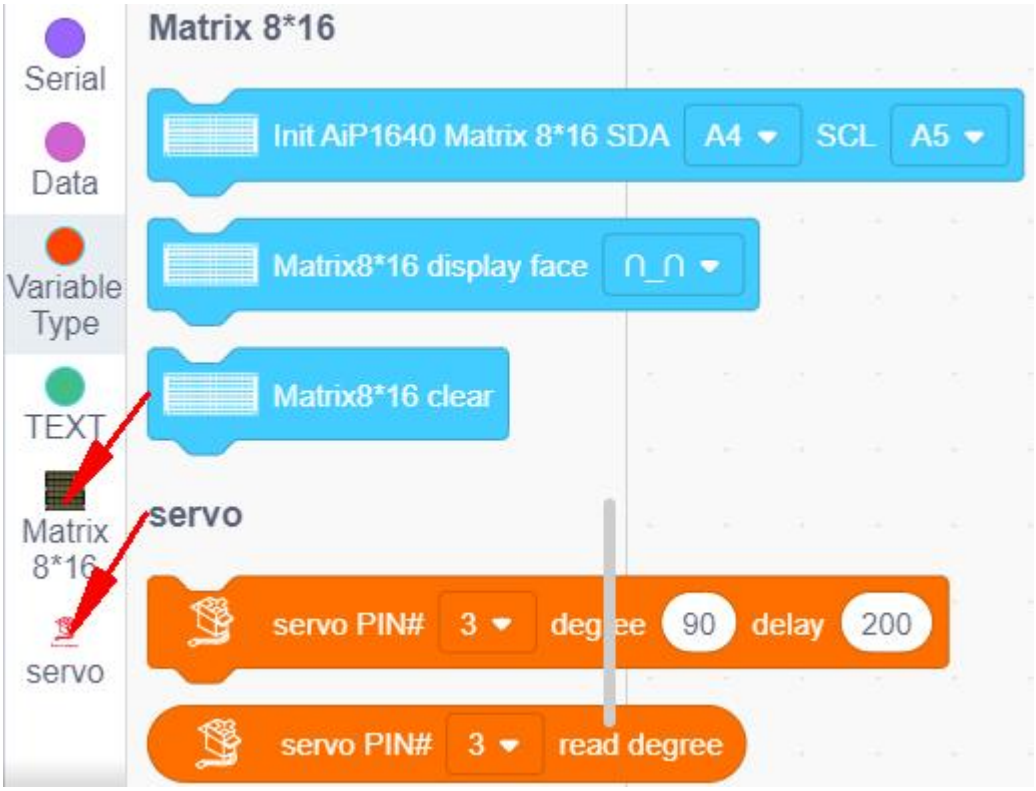
Before writing the code, it is necessary to import the library files of the 8x16 LED board and the servo. The specific steps are as follows:

Click  to enter the extension library interface of sensors/modules/components, then search for "Matrix 8*16 Aip1640" moduleand click it. In this way, "Not loaded" changes to "loaded", indicating that the"Matrix 8*16 Aip1640"module was added successfully.



Click  to return to the code editor interface, the instruction block of the added "Matrix 8*16" module and "Servo" component can be seen

in the module area.



You can drag blocks to edit. Blocks listed below are for your reference

（1）



（2）



（3）


Operator
Variable
My
> 50
< 50
= 50

（4）


Serial
Data
Variable
Type
Serial
serial begin baudrate 9600
serial print Hello KidsBlock

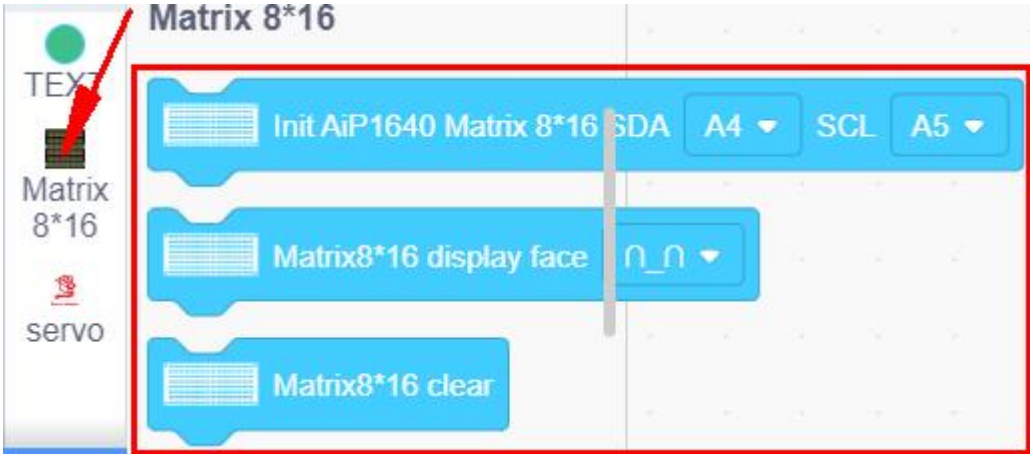
（5）


Pins
Serial
Data
Variable
Type
Pins
set pin 0 mode input
set digital pin 0 out high
set pwm pin 3 out 255

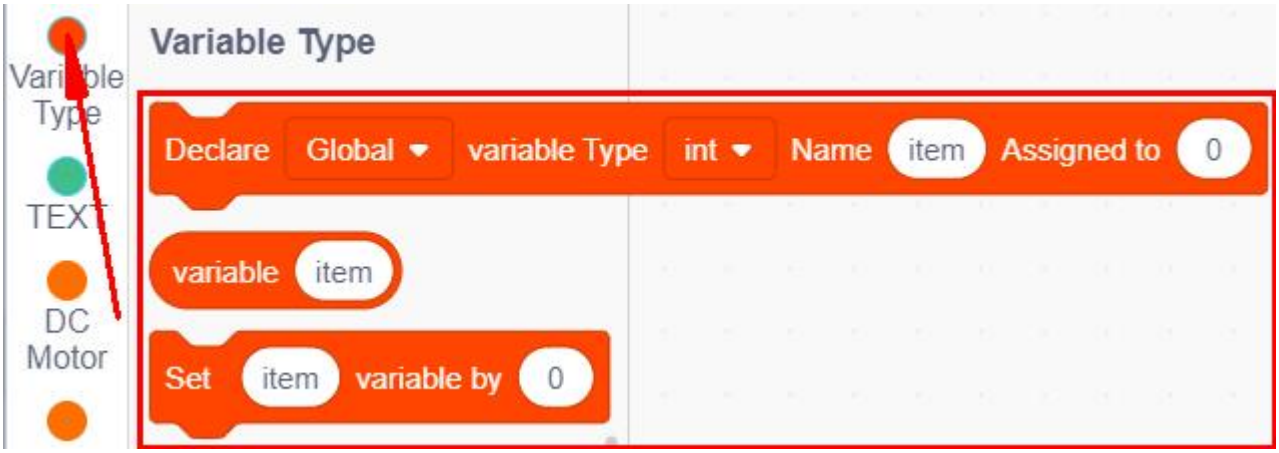
（6）


TEXT
Matrix
8*16
TEXT
char a
string hello

（7）


Matrix 8*16
TEXT
Matrix 8*16
servo
Init AiP1640 Matrix 8*16 SDA A4 SCL A5
Matrix8*16 display face ∩_∩
Matrix8*16 clear

（8）


Variable Type
TEXT
DC Motor
Declare Global variable Type int Name item Assigned to 0
variable item
Set item variable by 0

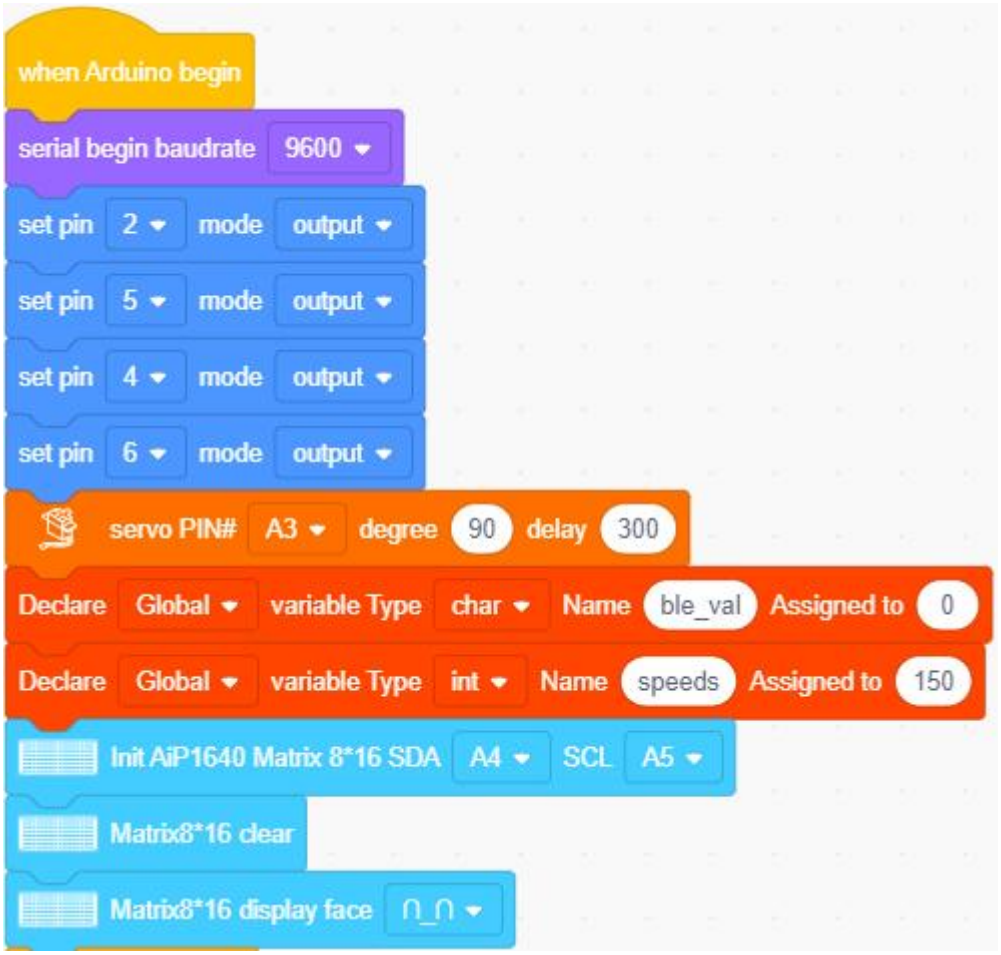
（9）

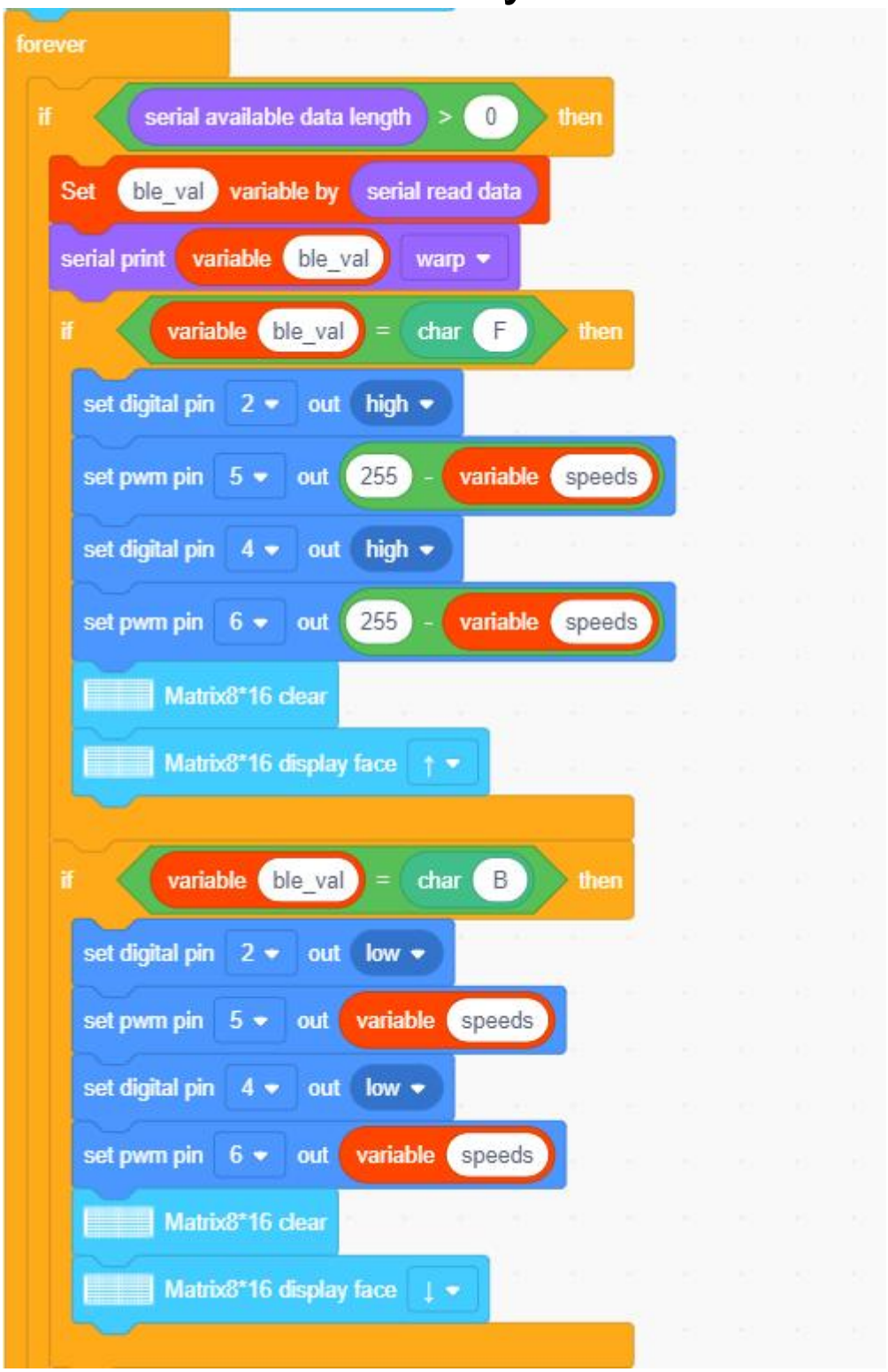

servo
servo PIN# 3 degree 90 delay 200

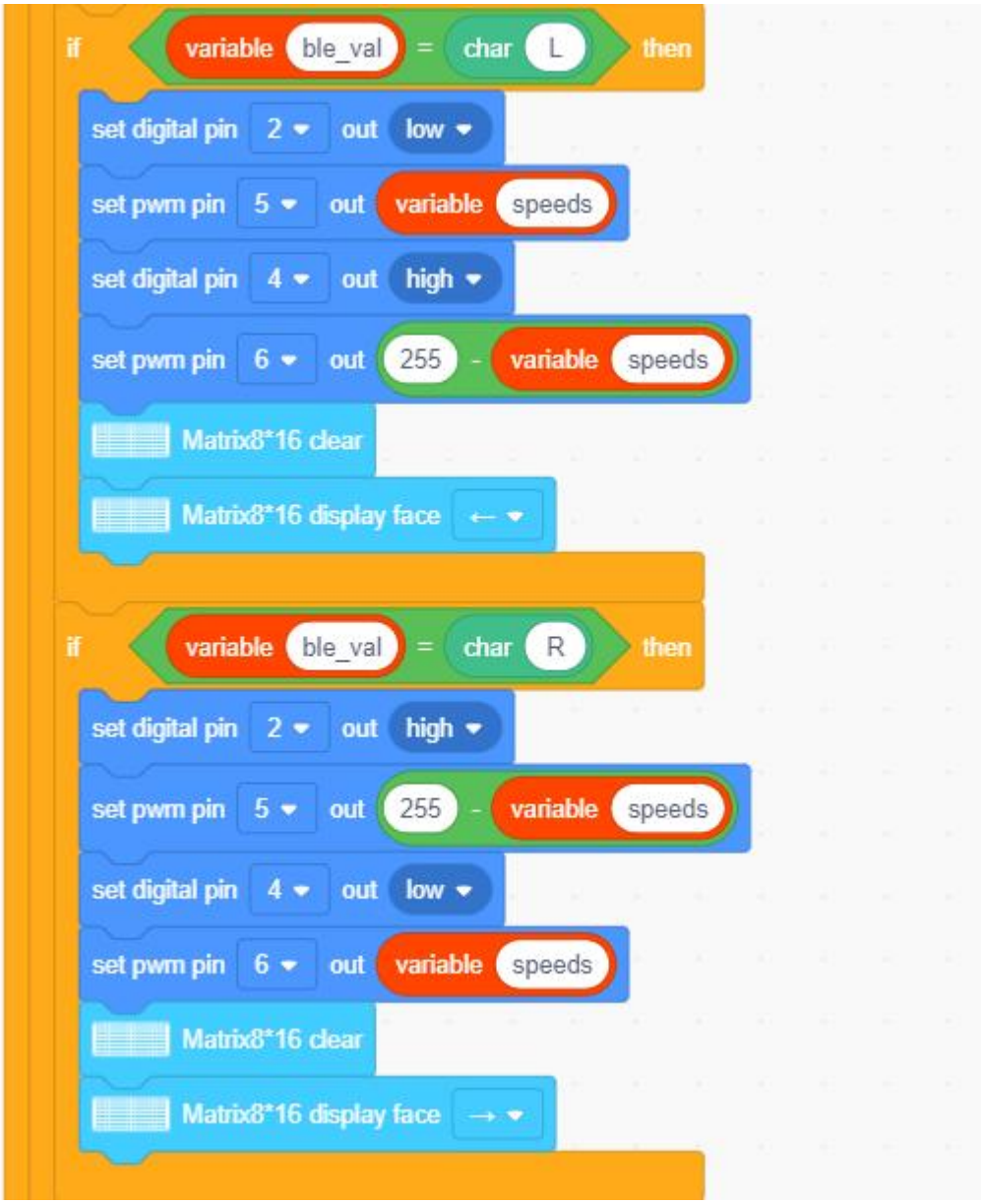
（10）

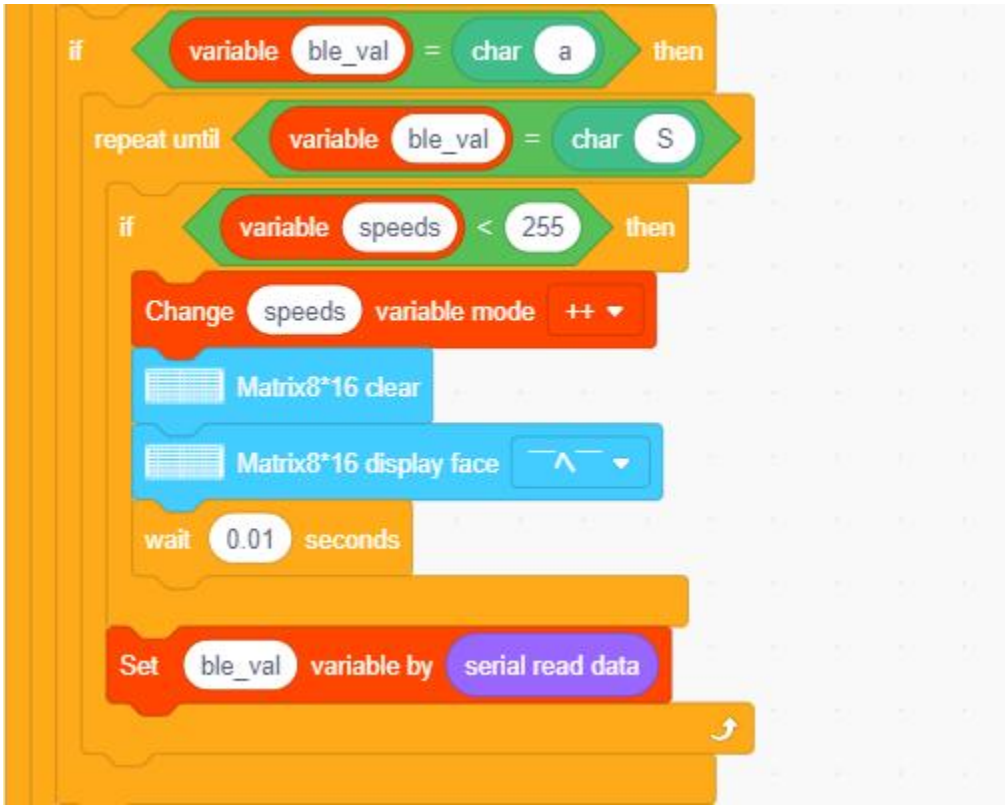

Operators
Variables
0 + 0
0 - 0

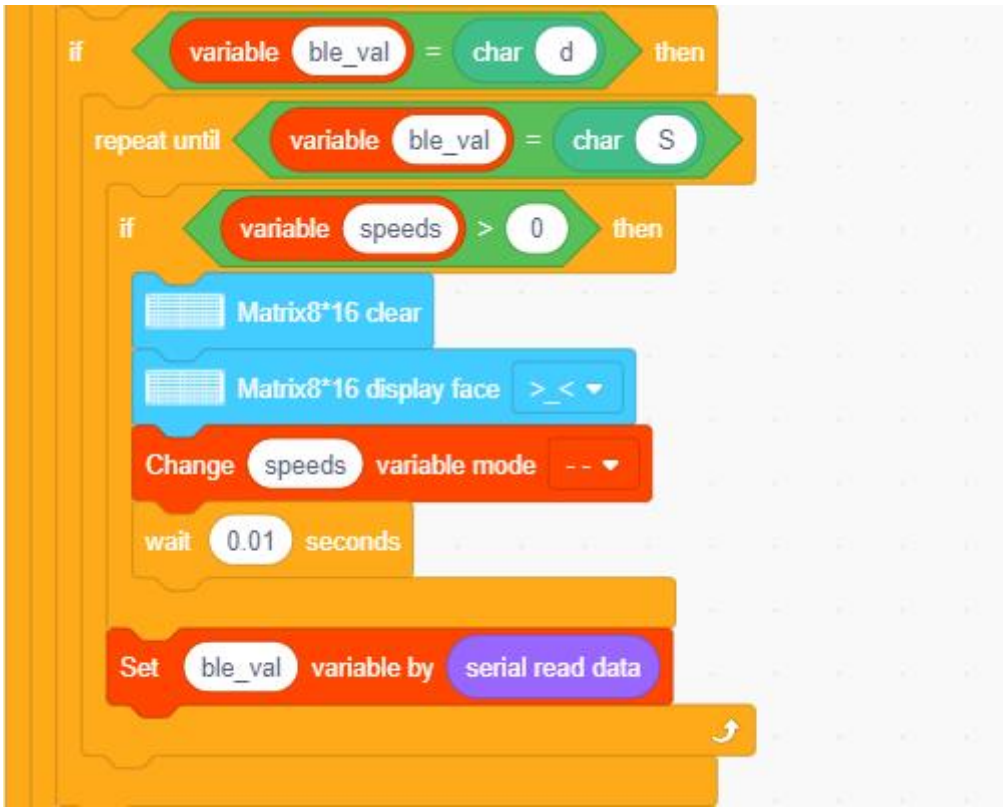
Complete Test Code




forever
if serial available data length > 0 then
Set ble_val variable by serial read data
serial print variable ble_val warp
if variable ble_val = char F then
set digital pin 2 out high
set pwm pin 5 out 255 - variable speeds
set digital pin 4 out high
set pwm pin 6 out 255 - variable speeds
Matrix8*16 clear
Matrix8*16 display face
if variable ble_val = char B then
set digital pin 2 out low
set pwm pin 5 out variable speeds
set digital pin 4 out low
set pwm pin 6 out variable speeds
Matrix8*16 clear
Matrix8*16 display face


if variable ble_val = char L then
set digital pin 2 out low
set pwm pin 5 out variable speeds
set digital pin 4 out high
set pwm pin 6 out 255 - variable speeds
Matrix8*16 clear
Matrix8*16 display face ←
if variable ble_val = char R then
set digital pin 2 out high
set pwm pin 5 out 255 - variable speeds
set digital pin 4 out low
set pwm pin 6 out variable speeds
Matrix8*16 clear
Matrix8*16 display face →


if variable ble_val = char a then
repeat until variable ble_val = char S
if variable speeds < 255 then
Change speeds variable mode ++
Matrix8*16 clear
Matrix8*16 display face ‾^‾
wait 0.01 seconds
Set ble_val variable by serial read data


if variable ble_val = char d then
repeat until variable ble_val = char S
if variable speeds > 0 then
Matrix8*16 clear
Matrix8*16 display face >_<
Change speeds variable mode --
wait 0.01 seconds
Set ble_val variable by serial read data



5.Test Result

After successfully uploading the code to the V4.0 board, connect the wirings according to the wiring diagram, power on the external power then turn the DIP switch to ON. Pairing the APP with Bluetooth, the smart car can be controlled to move by the APP.

Press 

, the car will speed up, press 

, the car will slow down, and the 8*16 LED board will display the corresponding status pattern of the smart car.

Before uploading the test code, you need to remove the Bluetooth module, otherwise the code will fail to be uploaded. Connect the Bluetooth module after uploading the code successfully.