**-Arduino Code:**

#include <SoftwareSerial.h>

#include <Servo.h>

Servo myservo1; // create servo object to control a servo

Servo myservo2;

SoftwareSerial nodemcu(0,1);

int parking1\_slot1\_ir\_s = 4; // parking slot1 infrared sensor connected with pin number 4 of arduino

int parking1\_slot2\_ir\_s = 5;

int parking1\_slot3\_ir\_s = 6;

int parking2\_slot1\_ir\_s = 7;

int parking2\_slot2\_ir\_s = 8;

int parking2\_slot3\_ir\_s = 9;

int entrance\_gate = 11;

int exit\_gate = 12;

int pos1 = 90; // variable to store the servo position(entrance gate)

int pos2 = 90; // exit gate

String sensor1;

String sensor2;

String sensor3;

String sensor4;

String sensor5;

String sensor6;

String cdata =""; // complete data, consisting of sensors values

void setup()

{

Serial.begin(9600);

nodemcu.begin(9600);

pinMode(parking1\_slot1\_ir\_s, INPUT);

pinMode(parking1\_slot2\_ir\_s, INPUT);

pinMode(parking1\_slot3\_ir\_s, INPUT);

pinMode(parking2\_slot1\_ir\_s, INPUT);

pinMode(parking2\_slot2\_ir\_s, INPUT);

pinMode(parking2\_slot3\_ir\_s, INPUT);

pinMode(entrance\_gate, INPUT);

pinMode(exit\_gate, INPUT);

myservo1.attach(13); // attaches the servo on pin 9 to the servo object

myservo2.attach(3);

}

void loop()

{

p1slot1();

p1slot2();

p1slot3();

p2slot1();

p2slot2();

p2slot3();

gates();

//conditions();

cdata = cdata + sensor1 +"," + sensor2 + ","+ sensor3 +","+ sensor4 + "," + sensor5 + "," + sensor6 +","; // comma will be used a delimeter

Serial.println(cdata);

nodemcu.println(cdata);

delay(6000); // 100 milli seconds

cdata = "";

digitalWrite(parking1\_slot1\_ir\_s, HIGH);

digitalWrite(parking1\_slot2\_ir\_s, HIGH);

digitalWrite(parking1\_slot3\_ir\_s, HIGH);

digitalWrite(parking2\_slot1\_ir\_s, HIGH);

digitalWrite(parking2\_slot2\_ir\_s, HIGH);

digitalWrite(parking2\_slot3\_ir\_s, HIGH);

digitalWrite(entrance\_gate, HIGH);

digitalWrite(exit\_gate, HIGH);

}

void p1slot1() // parkng 1 slot1

{

if( digitalRead(parking1\_slot1\_ir\_s) == LOW)

{

sensor1 = "255";

delay(200);

}

if( digitalRead(parking1\_slot1\_ir\_s) == HIGH)

{

sensor1 = "0";

delay(200);

}

}

void p1slot2() // parking 1 slot2

{

if( digitalRead(parking1\_slot2\_ir\_s) == LOW)

{

sensor2 = "255";

delay(200);

}

if( digitalRead(parking1\_slot2\_ir\_s) == HIGH)

{

sensor2 = "0";

delay(200);

}

}

void p1slot3() // parking 1 slot3

{

if( digitalRead(parking1\_slot3\_ir\_s) == LOW)

{

sensor3 = "255";

delay(200);

}

if( digitalRead(parking1\_slot3\_ir\_s) == HIGH)

{

sensor3 = "0";

delay(200);

}

}

// now for parking 2

void p2slot1() // parking 1 slot3

{

if( digitalRead(parking2\_slot1\_ir\_s) == LOW)

{

sensor4 = "255";

delay(200);

}

if( digitalRead(parking2\_slot1\_ir\_s) == HIGH)

{

sensor4 = "0";

delay(200);

}

}

void p2slot2() // parking 1 slot3

{

if( digitalRead(parking2\_slot2\_ir\_s) == LOW)

{

sensor5 = "255";

delay(200);

}

if( digitalRead(parking2\_slot2\_ir\_s) == HIGH)

{

sensor5 = "0";

delay(200);

}

}

void p2slot3() // parking 1 slot3

{

if( digitalRead(parking2\_slot3\_ir\_s) == LOW)

{

sensor6 = "255";

delay(200);

}

if( digitalRead(parking2\_slot3\_ir\_s) == HIGH)

{

sensor6 = "0";

delay(200);

}

}

// for the gates

void gates()

{

if (digitalRead(exit\_gate) == LOW)

{

for (pos2 = 90; pos2 <= 180 ; pos2 += 1) { // goes from 0 degrees to 180 degrees

// in steps of 1 degree

myservo2.write(pos2); // tell servo to go to position in variable 'pos'

delay(15); // waits 15ms for the servo to reach the position

}

delay(3000);

for (pos2 = 180; pos2 >= 90; pos2 -= 1) { // goes from 180 degrees to 0 degrees

myservo2.write(pos2); // tell servo to go to position in variable 'pos'

delay(15); // waits 15ms for the servo to reach the position

}

}

if (((digitalRead(entrance\_gate) == LOW)) && (( digitalRead(parking1\_slot1\_ir\_s) == HIGH) || ( digitalRead(parking1\_slot2\_ir\_s) == HIGH) || ( digitalRead(parking1\_slot3\_ir\_s) == HIGH) || ( digitalRead(parking2\_slot1\_ir\_s) == HIGH) || ( digitalRead(parking2\_slot2\_ir\_s) == HIGH)|| ( digitalRead(parking2\_slot3\_ir\_s) == HIGH)))

{

for (pos1 = 0; pos1 <= 90 ; pos1 += 1) { // goes from 0 degrees to 180 degrees

// in steps of 1 degree

myservo1.write(pos1); // tell servo to go to position in variable 'pos'

delay(15); // waits 15ms for the servo to reach the position

}

delay(3000);

for (pos1 = 90; pos1 >= 0; pos1 -= 1) { // goes from 180 degrees to 0 degrees

myservo1.write(pos1); // tell servo to go to position in variable 'pos'

delay(15); // waits 15ms for the servo to reach the position

}

}

}