#define enA 10

#define in1 9

#define in2 8

#define in3 7

#define in4 6

#define enB 5

#define pump 4

#define ir\_R A0

#define ir\_F A1

#define ir\_L A2

#define servo A3

int Speed = 220;

int s1, s2, s3;

void setup()

{

Serial.begin(9600);

pinMode(ir\_R, INPUT);

pinMode(ir\_F, INPUT);

pinMode(ir\_L, INPUT);

pinMode(enA, OUTPUT);

pinMode(in1, OUTPUT);

pinMode(in2, OUTPUT);

pinMode(in3, OUTPUT);

pinMode(in4, OUTPUT);

pinMode(enB, OUTPUT);

pinMode(servo, OUTPUT);

pinMode(pump, OUTPUT);

digitalWrite(pump,LOW);

for (int angle = 90; angle <= 140; angle += 5) {

servoPulse(servo, angle);

}

for (int angle = 140; angle >= 40; angle -= 5) {

servoPulse(servo, angle);

}

for (int angle = 40; angle <= 95; angle += 5) {

servoPulse(servo, angle);

}

analogWrite(enA, Speed);

analogWrite(enB, Speed);

delay(300);

}

void loop() {

s1 = analogRead(ir\_R);

s2 = analogRead(ir\_F);

s3 = analogRead(ir\_L);

Serial.print(s1);

Serial.print("\t");

Serial.print(s2);

Serial.print("\t");

Serial.println(s3);

delay(50);

if (s1 < 200) {

Stop();

digitalWrite(pump, HIGH);

for (int angle = 90; angle >= 40; angle -= 3) {

servoPulse(servo, angle);

}

for (int angle = 40; angle <= 90; angle += 3) {

servoPulse(servo, angle);

}

}

else if (s2 < 300) {

Stop();

digitalWrite(pump, HIGH);

for (int angle = 90; angle <= 140; angle += 3) {

servoPulse(servo, angle);

}

for (int angle = 140; angle >= 40; angle -= 3) {

servoPulse(servo, angle);

}

for (int angle = 40; angle <= 90; angle += 3) {

servoPulse(servo, angle);

}

}

else if (s3 < 200) {

Stop();

digitalWrite(pump, HIGH);

for (int angle = 90; angle <= 140; angle += 3) {

servoPulse(servo, angle);

}

for (int angle = 140; angle >= 90; angle -= 3) {

servoPulse(servo, angle);

}

}

else if (s1 >= 251 && s1 <= 500) {

digitalWrite(pump, LOW);

turnRight();

delay(100);

forword();

delay(100);

}

else if (s2 >= 251 && s2 <= 500) {

digitalWrite(pump,LOW);

forword();

}

else if (s3 >= 251 && s3 <= 500) {

digitalWrite(pump, LOW);

turnLeft();

delay(100);

forword();

delay(100);

}

else {

digitalWrite(pump, LOW);

Stop();

}

delay(10);

}

void servoPulse(int pin, int angle) {

int pwm = (angle \* 11) + 500;

digitalWrite(pin, HIGH);

delayMicroseconds(pwm);

digitalWrite(pin, LOW);

delay(50);

}

void forword() {

digitalWrite(in1, HIGH);

digitalWrite(in2, LOW);

digitalWrite(in3, HIGH);

digitalWrite(in4, LOW);

}

void backword() {

digitalWrite(in1, LOW);

digitalWrite(in2, HIGH);

digitalWrite(in3, LOW);

digitalWrite(in4, HIGH);

}

void turnRight()

{

digitalWrite(in1, LOW);

digitalWrite(in2, HIGH);

digitalWrite(in3, HIGH);

digitalWrite(in4, LOW);

}

void turnLeft() {

digitalWrite(in1, HIGH);

digitalWrite(in2, LOW);

digitalWrite(in3, LOW);

digitalWrite(in4, HIGH);

}

void Stop() {

digitalWrite(in1, LOW);

digitalWrite(in2, LOW);

digitalWrite(in3, LOW);

digitalWrite(in4, LOW);

}