THE SMARTFIRE EXTINGUISHER

MINI PROJECT

Project Code

```
#define enA 10//Enable1 L298 Pin enA

#define in1 9 //Motor1 L298 Pin in1

#define in2 8 //Motor1 L298 Pin in2

#define in3 7 //Motor2 L298 Pin in3

#define in4 6 //Motor2 L298 Pin in4

#define enB 5 //Enable2 L298 Pin enB

#define ir_R A0

#define ir_F A1

#define ir_L A2

#define servo A4

#define pump A5

int Speed = 160; // Write The Duty Cycle 0 to 255 Enable for Motor Speed

int s1, s2, s3;

void setup(){ // put your setup code here, to run once

Serial.begin(9600); // start serial communication at 9600bps

pinMode(ir_R, INPUT);// declare fire sensor pin as input

pinMode(ir_F, INPUT);// declare fire sensor pin as input

pinMode(ir_L, INPUT);// declare fire sensor pin as input

pinMode(enA, OUTPUT); // declare as output for L298 Pin enA

pinMode(in1, OUTPUT); // declare as output for L298 Pin in1

pinMode(in2, OUTPUT); // declare as output for L298 Pin in2

pinMode(in3, OUTPUT); // declare as output for L298 Pin in3

pinMode(in4, OUTPUT); // declare as output for L298 Pin in4

pinMode(enB, OUTPUT); // declare as output for L298 Pin enB
```

```
pinMode(servo, OUTPUT);
pinMode(pump, OUTPUT);
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); // Write The Duty Cycle 0 to 255 Enable Pin A for
Motor1
SpeedanalogWrite(enB, Speed); // Write The Duty Cycle 0 to 255 Enable Pin B
for Motor2
Speeddelay(500);
}
void loop(){
s1 = analogRead(ir_R);
s2 = analogRead(ir_F);
s3 = analogRead(ir_L);
//=============================================================
=====
// Auto Control
//=============================================================
=====
Serial.print(s1);
Serial.print("\t");
Serial.print(s2);
Serial.print("\t");
Serial.println(s3);
delay(50);
```

```
if(s1<250){
Stop();
digitalWrite(pump, 1);
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<350){
Stop();
digitalWrite(pump, 1);
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<250){
Stop();
digitalWrite(pump, 1);
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<=700){

digitalWrite(pump, 0);

backword();

delay(100);

turnRight();

delay(200);

}

else if(s2>=251 && s2<=800){

digitalWrite(pump, 0);

forword();

}

else if(s3>=251 && s3<=700){

digitalWrite(pump, 0);

backword();

delay(100);

turnLeft();

delay(200);

}else{

digitalWrite(pump, 0);

Stop();

}
```

```
delay(10);

}

void servoPulse (int pin, int angle){

int pwm = (angle*11) + 500; // Convert angle to microseconds

digitalWrite(pin, HIGH);

delayMicroseconds(pwm);

digitalWrite(pin, LOW);

delay(50); // Refresh cycle of servo

}

void forword(){ //forword

digitalWrite(in1, HIGH); //Right Motor forword Pin

digitalWrite(in2, LOW); //Right Motor backword Pin

digitalWrite(in3, LOW); //Left Motor backword Pin

digitalWrite(in4, HIGH); //Left Motor forword Pin

}

void backword(){ //backword

digitalWrite(in1, LOW); //Right Motor forword Pin

digitalWrite(in2, HIGH); //Right Motor backword Pin

digitalWrite(in3, HIGH); //Left Motor backword Pin

digitalWrite(in4, LOW); //Left Motor forword Pin

}

void turnRight(){ //turnRight

digitalWrite(in1, LOW); //Right Motor forword Pin

digitalWrite(in2, HIGH); //Right Motor backword Pin

digitalWrite(in3, LOW); //Left Motor backword Pin

digitalWrite(in4, HIGH); //Left Motor forword Pin

}
```

```cpp
void turnLeft(){ //turnLeft
digitalWrite(in1, HIGH); //Right Motor forword Pin
digitalWrite(in2, LOW); //Right Motor backword Pin
digitalWrite(in3, HIGH); //Left Motor backword Pin
digitalWrite(in4, LOW); //Left Motor forword Pin
}
void Stop(){ //stop
digitalWrite(in1, LOW); //Right Motor forword Pin
digitalWrite(in2, LOW); //Right Motor backword Pin
digitalWrite(in3, LOW); //Left Motor backword Pin
digitalWrite(in4, LOW); //Left Motor forword Pin
}
```