PROGRAM

```
#include <LiquidCrystal.h>
LiquidCrystal lcd(8, 9, 10, 11, 12, 13);
#include <Servo.h>
Servo myservo;  //ceate 32 bit
int pos = 0;
#define rl1 4
#define rl2 5
#define rl3 6
#define rl4 7
#define r5 2
#define alm A2
int fire1 = A3;
int fire2 = A4;
int fire3 = A5;
unsigned a, at = 0,aa;
int temp, gas;
char s_val[20], count, rcv[100];
void (*resetFunc)(void) = 0;
void setup() {
  Serial.begin(9600);
  pinMode(rl1, OUTPUT);
  pinMode(rl2, OUTPUT);
  pinMode(rl3, OUTPUT);
  pinMode(rl4, OUTPUT);
  pinMode(r5, OUTPUT);
```

```
pinMode(alm, OUTPUT);
pinMode(fire1, INPUT);
pinMode(fire2, INPUT);
pinMode(fire3, INPUT);
pinMode(temp, INPUT);
pinMode(gas, INPUT);
myservo.attach(3);
myservo.write(90);
digitalWrite(rl1, LOW);
digitalWrite(rl2, LOW);
digitalWrite(rl3, LOW);
digitalWrite(rl4, LOW);
digitalWrite(r5, LOW);
digitalWrite(alm, LOW);
lcd.begin(16, 2);
lcd.setCursor(0, 0);
lcd.print("----------------");
lcd.setCursor(0, 1);
lcd.print("----------------");
delay(2000);
lcd.clear();
lcd.setCursor(0, 0);
lcd.print(" FIRE FIGHTING  ");
lcd.setCursor(0, 1);
lcd.print("     ROBOT      ");
```

```
  delay(2000);
  lcd.clear();
}
void loop() {
  ////////////////////////////////////SENSOR/////////////////////////////////////////////////
  temp = analogRead(A0) >> 2;
  gas = analogRead(A1) >> 2;
  lcd.setCursor(0, 0);
  lcd.print("T:");
  Lcd_Decimal3(2, 0, temp);
  lcd.setCursor(6, 0);
  lcd.print("G:");
  Lcd_Decimal3(8, 0, gas);
  if (temp > 50) {
    digitalWrite(alm, HIGH);aa=1;
    delay(1000);
    digitalWrite(alm, LOW);
    lcd.setCursor(11, 0);
    lcd.print("HI TEMP");
  } else if (gas > 90) {
    digitalWrite(alm, HIGH);aa=2;
    delay(1000);
    digitalWrite(alm, LOW);
    lcd.setCursor(11, 0);
    lcd.print("HI GAS");
```

```
} else {
  lcd.setCursor(11, 0);aa=0;
  lcd.print(" NRML ");
}
at++;
if(at>100){
  Serial.print(temp);
  Serial.print(",");
  Serial.println(gas);
  at=0;
}
////////////////////////////////////FIRE DETECTION//////////////////////////////////////////////
if (digitalRead(fire1) == HIGH) {
  lcd.setCursor(0, 1);
  a = 2;
  lcd.print("P_ON ");
  myservo.write(180);
  delay(1000);
  digitalWrite(r5, HIGH);
  digitalWrite(alm, HIGH);
  delay(1000);//myservo.write(90);
  delay(1000);
  digitalWrite(r5, LOW);
digitalWrite(alm, LOW);delay(1000);
myservo.write(90);
```

```
} else if (digitalRead(fire2) == HIGH) {
  lcd.setCursor(0, 1);
  a = 3;
  lcd.print("P_ON ");
  myservo.write(90);
  delay(1000);
  digitalWrite(r5, HIGH);
  digitalWrite(alm, HIGH);
  delay(1000);//myservo.write(90);
  delay(1000);
  digitalWrite(r5, LOW);
digitalWrite(alm, LOW);
} else if (digitalRead(fire3) == HIGH) {
  lcd.setCursor(0, 1);
  a = 1;
  lcd.print("P_ON ");
  myservo.write(0);
  delay(1000);
  digitalWrite(r5, HIGH);
  digitalWrite(alm, HIGH);
  delay(1000);//myservo.write(90);
  delay(1000);
  digitalWrite(r5, LOW);
digitalWrite(alm, LOW);delay(1000);
```

```
myservo.write(90);
} else {
  lcd.setCursor(0, 1);
  a = 0;
  lcd.print("P_OFF");
  digitalWrite(r5, LOW);
// digitalWrite(alm, LOW);
}
////////////////////////////////////BLUETOOTH/////////////////////////////////////
while (Serial.available()) {
  unsigned int rec = Serial.read();
  s_val[count] = rec;
  if (s_val[0] == '*') {
    count++;
  } else {
    count = 0;
  }
}
if (count > 1) {
  count = 0;
  if (s_val[1] == '1') {
    forward();
  }
  if (s_val[1] == '2') {
    reverse();
```

```
    }
    if (s_val[1] == '3') {
      left();
    }
    if (s_val[1] == '4') {
      right();
    }
    if (s_val[1] == '5') {
      stop();
    }
  }
}

void forward() {
  digitalWrite(rl1, LOW);
  digitalWrite(rl2, HIGH);
  digitalWrite(rl3, LOW);
  digitalWrite(rl4, HIGH);
  lcd.setCursor(6, 1);
  lcd.print("FORWARD");
}
void reverse() {
  digitalWrite(rl1, HIGH);
  digitalWrite(rl2, LOW);
  digitalWrite(rl3, HIGH);
```

```
  digitalWrite(rl4, LOW);
  lcd.setCursor(6, 1);
  lcd.print("REVERSE");
}
void left() {
  digitalWrite(rl1, LOW);
  digitalWrite(rl2, HIGH);
  digitalWrite(rl3, HIGH);
  digitalWrite(rl4, LOW);
  lcd.setCursor(6, 1);
  lcd.print(" LEFT  ");
}
void right() {
  digitalWrite(rl1, HIGH);
  digitalWrite(rl2, LOW);
  digitalWrite(rl3, LOW);
  digitalWrite(rl4, HIGH);
  lcd.setCursor(6, 1);
  lcd.print(" RIGHT ");
}
void stop() {
  digitalWrite(rl1, LOW);
  digitalWrite(rl2, LOW);
  digitalWrite(rl3, LOW);
  digitalWrite(rl4, LOW);
```

```
  lcd.setCursor(6, 1);
  lcd.print(" STOP  ");
}
void Lcd_Decimal3(unsigned char com, unsigned char com1, unsigned int val) {
  unsigned int Lcd_h, Lcd_hr, Lcd_t, Lcd_o;
  lcd.setCursor(com, com1);
  Lcd_h = val / 100;
  Lcd_hr = val % 100;
  Lcd_t = Lcd_hr / 10;
  Lcd_o = Lcd_hr % 10;

  lcd.setCursor(com, com1);
  lcd.write(Lcd_h + 0x30);
  lcd.setCursor(com + 1, com1);
  lcd.write(Lcd_t + 0x30);
  lcd.setCursor(com + 2, com1);
  lcd.write(Lcd_o + 0x30);
}
```