SMART FIRE ALARM

Project Description

This system uses a **flame sensor** to detect fire and automatically control a **water pump** through a **relay**. When a flame is detected, the sensor sends a signal to the Arduino, which turns **ON the pump** to spray water and control the fire. Once the flame disappears, the pump is **turned OFF** automatically. This system provides a **quick, automatic response** to fire accidents and helps improve safety in homes, labs, and workplaces.

Pin Connections
(Flame to Arduino)

Vcc - 5V
Gnd - Gnd
DO - D2

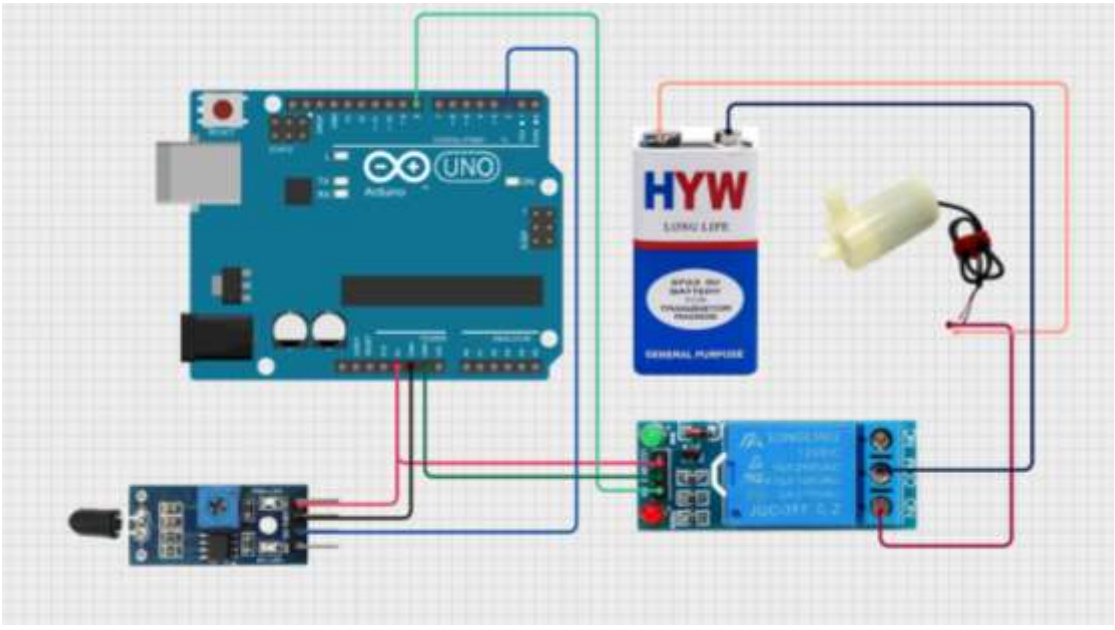
(Relay to Arduino)

IN - D8
Vcc - 5V
Gnd - Gnd

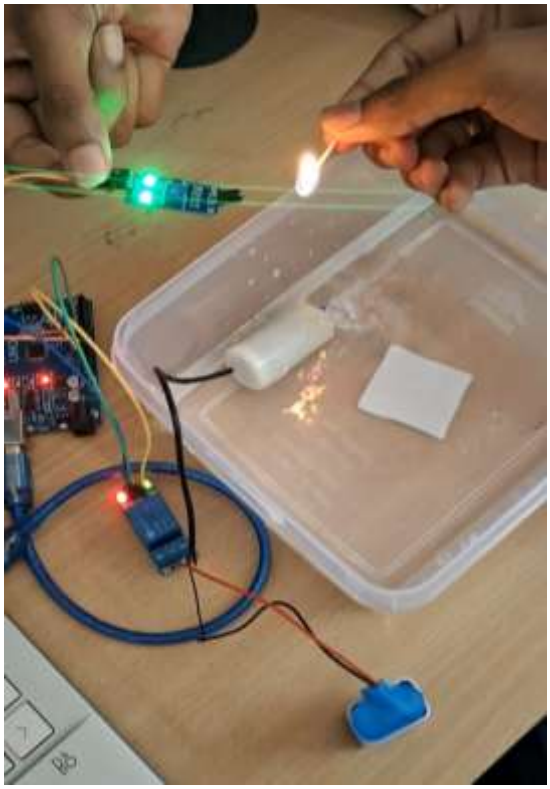
(Relay to Pump)

NO - Pump +ve
COM - 9V Battery +ve
Pump -ve – Battery -ve

Circuit Diagram



Project Photos



Code

```
int flame = 2;       // Flame sensor DO pin

int relay = 8;    // Relay input pin
void setup() {
  pinMode(flame, INPUT);
  pinMode(relay, OUTPUT);
  digitalWrite(relay, HIGH);   // Pump OFF initially
}
void loop() {
  int sensorValue = digitalRead(flame);
  if (sensorValue == LOW) {      // Flame detected
    digitalWrite(relay, LOW);    // Pump ON
  } else {                       // No hand
    digitalWrite(relay, HIGH);   // Pump OFF
  }
```

}