Embedded fire detection and alarm notification system

```
from machine import Pin, I2C
import ssd1306
import time

# === Pin Setup ===
flame_sensor = Pin(15, Pin.IN)     # Flame sensor OUT → GP15
buzzer = Pin(16, Pin.OUT)          # Buzzer + → GP16


# === OLED Setup ===
i2c = I2C(0, scl=Pin(1), sda=Pin(0))  # I2C0: SCL=GP1, SDA=GP0
oled = ssd1306.SSD1306_I2C(128, 64, i2c)

# === Startup Message ===
oled.fill(0)
oled.text("Fire Detection", 0, 0)
oled.text("System Initializing", 0, 16)
oled.show()
time.sleep(2)

# === Main Loop ===
while True:
```

```
if flame_sensor.value() == 0:   # LOW means fire detected
    buzzer.value(1)             # Buzzer ON
    oled.fill(0)
    oled.text(" FIRE ALERT!", 0, 20)
    oled.show()
    print("FIRE ALERT!")
else:
    buzzer.value(0)             # Buzzer OFF
    oled.fill(0)
    oled.text("SAFE", 40, 20)
    oled.show()
    print("SAFE")

time.sleep(0.2)
```