REAL TIME ENVIRONMENTAL MONITORING AND AIR QUALITY SENSING

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

# === OLED Setup ===
i2c = I2C(0, scl=Pin(5), sda=Pin(4))  # SCL=GP5, SDA=GP4
oled = ssd1306.SSD1306_I2C(128, 64, i2c)

# === MQ135 Gas Sensor Setup ===
mq135 = ADC(Pin(26))  # Connect MQ135 analog output to GP26 (ADC0)

# === Buzzer Setup ===
buzzer = Pin(15, Pin.OUT)  # Buzzer connected to GP15

# === Threshold for air quality ===
THRESHOLD = 30000  # Adjust this value depending on your sensor calibration

while True:
    # Read MQ135 value (0–65535)
    gas_value = mq135.read_u16()

    # Clear OLED screen
```

```
oled.fill(0)
oled.text("Air Quality", 0, 0)
oled.text("Gas Value:", 0, 20)
oled.text(str(gas_value), 0, 35)

# Check air quality
if gas_value > THRESHOLD:
    oled.text("BAD AIR!", 0, 50)
    buzzer.value(1)  # Turn buzzer ON
else:
    oled.text("Good Air", 0, 50)
    buzzer.value(0)  # Turn buzzer OFF

oled.show()
sleep(1)
```