Circuit Documentation

Summary

This circuit is designed to interface an MQ-3 alcohol sensor with an Arduino UNO. The MQ-3 sensor is used to detect alcohol levels, and the Arduino UNO processes the sensor data to provide a digital and analog output. The digital output indicates whether the alcohol level is above a certain threshold, while the analog output provides a continuous value representing the alcohol concentration.

Component List

MQ-3 Breakout

- **Description**: The MQ-3 is an alcohol sensor that can detect the presence of alcohol in the air. It provides both digital and analog outputs.
- **Pins**:
  - VCC: Power supply pin
  - GND: Ground pin
  - DO: Digital output pin
  - AO: Analog output pin

Arduino UNO

- **Description**: The Arduino UNO is a microcontroller board based on the ATmega328P. It is used to read the sensor data and process it.
- **Pins**:
  - 5V: Power supply pin
  - GND: Ground pin
  - D8: Digital input/output pin
  - A0: Analog input pin

Wiring Details

MQ-3 Breakout

- **VCC** is connected to **5V** on the Arduino UNO.
- **GND** is connected to **GND** on the Arduino UNO.
- **DO** is connected to **D8** on the Arduino UNO.
- **AO** is connected to **A0** on the Arduino UNO.

Arduino UNO

- **5V** is connected to **VCC** on the MQ-3 Breakout.

- **GND** is connected to **GND** on the MQ-3 Breakout.
- **D8** is connected to **DO** on the MQ-3 Breakout.
- **A0** is connected to **AO** on the MQ-3 Breakout.

Documented Code

```
const int AOUTpin = 0;
const int DOUTpin = 8;
int limit;
int value;

void setup() {
    Serial.begin(9600);
    pinMode(DOUTpin, INPUT);
}
void loop() {
    value = analogRead(AOUTpin);
    limit = digitalRead(DOUTpin);
    Serial.print("Alcohol value: ");
    Serial.println(value);
    Serial.print("Limit: ");
    Serial.print(limit);
    delay(500);
}
```

Code Explanation

- **AOUTpin** and **DOUTpin** are defined to represent the analog and digital output pins connected to the MQ-3 sensor.
- In the setup() function, the serial communication is initialized at a baud rate of 9600, and the digital output pin is set as an input.
- The loop() function continuously reads the analog and digital values from the sensor. It prints the alcohol value and the limit status to the serial monitor every 500 milliseconds. The analog value represents the concentration of alcohol, while the digital value indicates whether the concentration is above a predefined threshold.

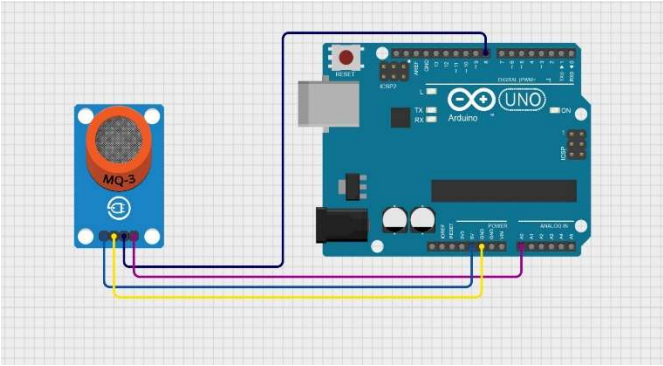

Fig 1