

KINGS ENGINEERING COLLEGE

PROJECT NAME: AIR QUALITY ANALYSIS

Team members:

1.VeeraGanesh.S

2.Vishwa.M

3.Vetrivel.N

4.Vignesh.S

5.Vigneshwaran.N

ABSTRACT:

The Air Quality Monitor project aims to create a low-budget air quality monitoring system using an Arduino board and an MQ-135 gas sensor. This report provides an overview of the project's objectives, materials used, implementation steps, and the results obtained.

INTRODUCTION:

Air quality is a critical aspect of environmental health that impacts the well-being of individuals and communities. The quality of the air we breathe can have far-reaching effects on public health, particularly in urban areas where pollution levels can be elevated. Poor air quality can lead to a range of health issues, including respiratory problems, allergies, and even more severe conditions.

OBJECTIVES:

The main objectives of this project are as follows:

- To design and build a functional air quality monitor using readily available components.
- To display air quality data on an LCD screen in real-time.
- To create a cost-effective solution for air quality assessment.

MATERIALS AND EQUIPMENT:

- Arduino board (Arduino Uno)
- MQ-135 Gas Sensor
- 16x2 LCD Display
- Breadboard and Jumper Wires
- USB Power Bank
- Enclosure (Optional)

HARDWARE SETUP:

1. Connect the MQ-135 gas sensor to the Arduino board using jumper wires,

following the pinout provided in the sensor's datasheet.

2. Connect the 16x2 LCD display to the Arduino using appropriate jumper wires, ensuring that power, ground, and data pins are correctly connected.

3. Assemble the components on a breadboard.

SOFTWARE DEVELOPMENT:

1. Install necessary libraries in the Arduino IDE, including "Adafruit_Sensor," "Adafruit_MQ135," and "LiquidCrystal."

2. Write Arduino code to:

- Read air quality data from the MQ-135 sensor.
- Display real-time air quality data on the LCD display.
- Implement threshold alarms (optional).
- Log data to an SD card (optional).

CONCLUSION:

The Air Quality Monitor project has successfully demonstrated the feasibility of creating an affordable and accessible solution for air quality monitoring. By leveraging widely available components and the Arduino platform, this project addresses the critical need for individuals and communities to monitor their local air quality.