আন্তর্জাতিক ইসলামী বিশ্ববিদ্যালয় চট্টগ্রাম

الجامعة الإسلامية العالمية شيتاغونغ

International Islamic University Chittagong

Department of CSE

Project Proposal
Of

Electronic Drives and Instruments

Submitted by:

Akther uz zaman (C183059)
Mohammad Toufiqul Alam (C191096)
Nurul Karim Symon (C183050)

Submitted to:

Md. Ashraful Alam

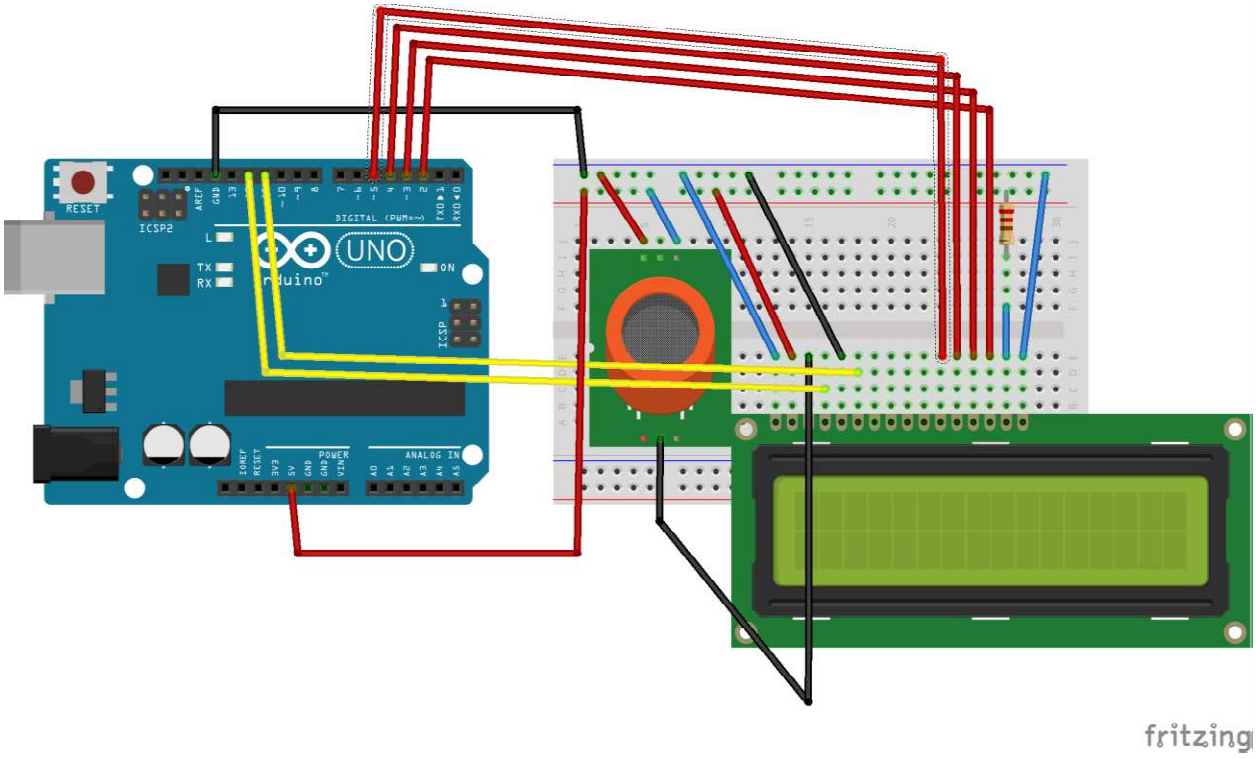
Project Proposal-1

Name: Air Quality Monitor.

Component Requirement:

- Arduino UNO
- Breadboard
- MQ135 sensor
- Cables
- 16*2 LCD Display

Circuit Diagram:



Working Principle:

As the device is powered, the Arduino board loads the required libraries. The analog voltage sensed at the pin A0 of the Arduino is converted to a digital value by using the in-built ADC channel of the Arduino. The Arduino board has 10-bit ADC channels, so the digitized value ranges from 0 to 1023. The digitized value can be assumed proportional to the concentration of gases in PPM. The code is uploaded on the board using the USB drive and then run. The output is observed on the serial monitor directly in PPM unit.

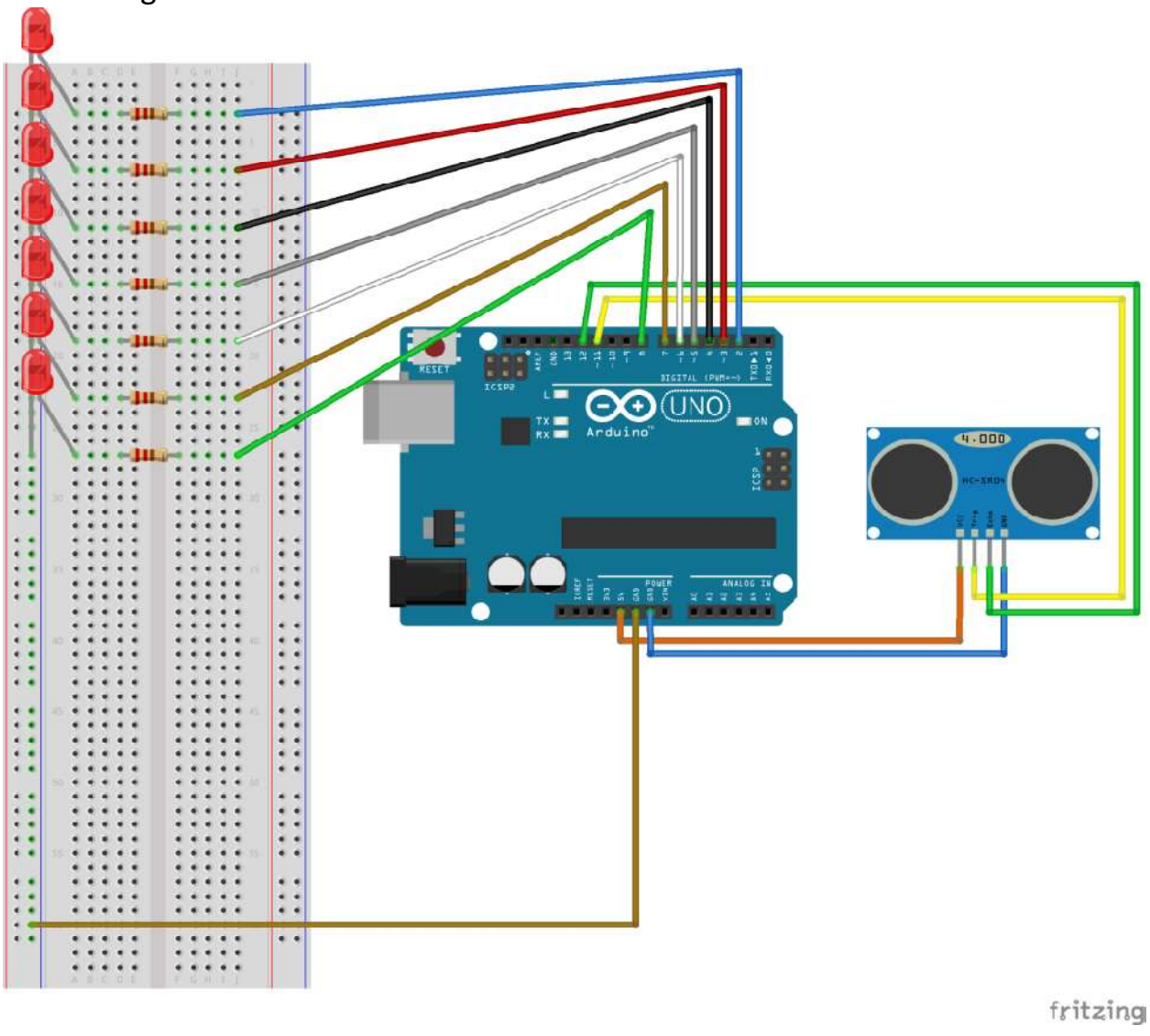
Project Proposal-02

Name: LED Distance Meter.

Component Requirement:

- Arduino UNO
- Breadboard
- Ultrasonic sensor
- Jumper Cables
- 1k ohm Resistors
- LED lights

Circuit Diagram:



Working Principle:

As the device is powered, the Arduino board loads the required libraries. The ultrasonic sensor will be the main component of our project in this experiment along with Arduino. An ultrasonic sensor is an electronic device that measures the distance of a target object by emitting ultrasonic sound waves, and converts the reflected sound into an electrical signal. Ultrasonic waves travel faster than the speed of audible sound (i.e. the sound that humans can hear). Ultrasonic sensors have two main components: the transmitter (which emits the sound using piezoelectric crystals) and the receiver (which encounters the sound after it has travelled to and from the target).The LEDs will indicate the distance and the distance in centimeters will be given through code. The resistors will control the flow of the current to LEDs. The code is uploaded on the board using the USB drive and then run.

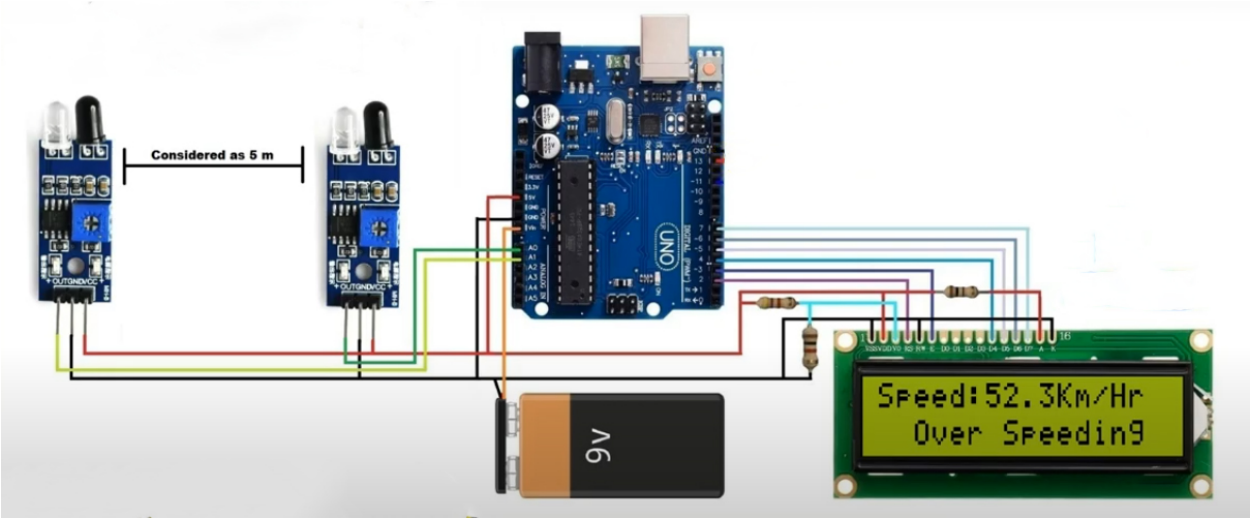
Project Proposal-3

Name: Vehicle speed detector

Component Requirement:

- Arduino Uno
- IR Sensors x 2
- 16X2 LCD Display Module
- Breadboard
- Connecting Wires
- Power Supply
- 10K Resistor

Circuit Diagram:



Working Principle:

IR Sensors are the main part of the project that detect the speed of a car.
I have used two reflective type IR Sensors and placed them 5cm apart.
When a car travelling reaches the first sensor, the IR Sensor gets activated.
From this moment onward, a timer is initiated and will continue to keep time until the car reaches the second IR Sensor.
By simulating the distance between the two sensors to be 10 cm, you can calculate the speed at which the car travelled from IR Sensor 1 to IR Sensor 2 as you already know the time of travel. All the calculations and data gathering are done by Arduino and the final result is displayed on a 16X2 LCD Module.
The system then calculates speed and displays it on the display.

Formula to Calculate: Speed (kmph) = Distance/Time

*** If the speed of the vehicle become greater than 40km/h then the "Normal Speed" will be shown on the display and if it less than 40km/h then the "Over Speeding" will be shown on the display.