

# AUTOMATIC DETECTION OF DRIVER IMPAIRMENT BASED ON PUPILARY LIGHT REFLEX.

UNDER THE GUIDANCE OF:

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**DEPT OF ECE**

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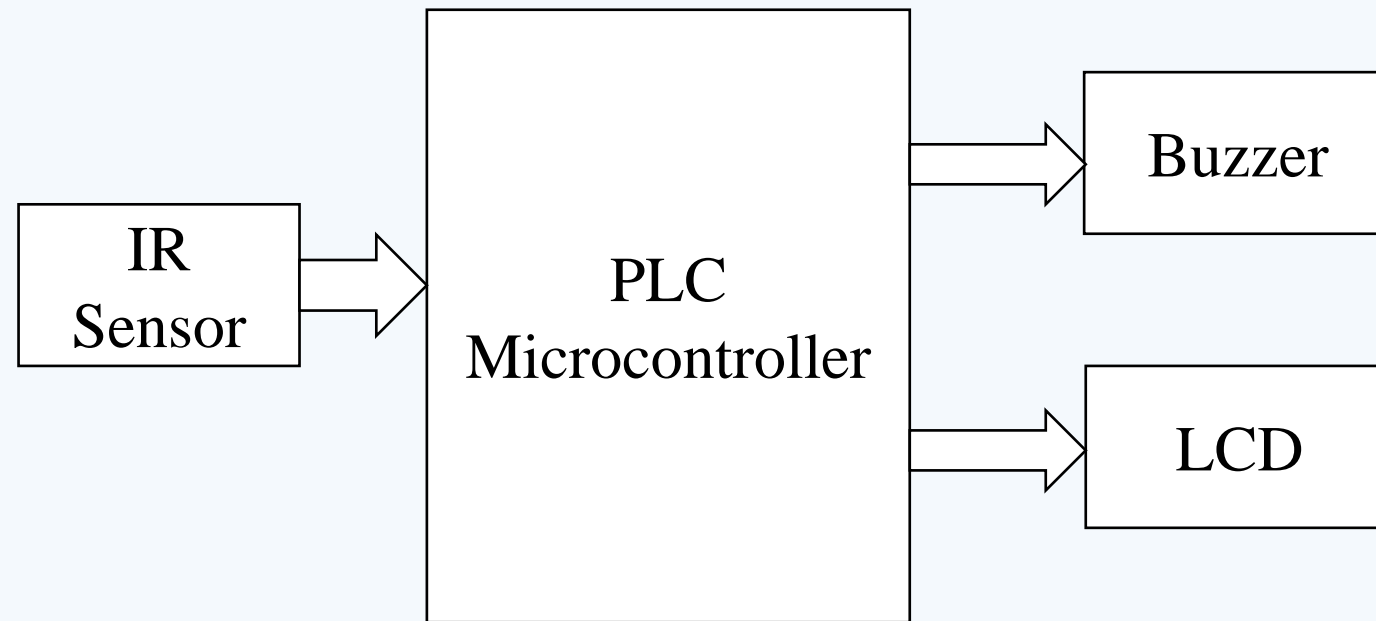
# ABSTRACT:



- Drowsiness due to drunken driving is increasing and falling sleep causes the major road accidents. If driver is found to be drowsiness in eyes more than 2 secs, then the IR sensor senses the blink rate. If the eyes are found to be closed, then the speed of the vehicle slows down. In our proposed system, along with drowsiness , alcohol detection is also detected by using alcohol MQ3 sensor. If alcohol is detected in driver's breathe, then the buzzer gives an alert to the Driver and Co-passengers .Buzzer rings in case of drowsiness detection and speed of the vehicle varies on detection of Eye blink based on pupillary light reflex.

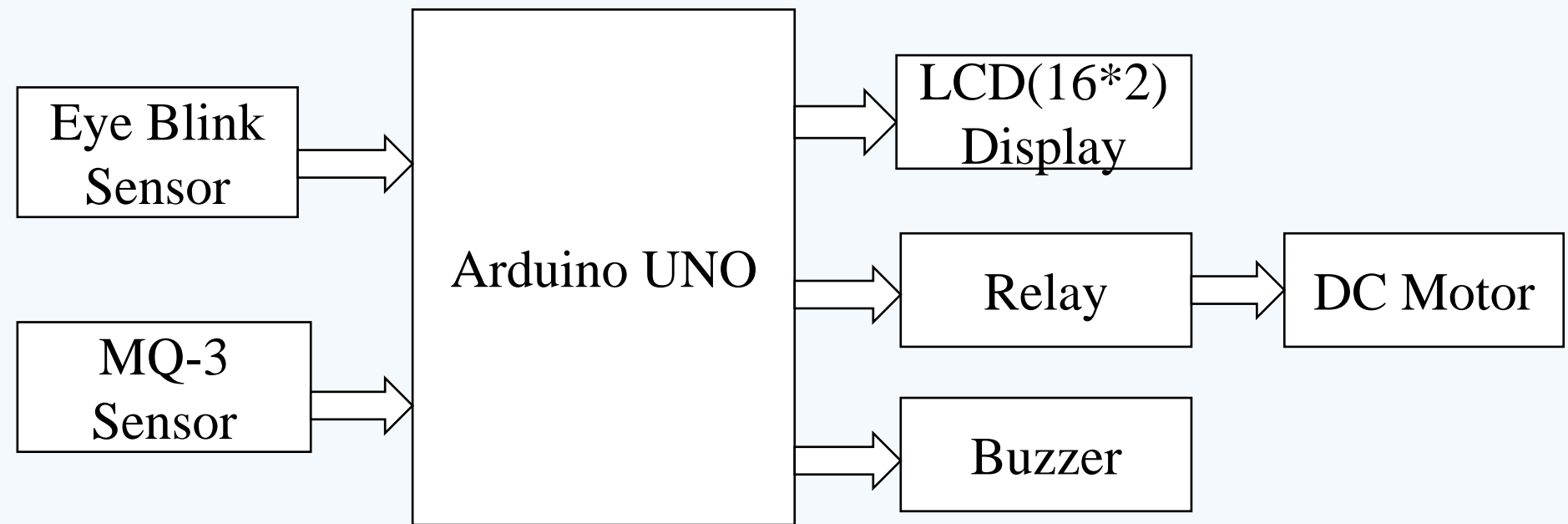
# ❖ EXISTING SYSTEM:

## ➤ BLOCK DIAGRAM:

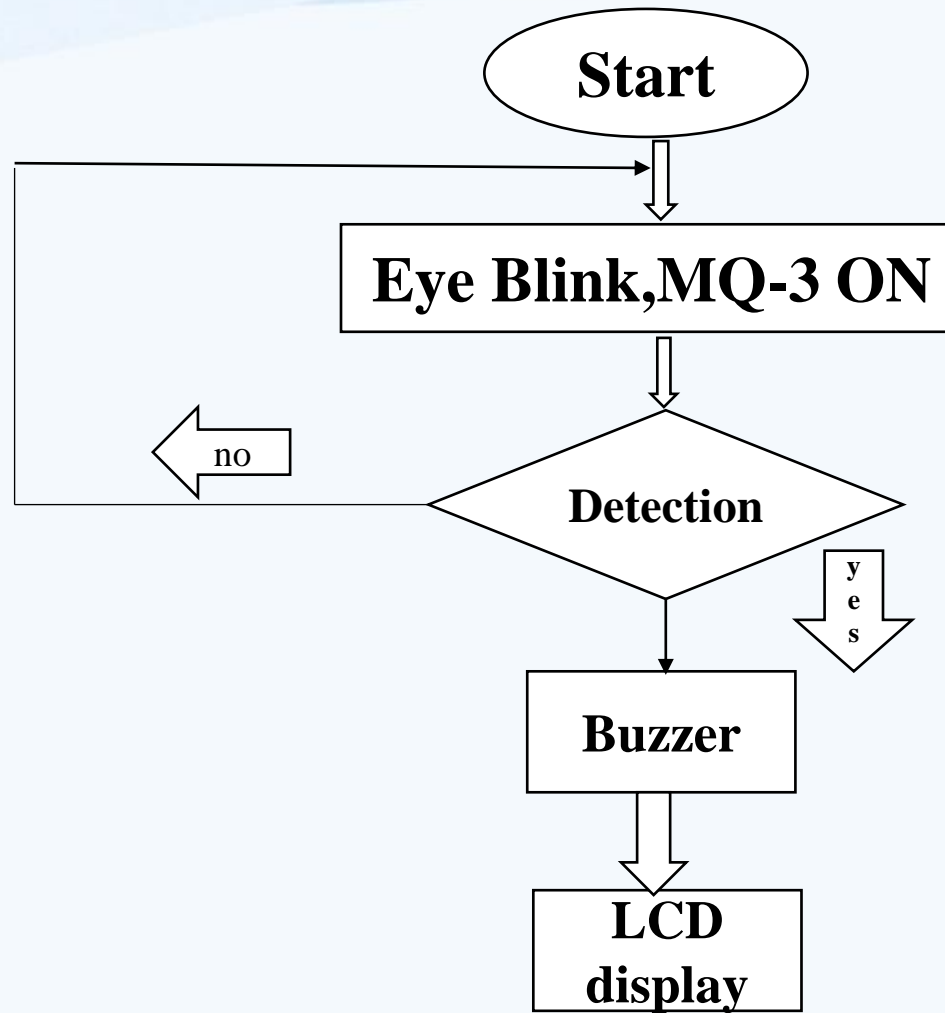


# ❖ PROPOSED SYSTEM:

## ➤ BLOCK DIAGRAM:



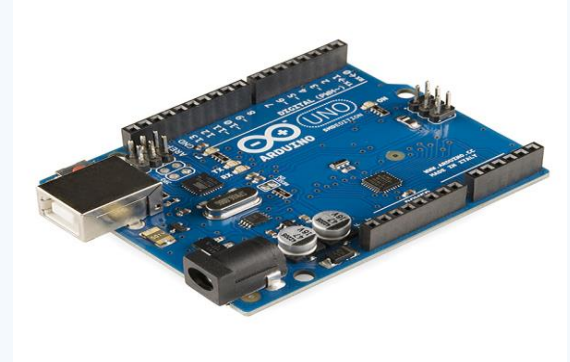
# ❖ FLOW CHART:-





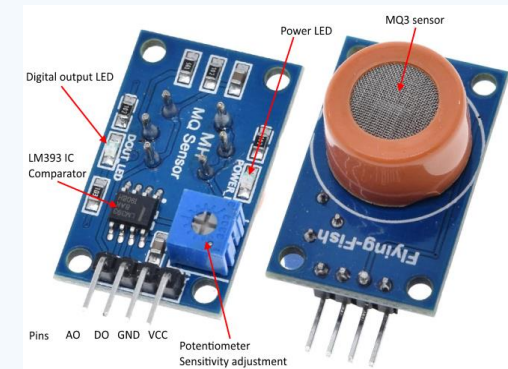
## ❖ ARDUINO UNO:

- Arduino UNO is a microcontroller board based on the ATmega328P.
- It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header and a reset button.



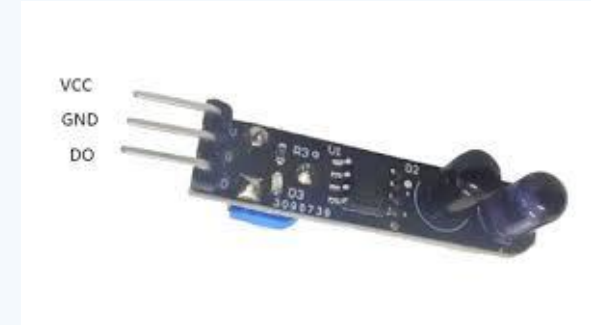
## ❖ MQ-3 SENSOR:

- It is a low cost semiconductor sensor which can detect the presence of alcohol gases at concentrations from 0.05 mg/L to 10 mg/L.
- The sensitive material used for this sensor is SnO<sub>2</sub>.



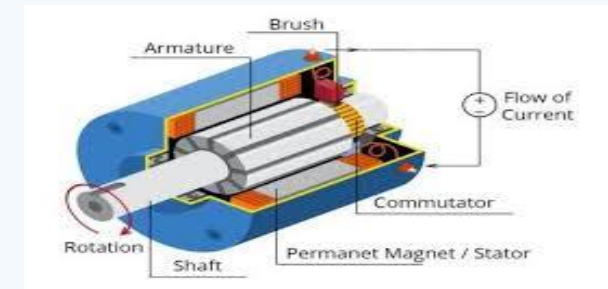
## ❖ EYE BLINK SENSOR:

- The eye blink sensor is an infrared sensor. It contains two parts. A transmitter and a receiver. The transmitter continuously emits infrared waves onto the eye.
- While the receiver continuously looks for variations in the reflected waves which indicates that the eye has blinked.



## ❖ DC MOTOR:

- The DC Motor is the motor which converts the direct current into the mechanical work.



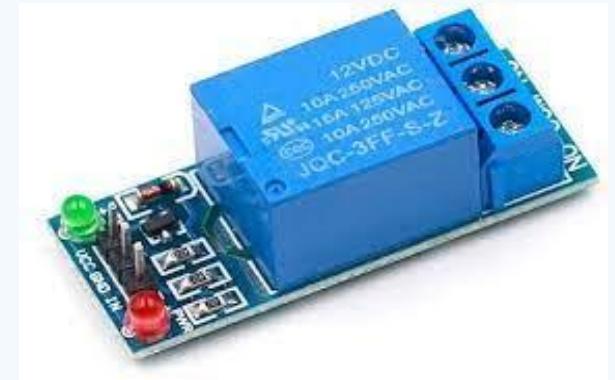


## ❖ RELAY:

- A relay is an electrically operated switch.
- It consists of a set of input terminals for a single or multiple control signals, and a set of operating contact terminals.

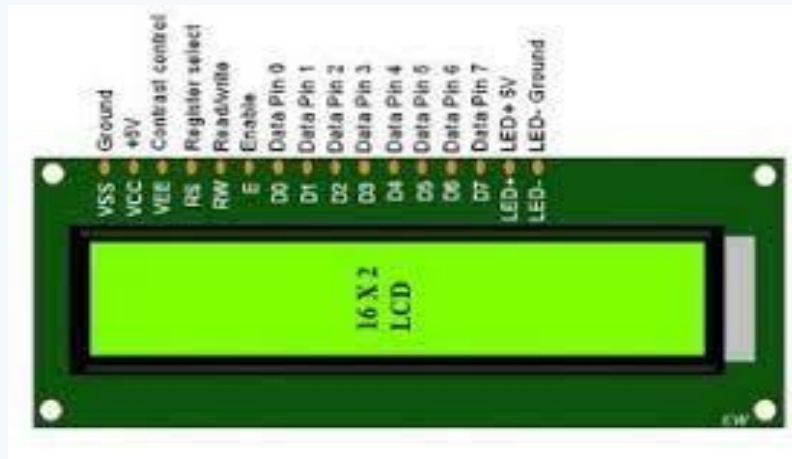
## ❖ BUZZER:

- The buzzer is an electrical device that generates audible sound due to potential differences between source and sinks in the circuit.



## ❖ LCD(16\*2) DISPLAY:

- A 16x2 LCD means it can display 16 characters per line and there are 2 such lines.
- The 16 x 2 intelligent alphanumeric dot matrix display is capable of displaying 224 different characters and symbols.



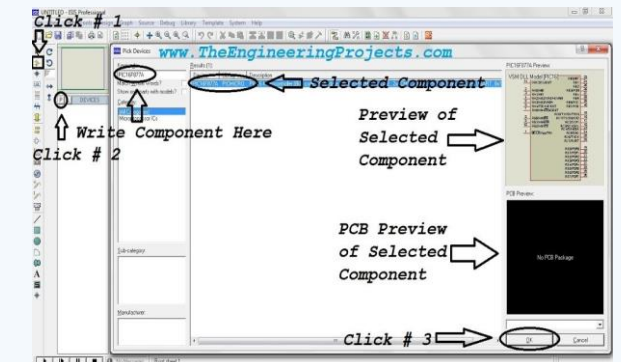
## ❖ ARDUINO IDE:

- The Arduino Integrated Development Environment - or Arduino Software (IDE) - contains a text editor for writing code, a message area, a text console, a toolbar with buttons.



## ❖ PROTEUS:

- The Proteus Design Suite is a proprietary software tool suite used primarily for electronic design automation.



## ❖ ADVANTAGES:

- Safe driving.
- Decreased death rates.
- As the system uses fewer resources therefore the cost of the system is less.
- The system also reduces the human effort.

## ❖ APPLICATIONS:

- The proposed system can be used for long distance travellers.
- The proposed system is utilized in cars, trucks , lorries.
- Driver eye/face monitoring.
- Physiological measurement.



# ❖ RESULT:

➤ Starting message on LCD Display:



➤ Output of MQ-3 Sensor :

a) When alcohol is not detected



b) When alcohol is detected





# ❖ CONTINUED...

➤ Output of Eye Blink Sensor:

a) When eyes are open



b) When eyes are closed



## ❖ CONCLUSION:

- This proposed system helps in finding drowsiness and alcohol detection using Arduino. This helps in avoiding many accidents. If the driver's eyes are closed cumulatively more than a standard value, the system draws the conclusion that the driver is falling asleep, and then it will activate an alarm sound to alert the driver and co-passengers.

## ❖ FUTURE SCOPE:

- An application can be developed where it can alert or prevent the user from sleeping. It can be used to develop an IOT device that can be installed in the car to detect driver's drowsiness.
- Further we can extend this project by using camera sensor to detect the drowsiness of the driver.

THANK  
YOU

