



AVS ENGINEERING COLLEGE

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

ANTI-SLEEP ALARM FOR DRIVERS USING ARDUINO

ABSTRACT

- Facial features including eye and head movements reveal driver weariness and drunkenness. Characteristics such as facial angle, head movement, and eye blinking have been monitored during the design, construction, and testing phases of a driver impairment monitoring system.
- This system made use of an IOT module, microcontroller, tilt sensor, drowsiness detection, and an alcohol sensor (MQ3). The alcohol sensor (MQ3), tilt switch or sensor, and open eye sensor or sleepiness detection are the three sensors that are used. There was a microcontroller and an IOT module.
- There was a buzzer, a display, and a reset switch. The microcontroller will receive signals from three sensors as well as a reset switch. The cover is fastened to the alcohol sensor. T
- he driver would activate if it did not react to the sensor's alarm a light that could cause the engine to shut off. Second, the microcontroller would sound an alarm if the driver closed his eyelids for a predetermined amount of time, detecting it via an infrared open eye sensor. .

LITERATURE SURVEY

S. No	Title	Authors	Year	concept	Advantage	Disadvantage
1	Design and Development of Automatic Vehicle accident detection & Localization of Automobile Using Bluetooth Technology.	Nitin Thakre, Prof. Nitin Raut, Prof. Abdulla Shaik	7, July 2015	Track vehicles using Google Earth application develop in android application for mobile system	Wireless communication	Short range communication
2	Accident Prevention and Reporting System Using GSM (SIM 900D) and GPS (NMEA 0183)	Rashida Nazir, Ayesha Tariq, Sadia Murawwat, Sajjad Rabbani	june -2017	It enables intelligent detection of an accident at any place and reports about the accident on predefined numbers.	Easy to locate the accident place	Signal problem

S. No	Title	Authors	Year	concept	Advantage	Disadvantage
3	Vehicle Speed Control System Using GSM/GPRS	B.Devikiruba	May 2017	GPS technologies having greater range of frequencies, the user can get the information as quicker as possible.	to speed control at specific traffic roads.	Human being is affected
4	An Assessment of Emergency Response Vehicle Pre-Deployment Using GIS Identification of High-Accident Density Locations.	H.M. Ahsan, M.A. Raihan & M. Rahman	June 18	The general characteristics of car fatal accidents and makes an attempt to establish the most common types of fatal accidents and the causal factors.	Multiple sensors are used	Short range communication

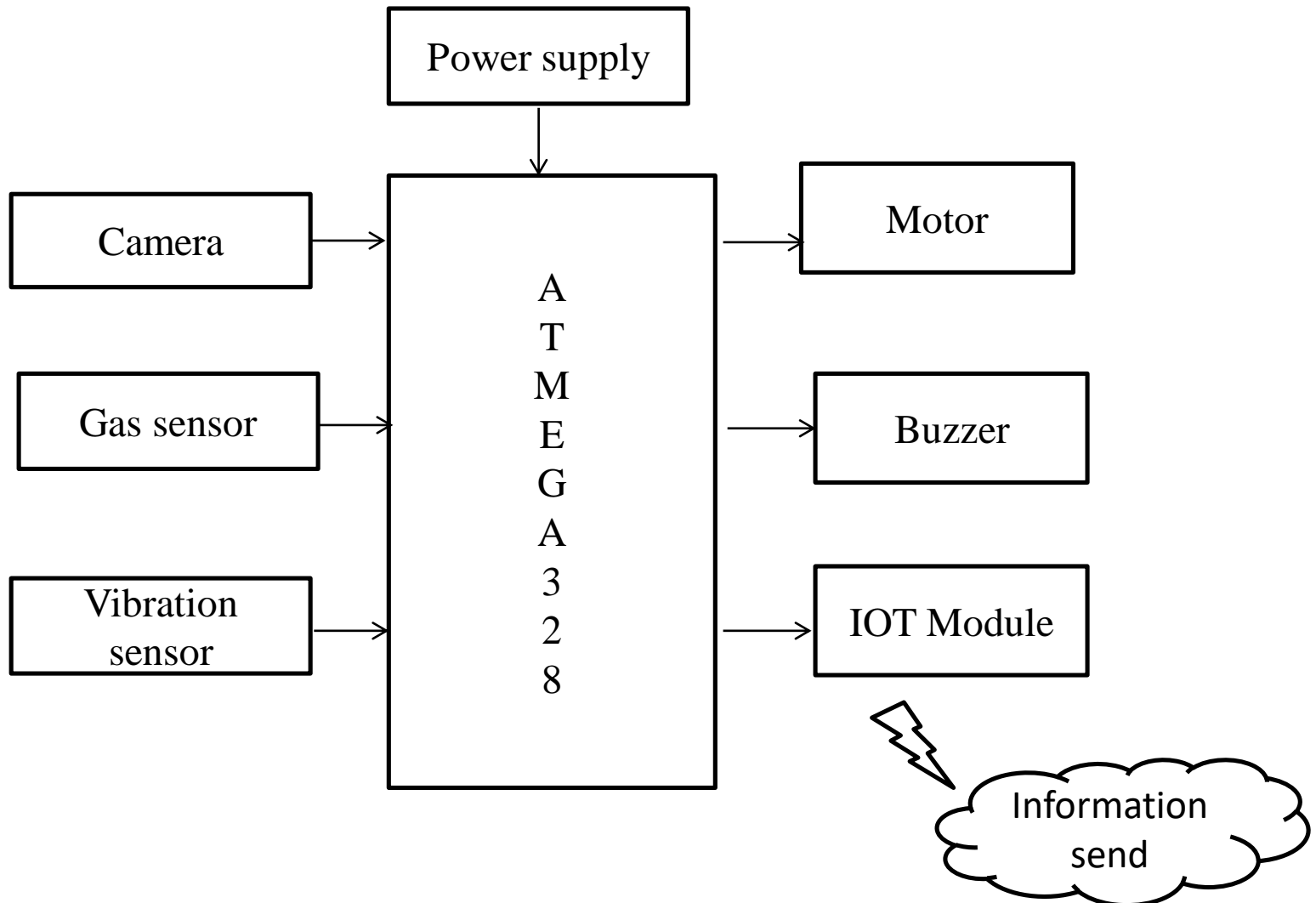
EXISTING SYSTEM

- One of the main reason for accident is stress which degrades the driving performance of the driver.
- In existing system, there is no device to detect / predict the driver stress and driving efficiency. In existing system, they have proposed to detect drowsiness, stress and fatigue conditions of the driver, based on vision based methods and physiological signals.
- The vision based methods uses cameras and image processing to monitor the eye lid, head movement, and facial expression of the driver [3] [4].
- However, sensitivity to environmental factors, such as lighting conditions and the wearing of glasses, is a major problem that must be solved. This method can detect a condition only after it begins to show on face It is one of the main disadvantage in this vision based

DRAWBACKS

- Limited Environmental Adaptability.
- Influence of Eyewear and facial expressions.
- Challenges in Dataset Diversity.
- Processing Overhead.

BLOCK DIAGRAM



PROPOSED SYSTEM

- The implementation of a preventive program for this matter has become a big challenge. This method calculates the examination of safety criteria and ocular condition.
- In this research, a tilt sensor gas sensor was suggested as well as an eye blink sensor to identify driver tension and dilated pupils. The suggested system senses the driver's tiredness and, if it is found, sounds an alert through a buzzer.
- An Arduino and a gas sensor are interfaced in this setup. The car will automatically slow down and stop if any of these sensors detects an abnormal state in the driver.
- The proposed system detects the driver's drowsiness and if detected alert will be given through buzzer, if the driver doesn't wakes up then vehicle slows down and moves to left and will be stopped.

Hardware components

- Arduino microcontroller
- Gas sensor
- Vibration sensor
- Camera
- buzzer
- Motor
- IOT

ARDUINO UNO

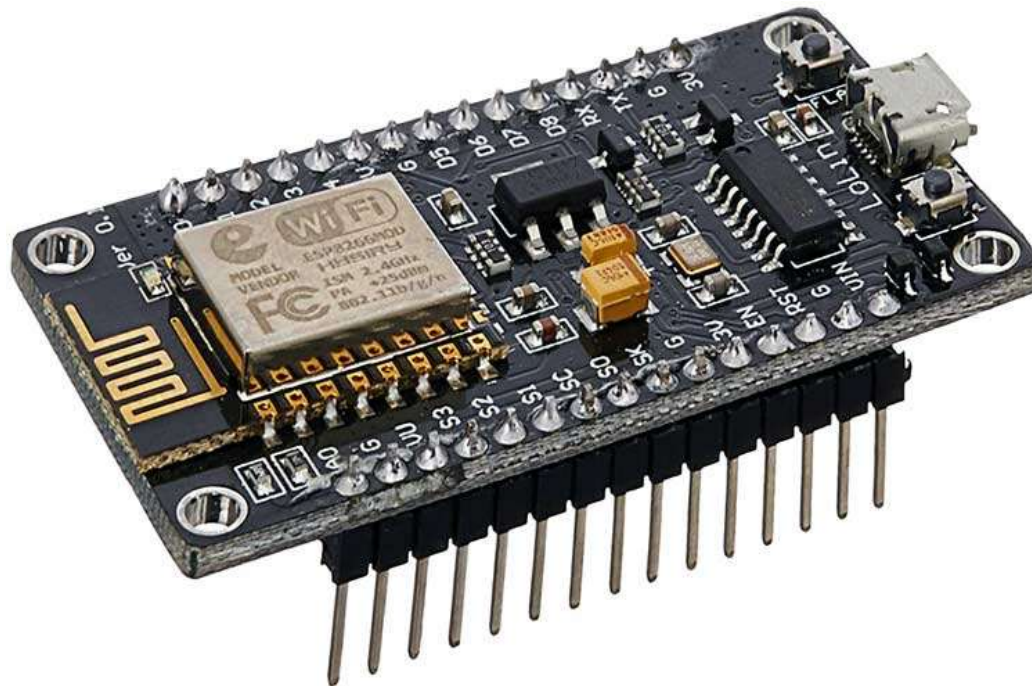
- The Arduino Uno is a microcontroller board based on the ATmega328 which operating at 5v
- It has the following parts,
 1. 14 digital input/output pins
 2. Analog inputs,
 3. 16 MHz crystal oscillator,
 4. USB connection,
 5. Power jack, an ICSP header,
 6. Reset button.

LCD DISPLAY

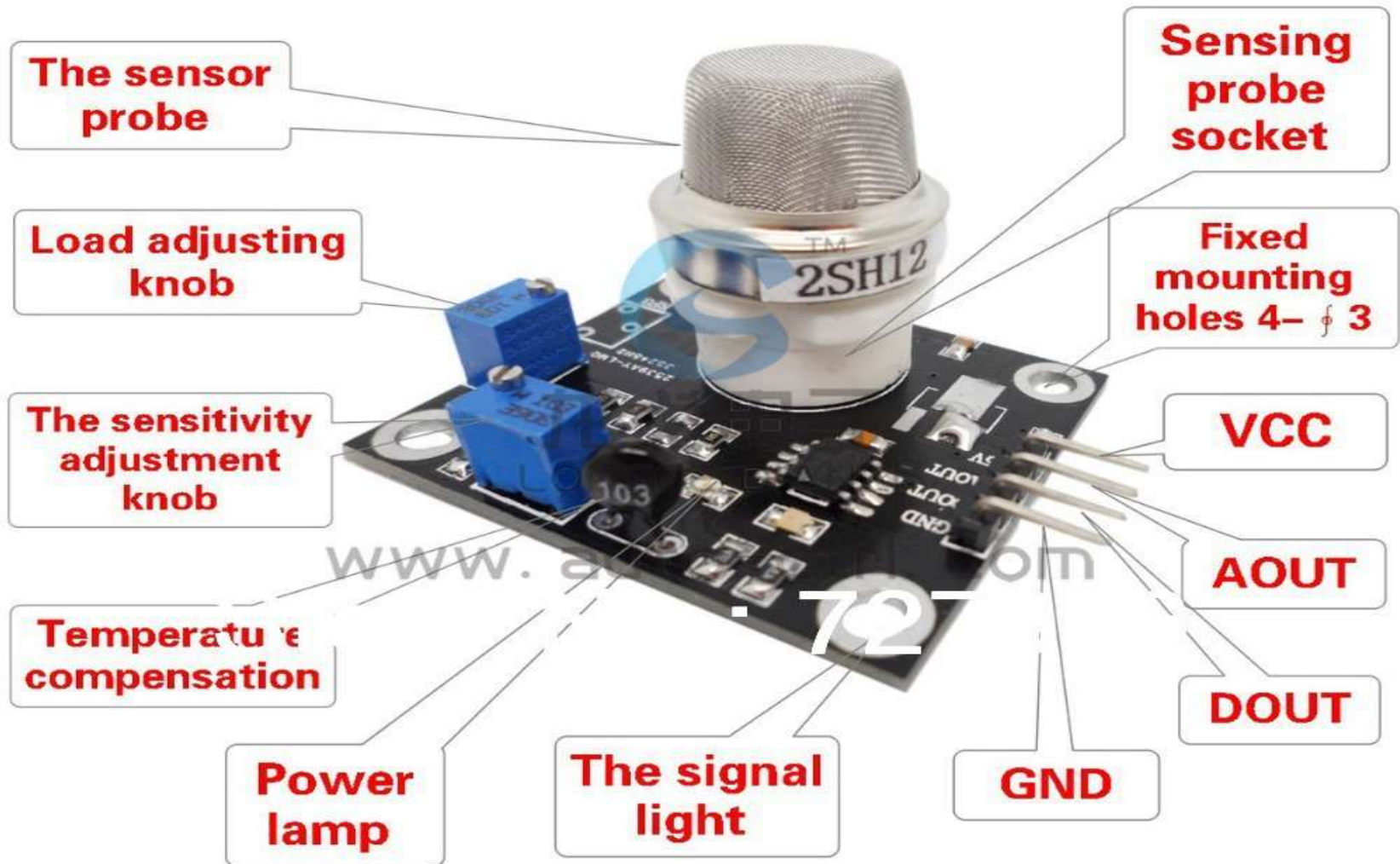
- A liquid-crystal display (LCD) is a flat pane display, electronic visual display, or video display that uses the light modulating properties of liquid crystals.
- Liquid crystals do not emit light directly.



IOT MODULE



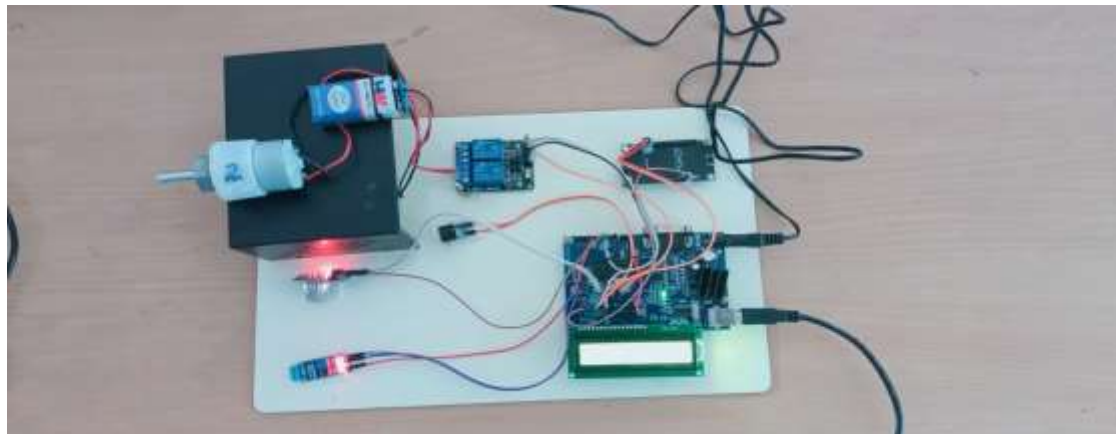
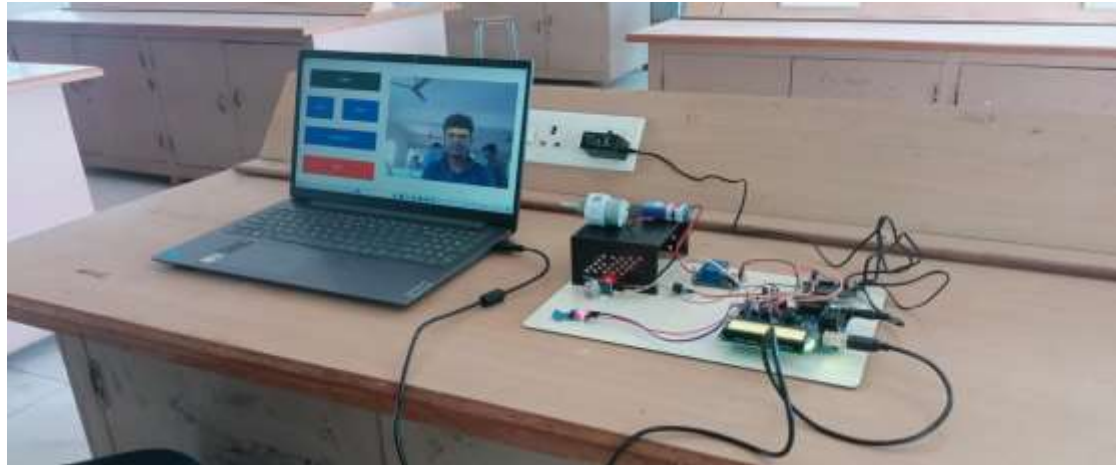
Gas sensor



Software

- Arduino
- PHP

FINAL OUTPUT OF THE PROJECT



CONCLUSION

The conclusion for a paper or presentation on an anti-sleep alarm for drivers using a DIP (Driver Inattention and Drowsiness Monitoring) system could emphasize the critical role of such technology in preventing accidents caused by drowsy driving. It might highlight the effectiveness of the DIP system in detecting signs of drowsiness and alerting drivers, ultimately promoting road safety. Additionally, it could discuss the potential for widespread adoption of this technology to mitigate the risks associated with driver fatigue, leading to fewer accidents, injuries, and fatalities on the roads. Overall, the conclusion should emphasize the significance of proactive measures like the anti-sleep alarm system in safeguarding both drivers and pedestrians.

FUTURE SCOPE

- ✓ Enhancing an Anti-sleep Alarm for Drivers with a DIP(Driver's Information Panel monitoring system could involve integrating real-time data from the vehicle's sensors to detect signs of drowsiness more accurately.
- ✓ This could include analyzing steering patterns, Lane departure, eye movements and even heart rate through wearable devices to provide timely alerts and prevent accidents.
- ✓ Additionally, incorporating machine learning algorithms could improve the system's ability to recognize individual patterns and adjust alert thresholds accordingly.

REFERENCE

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THANK YOU....!