DAYANANDA SAGAR COLLEGE OF ENGINEERING

An Autonomous Institute affiliated to VTU, Belagavi – 590018
Approved by AICTE & ISO 9001:2008 certified
Accredited by National Assessment & Accreditation Council (NAAC) with 'A' grade
Shavige Malleshwara Hills, Kumaraswamy Layout
Bengaluru-560078

Mini Project Report on

SMART DRIVE SENTRY: KEEPING YOU SAFE ON ROAD

Submitted in partial fulfillment for the award of degree of

Bachelor of Engineering
in
Electrical and Electronics Engineering

Submitted by

Sumangala police patil	**1DS22EE091**
Vijayalaxmi siddappa karjagi	**1DS22EE102**
Zoyataj S	**1DS22EE110**
Rakshitha N	**1DS23EE418**

Under the Guidance of
Mrs Deekshitha Arasa
Assistant professor
Dept. of E&E Engg.
DSCE, Bengaluru

VISVESVARAYA TECHNOLOGICAL UNIVERSITY
JNANASANGAMA, BELAGAVI-590018
2023-24

DAYANANDA SAGAR COLLEGE OF ENGINEERING

(An Autonomous Institute affiliated to VTU, Belagavi – 590018, Approved by AICTE & ISO 9001:2015 Certified)
Accredited by National Assessment & Accreditation Council (NAAC) with 'A' grade
Shavige Malleshwara Hills, Kumaraswamy Layout
Bengaluru-560078
2023-2024

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

CERTIFICATE

Certified that the mini project report entitled **"Smart drive :keeping you safe on the road"** carried out by **Sumangala Police Patil (1DS22EE091), Vijayalaxmi Siddappa Karjagi (1DS22EE102), Zoyataj S (1DS22EE110) and Rakshitha N (1DS23EE418)** are bonafide students of **DAYANANDA SAGAR COLLEGE OF ENGINEERING**, an autonomous institution affiliated to VTU, Belagavi in partial fulfillment for the award of Degree of **Bachelor of Engineering in Electrical and Electronics Engineering** during the year **2023-2024**. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The mini project report has been approved as it satisfies the academic requirements in respect of work prescribed for the said Degree.

Signature of the Guide
Mrs Deekshitha Arasa
Assistant Prpfessor
Dept. of E&E Engg.
DSCE, Bengaluru

Signature of the HOD
Dr. M. Premkumar
Professor & HOD
Dept. of E&E Engg.
DSCE, Bengaluru

DAYANANDA SAGAR COLLEGE OF ENGINEERING

(An Autonomous Institute affiliated to VTU, Belagavi – 590018, Approved by AICTE & ISO 9001:2015 Certified)
Accredited by NBA, National Assessment & Accreditation Council (NAAC) with 'A' grade
Shavige Malleshwara Hills, Kumaraswamy Layout
Bengaluru-560078
2023-2024

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

DECLARATION

We, Sumangala Police Patil (1DS22EE091), Vijayalaxmi Siddappa Karjagi (1DS22EE102), Zoyataj S (1DS22EE110) and Rakshitha N (1DS23EE418) respectively, hereby declare that the mini project work entitled " Smart drive: keeping you safe on the road" has been independently done by us under the guidance of 'Mrs Deekshitha Arasa', Assistant Professor, EEE department and submitted in partial fulfillment of the requirement for the award of the degree of Bachelor of Engineering in Electrical & Electronics Engineering, at Dayananda Sagar College of Engineering, an autonomous institution affiliated to VTU, Belagavi during the academic year 2023-2024.

We further declare that we have not submitted this report either in part or in full to any other university for the award of any degree.

Sumangala Police Patil	**1DS22EE091**
Vijayalaxmi Siddappa Karjagi	**1DS22EE102**
Zoyataj S	**1DS22EE110**
Rakshitha N	**1DS23EE418**

ACKNOWLEDGEMENT

The satisfaction and euphoria that accompany the successful completion of any task would be incomplete without the mention of people who made it possible and under whose constant guidance and encouragement the task was completed. We express our sincere regards to the **Management of Dayananda Sagar College of Engineering, Bengaluru.**

We express our sincere regards and thanks to **Dr. B G Prasad, Principal, Dayananda Sagar College of Engineering, Bengaluru.** His incessant encouragement guidance and valuable support have been immense help in realizing this mini project.

We express our sincere regards and thanks to **Dr. Premkumar M, Professor & HOD, Department of Electrical and Electronics Engineering, Dayananda Sagar College of Engineering, Bengaluru.** His incessant encouragement guidance and valuable technical support have been immense help in realizing this mini project. His guidance gave us the environment to enhance our knowledge, skills and to reach the pinnacle with sheer determination, dedicated and hard work.

We would like to express profound gratitude to our guide **Mrs Deekshitha Arasa, Assistant Professor, Department of Electrical and Electronics Engineering, Dayananda Sagar College of Engineering, Bengaluru** who has encouraged us throughout the mini project. Her moral support enabled us to complete our work successfully.

We express our sincere thanks to Mini project Coordinator **Dr. Suchana Mishra**, **Assistant Professor, Department of Electrical and Electronics Engineering** for her continues support and guidance. We thank all teaching and non-teaching staff of Electrical and Electronics Engineering department for their kind and constant support throughout the academic Journey.

ABSTRACT

Road traffic injuries make high economic losses for people, their families, and to countries in general. These misfortunes emerge from the expense of treatment as well as lost efficiency for those killed or crippled by their injuries, and for family individuals who need to get some much-needed rest work or school to really focus on the harmed. Road traffic crashes cost most nations 3% of their GDP. So here we design a system that can alert the vehicle owner/loved ones over SMS as soon as any signs of accident or may lead to an accident are detected. The system makes use of Temperature sensor for fire detection in car, Vibration sensor to detect any impact force or heavy vibrations, Alcohol sensor to check if driver was drunk, gyro scope sensor to record data if vehicle tilted or turned over during accident and a GPS and GSM modem to send SMS with GPS Coordinates about the incident. This complete system is now powered by an Arduino Mega to operate the system. The system also has 2 Motors used to demonstrate as car engine. The system monitors all sensor data to check for any abnormalities. Is alcohol sensor is triggered the controller similarly sends an SMS notification with alcohol data and GPS Coordinates on Map link for easy vehicle location tracking. In case of any sensor triggers an abnormal activity, the black box starts storing all sensor data on a second-by-second basis in an SD card so that investigation team may recover the data and study exactly what went on during the accident.

TABLE OF CONTENTS

CHAPTER- 1

INTRODUCTION

The causes of car accidents are not too difficult to investigate as that of plane crashes, but there are some cases that are very difficult to solve due to contradictory stories of drivers. . In order to know what type of sensors should be installed into the vehicle, research was carried out to identify the main information needed for better accident analysis. A wireless box using micro electro mechanical systems (MEMS) accelerometer and GPS tracking system is developed for accidental monitoring. In the event of an accident, this wireless device will send a short message on the mobile phone, indicating the position of the vehicle using a GPS. As soon as the driver runs the motor, the system will begin saving the events of corresponding vehicle. Black box refers to collection of several different recording devices. Car black box is "event data recorder". The causes of the car accident are not too difficult to investigate as that of plane crashes but many cases are very difficult to solve due to contradictory stories of drivers. The collection of the real time data after the detection of collision around the vehicle environment and analyze the collected data to have the conclusion regarding the collision and simultaneously transmitting the data over the wireless network.

A black box system is very useful for the automobile industry innovative black box is developed using various sensors like steer touch sensor, hall effect sensor and an android app that contains features of audio/video and GPS/GSM. Car black box is digital electronics device, which records and stores vehicle's speed, vehicle location, vehicle temperature, distance from obstacles, and real time and vehicle's other status information's. It helps to discover and to analyze the reason of an accident easily and to settle many disputes related to a car accident, such as, crash and insurance settlements. Data from all sensors is recorded using electrically erasable programmable read only memory (EEPROM). Consistently the existences of roughly 1.3 million individuals are cut short because of a road traffic crash. Somewhere in the range of 20 and 50 million additional individuals experience non-fatal injuries, with many causing a disability because of their physical issue. Road traffic injuries make high economic losses for people, their families, and to countries in general These misfortunes emerge from the expense of treatment as well as lost efficiency for those killed or crippled by their injuries, and for family individuals who need to get some much needed rest work or school to really focus on the harmed. Road traffic crashes cost most nations 3% of their GDP.

CHAPTER 2

LITERATURE SURVEY

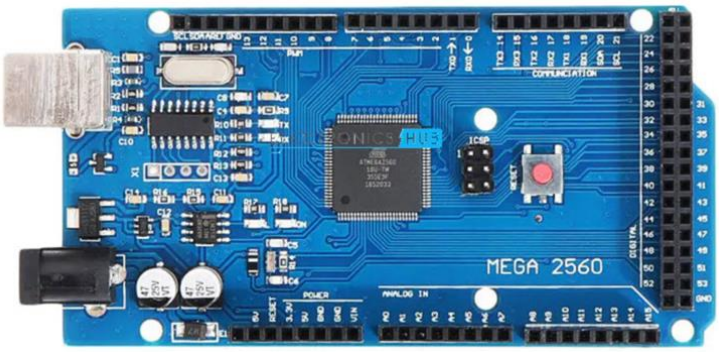
Sri Krishna Chaitanya Varma, Poornesh, Tarun Varma and Harsha in [3] have designed a working model of automatic vehicle accident detection and messaging. system using a GPS and GSM modems successfully. In this. work they have used a basic AT89C52 microcontroller for cost effective and easy understanding. The microcontroller is interfaced to GPS and GSM module via a multiplexer, where these devices activated using select lines internally built in the multiplexer. When the IR sensors sense any obstacle, they send an interrupt to microcontroller. The GPS receives the location of the vehicle that met with an accident and gives the information back. This information will be sent to a mobile number through a message. This message will be received using GSM modem present in the circuit. The message will give the information of longitude and latitude values. Using these values the position of the vehicle can be estimated. They have used assembly programming for better accuracy.

Mr.Dinesh Kumar HSDK, Shreya Gupta, Sumeet Kumar and Sonali Srivastava in 19] have designed an accident detection and reporting system using GPS and GSM module. The system incorporates a single-board embedded system that contains GPS and GSM modems connected with a microcontroller89552, alcohol sensor and vibration sensor, GPS is used to identify the exact location of the vehicle and GSM is used to inform the exact vehicular location to the pre- coded number. In accidents, when the drivers lose control and fail to stop the vehicle, the vibration sensor will be triggered because of the vibrations. The processor locks the brakes when triggered and thus the impact of the accident can be weakened.

CHAPTER 3

HARDWARE REQUIREMENT

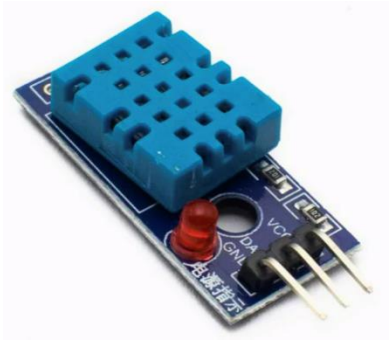
Arduino Mega



3.1

The Arduino Mega 2560 is a microcontroller board based on the ATmega2560. It has 54 digital input/output pins (of which 15 can be used as PWM outputs), 16 analog inputs, 4 UARTs (hardware serial ports), a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.

Temperature sensor

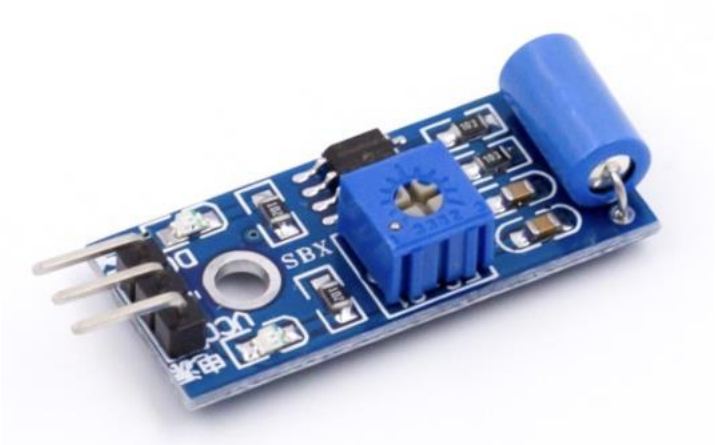


3.2

A temperature sensor is a device, typically, a thermocouple or resistance temperature detector, that provides temperature measurement in a readable form through an electrical signal. The basic principle of working the temperature sensors is the voltage across the diode terminals. If the voltage increases, the temperature also rises, followed by a voltage drop between the transistor terminals of the base and emitter in a diode.

The working of a temperature meter depends upon the voltage across the diode. The temperature change is directly proportional to the diode's resistance. The cooler the temperature, the lesser will be the resistance, and vice-versa.

Vibration sensor

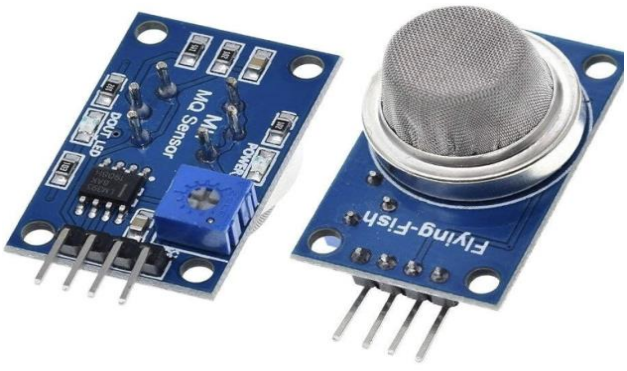


3.3

A vibration sensor is a device that detects mechanical vibrations. It measures the vibration levels in your machine and alerts you to any potential problems, like equipment failure or worn parts that need replacement. Vibration sensors can help improve efficiency and prevent costly downtime by detecting these problems before they happen.

Vibration sensors are devices that detect vibration, shock, and sound. They can be used in machinery to detect problems before they happen. Vibration sensors work by detecting the motion of a material or object by sensing its frequency. The faster the movement, the higher the frequency detected on a vibration sensor.

Alcohol Sensor

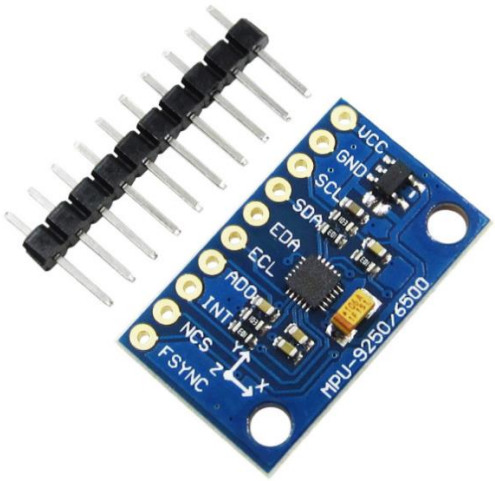


3.4

A alcohol sensor 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 SnO2, whose conductivity is lower in clean air. It's conductivity increases as the concentration of alcohol gases increases. It has high sensitivity to alcohol and has a good resistance to disturbances due to smoke, vapor and gasoline. This module provides both digital and analog outputs. MQ3 alcohol sensor module can be easily interfaced with Microcontrollers, Arduino Boards, Raspberry Pi etc.

This alcohol sensor is suitable for detecting alcohol concentration on your breath, just like your common breath analyzer. It has a high sensitivity and fast response time. Sensor provides an analog resistive output based on alcohol concentration. The drive circuit is very simple, all it needs is one resistor. A simple interface could be a 0-3.3V DC.

Gyroscope Sensor

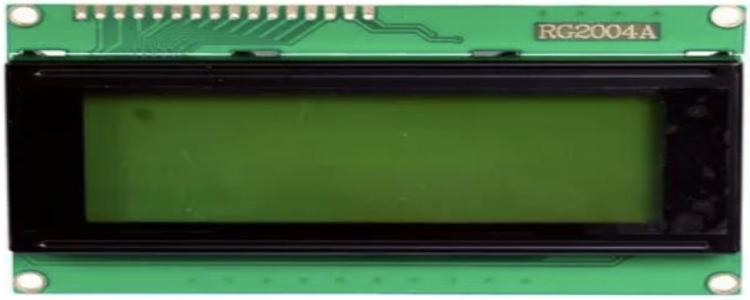


3.5

Gyroscope sensor is a device that can measure and maintain the orientation and angular velocity of an object. These are more advanced than accelerometers. These can measure the tilt and lateral orientation of the object whereas accelerometer can only measure the linear motion.

Gyroscope sensors are also called as Angular Rate Sensor or Angular Velocity Sensors. These sensors are installed in the applications where the orientation of the object is difficult to sense by humans.Besides sensing the angular velocity, Gyroscope sensors can also measure the motion of the object.

LCD Display

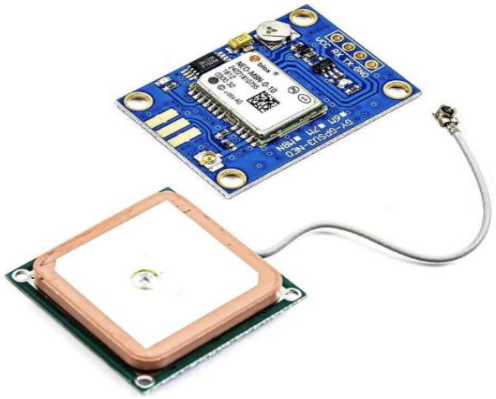


3.6

An LCD consists of a layer of liquid crystals sandwiched between two transparent electrodes. When an electric current is applied, the crystals align to control the amount of light passing through them, creating the image you see on the screen.

A liquid-crystal display (LCD) is a flat-panel display or other electronically modulated optical device that uses the light-modulating properties of liquid crystals combined with polarizers. Liquid crystals do not emit light directly but instead use a backlight or reflector to produce images in colour or monochrome.

GPS Module



3.7

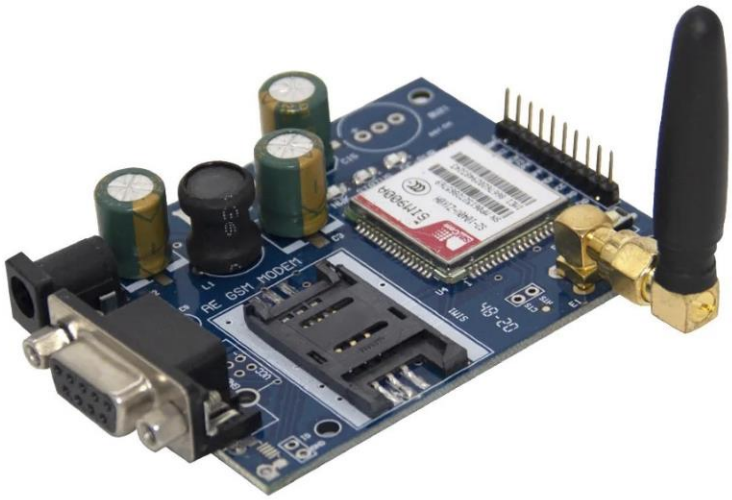
Global Positioning System (GPS) is a satellite-based system that uses satellites and ground stations to measure and compute its position on Earth. GPS receivers are generally used in smartphones, fleet management system, military etc. for tracking or finding location. GPS is also known as Navigation System with Time and Ranging (NAVSTAR) GPS.

GPS receiver needs to receive data from at least 4 satellites for accuracy purpose. GPS receiver does not transmit any information to the satellites. This GPS receiver is used in many applications like smartphones, Cabs, Fleet management etc.

GPS receiver module gives output in standard (National Marine Electronics Association) NMEA string format. It provides output serially on Tx pin with default 9600 Baud rate.

This NMEA string output from GPS receiver contains different parameters separated by commas like longitude, latitude, altitude, time etc. Each string starts with $ and ends with carriage return/line feed sequence.

GSM Modem



3.8

GPS (Global Positioning System) devices display a range of information that can be useful for navigation, tracking, and location-based services. A GSM modem is a specialized type of modem which accepts a SIM card, and operates over a subscription to a mobile operator, just like a mobile phone. From the mobile operator perspective, a GSM modem looks just like a mobile phone.

When a GSM modem is connected to a computer, this allows the computer to use the GSM modem to communicate over the mobile network. While these GSM modems are most frequently used to provide mobile internet connectivity, many of them can also be used for sending and receiving SMS and MMS messages.

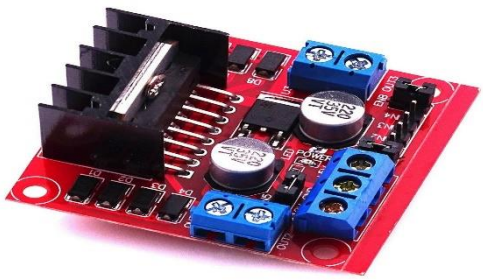
DC motors

3.9

DC motor is a machine that converts electrical energy of direct current into mechanical energy. In a DC motor, the input electrical energy is direct current which is converted into mechanical rotation.

DC Motor is an electrical machine which, when provided with direct current electrical energy, converts it into mechanical energy. It is based on electromagnetic induction, where a conductor carrying current (normally a coil of wire) placed in a magnetic field experiences force to rotate. This rotation is used to perform mechanical work.

Motor Driver:



3.10

A motor driver is an electronic device used to control the direction, speed, and operation of electric motors. It acts as an interface between a microcontroller (or other control units) and the motor, providing the necessary current and voltage to drive the motor according to the control signals.

Jumper wires

3.11

Jumper wires are simply wires that have connector pins at each end, allowing them to be used to connect two points to each other without soldering. Jumper wires are typically used with breadboards and other prototyping tools in order to make it easy to change a circuit as needed.

Bread board

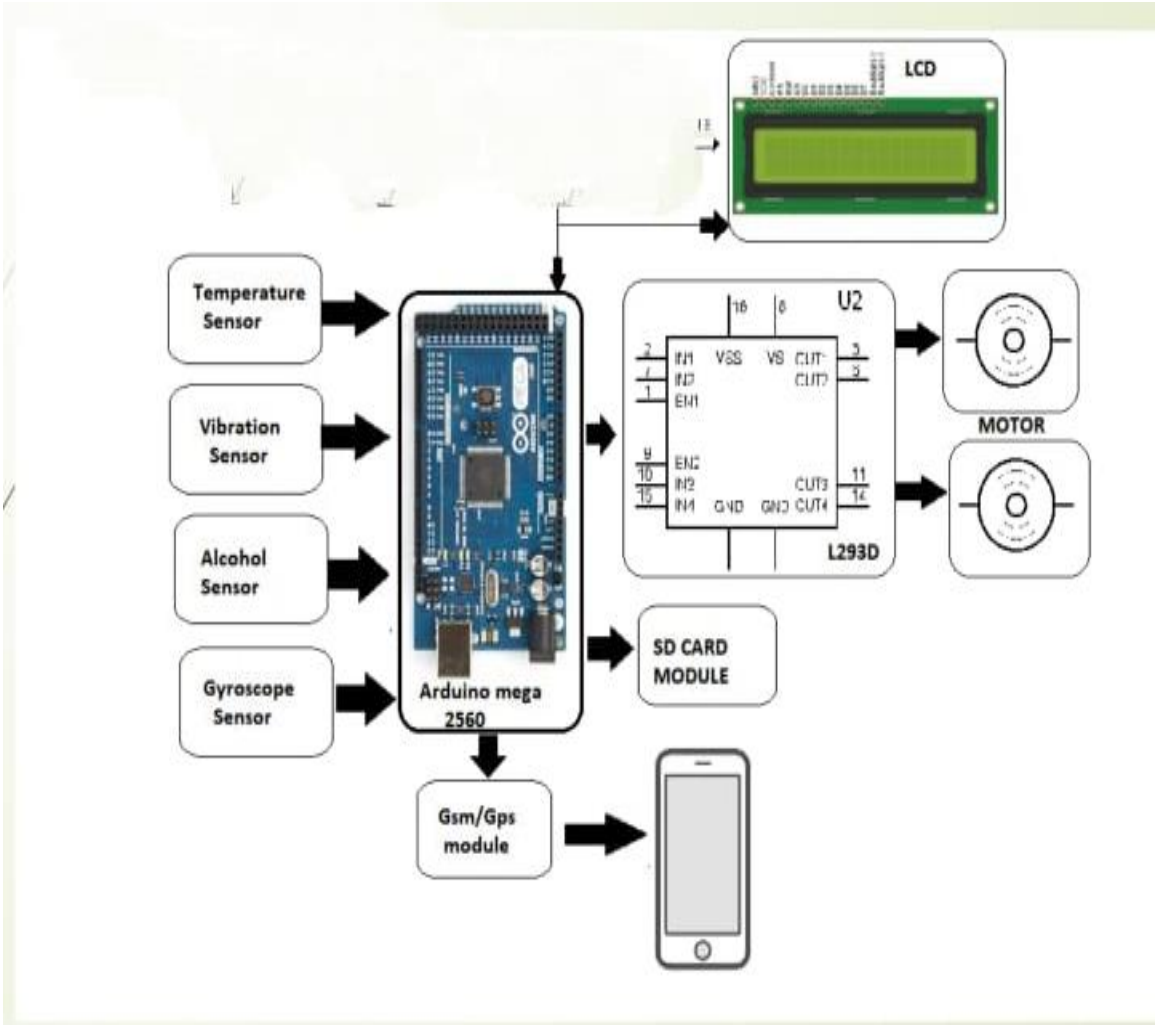
3.12

A breadboard is a rectangular plastic board with a bunch of tiny holes in it. These holes let you easily insert electronic components to prototype (meaning to build and test an early version of) an electronic circuit, like this one with a battery, switch, resistor, and an LED (light-emitting diode).

CHAPTER- 4

METHODOLOGY

BLOCK DIAGRAM



The Connections are as follows:

- Temperature sensor's vcc pin is connected to 5 volts ,data pin is connected to analog, ground is connected to ground of the aurdino mega.
- Vibration sensor vcc pin is connected to 5 volt, ground is connected to ground and the digital pin is connected to digital output of the aurdino mega.
- Gas sensors vcc pin is connected to 5 volt and ground is connected to ground, analog pin is connected to A5, digital pin is connected to D44 of the Aurdino mega.
- GSM model vcc is connected to 5 volt, ground is connected to the ground, RX pin is connected to RX 217, and TX penis connected to TX 216 of the aurdino mega.
- GPS model vcc pin is connected to the 5 volt, ground is connected to ground, RX is connected to TX 119 and the TX pin is connected to RX 118 of the aurdino mega.
- SD card adaptor BCC is connected to 5 volts, ground is connected to ground MISO is connected to D50, MOSI CONNECTED TO D51, SEK is connected to D52, CS is connected to D53 of the aurdino mega.
- Digital accelerometre's vcc pen is connected to 5 volt, ground is connected to the ground, CS is connected to D48, SDO is connected to D46, SDA is connected to D49 and SCL is connected to D47 of the aurdino mega.
- Motor driver ENA pin is connected to digtal pin 9, IN1 is connected to analog pinA0, IN2 is connected to analog pin1, IN3 pin is connected to analog pin2,IN4 pin is connected to analog pin3, ENB pin is connected to digital pin10 of the aurdino mega.

WORKING

The system makes use of Temperature sensor for fire detection in car, Vibration sensor to detect any impact force or heavy vibrations, Alcohol sensor to check if driver was drunk, gyro scope sensor to record data if vehicle tilted or turned over during accident and a GPS and GSM modem to send SMS with GPS Coordinates about the incident. This complete system is now powered by an Arduino Mega to operate the system.

The system also has 2 Motors used to demonstrate as car engine. We can increase the speed of Motors using Trimpot. As we increase the speed beyond set limit, the system detects over speeding and sends an SMS Message with over speeding alert and GPS coordinates to registered number. The system monitors all sensor data to check for any abnormalities. If the fire sensor detects a fire, the controller operates the interfaced GSM modem to send an SMS to the registered contact number informing about the event and also starts recording data.

Similarly if the vibration sensor detects heavy vibrations, the controller sends SMS to registered number informing about the event to the registered user. Is alcohol sensor is triggered the controller similarly sends an SMS notification with alcohol data and GPS Coordinates on Map link for easy vehicle location tracking. In case of any sensor triggers an abnormal activity the black box starts storing all sensor data on a second by second basis in an SD card so that investigation team may recover the data and study exactly what went on during the accident.

CHAPTER - 5

ADVANTAGES AND DISADVANTAGES

ADVANTAGES

- Enhanced Safety: Implementing this technology can improve safety measures. This could refer to physical safety (e.g., in vehicles or machinery) or data safety (e.g., in cybersecurity).
- Accountability and Legal Evidence: The technology helps in maintaining accountability by providing reliable records that can serve as legal evidence if required. This might be useful in situations such as traffic incidents, workplace disputes, or criminal investigations.
- Insurance Benefits: Using this technology can lead to reduced insurance premiums or other benefits. For example, car insurers might offer discounts for vehicles equipped with advanced safety features or tracking devices.
- Data Collection and Analysis: The technology enables extensive data collection and analysis, which can be used to improve services, enhance efficiency, or predict future trends.
- Real-Time Alerts: It provides real-time alerts to users about important events or conditions. This could include notifications about security breaches, equipment failures, or other critical situations that require immediate attention.
- Parental Control and Fleet Management: This benefit includes features that allow parents to monitor and control their children's activities or enables companies to manage their vehicle fleets more effectively.
- Technological Advancement and Innovation: The adoption of this technology can drive technological progress and innovation, leading to the development of new products, services, or processes.

DISADVANTAGES

- Continuous monitoring and data collection can lead to significant privacy issues. Drivers and passengers might feel uncomfortable knowing that their movements and behaviors are being tracked.
- Cost: The installation and maintenance of Smart Drive Sentry systems can be expensive. This includes the initial purchase cost, potential subscription fees for software services, and costs for repairs or upgrades.
- Data Security: The data collected by these systems could be vulnerable to hacking or unauthorized access. If sensitive Privacy Concerns: information is compromised, it could lead to identity theft or other security breaches.
- False Sense of Security: Relying too heavily on the system might lead to complacency among drivers. They may become less attentive or assume the system will handle all safety aspects, potentially increasing the risk of accidents.

CHAPTER –6

APPLICATIONS

- Personal Vehicle Safety: Smart Drive Sentry systems enhance the safety of individual drivers and passengers by providing features such as real-time monitoring, collision warnings, and automated emergency assistance. This can help prevent accidents and improve overall driving behavior.

- Commercial Fleet Management: For businesses with vehicle fleets, these systems can optimize operations by tracking vehicle locations, monitoring driver behavior, and ensuring timely maintenance. This leads to increased efficiency, reduced costs, and improved safety.

- Insurance Industry: Insurance companies can use data from Smart Drive Sentry systems to assess risk more accurately, leading to personalized insurance premiums. This data can also expedite the claims process by providing clear evidence of incidents.

- Emergency Response: In the event of an accident or emergency, Smart Drive Sentry systems can automatically alert emergency services, provide them with precise location data, and even offer details about the nature of the incident, thus reducing response times and improving outcomes.

- Road Safety Research and Policy Making: The extensive data collected by these systems can be invaluable for researchers and policymakers. Analyzing this data can lead to better understanding of road safety issues, influencing the development of more effective traffic laws and safety regulations.

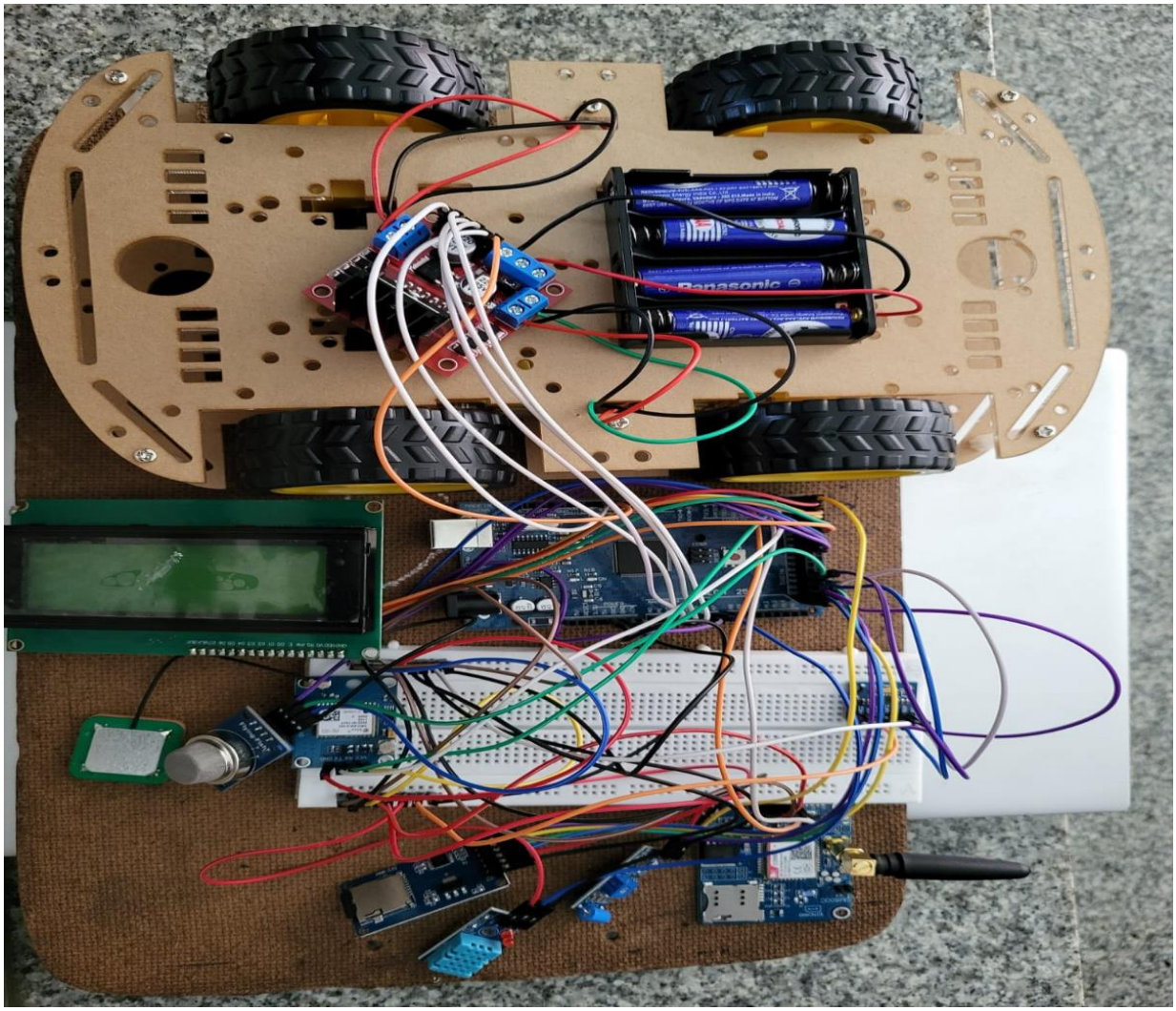
- Public Transportation: Implementing Smart Drive Sentry systems in public transportation vehicles can enhance passenger safety, improve route efficiency, and ensure compliance with regulations. These systems can also monitor driver performance and reduce the likelihood of accidents.

- Technological Integration: The integration of Smart Drive Sentry systems with other technologies, such as GPS, IoT devices, and advanced analytics, can create a more interconnected and efficient transportation ecosystem. This can lead to smarter cities and improved transportation infrastructure.

- Educational and Training Program: These systems can be used in driver education and training programs to provide real-time feedback and monitor progress. This can help new drivers develop safe driving habits and allow experienced drivers to improve their skills.

CHAPTER – 7

RESULT



CHAPTER- 8

CONCLUSION

This project on "CAR ACCIDENT AND ALCOHOL DETECTOR AND RECORDER BOX" is working fire, getting the parameter envisaged during the conceptual stage. During the design, as well as during the construction, greater care has been put in to avoid hiccups at the final stage. The PCB layouts were prepared with at most care to incorporate the circuits in a modular manner. The circuit is made as simple as to our knowledge. Also components and cost. It was a very interesting process of developing the prototype, stage by stage and testing the same. We have to go through fairly large pages of data related to the components etc. It was a useful and fulfilling assignment to get the project completed in time. This gave as a sense of satisfaction and accomplishment.

The advent of Smart Drive Sentry systems marks a significant leap forward in automotive safety technology. These systems, equipped with a suite of advanced sensors, real-time monitoring capabilities, and data analytics, offer a comprehensive solution to enhance road safety. By continuously assessing the driving environment and driver behavior, Smart Drive Sentry systems provide timely alerts and interventions that help prevent accidents and ensure a safer driving experience.

Smart Drive Sentry systems benefit various sectors, from personal vehicles and commercial fleets to public transportation and emergency response. They optimize operations, reduce costs, and, most importantly, save lives. The integration of these systems can lead to more informed road safety policies, improved driver education, and a safer driving environment overall.

As we move towards an increasingly connected and automated world, the role of Smart Drive Sentry systems will become even more crucial. They not only enhance individual driver safety but also contribute to the broader goal of making our roads safer for everyone. Embracing this technology is a step forward in ensuring that our journeys are not only efficient but also secure. The future of driving is bright, safe, and intelligent with Smart Drive Sentry systems leading the way.

REFERANCE

[1] G. Hayes, F. Blosser, “Motor Vehicle Crashes Claim More than a Million Lives Worldwide”, CDC Injury Center Media Relations, Press Release, April, 2004.

[2] Abdallah Kassem, Rabih Jabr, Ghady Salamouni, Ziad Khairallah Maalouf, “Vehicle Black Box System”, Proceedings of the 2nd Annual IEEE System Conference, IEEE 2008, pp. 1-6.

[3] Byung Yun Lee, Yong Yoon Shin, Hyun Joo Bae, “Development of Insurance Server System based on Vehicle Driving Information “, Proceedings of 7th IEEE International Conference on Computing and Convergence Technology (ICCCT), 2012, pp. 156 – 159.

[4] Jacek W, "Embedded Internet technology in process control devices," IEEE Internet Computing, Vol. 34, 2000.

[5] Douglas, "Engineering Web Technologies for Embedded Applications," IEEE Internet Computing, May/June 1998.

[6] International journal of Innovative Science and Modern Engineering (IJISME) ISSN: 2319-6386, Volume -2 Issue -11, October2014.