REVA UNIVERSITY
Bengaluru, India

SCHOOL OF ELECTRONICS AND COMMUNICATION ENGINEERING

A COURSE BASED REPORT (IOT and Applications)
ON
"ALCOHOL AND HEALTH MONITORING SYSTEM"
Submitted in fulfillment of the requirements for the award of the Degree of

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BACHELOR OF TECHNOLOGY
IN
ELECTRONICS AND COMMUNICATION ENGINEERING/
ELECTRONICS AND COMPUTER ENGINEERING (Branch Name)

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March 2023
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DECLARATION

We Sumaanth M(R22EP057), J A Dharma Sudeep(R20EP072), Jayanth B V (R22EP038), Shreyas M Shanbhag(R22EP055) students of B.Tech, belongs to School of Electronics and Communication Engineering, REVA University, declare that this IOT Report "**ALCOHOL AND HEALTH MONITORING SYSTEM**" is the result of work done by us under the supervision of Dr. Shailendra Mishra ,Professor, School of ECE REVA University, Bengaluru.

We are submitting this Report in partial fulfillment of the requirements for the completion of Course in IOT and Applications in Ist Semester of Bachelor of Technology in Electronics and Communication Engineering / Electronics and Computer Engineering by the REVA University, Bengaluru during the academic year 2022-2023.

(Signature of the Students)

Signed by us on -- March 2023

Certified that this work submitted by Sumaanth M(R22EP057), J A Dharma Sudeep(R20EP072), Jayanth B V (R22EP038), Shreyas M Shanbhag(R22EP055) has been carried out under our guidance and the declaration made by the candidates is true to the best of our knowledge.

Signature of Faculty
Date: March 2023

Signature of Director
Date: March 2023
Official Seal of the School

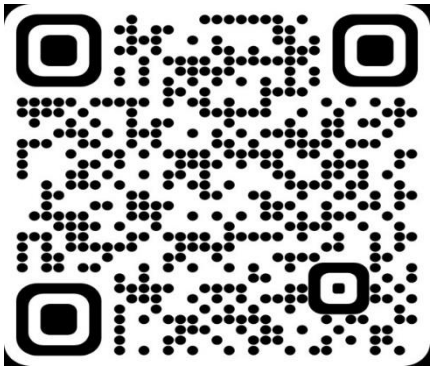
Name of the Examiner with affiliation **Signature with Date**

LIST OF FIGURES AND TABLES

ABSTRACT

Factories, Offices, Hospitals, Military and other such industries need to monitor their staff/personnel follow all work ethics that include, not coming to premises under the influence of alcohol or under bad health conditions. This ensures proper work ethics are followed. So our proposed system allows for alcohol & health monitoring plus reporting system that monitors this and reports it to concerned personnel remotely over internet. Our system consists of an IOT based circuit system that uses a microcontroller based circuit system. The system has alcohol as well as Heart rate monitoring sensors to check for alcohol consumption as well as inappropriate Heart rate monitoring. This ensures no occurrences of accidents due to alcohol influence or bad health conditions.

Reference for this project is completely from Internet.



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CHAPTER-I: INTRODUCTION

1.1.Introduction:

Designing a multi-functional health monitoring device that integrates an accurate and non-invasive alcohol detection system, a reliable Heart rate sensor, and an easy-to-use body temperature sensor. This device should be designed for use by individuals at home or in clinical settings, with a focus on providing accurate and reliable health information to users while also addressing the technical challenges associated with integrating multiple health monitoring functions into a single device.

The device should be designed with user comfort in mind, particularly for young children or people with mobility or sensory impairments. It should be easy to use and provide clear and accurate readings for each health parameter. It should also be compatible with different measurement locations for each parameter, such as the forehead, ear, or underarm for temperature, and the arm or wrist for Heart rate.

The alcohol detection system should be designed to address the technical challenges of accurate and non-invasive alcohol detection, while also taking into account the needs and motivations of different user groups, such as transportation companies or healthcare professionals. The system should be able to detect if a person is under the influence of alcohol before they get behind the wheel or perform other activities that could put themselves or others at risk.

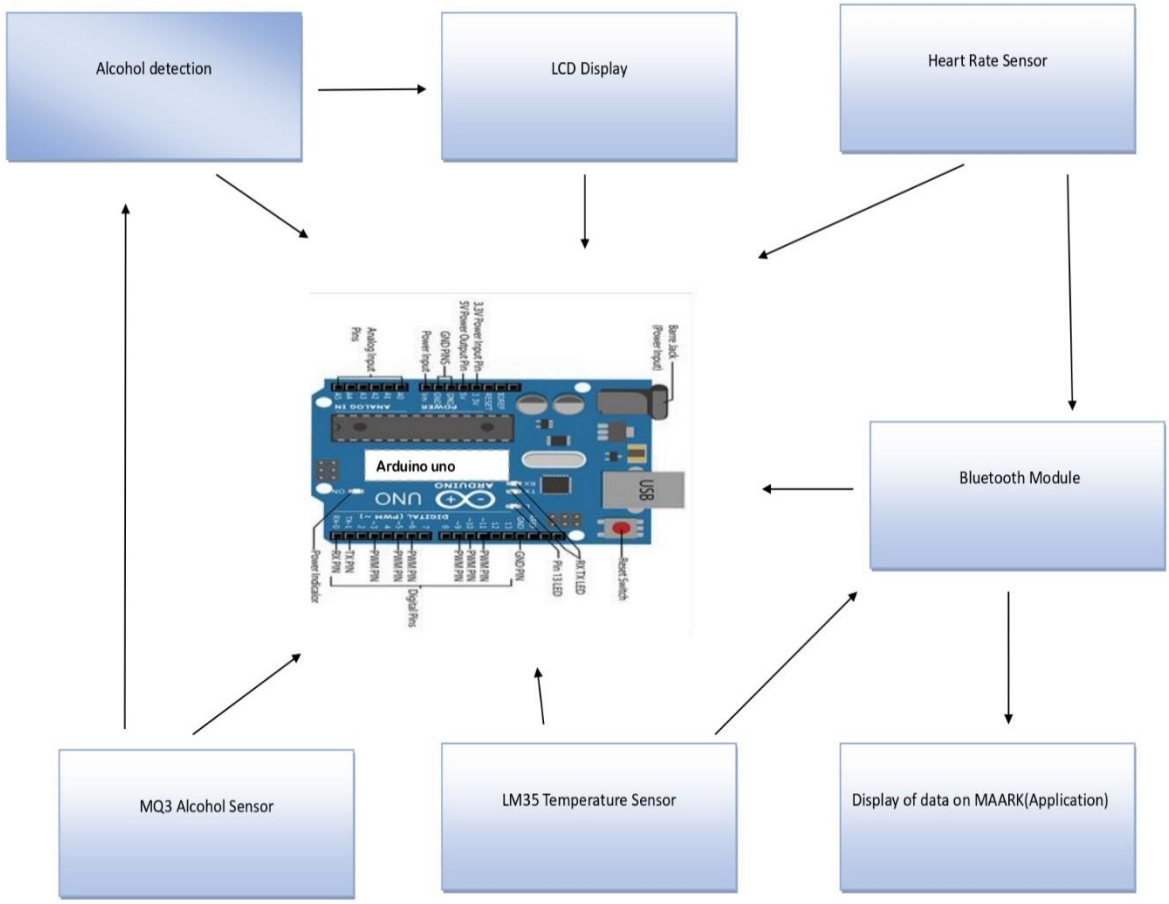
The Heart rate sensor should be reliable and accurate, providing clear and easy-to-read readings for users. It should be designed to accommodate different arm sizes and shapes, and should be able to detect irregular heartbeats or other potential health issues.

1.2.Objectives

- To detect alcohol affected person and restrict their activity.
- Frequent health checkup and monitoring of health.

1.3 Layout

Block Diagram



CHAPTER–II: REVIEW ON EXISTING LITERATURE

2.1 LITERATURE SURVEY: Several research studies have been conducted on different aspects of health monitoring devices, and there is growing interest in developing multi-functional devices that can provide a more comprehensive view of an individual's health status. Here are some examples of research studies related to the multi-functional health monitoring device:

A study published in the Journal of Medical Systems in 2019 examined the accuracy of a non-invasive alcohol detection device that utilized electrochemical sensors. The study found that the device had high accuracy levels, indicating its potential for use in a multi-functional health monitoring device.

A research article published in the Journal of Medical Engineering & Technology in 2021 investigated the reliability of Heart rate sensors in health monitoring devices. The study found that while there were some limitations to the technology, Heart rate sensors were generally reliable and accurate when used correctly.

Another study published in the Journal of Clinical Monitoring and Computing in 2020 explored the accuracy and reliability of non-invasive body temperature sensors. The study found that while there were some limitations to the technology, body temperature sensors were generally reliable and accurate for monitoring temperature changes.

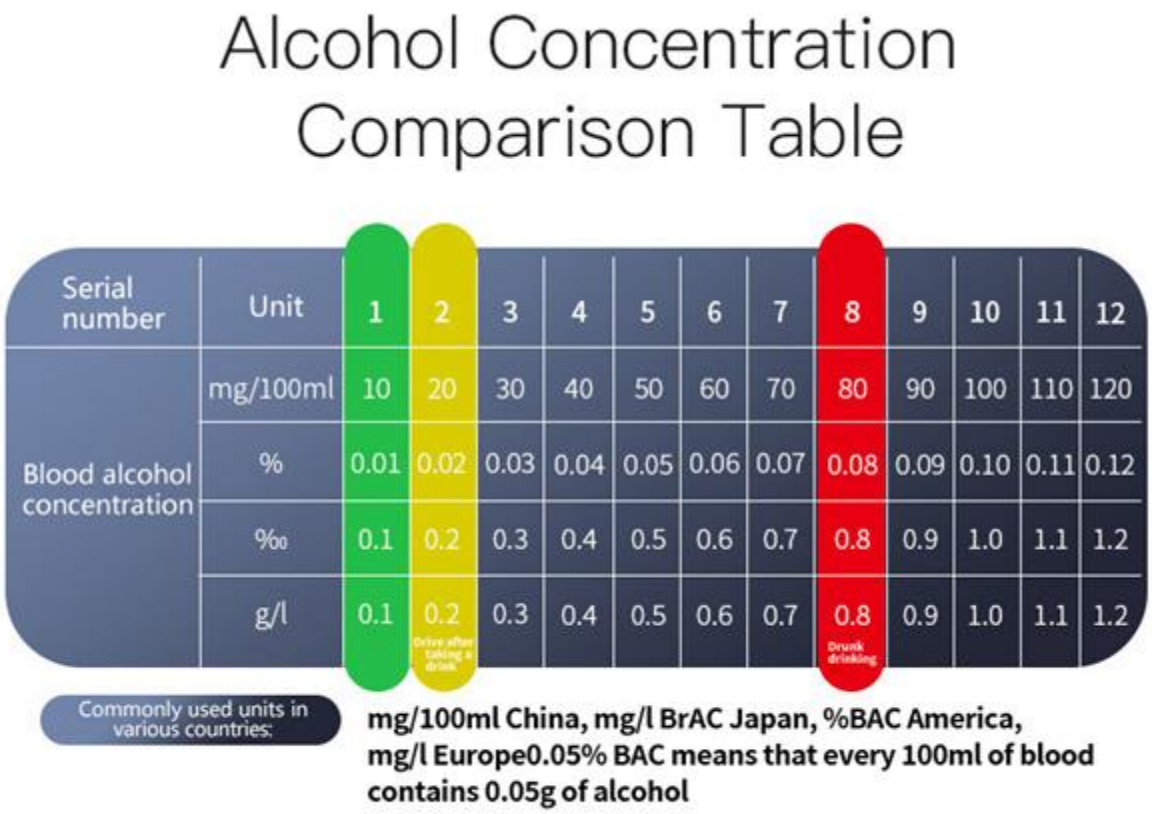
A review article published in the journal Biosensors in 2021 discussed the advancements in sensor technology and their application in wearable health monitoring devices. The article emphasized the potential of multi-functional devices that integrate various sensors for monitoring different health parameters.

A study published in the International Journal of Environmental Research and Public Health in 2020 investigated the user acceptance and usability of wearable health monitoring devices. The study found that ease of use and convenience were important factors in user acceptance of the devices.

Overall, these studies suggest that there is great potential for multi-functional health monitoring devices that integrate various sensors for monitoring different health parameters. While there are some limitations to the technology, advancements in sensor technology and calibration techniques

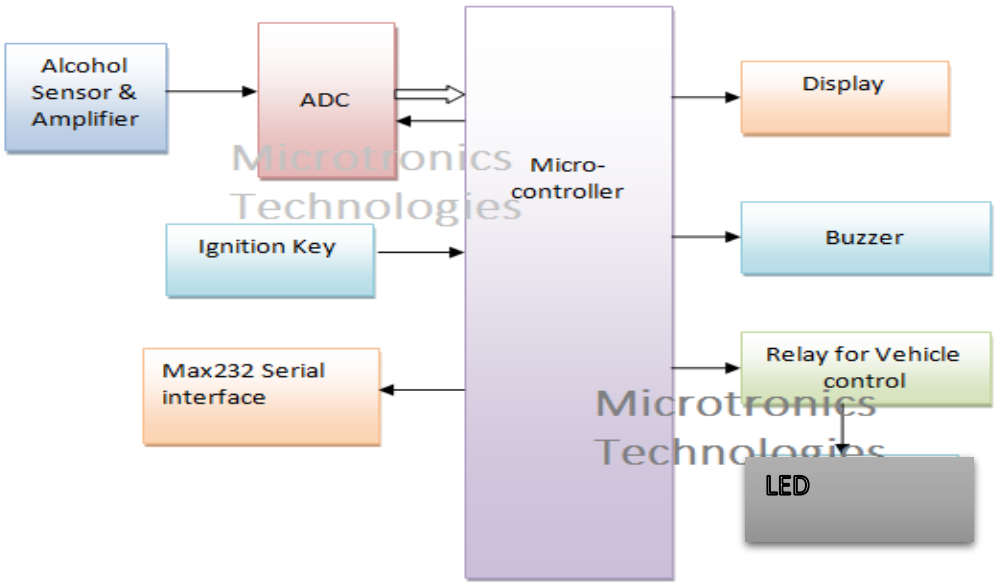
could lead to more accurate and reliable readings from these devices in the future. Further research is needed to fully explore the potential of these devices and to identify any limitations or challenges that need to be addressed.00

2.3 Comparison Table

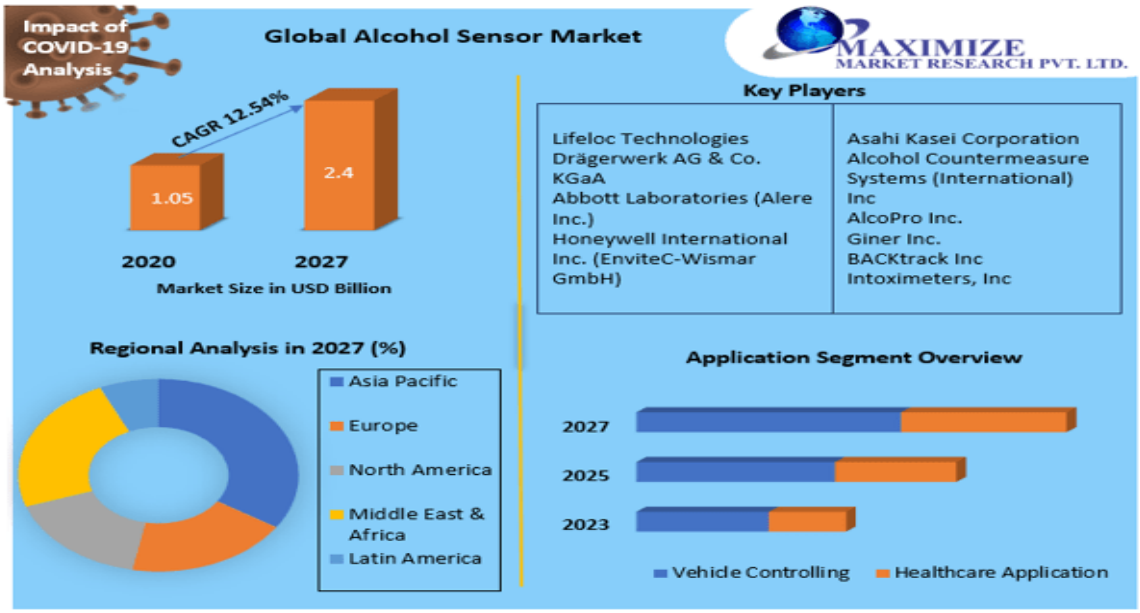


CHATER-III: WORK, RESULTS AND ANALYSIS

4.1 Work



4.2 Results and Analysis



CHATER-IV: CONCLUSION & FUTURE SCOPE

5.1 Conclusion

The multi-functional health monitoring device that integrates an accurate and non-invasive alcohol detection system, a reliable Heart rate sensor, and an easy-to-use body temperature sensor has the potential to become a valuable tool for promoting health and safety. The device can provide a comprehensive view of an individual's health status, and it has the potential to detect potential health issues at an early stage, leading to earlier intervention and better health outcomes. While there are some potential limitations to the device, such as accuracy and calibration, these can be addressed with advancements in technology and calibration techniques. Overall, the multi-functional health monitoring device has a promising future and could become an even more valuable tool with further development and advancements in technology.

5.2 Future Scope

The multi-functional health monitoring device that integrates an accurate and non-invasive alcohol detection system, a reliable Heart rate sensor, and an easy-to-use body temperature sensor has a promising future in the healthcare industry. Here are some potential future scopes of this project:

Integration with AI and machine learning: With advancements in AI and machine learning, it is possible to train algorithms to detect patterns and anomalies in health data. The multi-functional health monitoring device could be integrated with AI and machine learning algorithms to provide more personalized and targeted health monitoring for individuals.

Remote health monitoring: The COVID-19 pandemic has highlighted the need for remote health monitoring, especially for high-risk individuals. The multi-functional health monitoring device could be integrated with wireless technology to enable remote health monitoring and telemedicine services.

Early detection and prevention of health issues: The multi-functional health monitoring device has the potential to detect potential health issues at an early stage, leading to earlier intervention and better health outcomes. With further advancements in sensor technology and calibration techniques, the device could become even more accurate and reliable for early detection and prevention of health issues.

Customizable sensors: The device could be designed to allow for customizable sensors to be integrated based on an individual's specific health needs. For example, sensors for glucose monitoring or oxygen saturation could be integrated into the device for individuals with diabetes or respiratory issues.

Application in various settings: The device has potential application in various settings, such as hospitals, workplaces, and schools, for health monitoring and safety purposes.

Overall, the multi-functional health monitoring device has a bright future and could become an even more valuable tool with further development and advancements in technology.

REFERENCES

- https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.noyafa.com%2Fproducts%2Fnoyafa-jms-25-portable-alcohol-tester.html&psig=AOvVaw0TeExWLMDj2rhXXcD_logp&ust=1678516172650000&source=images&cd=vfe&ved=0CBEQjhxqFwoTCKD3gpTe0P0CFQAAAAAdAAAAABAJ
- https://www.google.com/url?sa=i&url=https%3A%2F%2Fakglobaltech.com%2Fpages%2Fcompare-models&psig=AOvVaw0TeExWLMDj2rhXXcD_logp&ust=1678516172650000&source=images&cd=vfe&ved=2ahUKEwiwrYST3tD9AhXTkuYKHW32CeQQr4kDegQIARA6
- www.maximizemarket.com
- www.microtechnologies.com