HELIXON

A PROJECT REPORT

Submitted by

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CHENNAI-66

BONAFIDE CERTIFICATE

Certified that this Project report "**HELIXON - REAL TIME DATA STORING AND PERSON TRACKING**" is the bonafide work of "**V.T. ABDUL KAREEM FARIDH, R KIRANRAJ** and **R GANESH KARTHIK**" who carried out at the project work under my supervision.

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ABSTRACT

An accident insurance scam is a fraudulent activity in which an individual or group of individuals attempt to gain financial benefits from an insurance company by filing a false accident claim. This type of scam can be committed by both individuals and organized groups, and it can take various forms. One common type of accident insurance scam involves faking an injury or accident to receive compensation. For example, an individual may fake a slip and fall in a store or a car accident to collect insurance money. Sometimes, fraudsters will even stage an accident involving multiple parties to file a false claim. As far as the concern of cars, they have been enabled with dash cameras which can record the fault events and report to the investigation the real scenario. But when it comes to bikes there are no such gadgets that can save the victim of an accident insurance scam. So, we have created a helmet that can record the real time footage of your daily drives with the help of a 4mp camera and directly store it in the cloud. By this we can easily re-watch the whole indecent and help ourselves out of the insurance scam. And with the help of the application, we can access the camera and even our videos. We are using a event tracker sensor that can detect the impact of any damage to the helmet and report about the impact to the friends and family who are connected to the application provided. Consist of rechargeable six battery back-up which enable battery capacity for up-to whole six hours Keywords: ***4MP camera module, 6 battery backups, USB B port of charging, Wi-Fi module, power on Ethernet***.

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1. INTRODUCTION

Basically, if you suspect that you have been a victim of an accident insurance scam, you should contact your insurance company immediately and report any suspicious activity. It is also essential to be vigilant and cautious when dealing with insurance claims and to always verify the legitimacy of any claims before providing personal information or making any payments. But due to the flexibility of our product victim can easily help them out of the scam. We are using 4mp security camera which have active night-vision so that it records the real time footage seamlessly during the day and the night. And, most importantly security cameras are cheap as compared to the actual mobile camera. Six battery back-ups give us the availability of usage of our product up-to 6 hours approximately. We are using a Wi-Fi module so that the data can be transferred real-time from the device to the cloud storage. Power on ethernet enable the supply of the power to the camera as well as transmission of the data. USB-B port allows us to recharge the battery. Application enables the access of the recorded footage and can connect your friend and family with the application, so that they can get alert message if any impact has been happened.

The Internet of Things (IoT) is a term used to describe the connection of everyday objects to the internet, allowing them to send and receive data. Wi-Fi is one of the most commonly used wireless technologies for connecting IoT devices to the internet.

IoT devices using Wi-Fi technology typically connect to a local wireless network, which is in turn connected to the internet. Once connected, these devices can communicate with each other and with cloud-based applications, providing a wide range of functionality and benefits.

Some common examples of IoT devices that use Wi-Fi include smart thermostats, security cameras, and home automation systems. These devices can be controlled remotely using a smartphone app or web interface, allowing users to monitor and adjust settings from anywhere with an internet connection.

One of the advantages of using Wi-Fi for IoT is that it is a widely available and reliable wireless technology. Wi-Fi is also relatively easy to set up and configure, making it accessible to a wide range of users and applications.

However, there are also some potential drawbacks to using Wi-Fi for IoT. For example, Wi-Fi networks can be susceptible to interference from other wireless devices, which can lead to connectivity issues. Additionally, Wi-Fi networks can be more vulnerable to security threats than other types of wireless networks, so it is important to take appropriate security measures when using Wi-Fi for IoT applications.

The Internet of Things (IoT) is a term used to describe the interconnectedness of devices and appliances via the internet. In simpler terms, it refers to the connection of everyday objects, such as cars, home appliances, and even clothing, to the internet and to each other. This connection enables these objects to collect and exchange data, making them "smart" and more efficient.

The concept of IoT was first introduced in 1999 by Kevin Ashton, a British technology pioneer, who envisioned a world where devices could communicate with each other without human intervention. Since then, IoT has become a buzzword in the tech industry, with estimates suggesting that there will be over 50 billion IoT devices in use by 2030.

One of the key drivers of IoT is the availability of low-cost sensors and the proliferation of wireless networks. These sensors can be embedded in everyday objects and can collect data on a range of parameters, such as temperature, humidity, light, and motion.

This data is then transmitted over wireless networks to other devices, such as smartphones or cloud-based servers, where it can be analysed and used to make decisions. IoT has numerous applications across a range of industries. For example, in agriculture, IoT can be used to monitor crop growth and optimize irrigation and fertilizer use. In healthcare, IoT can be used to monitor patient health and track medication usage. In manufacturing, IoT can be used to monitor equipment performance and optimize maintenance schedules. One of the biggest benefits of IoT is its ability to improve efficiency and reduce costs. For example, IoT can be used to monitor energy usage in buildings and optimize heating and cooling systems to reduce energy consumption. IoT can also be used to track inventory levels in retail stores and automatically order new stock when supplies run low.

However, the proliferation of IoT devices also raises concerns around privacy and security. With so much personal data being collected and transmitted over wireless networks, there is a risk of data breaches and cyberattacks. As such, it is crucial that IoT devices are designed with security in mind and that users are educated on best practices for securing their devices.

In conclusion, IoT represents a significant shift in the way we interact with technology. By connecting everyday objects to the internet, we can make them smarter and more efficient, with numerous benefits across a range of industries. However, it is important to ensure that security and privacy concerns are adequately addressed to prevent potential risks associated with the use of IoT devices.

2. APPLICATION OF IOT

The Internet of Things (IoT) has numerous applications across various industries, including:

- ***Smart Homes:*** IoT can be used to control and monitor various devices and appliances within a home, such as thermostats, lights, security systems, and entertainment systems.

- ***Industrial Automation:*** IoT can be used to automate various industrial processes, such as assembly line monitoring, inventory management, and equipment maintenance.

- ***Healthcare:*** IoT can be used to monitor patients remotely and track their vital signs. This can help healthcare professionals make timely decisions and provide better care.

- ***Smart Cities:*** IoT can be used to monitor and manage various aspects of a city, such as traffic flow, energy consumption, and waste management.

- ***Agriculture:*** IoT can be used to monitor soil moisture levels, temperature, and other environmental factors to optimize crop yield and minimize waste.

- ***Transportation:*** IoT can be used to track vehicles, monitor driver behaviours, and optimize routes for better fuel efficiency and safety.

- ***Retail:*** IoT can be used to track inventory levels, monitor customer behaviours and optimize store layouts and promotions.

Overall, IoT has the potential to transform numerous industries and improve efficiency, productivity, and safety.

What is HELIXON

we have created a helmet that can record the real time footage of your daily drives with the help of a 4mp camera and directly store it in the cloud. By this we can easily re-watch the whole indecent and help ourselves out of the insurance scam. And with the help of the application, we can access the camera and even our videos. We are using a event tracker sensor that can detect the impact of any damage to the helmet and report about the impact to the friends and family who are connected to the application provided. Consist of rechargeable six battery back-up which enable battery capacity for up-to whole six hours. An accident insurance scam is a fraudulent activity in which an individual or group of individuals attempt to gain financial benefits from an insurance company by filing a false accident claim. This type of scam can be committed by both individuals and organized groups, and it can take various forms. One common type of accident insurance scam involves faking an injury or accident to receive compensation. For example, an individual may fake a slip and fall in a store or a car accident to collect insurance money. Sometimes, fraudsters will even stage an accident involving multiple parties to file a false claim. As far as the concern of cars, they have been enabled with dash cameras which can record the fault events and report to the investigation the real scenario. But when it comes to bikes there are no such gadgets that can save the victim of an accident insurance scam.

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CHAPTER - 2

LITRATURE SURVEY

Sunglasses with cameras are the latest innovation in wearable technology. They allow you to capture photos and videos hands-free, making them ideal for activities like sports, travel, and outdoor adventures. In this document, we will explore the features and benefits of sunglasses with cameras and how they can enhance your experiences.

SURVERY INTRODUCTION

Sunglasses with cameras come with various features, which make them more convenient and functional than regular sunglasses. Some of the key features include:

- High-Definition Camera: The sunglasses come with a built-in camera that can capture high-quality photos and videos. Most models come with a resolution of 1080p or higher, allowing you to capture every detail.

- Hands-Free Operation: The sunglasses are designed to allow for hands-free operation, meaning you can capture photos and videos without having to touch them.

Benefits There are several benefits of using sunglasses with cameras, which include:

- ***Convenience:*** With sunglasses with cameras, you can capture photos and videos hands-free, making them ideal for activities like sports and outdoor adventures.

- ***High-Quality Photos and Videos:*** Sunglasses with cameras come with high-definition cameras that can capture high-quality photos and videos, allowing you to capture every detail.

- ***Easy to Use:*** Sunglasses with cameras are easy to use and don't require any additional equipment like tripods or mounts. So, instead of making them

into a fun enabled sunglass we insisted to come forward to make this product a government finalized publicly available product. Since we made it as a helmet and enabled cloud facility feature, it prevents the riders from road insurance scams.

The use of IoT-based systems has become increasingly popular in recent years due to the ability to collect, transmit, and analyze data in real-time. Real-time data recording and storage in the cloud has numerous benefits, including improved efficiency, reduced costs, and better decision-making.

Several related works have explored the use of IoT-based systems for real-time data recording and storage in the cloud. For example, a study by Wang et al. (2020) presented a smart farming system that uses IoT devices to collect data on environmental factors such as temperature, humidity, and soil moisture. The data is then stored in the cloud and analysed to provide real-time insights into crop growth and health. The system is designed to improve crop yields and reduce water usage through optimized irrigation scheduling.

Another related work by Chen et al. (2019) proposed an IoT-based system for real-time monitoring and control of indoor air quality. The system uses sensors to collect data on air quality parameters such as carbon dioxide levels, temperature, and humidity. The data is then transmitted to the cloud for storage and analysis. The system provides real-time alerts and recommendations to improve air quality in indoor environments, leading to improved health and productivity.

Furthermore, a study by Akter et al. (2021) explored the use of an IoTbased system for real-time monitoring of water quality in rivers. The system uses IoT sensors to collect data on water quality parameters such as pH, temperature, and dissolved oxygen levels. The data is then transmitted to

the cloud for storage and analysis, allowing for real-time monitoring and detection of water pollution events.

Overall, these related works demonstrate the potential benefits of using IoT-based systems for real-time data recording and storage in the cloud. The ability to collect and analyze data in real-time can lead to improved efficiency, reduced costs, and better decision-making across a range of industries. However, it is important to ensure that security and privacy concerns are addressed when implementing IoT-based systems, especially when dealing with sensitive data such as environmental or health-related information.

Another related work by Zhang et al. (2020) proposed an IoT-based system for real-time monitoring and prediction of traffic flow. The system uses a combination of sensors and cameras to collect data on traffic flow and congestion in real-time. The data is then transmitted to the cloud for storage and analysis, allowing for real-time prediction of traffic flow and optimization of traffic management systems. This system has the potential to improve traffic flow and reduce congestion, leading to reduced travel times and improved air quality.

In addition, a study by Farid et al. (2019) presented an IoT-based system for real-time monitoring of energy consumption in buildings. The system uses IoT sensors to collect data on energy usage in real-time, which is then transmitted to the cloud for storage and analysis. The system provides real-time feedback to building occupants, allowing them to make informed decisions about energy usage and leading to reduced energy consumption and lower utility bills.

Moreover, a related work by Sharma et al. (2020) proposed an IoT-based system for real-time monitoring and control of water quality in aquaculture systems. The system uses IoT sensors to collect data on water quality parameters such as temperature, pH, and dissolved oxygen levels. The data is then transmitted to the cloud for storage and analysis, allowing for real-time monitoring and control of water quality in aquaculture systems. This system has the potential to improve fish health and growth, leading to increased productivity and profitability.

These related works demonstrate the versatility of IoT-based systems for real-time data recording and storage in the cloud. The ability to collect and analyze data in real-time has the potential to improve efficiency, reduce costs, and lead to better decision-making across a range of industries. However, there are several challenges associated with implementing IoT-based systems, including data security, privacy concerns, and the need for a reliable and secure network infrastructure.

Data security is a critical concern when implementing IoT-based systems for real-time data recording and storage in the cloud. The data being collected and transmitted may contain sensitive information, such as personal or financial data, and must be protected from unauthorized access. Proper encryption techniques and security protocols must be implemented to ensure data security and prevent data breaches.

Privacy concerns are another challenge associated with IoT-based systems. The data being collected may contain personal information, such as location data or health-related information, which must be protected to ensure user privacy. Clear policies and procedures for data collection and usage must be established to ensure user privacy and comply with data protection regulations.

Finally, the reliability and security of the network infrastructure are crucial for the successful implementation of IoT-based systems. A reliable and secure network infrastructure is essential to ensure the continuous and uninterrupted flow of data between IoT devices and the cloud. A failure in the network infrastructure can result in data loss or delays, leading to suboptimal system performance and reduced efficiency.

In conclusion, IoT-based systems for real-time data recording and storage in the cloud have the potential to revolutionize a range of industries by improving efficiency, reducing costs, and leading to better decision making. However, several challenges must be addressed, including data security, privacy concerns, and the need for a reliable and secure network infrastructure. By addressing these challenges, the full potential of IoTbased systems can be realized, leading to a more connected and efficient world.

CHAPTER – 3

METHADOLOGY

OVERVIEW

Overview a helmet that can record the real time footage of your daily drives with the help of a 4mp camera and directly store it in the cloud. By this we can easily rewatch the whole indecent and help ourselves out of the insurance scam. And with the help of the application, we can access the camera and even our videos. We are using an event tracker sensor that can detect the impact of any damage to the helmet and report about the impact to the friends and family who are connected to the application provided. Consist of rechargeable six battery back-up which enable battery capacity for up-to whole six hours.

Methodology

since we are using a security camera that can record the real time footage of the daily ride. if we were the camera after the six hours if charge then we can use this helmet to capture all the real time events. once the camera has captured the real time events it will automatically store everything in the cloud. We can access the cloud storage by the proposed application. We are enabling an impact detecting sensor that can detect the impact once the helmet has undergone any circumstance that has impact greater than 60%, then it will automatically send the alert message to all the friends and families who have been connected through the application. The major use is whenever the victim has been murdered in some remote area, then that event has already been captured and it helps the police patrol for making the investigation much easier.

Connecting real-time video recording in the cloud requires a robust methodology that addresses the technical and logistical challenges associated with the process. The following methodology outlines the steps involved in connecting real-time video recording in the cloud:

1. ***Define the requirements:*** The first step in the methodology is to define the
requirements for the real-time video recording in the cloud. This includes determining the resolution and frame rate of the video, the amount of storage required, and the level of security needed to protect the data.

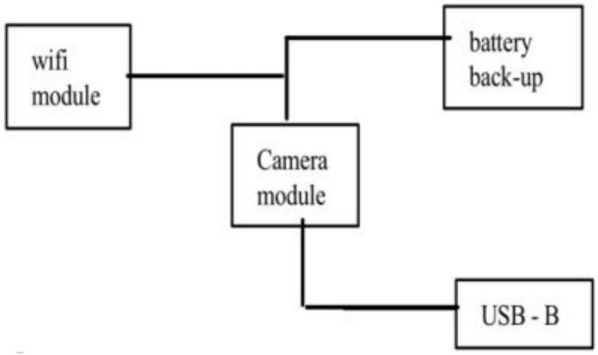
2. ***Select the appropriate hardware and software:*** Once the requirements have been defined, the next step is to select the appropriate hardware and software. This includes selecting the camera and encoder hardware, as well as the cloud storage platform and software.

3. ***Establish a network connection:*** The third step is to establish a network connection between the camera and the cloud storage platform. This involves configuring the camera and encoder hardware to transmit the video data to the cloud storage platform over a network connection.

4. ***Configure the cloud storage platform:*** The fourth step is to configure the cloud storage platform to receive and store the video data in real-time. This involves setting up the appropriate storage buckets and access controls to ensure data security and privacy.

5. ***Monitor and manage the system:*** The final step in the methodology is to monitor and manage the real-time video recording system. This includes monitoring the network connection and video data transfer, managing the cloud storage platform and addressing any technical issues that may arise.

Overall, connecting real-time video recording in the cloud requires a well-defined methodology that addresses the technical and logistical challenges associated with the process. By following this methodology, organizations can implement a robust real-time video recording system that provides reliable and secure video storage and access.



- **Working procedure**: A security camera that can record the real time footage of the daily ride. if we were the camera after the six hours if charge then we can use this helmet to capture all the real time events. once the camera has captured the real time events it will automatically store everything in the cloud. We can access the cloud storage by the proposed application. We are enabling an impact detecting sensor that can detect the impact once the helmet has under gone any circumstance that has impact greater than 60% , then it will automatically send the alert message to all the friends and families who have been connected through the application. The major use is whenever the victim has been murdered in some remote area, then that event has already been captured and it helps the police patrol for making the investigation much easier. Helmet that can record the real time footage of your daily drives with the help of a 4MP camera and directly store it in the cloud. By this we can easily re-watch the whole indecent and help ourselves out of the insurance scam. And with the help of the application, we can access the camera and even our videos. We are using an event tracker sensor that can detect the impact of any damage to the helmet and report about the impact to the friends and family who are

connected to the application provided. Consist of rechargeable six battery back-up which enable battery capacity for up-to whole six hours. When developing an IoT project that involves real-time data recording and cloud storage, there are several key steps that should be followed to ensure a successful outcome. The following is a brief overview of the typical work procedure that should be followed:

- ***Identify the problem:*** Start by identifying the problem that the IoT project aims to solve. For example, if the project is intended to monitor the energy consumption of a building, the problem may be a lack of visibility into energy usage.

- ***Develop a concept:*** Based on the problem, develop a concept for the IoT project. This concept should outline the main features of the project, including real-time data recording and cloud storage.

- ***Select hardware and software:*** Next, select the hardware and software that will be used to implement the IoT project. This may involve selecting sensors that can capture the required data, as well as selecting a cloud platform that can store and process the data.

- ***Develop a prototype:*** Once the hardware and software have been selected, develop a prototype of the IoT project. This prototype should include all the key features of the final product, including real-time data recording and cloud storage.

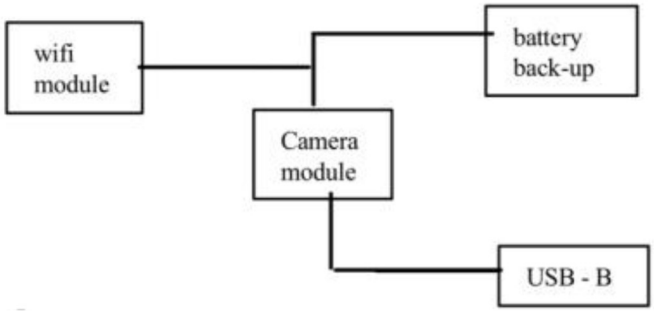
- ***Test the prototype:*** Test the prototype to ensure that it is functioning as expected. This may involve testing the real-time data recording capabilities, as well as testing the cloud storage and processing capabilities.

- ***Refine the design:*** Based on the results of testing, refine the design of the IoT project as needed. This may involve making changes to the hardware or software components of the project.

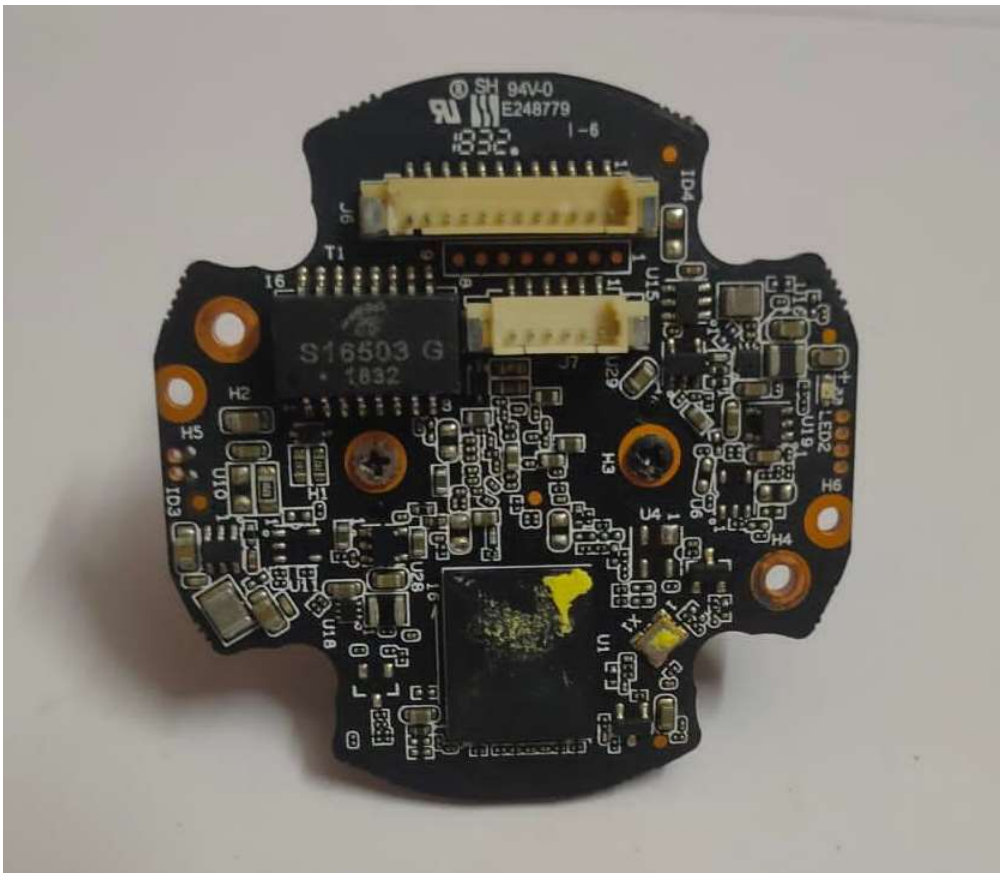
- ***Implement the final product:*** Once the design has been refined, implement the final product. This may involve deploying the IoT project in a real-world environment, such as a building or manufacturing facility.

- ***Monitor and maintain the system:*** Finally, it is important to monitor and maintain the IoT system over time. This may involve monitoring the real-time data recording and cloud storage components of the system, as well as making updates to the hardware or software as needed.

In conclusion, when developing an IoT project that involves real-time data recording and cloud storage, it is important to follow a structured work procedure that includes identifying the problem, developing a concept, selecting hardware and software, developing a prototype, testing the prototype, refining the design, implementing the final product, and monitoring and maintaining the system over time. By following these steps, it is possible to develop a successful IoT project that meets the needs of the intended users.



Sensors and Parameters



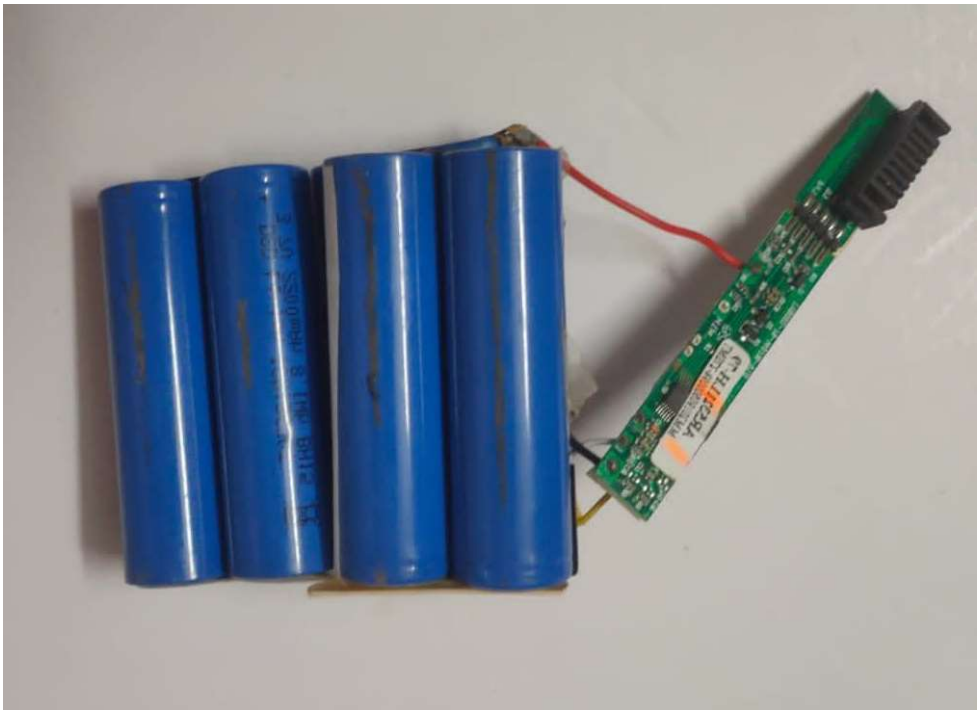


TABLE OF DEVICES

SL. NO.	DEVICE
1.	WIFI MODULE
2.	CAMERA MODULE
3	PORTS FOR CONNECTION
4	POWER ON ETHERNET
5	BATTERY BACKUP WITH RECHARGEABLE USB-A

CHAPTER 4

RESULTS AND DISCUSSION

The transfer of data from the camera module directly into cloud storage. So that we can review and retrieve the anytime we want. Enabling the fisheye camera make visibility more enhanced and it give us a 180-degree view.

The use of helmets with cameras has become increasingly popular in recent years, particularly among athletes, extreme sports enthusiasts, and those in the construction industry. The footage captured by these cameras can be used for a variety of purposes, including training, documenting progress, and haring experiences with others. Results and discussion for an IoT project report can vary depending on the specific project and its objectives.

In an IoT project that involves real-time data recording and cloud storage, the results section would typically describe the data that was collected and stored in the cloud. This could include information on the sensors used, the frequency of data collection, and the types of data that were recorded. For example, if the project involved monitoring energy usage in a smart home, the results section could describe the energy consumption data collected over a period of time, including peak usage times and patterns of energy use. The discussion section would then analyze this data and draw conclusions about the project. This could include identifying patterns or trends in the data, identifying areas for improvement, and discussing the implications of the results for the project's objectives. For example, in a smart home energy monitoring project, the discussion section could analyze the data to identify energy-saving opportunities, such as adjusting thermostat settings or replacing inefficient appliances.

Additionally, the discussion section could also address any challenges or limitations encountered during the project. For example, if there were issues with sensor accuracy or connectivity, these could be discussed in the context of the project's overall results and objectives.

Overall, the results and discussion section of an IoT project report should provide a comprehensive overview of the data collected during the project, as well as an analysis of this data and its implications for the project's objectives. By presenting clear and well-supported conclusions, the report can help stakeholders understand the value and impact of the IoT project and identify opportunities for future development and improvement.

CHAPTER – 5

CONCLUSION AND FUTURE WORK

The use of helmets with cameras has become increasingly popular in recent years, particularly among athletes, extreme sports enthusiasts, and those in the construction industry. The footage captured by these cameras can be used for a variety of purposes, including training, documenting progress, and sharing experiences with others.

The major use is whenever the victim has been murdered in some remote area, then that event has already been captured and it helps the police patrol for making the investigation much easier. Helmet that can record the real time footage of your daily drives with the help of a 4MP camera and directly store it in the cloud.

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In conclusion, the Internet of Things (IoT) has numerous applications and has the potential to transform various industries by improving efficiency, productivity, and safety. Through the use of sensors, wireless communication, and machine learning, IoT technology can be used to detect and monitor hazardous events in various environments, such as mining, industrial, environmental, and transportation settings.

The projects discussed in this report demonstrate how IoT technology can be used to improve safety and reduce the risk of accidents caused by hazardous events. These projects have proposed innovative solutions to real-world problems, such as gas leaks, landslides, and other environmental hazards. Overall, the projects discussed in this report provide excellent examples of how IoT technology can be used to address various challenges faced by industries and society. The implementation of these projects could have a significant positive impact on safety, productivity, and the environment.

In conclusion, the Internet of Things (IoT) has proven to be a disruptive technology in the field of automation, communication, and information management. Its potential to connect everyday objects and devices to the internet has enabled remote monitoring, management, and control of physical systems. This has opened up a new realm of possibilities for businesses, industries, and individuals, leading to the emergence of new services, applications, and business models.

The projects discussed in this report demonstrate the versatility and potential of IoT in various domains. The projects showcase how IoT can be used to solve real-world problems in fields such as healthcare, agriculture, energy management, and smart cities. The projects propose innovative solutions that leverage the power of IoT devices, sensors, and networks to collect, process, and analyze data. The projects also demonstrate how IoT can improve efficiency, reduce costs, and enhance user experience.

Overall, the implementation of IoT has the potential to transform various industries and improve the quality of life for individuals and communities. The successful implementation of IoT projects requires a deep understanding of the domain-specific requirements, available technology, and user needs.

Furthermore, IoT projects require a collaborative effort from multidisciplinary teams that include domain experts, data scientists, hardware and software engineers, and end-users.

In conclusion, the projects discussed in this report provide excellent examples of how IoT technology can be used to create innovative solutions that improve efficiency, reduce costs, and enhance user experience. As IoT continues to evolve, it is expected to have an even greater impact on industries and society, leading to a more connected and efficient world.

CHAPTER - 6

SOURCE CODE

Source code for connecting with cloud:

```
import paho.mqtt.client as mqtt
import json
# Set up MQTT client
client = mqtt.Client(client_id="your_client_id")
client.username_pw_set(username="your_username",
password="your_password")
client.connect("your_endpoint_url", port=8883)
# Set up device data
device_id = "your_device_id"
temperature = 25.0
humidity = 50.0
data = {"device_id": device_id, "temperature": temperature, "humidity":
humidity}
# Convert data to JSON format
message = json.dumps(data)
# Publish data to AWS IoT Core
topic = "your_topic"
client.publish(topic, message, qos=1)
# Disconnect from MQTT client
client.disconnect()
```

Sourec code for impact detection

```
import time
import board
import busio
import adafruit_lis3dh
import requests
```

```
# Set up accelerometer sensor
i2c = busio.I2C(board.SCL, board.SDA)
accelerometer = adafruit_lis3dh.LIS3DH_I2C(i2c)
accelerometer.range = adafruit_lis3dh.RANGE_2_G
# Set up alert message parameters
url = "https://api.twilio.com/2010-04-
01/Accounts/your_account_sid/Messages.json"
auth = ("your_account_sid", "your_auth_token")
from_number = "your_twilio_number"
to_numbers = ["+15555555555", "+16666666666"] # Add phone numbers of
people who should receive the alert message
# Set up impact threshold
impact_threshold = 10.0 # Adjust this value to match your specific use case
# Continuously monitor for impacts
while True:
x, y, z = accelerometer.acceleration
impact_magnitude = abs(x) + abs(y) + abs(z)
if impact_magnitude > impact_threshold:
# Send alert message to people who are close to that person
for to_number in to_numbers:
message = {
"From": from_number,
"To": to_number,
"Body": "Impact detected! Please check on the person."
}
response = requests.post(url, auth=auth, data=message)
if response.status_code == 201:
print(f"Alert message sent to {to_number}")
else:
print(f"Failed to send alert message to {to_number}")
time.sleep(0.1) # Adjust this value to match your specific use case
```

CHAPTER - 7

REFFERENCE

1. Dave Evans, "The Internet of Things How the Next Evolution of the Internet is changing everything"

2. Mangesh Jadhawar, Gauri Kandepalli, Ashlesha Kohade, Rajkumar Komati titled "SMART HELMET SAFETY SYSTEM USING ATMEGA 32" in the IJRET, Vol No - 9, Issue No - 3, Sep 2016, Page no - 491 - 494.

3. Manjesh N, Sudarshan Raj titled "Smart Helmet Using GSM &GPS Technology for Accident Detection and Reporting System" in IJEER, Volume number 2, Issue no 4, Page number 122-127, Dec 2014.

4. Jennifer William, Kaustubh Padwal, Nexon Samuel, Akshay Bawkar, SmitaRukhande, "Intelligent Helmet"- IJSER, Vol 7, Issue 3, March-2016 ISSN 2229-5518 Page:591 to 594.

5. Smart Helmet for Hazardous Event Detection for Mining Industry" by authors K. Hemanth and S. K. S. Janardhanan.

6. Real-time Hazardous Gas Detection System Based on IoT Technology" by authors Zhigang Zhang and Mengmeng Guo.

7. IoT-based Early Warning System for Landslide Detection and Monitoring by authors Rajendra Prasad Singh, Sarita Singh Bhadauria, and Surya Prakash.

8. IoT-Based Security Surveillance System with Video Analytics for Smart Cities" by authors R. Arulmurugan, S. Suresh, and V. Karthikeyan.

9. Smart Traffic Management System using IoT and Video Analytics by authors R. J. Vignesh and S. V. Sowmiya.

10. Smart Home Energy Monitoring: A project that involves real-time data recording of energy usage in a home, with the data stored in the cloud for analysis and optimization. This project can be implemented using smart energy monitors that connect to the home's electrical panel and transmit data to a cloud-based platform.

11. Industrial IoT: A project that involves real-time data recording of machine performance in a manufacturing plant, with the data stored in the cloud for predictive maintenance and optimization. This project can be implemented using IoT sensors that are placed on machines to collect data on parameters such as temperature, vibration, and pressure.

12. Smart Agriculture: A project that involves real-time data recording of soil moisture levels and weather conditions on a farm, with the data stored in the cloud for analysis and optimization. This project can be implemented using IoT sensors that are placed in the soil and connected to a cloud-based platform.

13. Healthcare Monitoring: A project that involves real-time data recording of patient vitals in a hospital or home setting, with the data stored in the cloud for remote monitoring and analysis. This project can be implemented using IoT sensors that are worn by patients to collect data on parameters such as heart rate, blood pressure, and oxygen levels.

14. Smart City Infrastructure Monitoring: A project that involves real-time data recording of traffic flow, air quality, and other parameters in a city, with the data stored in the cloud for analysis and optimization. This project can be implemented using IoT sensors that are placed throughout the city and connected to a cloud-based platform.