SMART HELMET

Guided by :

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INTRODUCTION

Enhancing Safety Accident Detection and SMS Alert System in Smart Helmet. The Smart Helmet integrates accident detection and SMS alert system to enhance safety for riders

NUMBER OF ROAD ACCIDENT CASES REPORTED IN INDIA

1,68,942

Two-wheeler deaths in India increased by nearly 8% in 2023, accounting for 44% of total road fatalities.

FEATURES

Accident Detection

SMS Alert System

GPS-Location Tracking

Live Location using Google maps

SMS ALERT SYSTEM

The Smart Helmet is equipped with an integrated SMS alert system that automatically notifies emergency contacts in the event of an accident. The system sends detailed information about the rider's location and the nature of the incident, enabling quick assistance and medical aid. This feature significantly enhances the safety of riders

COMPONENTS

- ESP-32
- GPS Module(Neo-6M)
- Gsm Module(SIM800L)
- Accelerometer(ADXL-345)

COMPONENTS

Accelerometer(ADXL-345)

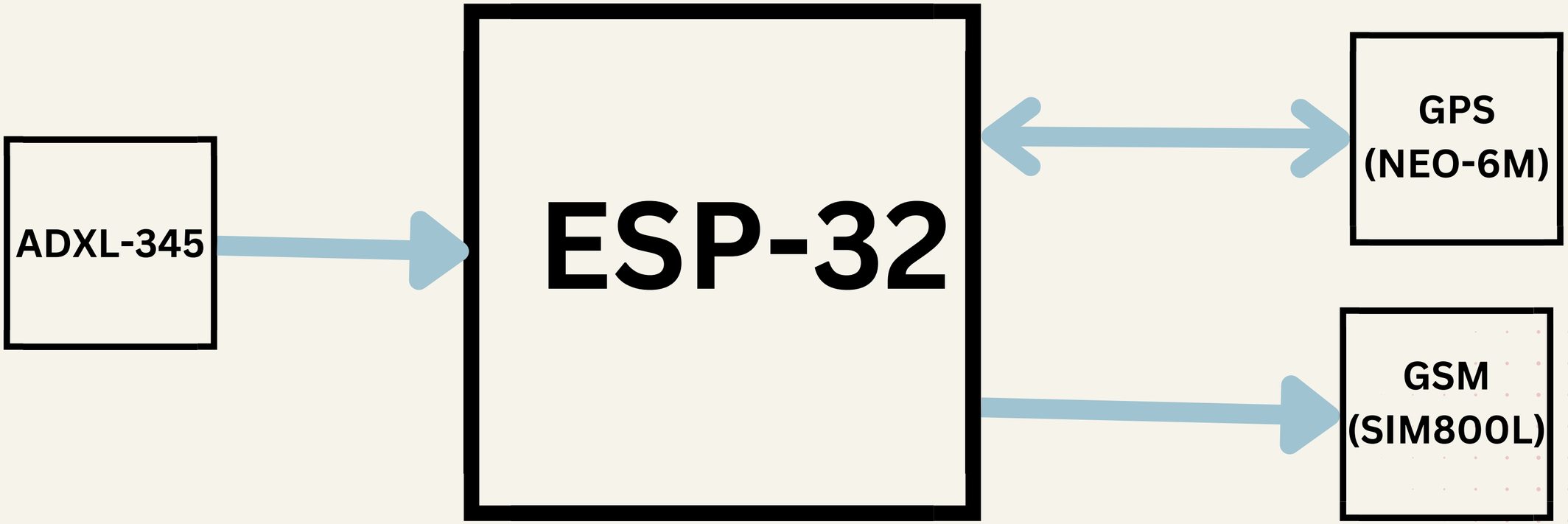
ESP 32

COMPONENTS

GSM Module (SIM800L)

GPS MODULE(NEO-6M)

BLOCK DIAGRAM



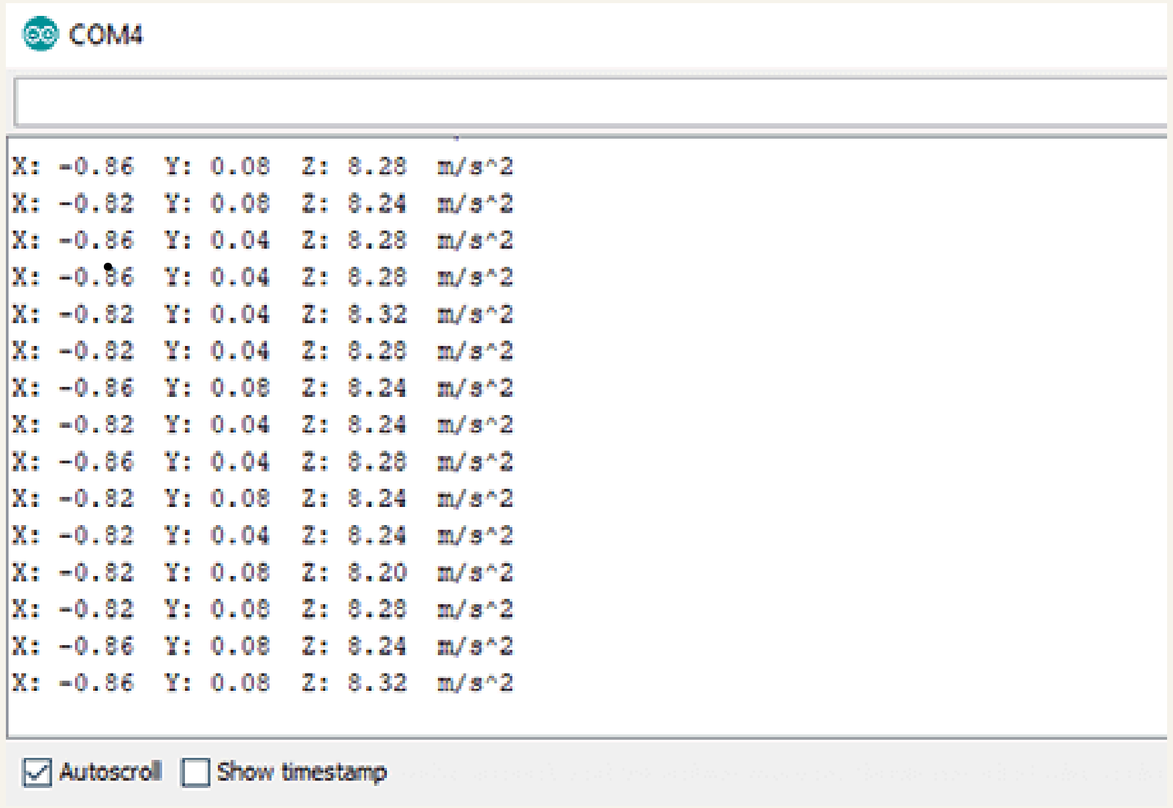
ALOGORITHM

1. Initialize: Set up serial communication for GPS (NEO6M) and GSM (SIM800L) modules.
2. Check GPS Data: Continuously check for GPS data availability.
3. Print GPS Coordinates: If GPS data is available, print latitude and longitude.
4. Read Accelerometer Data: Read accelerometer data from the ADXL345 sensor.
5. Print Accelerometer Data: Print the X, Y, and Z-axis acceleration values.

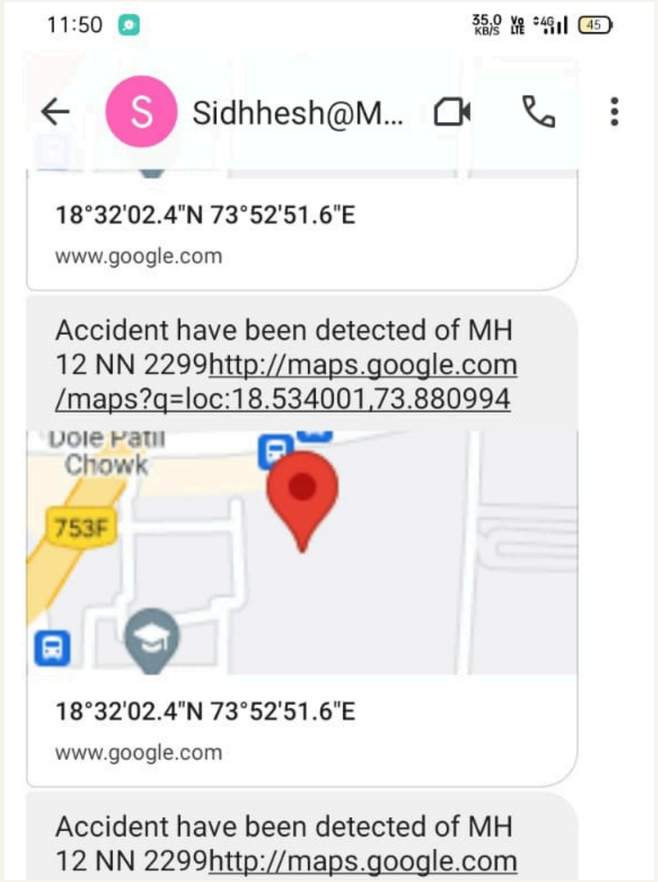
ALOGORITHM

1. Detect Accident: If the Z-axis acceleration is below a threshold (indicating a significant deceleration), proceed to the next step.
2. Send SMS Alert: Initialize SMS communication with the SIM800L module.
3. Compose SMS: Craft an SMS message indicating the detected accident and include the GPS coordinates as a Google Maps link.
4. Send SMS: Send the SMS alert to a predefined emergency contact number.
5. Wait: Wait for a brief period to allow the SMS to be sent successfully.
6. End.

OUPUT



1) ADXL 345 SERIAL MONITOR



2) Message alert with GPS location

MARKET ADOPTION AND DEMAND

The Smart Helmet is expected to generate significant demand due to its revolutionary safety features. As riders increasingly prioritize safety, the market adoption of smart helmets with advanced safety systems is projected to surge. Manufacturers and retailers are poised to capitalize on this growing demand for enhanced safety gear.

IETE PROJECT COMPETITION

IETE PUNE CENTRE

Raghuraj, 62, Indira Nagar, Erandawane, Pune - 411004. Phone : (020) 25449762 E-mail : ietepune5@gmail.com

CERTIFICATE

This is to certify that, Mr./Miss. Pratik Sunil Pawar From MESWCOE, Pune

Project Title " Smart Helmet "

Participated in "National Level Project Competition 2024" arranged by The Institution of Electronics and Telecommunication Engineers, Pune on 5th April, 2024 at Modern Education Society's Wadia College of Engineering, Pune – 411001

Dr. Prabhakar N. Kota
MESWCOE, Pune
Main Coordinator

Dr. Daulappa G. Bhalke
Hon. Secretary

Dr. Virendra V. Shete
Chairman

CONCLUSION

The Smart Helmet with accident detection and SMS alert system represents a significant leap forward in rider safety. By integrating advanced technology and proactive safety features, the smart helmet not only enhances individual safety but also raises industry standards. The future holds immense potential for further advancements in safety technology for riders.

THANK YOU