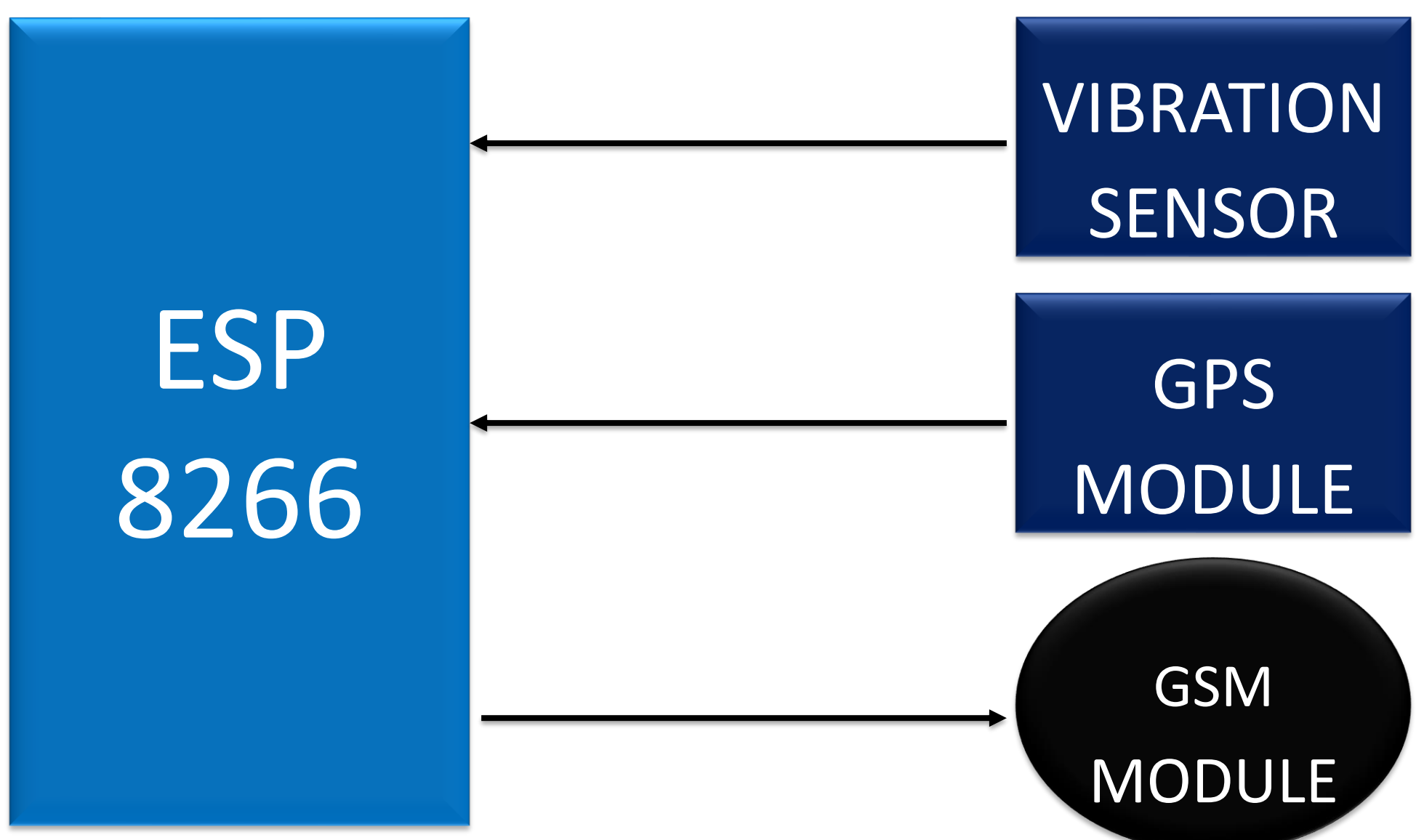# VEHICLE ACCIDENT DETECTION AND ALERT SYSTEM

## EMBEDDED SYSTEMS MINI PROJECT
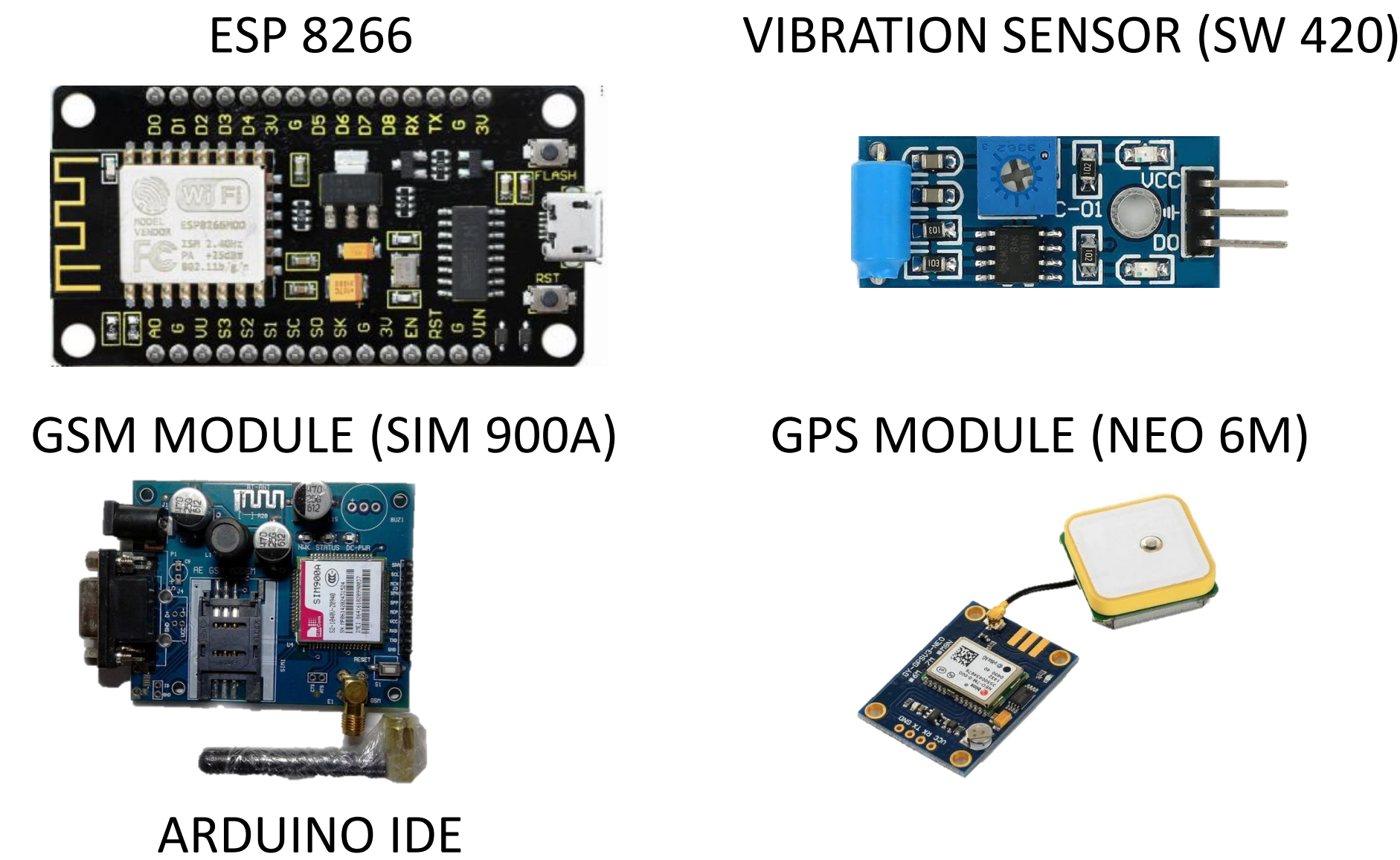## SARVAJANIK COLLEGE OF ENGINEERING AND TECHNOLOGY, SURAT.

## Abstract

The speed of our lives has been boosted with the advancement in the transportation system. In the present time, road traffic accidents have become a global concern all over the world. Road traffic accidents are considered as one of the prominent reasons for the reduction of life period, loss of lives, properties, and time. The death rate among people is rapidly increasing with the rapid increment in road accidents. For the victims, an accident acts as a catastrophic condition in the case when it occurs at the highways. In this project, an intelligent accident detection has been developed to detect accidents on the road. Intelligent accident detection involves location tracking as well as notification system that detect the accidents immediately through the GPS location. The sensor connected to the vehicle gets activated in the case of any accident. Notification messages will be sent to the family members through the Global System for Mobile Communication (GSM).
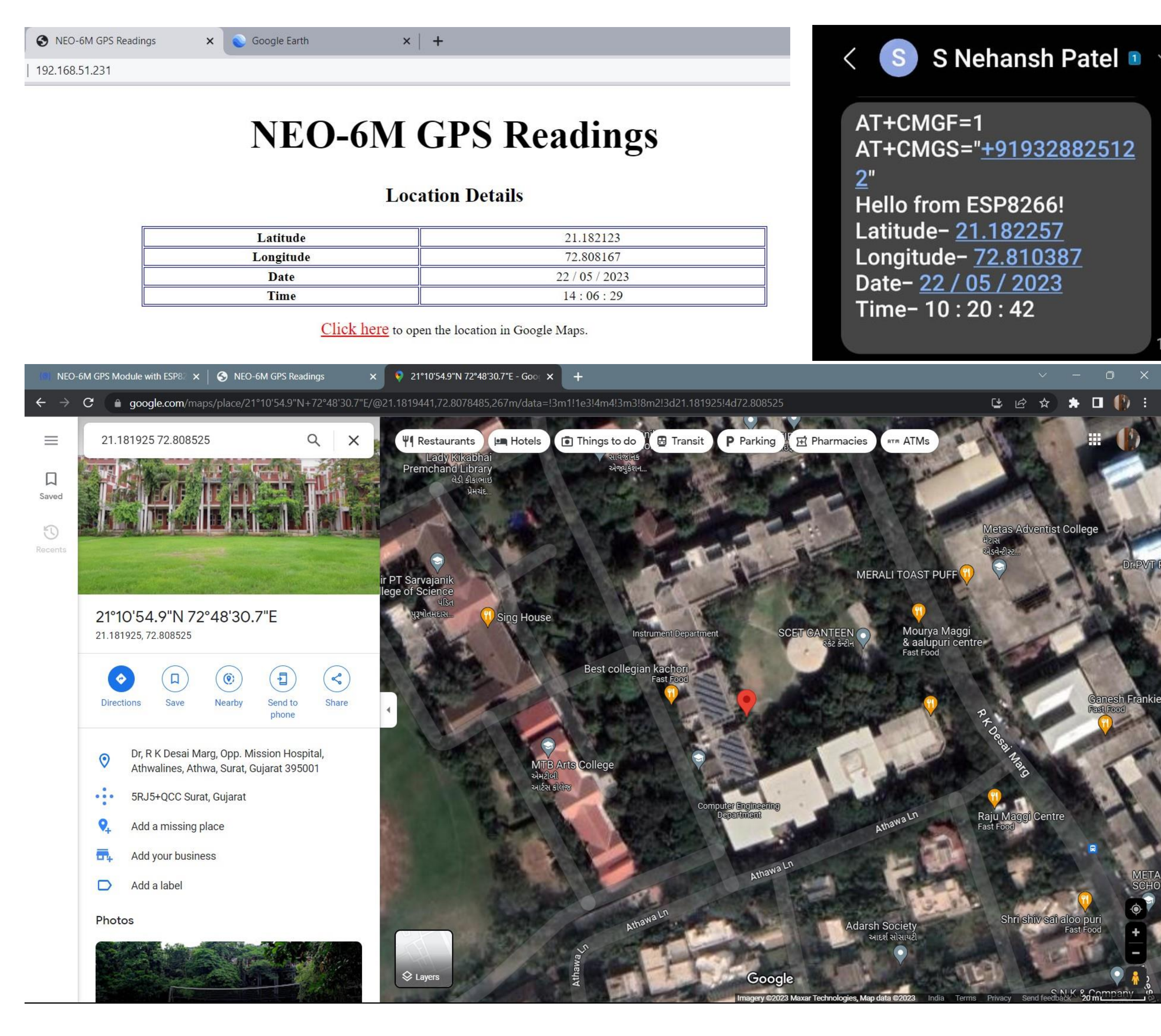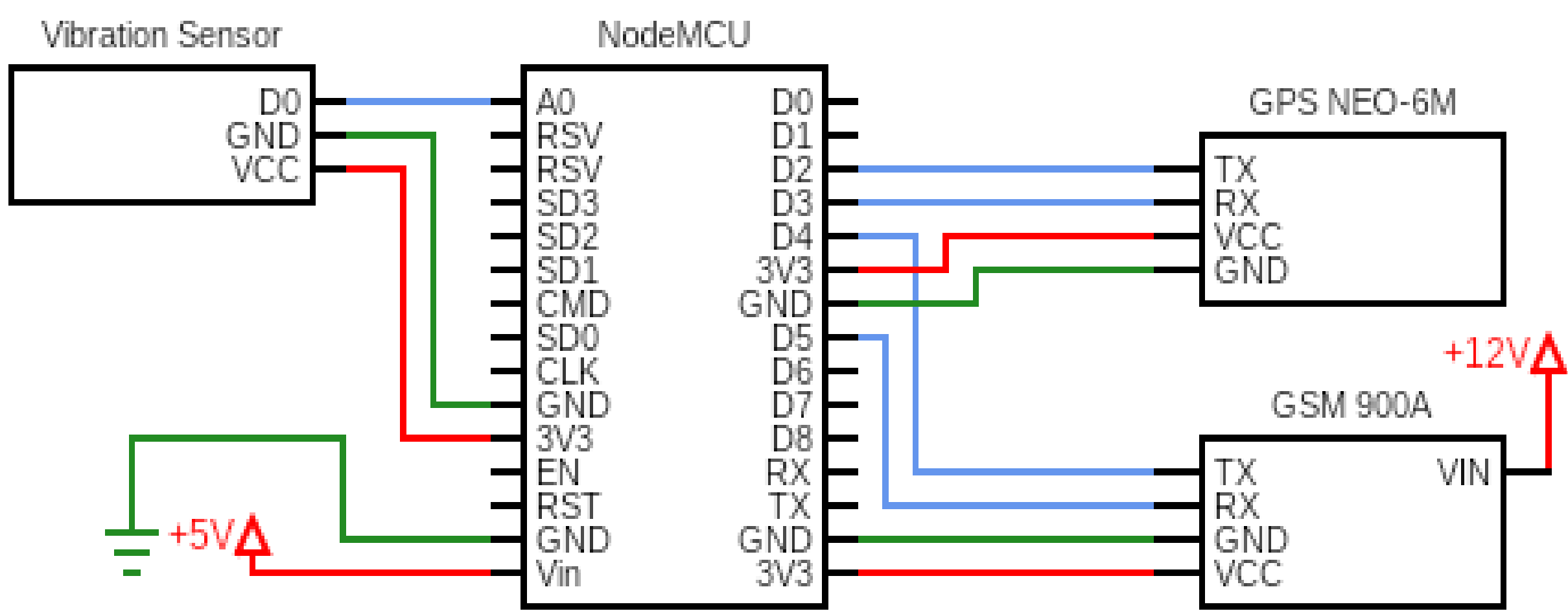
## BLOCK DIAGRAM



ESP 8266 — VIBRATION SENSOR — GPS MODULE — GSM MODULE

## HARDWARE & SOFTWARE REQUIREMENT



ESP 8266

VIBRATION SENSOR (SW 420)

GSM MODULE (SIM 900A)

GPS MODULE (NEO 6M)

ARDUINO IDE

## Results



### NEO-6M GPS Readings

#### Location Details

| | |
|---|---|
| Latitude | 21.182123 |
| Longitude | 72.808167 |
| Date | 22 / 05 / 2023 |
| Time | 14 : 06 : 29 |

Click here to open the location in Google Maps.

S Nehansh Patel

AT+CMGF=1
AT+CMGS="+9193288251 22"
Hello from ESP8266!
Latitude- 21.182257
Longitude- 72.810387
Date- 22 / 05 / 2023
Time- 10 : 20 : 42

## CIRCUIT DIAGRAM



## CONCLUSION

The proposed programmed accident detection system can be a rescuer of life for the people who met with accidents. The proposed system is exceptionally easy to understand and even a non-specialized Person can use it without any problem. The system consists of equipment and programming segments. The equipment unit includes accident detection sensors that are constrained by an ESP 8266 board and is fitted in the vehicle. Then again, the programming part is a GPS module which is used to get the point by point map and a GSM module which sends location coordinates via SMS. In general, the benefits of this system are low cost, secure and simple to use. The system introduced in this work reduces the casualties due to accidents.

## REFERENCES

•https://circuitdigest.com/microcontroller-projects/msp430-vehicle-tracking-and-accident-detection-using-vibration-sensor#:~:text=Then%20MSP430%20fetches%20data%20from,longitude%20from%20the%20GPS%20module

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