Universiti Malaysia PAHANG
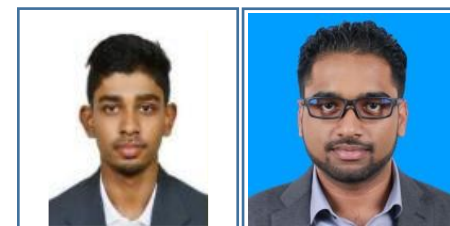Engineering · Technology · Creativity

DRIVER ALCOHOL MONITORING SYSTEM FOR VEHICLE SAFETY CONTROL WITH EMERGENCY CONTACT

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ABSTRACT

An intelligent alcohol detection and speed limiting system is proposed using Arduino A new approach is being described to identify drunk drivers and set limitations to functionalities of their vehicles to force drivers to completely stop whenever the blood alcohol content (BAC) level is higher than the approvable limitation which is 0 08 mg/L alcohol, that is equivalent to 180 PPM in this project.

PROBLEM STATEMENT

- Authorities unable to be omnipresent at the same time when a person is drunk driving.
- Most vehicle doesn't come with alcohol monitoring system.
- People are unaware of the driver's location once they are intoxicated by alcohol.

METHODOLOGY
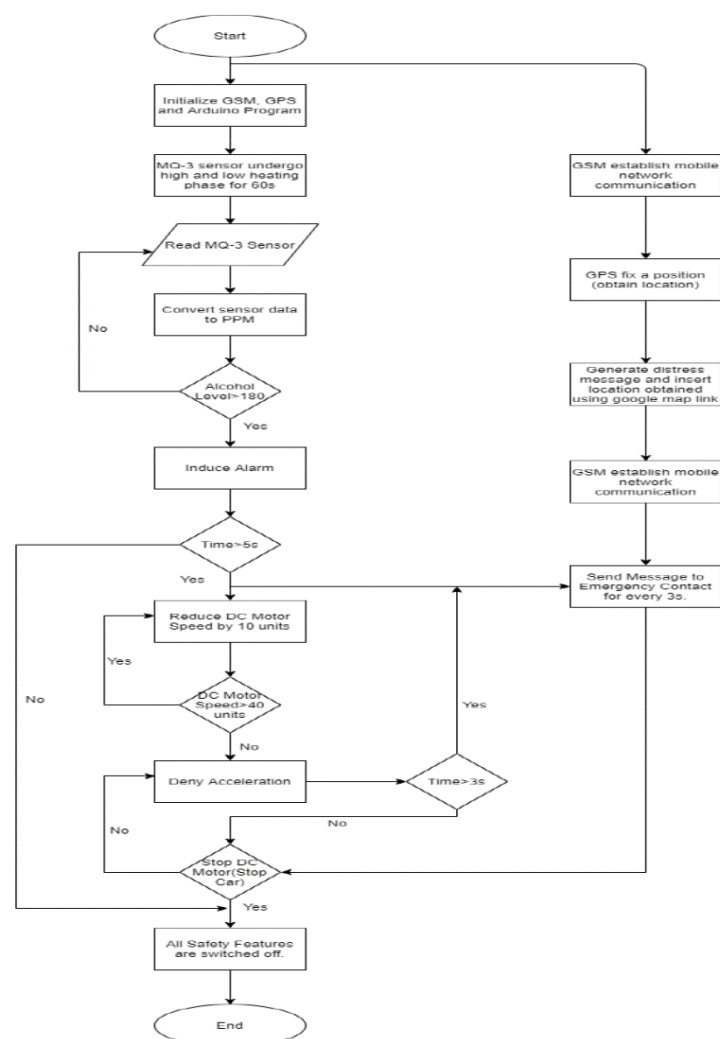
Flowchart of Driver Alcohol Monitoring System for Vehicle Safety Control with Emergency Contact

Emergency Contact Location Output

4°38'05.1"N 101°03'27.3"E
4.634746, 101.057580

Publication

- The importance of data classification using machine learning methods in microarray data, 19, 491-498, 2021 (Scopus)
- IoT based vehicle carbon monoxide monitoring, alerting and controlling system, 9, 2020 (Scopus)

AIM & OBJECTIVES

The goal of this project is to develop a Driver Alcohol Monitoring System for Vehicle Safety Control.

- To design and develop a monitoring system for intoxication of alcohol level of a driver.
- To design an alert system using GSM Module and send location using GPS.
- To design and simulate engine speed limitation if the driver is unfit to drive.
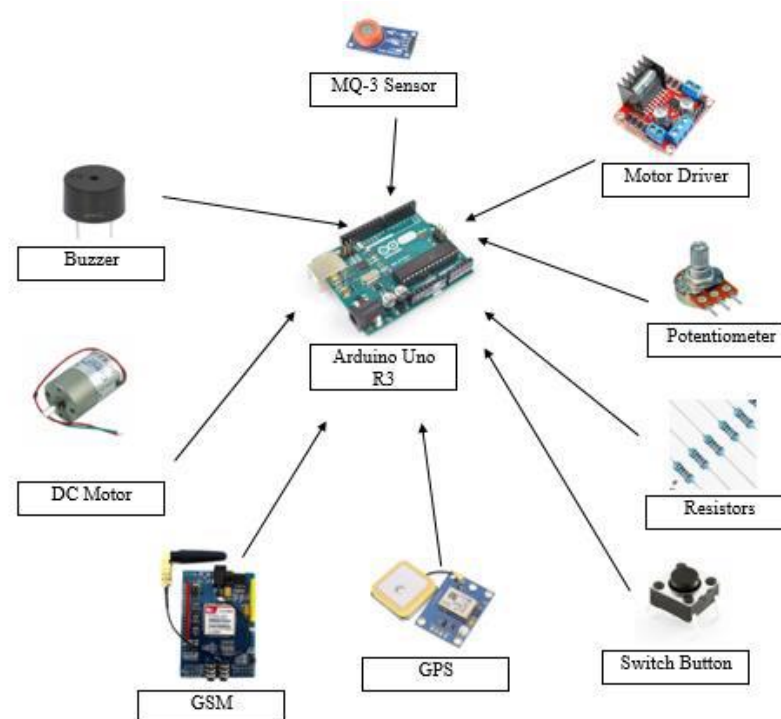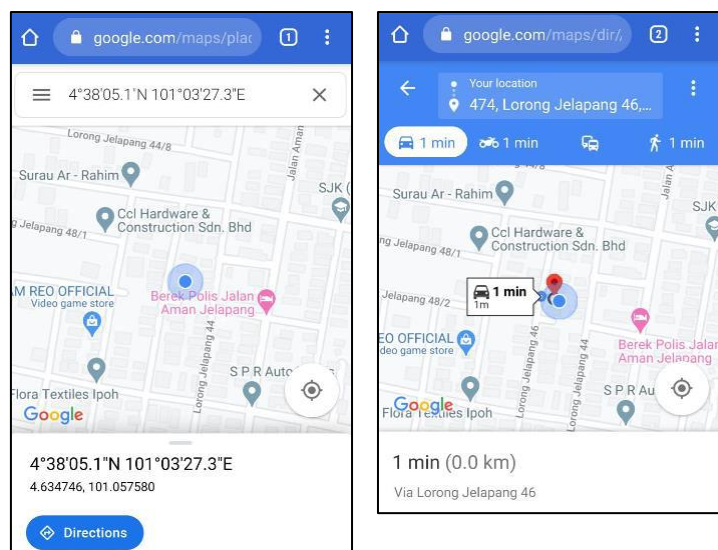

Architecture of Driver Alcohol Monitoring System for Vehicle Safety Control with Emergency Contact

RESULTS

Time: 1
Alcohol Level Description:
Safe: 0-179
Dangerous: 180 and Above
Alcohol Level(ppm): 506
DC Motor Speed: 85
Latitude :4.634713
Longitude:101.057601

Time: 2
Alcohol Level Description:
Safe: 0-179
Dangerous: 180 and Above
Alcohol Level(ppm): 512
DC Motor Speed: 13
Latitude :4.634713
Longitude:101.057601

Time: 3
Alcohol Level Description:
Safe: 0-179
Dangerous: 180 and Above
Alcohol Level(ppm): 496
DC Motor Speed: 0
Latitude :4.634713
Longitude:101.057601

Time: 4
Alcohol Level Description:
Safe: 0-179
Dangerous: 180 and Above
Alcohol Level(ppm): 514
DC Motor Speed: 85
Latitude :4.634800
Longitude:101.057731

Time: 5
Alcohol Level Description:
Safe: 0-179
Dangerous: 180 and Above
Alcohol Level(ppm): 502
DC Motor Speed: 75
Latitude :4.634800
Longitude:101.057731

Time: 6
Alcohol Level Description:
Safe: 0-179
Dangerous: 180 and Above
Alcohol Level(ppm): 476
DC Motor Speed: 65
Latitude :4.634800
Longitude:101.057731

Time: 7
Alcohol Level Description:
Safe: 0-179
Dangerous: 180 and Above
Alcohol Level(ppm): 481
DC Motor Speed: 55
Latitude :4.634800
Longitude:101.057731

Time: 8
Alcohol Level Description:
Safe: 0-179
Dangerous: 180 and Above
Alcohol Level(ppm): 484
DC Motor Speed: 45
Latitude :4.634800
Longitude:101.057731

Time: 9
Alcohol Level Description:
Safe: 0-179
Dangerous: 180 and Above
Alcohol Level(ppm): 507
DC Motor Speed: 35
Latitude :4.634800
Longitude:101.057731

BENEFITS / USEFULNESS / APPLICABILITY

- System is able to monitor alcohol level and react accordingly by producing safety controls features.
- System is able to send distress message when driver doesn't stop driving.
- System is able to acquire location of the driver and send it to an emergency contact.
- System is able to control the engine and force the driver to stop driving.
- Emergency contact is able to track back the drunk driver.