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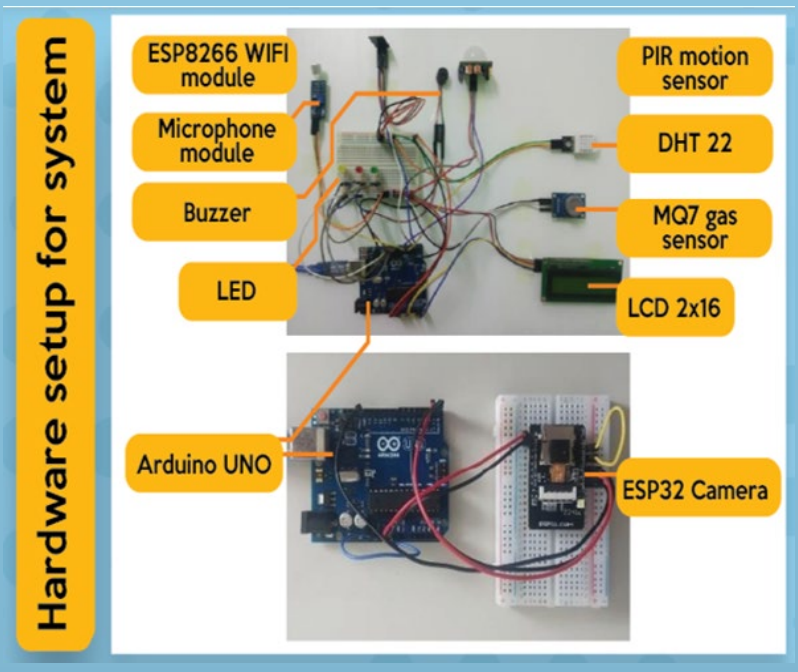
SMART SAFETY SYSTEM FOR VEHICLES

Recent technological developments have paved the way for multi-functional systems such as smartphones and enhanced vehicle technology. Modern cars are getting more ecologically friendly and technologically advanced. Much technological advancement has made our lives better, faster, and easier. However, several car deaths occur throughout the year as a result of human error and inhalation of harmful emissions. Children are frequently left in cars by their guardians, and fatalities occur due to a lack of oxygen for breathing, hyperthermia, and an increase in temperature in the vehicle. In several other cases, people were found dead after being inhaled excessive amounts of carbon monoxide in their cars. Not only that, but the car theft rate is also at an all-time high, causing consumers to feel worried.



Thus, the difficulties mentioned earlier were addressed by utilizing IoT to develop a smart safety system for vehicles. The Arduino UNO is used as a microcontroller in this project, along with the ESP8266-01 Wi-Fi Module and Blynk application, to warn the user via their smartphone of the status of their vehicles and to monitor if there is a theft attempt. The system also includes sensors such as the MQ7 Carbon Monoxide Gas Sensor, the HC-SR501 Passive Infrared (PIR) Motion Sensor, the DHT22 Temperature Sensor, the Sound Sensor Module, and the ESP32 Camera, which allow users to monitor the temperature within the vehicle, sense high levels of carbon monoxide concentration, and monitor for any children who may have been left unintentionally. When a motion or sound is detected in the car, the system alerts and notifies the user via a message to the smartphone. It also produces an alarm sound to alert anyone nearby while allowing users to monitor the condition of their car via live-streaming video. The system will also alert the vehicle owner via a message and alarm as soon as it detects the presence of carbon monoxide. This system will be easy to use and successfully address all the problems raised by taking advantage of the smartphone.

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