Smart Car Data Logger

Deadline:26/03/2021

Problem statement:

In many cases of car accidents, the condition of the vehicle is bad, and the reason for the accident is impossible to know. Some accidents are caused due to negligence by the driver. Design a system that will let the user monitor the condition of their vehicle. If possible, automate various safety measures in the vehicle. Use appropriate sensors and components to accomplish the same. Various reasons for motor accidents and vehicular deaths could be, but not restricted to, heatstroke, CO poisoning, car imbalance/instability etc. Also incorporate a system, where the information is stored, and can be reproduced on demand on a mobile app.

Guidelines:

- Use any arduino board.
- Use the serial communication protocols (I2C/SPI/UART). Abstain from using any pre-existing libraries for the sensors using the protocols. (For ex: Use ‘Wire.h’ and ‘SPI.h’ for I2C and SPI respectively, not ‘MPU6050.h’ for MPU6050 sensor)
- Log the data onto a memory element (SD card, external EEPROM etc).
- The logged data should at least contain the vehicle’s kinematics (acceleration, velocity), GPS coordinates and timestamp so that the reason, location, time of the accident can be tracked. More parameters can be included.
- Transmit and display the data in real time on Blynk app.
- Demonstrate a simulation of your design on proteus.
- Make a powerpoint presentation to present your idea.

Powerpoint Presentation:

- Show which sensors you have selected along with what parameters you have considered in tabular form. Consider at least 3 sensors for each use case and your reason for selecting one (Ex: LM35, DHT22, TMP36 for temperature).
- Block diagram of your proposed system.
- Flow chart of your program.