# REAL TIME VEHICLAE STATUS MONITORING USING CAN

AIM:

The aim of the project is to enhance vehicle safety and monitoring by using Controller Area Network (CAN) protocol. This system is designed to display critical vehicle parameters such as fuel percentage, indicator status, and airbag status/activation in real time.

INSIGHT:

➢ Knowledge of Embedded-C programming

➢ Thorough with the LPC2129 Architecture, General purpose I/O Interface, ADC, Interrupts & CAN interface

➢ Understanding of CAN protocol

BLOCK DIAGRAM:
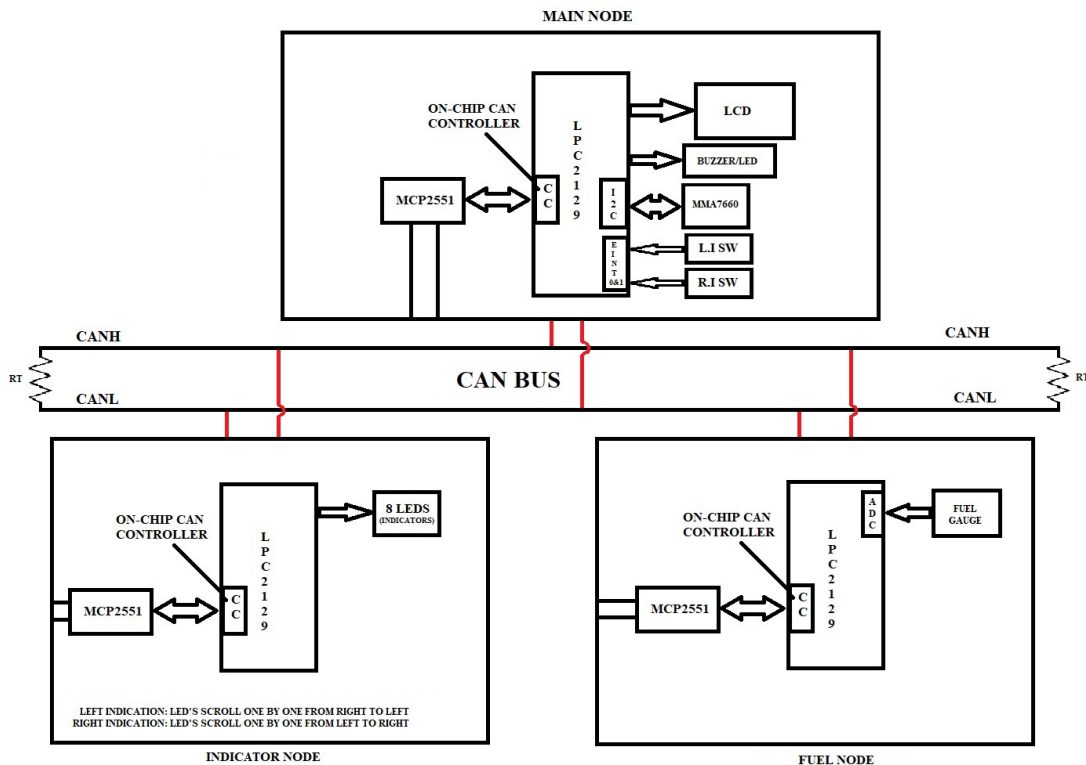
HARDWRAE REQUIREMENTS:

- LPC 2129
- CAN Transceiver (MCP2551)
- LEDS
- LCD
- MMA7660
- FUEL GAUGE
- SWITCHES
- USB to UART Converter

SOFTWARE REQUIREMENTS:

1) EMBEDDED C – PROGRAMMING
2) **KEIL-C COMPILER**
3) **FLASH MAGIC**

SEQUENCE TO BE FOLLOWED FOR IMPLEMENTATION:

- Create New Folder in your server/laptop/PC and save that folder with your project name
- Individually can check each and every module.
- First check lcd to display character constant, string constant and integer constant.
- Next check the on-chip ADC by connecting variable voltage (from potentiometer) and display input value on LCD.
- Then develop logic for reading the fuel percentage and display it on LCD.
- Then check the external interrupts code. Based on number of time interrupt is raised need to increase the count value and that should be displayed on LCD. (refer LMS for single & multiple interrupts sample codes)
- Then develop logic for reading the accelerometer sensor information and display it on LCD.
- Then download the CAN basic code from LMS and test it on hardware and analyse the working of that code.
- Once all the above modules are checked then start preparing the main code for each node.
- MAIN NODE: Read the accelerometer sensor information and display it on LCD. And

based on the interrupt generated, need to send the indicator signal to the indicator node. And one more task of this main node is receiving the fuel percentage from the fuel node and display it on LCD.

Note: SW1, SW2 need to access with the help of external interrupts.

➢ INDICATOR NODE: Continuously waiting for the data from the main NODE using CAN. If any data is received from main NODE, based on that it is controlling the indicator signals connected to microcontroller. Refer the block diagram for how to give the indicator signals with the help of LED'S.

➢ FUEL NODE: Continuously reading the Fuel gauge sensor information with the help of on chip ADC and send that information to the main node.

➢ If you're getting this output then your project is completed.

*************************** **ALL THE BEST** ***************************