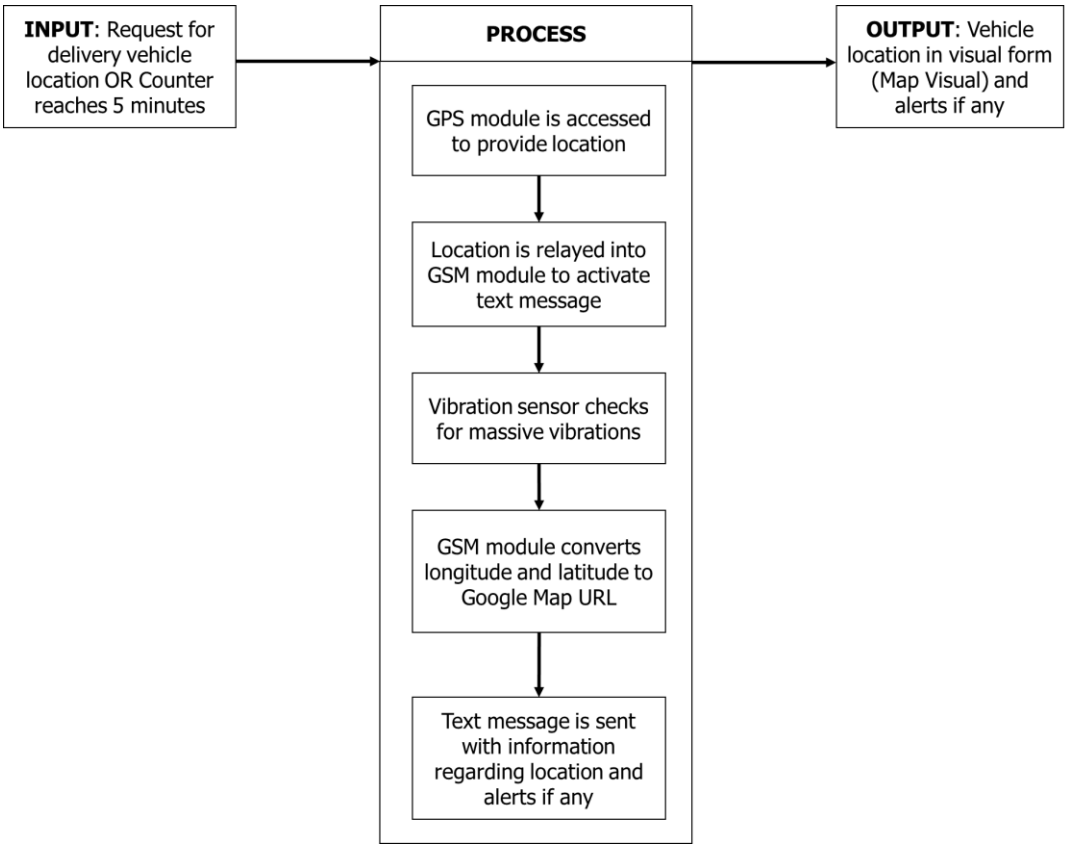
DESIGN_GPSTRACKER

The main objective of this product is to design a delivery vehicle tracking system using smartphone Google map application.

Specific Objective:

- To design a device that would provide the exact location of the delivery vehicle with the use of Google map application.
- To develop a system that is compatible to any smartphone.
- To have a system that has panic button that can alert the person in charge in case of emergency.



This project simply tracks the GPS location using a GPS module, format the latitude and longitude along with Google Maps Link and send it to a certain number via SMS using a GSM module. The sending of location is done every 5 minutes or if the user send a certain SMS to the device (ex: “WHEREAREYOU”) to request where is it now. Additionally, there are two inputs, the panic button and the G-force readings of the accelerometer. If the panic button was pressed, it will send an SMS to the user that “An emergency occurred at *insert google location link*”. When the G-force readings became abnormal, it means that it detects a vibration or accident, it will send SMS to the user that “Vibration detected at *insert google location link*” and the buzzer will be triggered. Additionally, an LCD is connected to output the device’s status.

Over all the IPO is changed to:

Inputs:

- Location coordinates.
- Panic button.
- G-Force readings from the accelerometer.

Process:

- Send google link coordinates every 5 mins.
- Send google link coordinates if the user text the device with “WHEREAREYOU”.
- Send SMS of Google location link if panic button is pressed.
- Send SMS of Google location link if vibration is detected and turn on the buzzer.

Outputs:

- Buzzer
- SMS to the user.
- Device status in the LCD.

Materials

- Arduino Nano
- MPU6050
- GPS Module (NEO-6M-V2)
- SIM800L
- 16x2 LCD (With I2C interface)
- Piezo Electric Buzzer
- Breadboard
- 2 pcs buttons for breadboard.
- 2 pcs buttons for finalization (the big square one from e-Gizmo).
- Male to Male wires.
- Female to Female wires.
- LM7805
- 330 nF capacitor
- 100 nF capacitor
- 12V power supply, it should output at least 2000 mA because SIM800L needs a lot of power.
- 16x 2 pre-synthesized PCB.
- Developer powder.
- Ferric chloride.

Tasks

Our job is to:

- Create the circuit of the device.
- Create the program of the device.

You job will be to:

- Create the PCB of the project.
- Create the casing of the project.