# Vehicle Tracking System

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*Abstract:* *The initial work of getting familiar with the Arduino UNO board was accomplished by interfacing a couple of modules with it, namely the LCD module and the GSM module. Primarily, we started off this project with the vision to employ this model extensively for security, surveillance, tracking and vigilance purposes. The GPS Tracking System provides a database of the path followed by the vehicle/locomotive on which this system is embedded, thus, useful in safe guarding it. This task has been done with the use of a controller Arduino UNO board, a GPS module, a SD card shield and a GSM shield. The GPS antenna here is responsible for collecting the location coordinates from the satellites and passing it on to the Arduino UNO board. The data received by the Arduino UNO board is saved on a memory card from which we plot the path on Google Earth. We attempted to make this project model real-time by integrating a GSM module with it, which gives the real time location coordinates to the desired mobile number.*

*Keywords:* *Arduino UNO, GSM Module, GPS Module, SD Card, LCD Module, Connectors.*

## I.     Introduction

The need for security and surveillance has increased manifold across the world. Along with this grew the demand for advanced technology to make tracking, surveillance etc. easier. The GPS Tracking System does the same. It's important to keep track of vehicles for many reasons. These days, with the number of online stores increasing, it's easier to track delivery trucks and couriers with just an SMS/call away. Furthermore, in case of a car theft, installing GPS Tracking System in the car can let you know the exact coordinates of the car. Apart from this GPS tracking has proved to be important for parents to keep their children and the elderly who travel under surveillance. works as a base station for the entire system. Furthermore, for including any extensive functionality in the Arduino UNO, one just needs to download the respective library online. All that needs to be done after interfacing GSM module, GPS, SD card and LCD with Arduino is to program it. With just a call/ text away, you can get the coordinates, date and time of the vehicle.

## II.     Literature Survey

The field chosen to work on as the engineering project was Embedded Systems, therefore we started with an initial research on the embedded boards available. We realized that there were a plethora of programmable boards working on open-source software. Among the many options were Raspberry Pi, Arduino, Beagle bone etc. Out of all these, we chose the Arduino platform as the most favorable to work on, because of its ease of availability, its feature of being user friendly, and its software being open-source. Also, we found that this platform was the best for us as beginners to learn and explore its potential features and functionality. We also noticed that there were a large number of applications which were based on Arduino, and this prompted us to rivet on working on this platform.

We initially explored the various modules that can be interfaced with the Arduino board, thus, beginning with the LCD module and GSM module, we tried to implement an electronic notice board. During this process, we came to know that there are different kinds of boards available, and we had to narrow down to the board specific to our application. This prompted us to explore more applications which could be implemented using this platform. We studied about automated attendance monitoring system, electronic door locker, fake currency detector, blind navigation system etc.
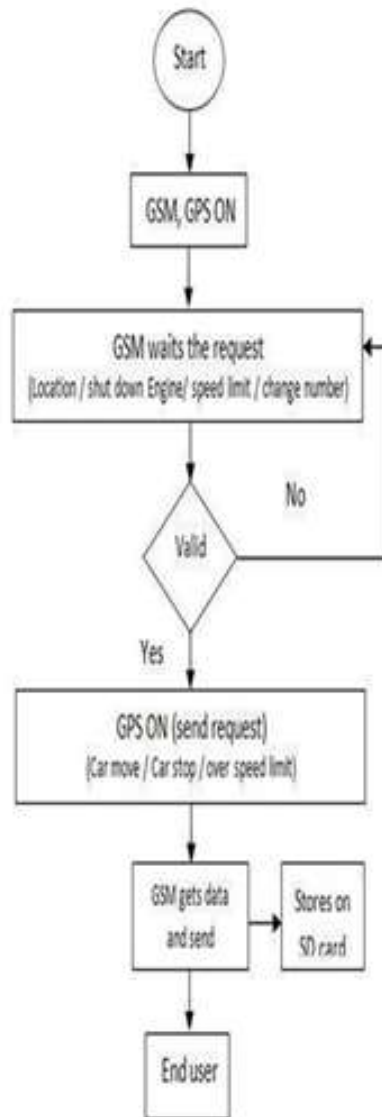
After analysing the economic feasibility of the selected project models, we came to a conclusion to work on a Wireless Notice Board using Arduino UNO. Since we had already worked on the interfacing of LCD and GSM modules, we decided to integrate these modules to the Wireless Notice Board. We decided to work on this project with the vision of using this model extensively for security, serveillance tracking and **FLOWCHART** vigilance purpose.

*International Conference on Innovations in Engineering, Technology, Science & Management –*          18 | Page
*2019 (ICI-ETSM-2019)*

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### III. Methodology

Designing and develop the system for security, surveillance, tracking and vigilance purpose. ie. Vehicle Tracking System, for Vehicles Using Arduino UNO. By Arduino UNO, GPS Module, GSM Module, LCD Module, SD Card Module, Connectors. This gadget is capable of tracking the vehicle with the help of GPS Module. It detects the location and condition of the vehicle and send the information to the register mobile number through GSM Module. SIM card installed in the GSM Device which present in the vehicle. Then Arduino UNO will check and match password and the messages, if they are same then it sends the location of the vehicle to the owner through Google map.

### IV. Working

- In Vehicle tracking system Arduino UNO is used for controlling whole the process with a GPS module and GSM module.
- In this system GPS module is used to detect the coordinates of the vehicles.
- And GSM module is used to sending coordinates of the vehicle by message to the user.
- LCD is used for displaying coordinates of the vehicle in the form of message.
- Sent messages are received by GSM module which is connected to the system and send message to Arduino UNO.



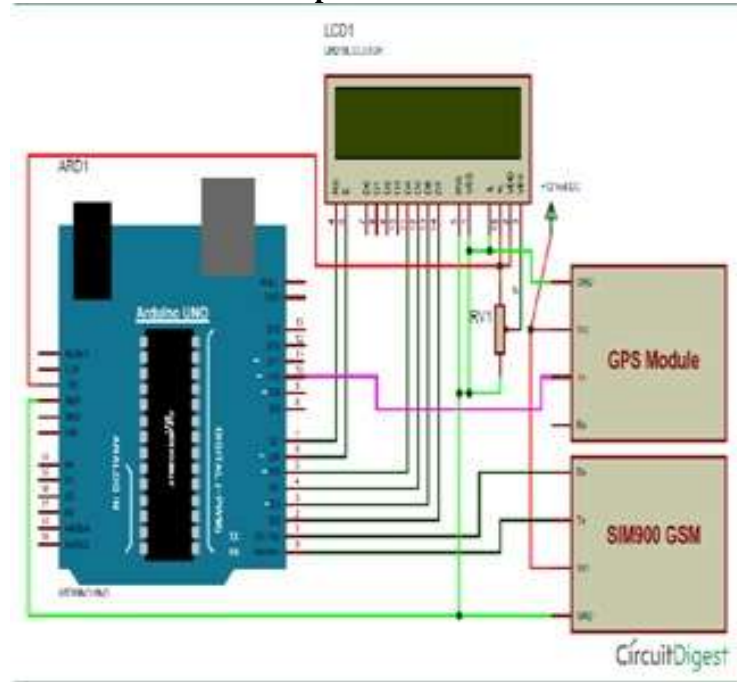*International Conference on Innovations in Engineering, Technology, Science & Management –* 19 | Page
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# V.    Implementation



**Fig.1** Block Diagram



**Fig2:** Implementation

*International Conference on Innovations in Engineering, Technology, Science & Management –* 20 | Page
*2019 (ICI-ETSM-2019)*
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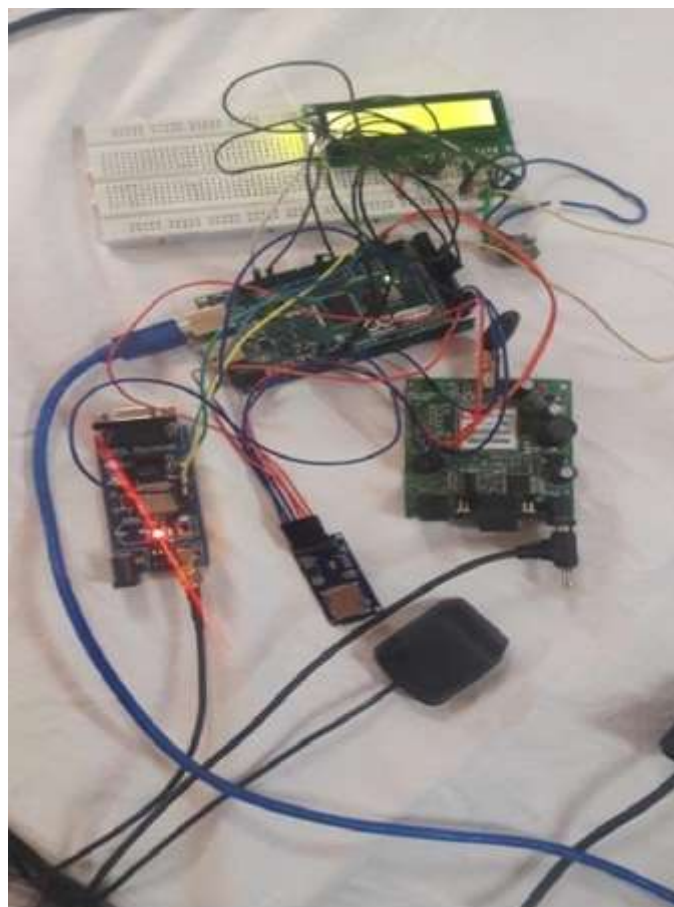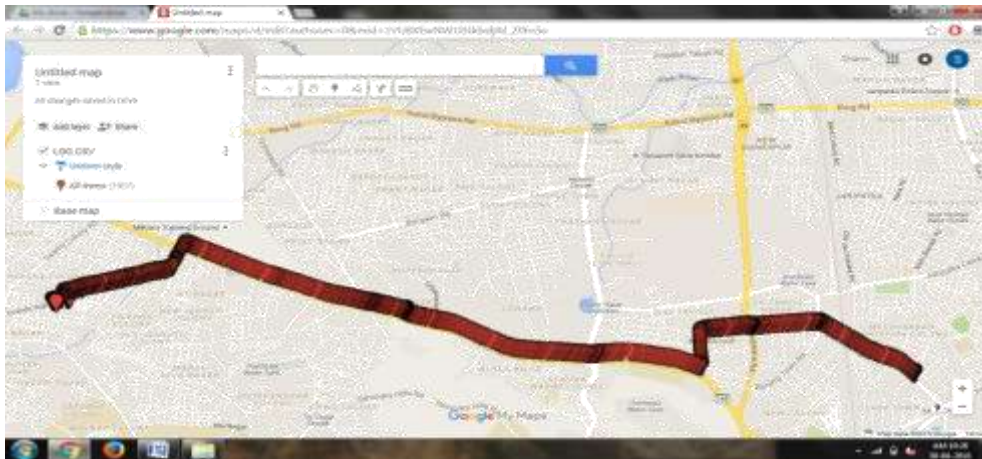**Fig.3:** Path Traced using Vehicle Tracking System

## VI. Conclusion

Vehicle tracking system are still in demand among people everywhere bit along with their demand is their desire for security and surveillance. Vehicles are very important in our daily so everyone want to secure from theft. Our project is also helpful for where accident occurs in the midnight it easily tracks the location.

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*International Conference on Innovations in Engineering, Technology, Science & Management –* 21 | Page
*2019 (ICI-ETSM-2019)*
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