

SMART VEHICLE WITH GSM ALERT SYSTEM

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Abstract- Smart vehicle with GSM alert system is a GPS tracking system which is required in many situations like in case of car theft detection. In an approximate survey, a huge number of vehicles are being theft in a month, and out of that, only a little number of vehicles are tracked, often in an-roadworthy conditions, with many components missing. So we decided our project on smart vehicle tracking system. In this project vehicle's position is tracked using GPS module. Using a microcontroller and GSM, real time position of the vehicle is send to owner's mobile. This system will protect user's vehicle from theft. In case of stolen vehicle user can shut down engine by sending command to controller. Components in this system are GPS module, Microcontroller, GSM module, Accelerometer sensors. GPS module will send coordinates to the microcontroller. Microcontroller then sends this data to the user in text message via GSM module. This text message contains longitude and latitude of the location. By this system user can get minute-by-minute updates about vehicle location. We have added an additional feature with the vehicle tracking system that is the "Accident alert system". This system works such as airbag sensor's which are present in vehicles named as accelerometer sensors. This sensor's, senses sudden vibration and sends the location to the user's family members with an alert message. So in all the system is named as "SMART VEHICLE WITH GSM ALERT SYSTEM".

Keywords- GSM, GPS, ACCELEROMETER SENSOR, SOLENOID VALVE.

I. INTRODUCTION

Smart vehicle with GSM alert system is a theft control system which is a combination of controlling the theft vehicle and tracking with the help of GPS further one more feature added is accident alert system. Smart vehicle with GSM alert system is a combination of three features that is theft control, tracking of the vehicle and lastly, accident alert. When user parks its vehicle, user activates GPS system which will continuous monitor the location of parked vehicle and send SMS through GSM to the user with certain interval of time. So when user's vehicle without the permission of user moves, user will be informed by the SMS that the vehicle has been moved from its parked location. Now the user got the SMS that its vehicle has been theft or moved from its parked location so the user will control the vehicle sending an SMS to the GSM system on vehicle which will stop the engine and user will track the location of stopped vehicle by GPS and can get vehicle back. So this is done by vehicle control and tracking system. Accident alert system is such that when user meets with an accident and user himself gets injured then at that time user's family members, police station, ambulance and other family members will get alert, that user has meet with an accident at which location, all information will be sent by SMS.

II. BACKGROUND

2.1 Vehicle Tracking

Vehicle tracking is basically done with the help of GPS. With the help of GPS we can get the location of

the vehicle and the location of the vehicle is send to the user with the help of GSM module in the system. A GPS-based vehicle tracking system will inform where our vehicle is and where it has been, how long it has been.

2.2 Vehicle theft control and Tracking

A vehicle tracking system combines the installation of an electronic device in a vehicle, or fleet of vehicles, with purpose-designed computer software to enable the owner or a third party to track the vehicle's location, collecting data in the process.

In the previous system security lock and alarm is implemented in a car. If a burglar can break open the lock, then it becomes easy for the burglar to steal the car, And in old security system if the car is stolen then it is out of the owner control.

User doesn't have any awareness about the current location of the vehicle. Where smart vehicle tracking system plays a major role, the user gets continuous updates of the location of the vehicle and if user wishes then user can control the movement of the vehicle with the help of GSM module by sending signal to the systems GSM module and the system will stop the fuel flow to the engine with the help of solenoid valve.

2.3 Accident Alert System

Accident alert system is an additional feature to the smart vehicle with GSM alert system.

Accident alert system gets activated by the accelerometer sensors.

These sensors sense sudden vibration and get activated, at that instant these sensors send signals to the system's GSM module and the module will send alert message to the user's family members that the

accident of the user has occurred with the location via SMS.

III. BLOCK DIAGRAM

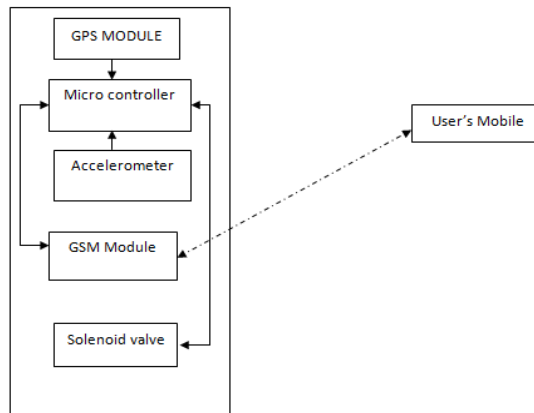


Fig.3.1 Basic block diagram of the system.

IV. EXPERIMENT

4.1 Simulation

We are simulating the basic concept on which the project works. Proteus 7, a multi tool simulation software is used to construct the equivalent circuit that

will give the idea on how the actual components will be interfaced. Also, Arduino IDE, an open source Arduino programming software is used to code the logic-that will detect the theft as well as send and receive messages for controlling via the GSM module.

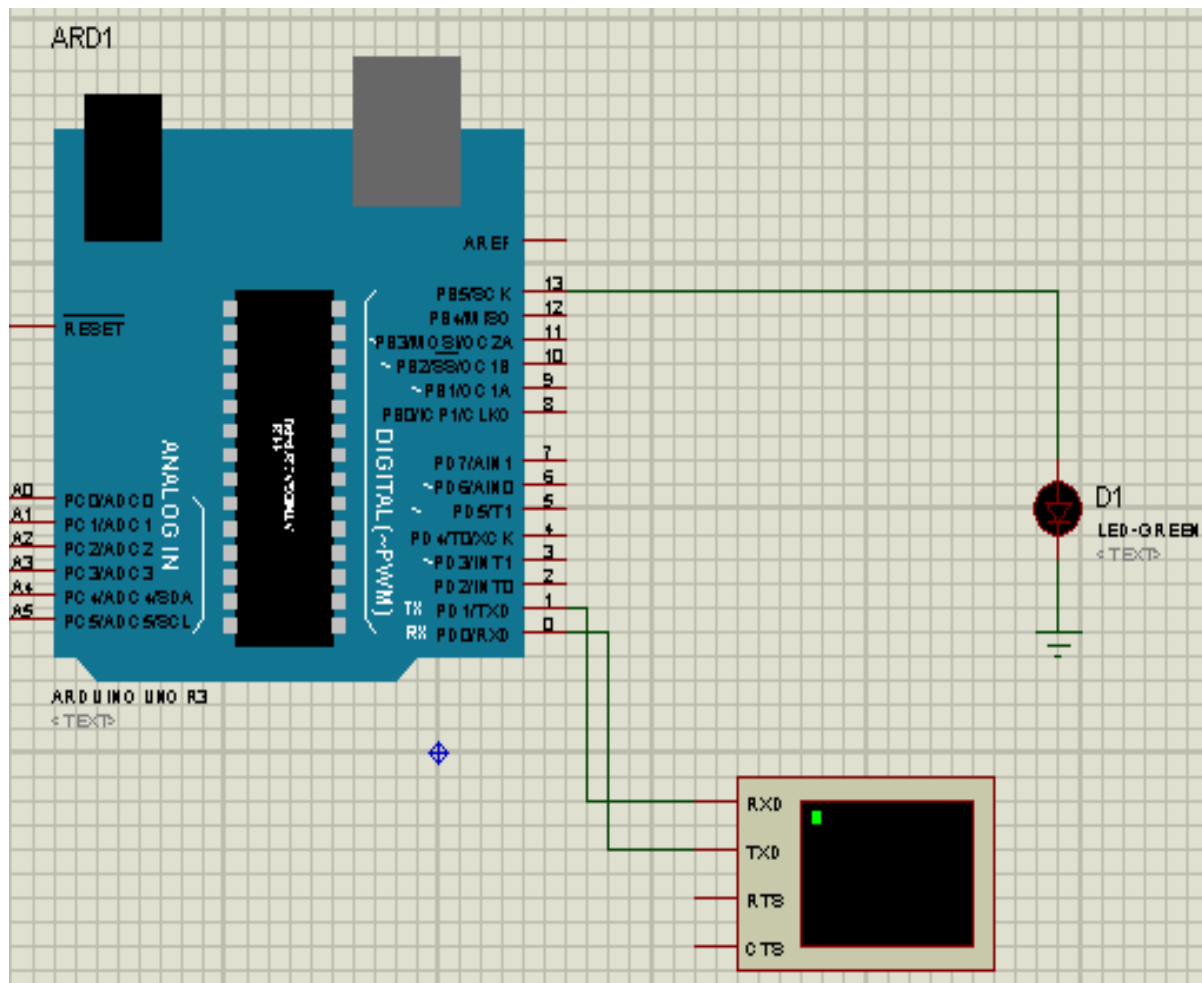


Fig 4.1 Basic Component Interfacing Concept

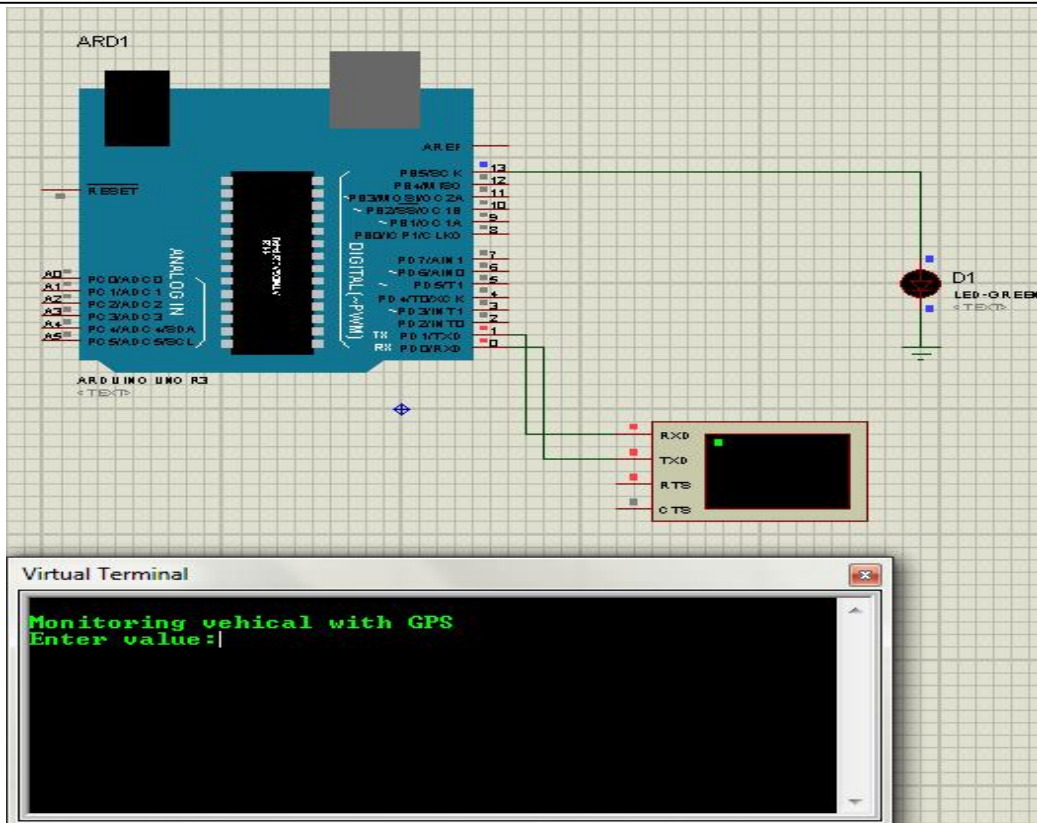


Fig 4.2 Showing the location of vehicle being monitored.

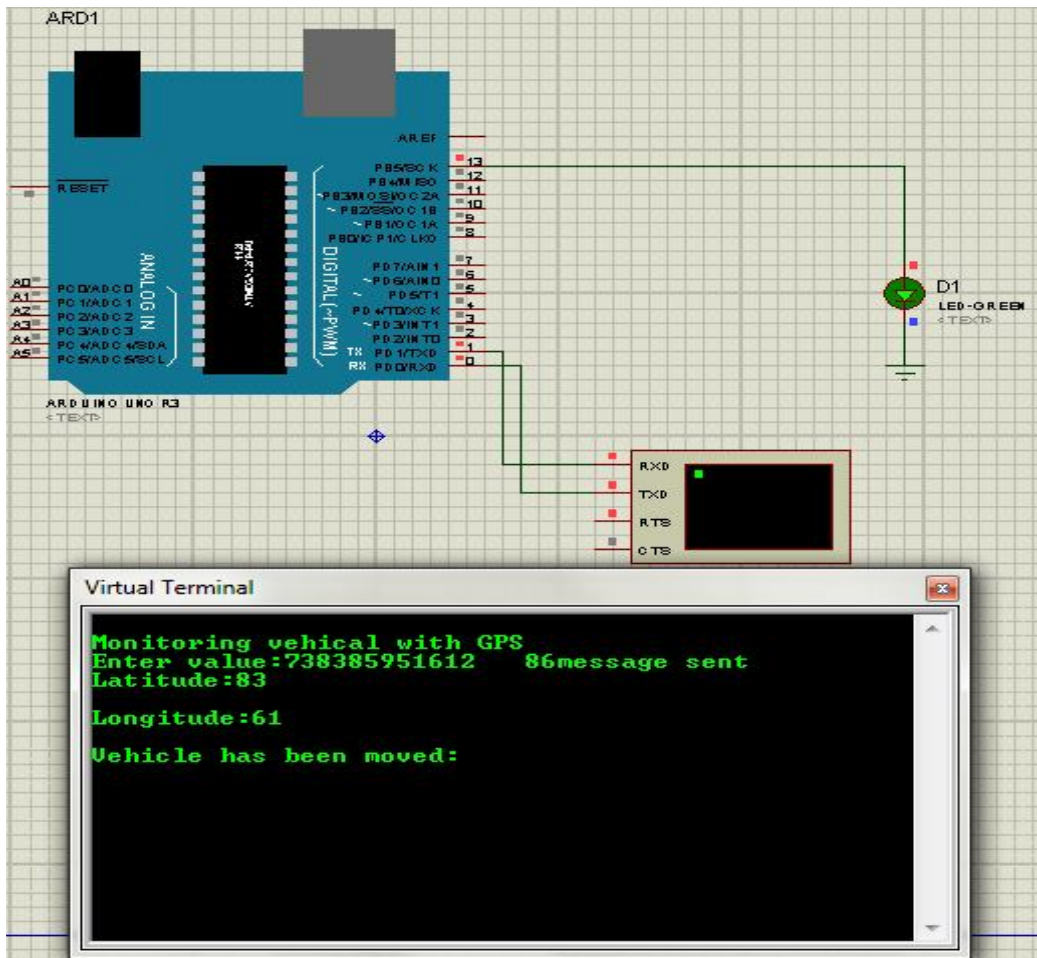


Fig 4.3 location send to the user's mobile number

CONCLUSION

Hereby, with a study and research regarding vehicle theft control and tracking system with GSM alert system, As expected, if a vehicle is moved from its position after being parked and the tracking system is being activated, precise location of the moving vehicle is being received by the user and the user can control the operating engine wherever the vehicle is located. As vehicles are becoming costly day by day this system would be very much helpful for the user. As the prime purpose of the project is security the GPS and GSM module functioning with satisfactory outcomes is expected.

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