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Online Database Authentication Security System

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Abstract: Our proposed research work is based on the online data base authentication system, using this we can make our country as smart country. Not only smart country but also, we can make our country secure and crime free where any person would think before performing any illegal activity. This system is controlled and authenticated by online database. The special feature of this system is that it can be installed anywhere easily. For example, if we implement this system into a vehicle than any other person cannot drive the vehicle without driving license and without any permission of the owner of the vehicle. Apart from this, if any person tries to drive the vehicle without following the rules in a proper way and caught then the Challan will be applicable on the driver of the vehicle instead on the vehicle. If that driver does not pay the Challan within a certain time limit, his driving ID will be suspended and after that he will not have the right to ride any vehicle. Not only this, if we implement this system in mall, taxies, buses, banks, parks, shops, and other social places then only a person can go to these places who have Indian citizenship or who is validate by Indian government. As a result, with the help of this project, illegal activities like terrorism and stealing can be stopped as well as persons come from other countries can also evaluated. Apart from this, if any person performs any illegal activity or crime, his ID can be blocked so that he cannot go to those places where this system is installed. If he tries to run after doing any crime, then he can be easily caught by the system which is installed in buses and taxis. Or if he goes to the social places where our system is installed then also, he can be easily caught. In such a way we can enhance the security of any place by installing this system even that place can be our home, or any social place. System consist of a smart card (RFID CARD) and fingerprint (optional). RFID cards contain the information of driving ID number (like A4BCN356) and it is verified by our created online data base where the data base contained the information of an driving ID numbers of vehicle driver there from it will verified by online stored data base after passing this authentication, an acknowledgment signal will send by microcontroller which is shown on display to verify the RFID detail of driver after this whole process vehicle will start or ignited.

Keywords: Security System, RFID, Vehicle Security, Authentication.

I. INTRODUCTION

This project is a security system or lock which is controlled through online data base and it is divided into five parts that are:

1. **DATA BASE**: A database is an organized collection of information or data which is collect the information or date of users in this manner Some impotent fields of database are:

- ID number: ID number is the unique and individual number of every person or user which are created randomly according to user registration.
- Permission: this field stores the permission for user whether the user can start the system or not and this field control by the owner of system.
- Country: this field stores the user's counter information.
- Checker: this field stores the information of the user whether there is any penalty, case, crime or fine.

2. **API:** API is used for communication system to web server which is made up of three parts

I. Web address: this is server or website http address.

II. Owner ID: this is id number of the system owner (system owner is owner of the system).

III. Used ID: this is id number of the user (user is who use the system).

3. **RFID CARD:** RFID card store the value of user id number and name.

4. **NETWORK:** Network is used to make a connection between the system or machine to the database. Machine or hardware is the hardware part of our system which is made up of some components which are: RFID READER, MICROCONTROLLER, FINGER PRINT, GPS, SIM, MICROPHONE AND SPEAKER, BUTTONS, CAMERA, DISPLAY. These components can be increased or decreased as per the requirement.

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5. INFORMATION COLLECTION: This works for collecting the data for example, if user uses any system then their information like user name, phone number, system location and system using timing will be sent

6.

7. automatically on owner's profile or owner's google sheet and also the information of owner like owner name, owner phone, system location and system using timing will be sent on the user's profile or on user's google sheet.

If we install this system in the vehicle, then the security of the vehicle will increase such as:

- Without driving license and without owner permission vehicle cannot start.
- This project will prevent the vehicle from being stolen.
- The driver will have to pay fine while the owner of the vehicle will not have to pay
- Control road accidents
- Parent's will trace the location of the children.
- Direct contact to taxi and vehicle owner.
- If the vehicle will have met an accident, then the system will call a specific number
- Travelling can only be done by ID.
- We will be able to trace the location of the vehicle by using GPS.

If we implement this system in mall, taxies, buses, banks, parks, shops, and other social places then only such person can go to these places who have Indian citizenship or who is validated by Indian government. As a result, with the help of this project, illegal activities like terrorism and stealing can be stopped as well as people coming from other countries can also be easily evaluated. Apart from this, if any person performs any illegal activity or crime, his ID can be blocked so that he cannot go to those places where this system is installed. If he tries to run after doing any crime, then he can be easily caught by the system which is installed in buses and taxis. Or if he goes to the social places where our system is installed then also, he can be easily caught. In such a way we can enhance the security of any place by installing this system even that place can be our home, or any social place.

II. LITERATURE REVIEW

The system consists of a smart card capable of storing the Fingerprint of particular person. While issuing the license, the specific person fingerprint is to be stored in the card. Vehicles such as cars, bikes etc. should have a card reader capable of reading the particular license. The same auto mobile should have the facility of fingerprint reader device. A person, who wishes to drive the vehicle, should insert the card (license) in the vehicle and then swipe his/her finger. If the fingerprint stored in the card and fingerprint swiped in the device matches, system can proceed for ignition, otherwise ignition will not work and warning message will be sent to the owner's mobile. Moreover, the seatbelt detector verifies and then prompts the user to wear the seat belt before driving. This increases the security of vehicles and ensures safe driving by preventing accidents. [1] In these days' security is of prime concern in vehicle. The present day's security offers little in terms of safety for the vehicles. The cost of anti-theft security system is also extremely expensive hence an effective alternative is required. This paper addresses the problem of security in vehicles using password to authenticate to turn on the engine. In the proposed security system, when the vehicle is accessed using correct password it sends an SMS to the owner with the address of accessed location. If the wrong password is entered for three times the system sends an SMS to owner saying that someone is trying to access vehicle at particular location and immediately to the system disconnects the power supply to the engine ignition system. [2] Here an Arduino is used to control the GSM and the GPS modules. Also emergency calling features as well as easy vehicle accessing features for emergency conditions are included. [3] The use of vehicle is a must for everyone. In the same way, safeguarding the vehicle against theft is also very essential. Impediment of vehicle theft can be done remotely by an authorized person. Embedded computing technology is an emergent field used in all the areas.

III. METHEDOLOGY

Basically our system consists of two sections that are:

1. Hard ware section: This section controlled by the microcontroller as shown in Fig 1. This section comprises of the hardware components like display, RFID module, GPS, GSM, finger print, etc,

2. Online data base section: this online section control the database part, permissions and authentications this section shown in Fig 2.

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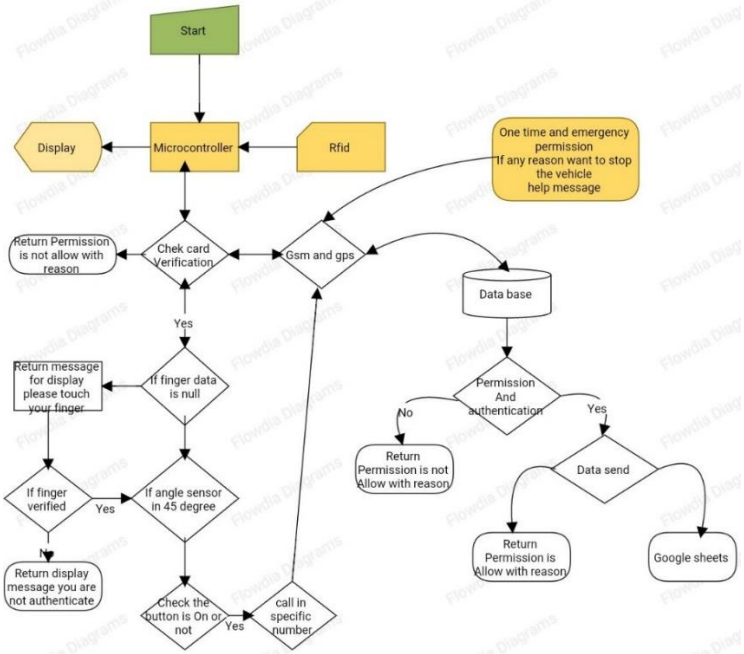

Fig. 1 Hardware Section

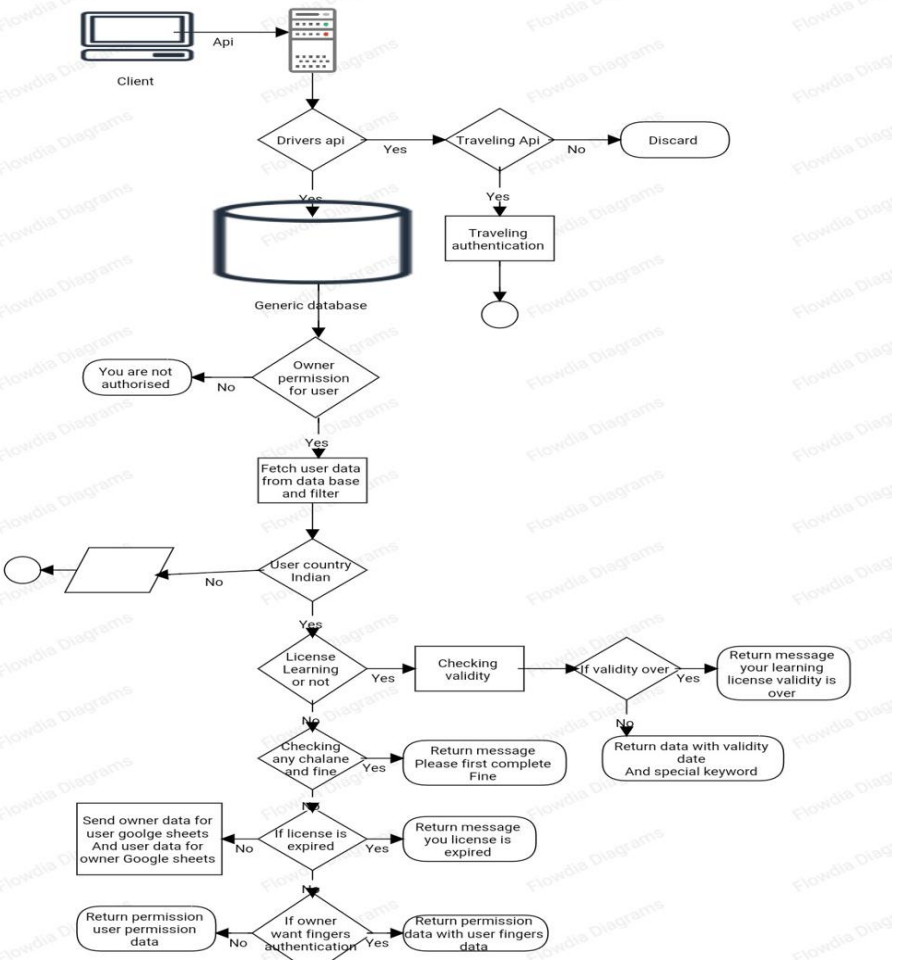

Fig. 2 Online Section

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IV. WORKING OF THE SYSTEM

When this system is started then it waits to connect with the networks and after it gets connected then user can scan his RFID card (RFID card stores some information like user ID number and name) by RFID module that is present inside the system. After scanning the RFID card system sends an acknowledgement on the online database through API. Online database will check automatically some mandatory information like user is registered or not in online database, whether the owner has given permission to the user or not, whether the user has committed crime or the user have any fine from the government, will check user country and some another information depending upon where we are using this system. Like if we are using this system in vehicles then the information which is checked in database is driving id and license field:

Driving ID: Driving ID is the ID that is provided by the government when user clears the driving test.

License: License field are used for checking that whether the user's driving certificate is expired or not and for checking whether user's license is learning license or not.

If any person uses any vehicle which have this system installed, then first of all he will have to scan his RFID card, this card will store user id number and name of user (driver). After this the system will send his user id number and name to online web server through API and will check this id number in online database and will check that whether this is already available in online webserver or not. If his id number exists in online database then system will be able to check automatically other information from database like, whether the owner of the vehicle has given permission to the user or not, will check its criminal record and whether the user have any penalty from government or not, will check user's country, driving ID, status of licence, license expiry, if after checking every information is found correct for example no fine or crime by user and driving ID is not expired then vehicle will we started and user can drive the vehicle.

At present we see that if any user (driver) does not follow the driving rules which have been imposed by the government then challan is done on the vehicle or the owner of the vehicle but owner of the vehicle is not responsible of this challan rather user (driver) is responsible for this challan so in such cases our system will be very useful. For example if the user does not wear the helmet or if he does not have a driving license and he is caught by the traffic police then at this situation challan will not be on the vehicle or vehicle owner rather challan will be on user (driver) who is driving the vehicle and after that he will have to pay before a certain time and if he fails to pay or not clear that challan in certain time then the user ID will be blocked after which he will not be able to drive any vehicle until he clear his challan. If we implement this system in mall, taxies, buses, banks, parks, shops, and other social places then only such person can go to these places who have Indian citizenship or who has been validated by Indian government. As a result, with the help of this project, illegal activities like terrorism and stealing can be stopped as well as person coming from other countries can also easily evaluated. Apart from this, if any person performs any illegal activity, his ID can be blocked so that he cannot go to those places where this system is installed. If he tries to run after doing any crime, then he can be easily caught by the system which is installed in buses and taxis. Or if he goes to the social places where our system is installed then also, he can be easily caught. In such a way we can enhance the security of any place by installing this system even that place can be our home, or any social place.

V. RESULTS AND DISCUSSION

The objectives being taken are fulfilled successfully and we have designed a prototype which successfully complete these tasks:

- The system did not start without the permission of owner.
- The location of the system is easily tracked by having GPS in the system as shown in Fig. 3.
- The information of owner is easily transferred to the user's google sheet and the information of user is easily transferred to the owner's google sheet (like name, phone number, some part of address, email id and timing when the system is use) as shown in Fig. 4.
- Call and messages are being sent from the system to a specific number when needed as shown in Fig. 5.
- If the check field of user is not null, then the system does not start even after giving owner permission.

Fig. 6 shows the prototype of the project.

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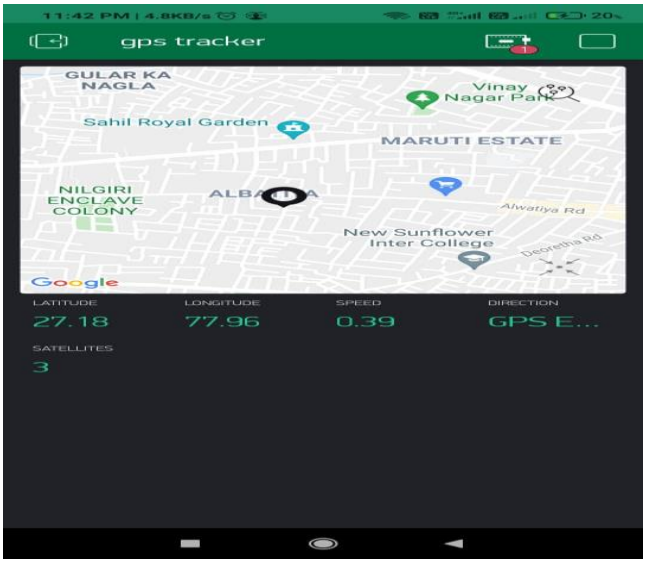

Fig. 3: The location of the system is easily tracked by having GPS in the system

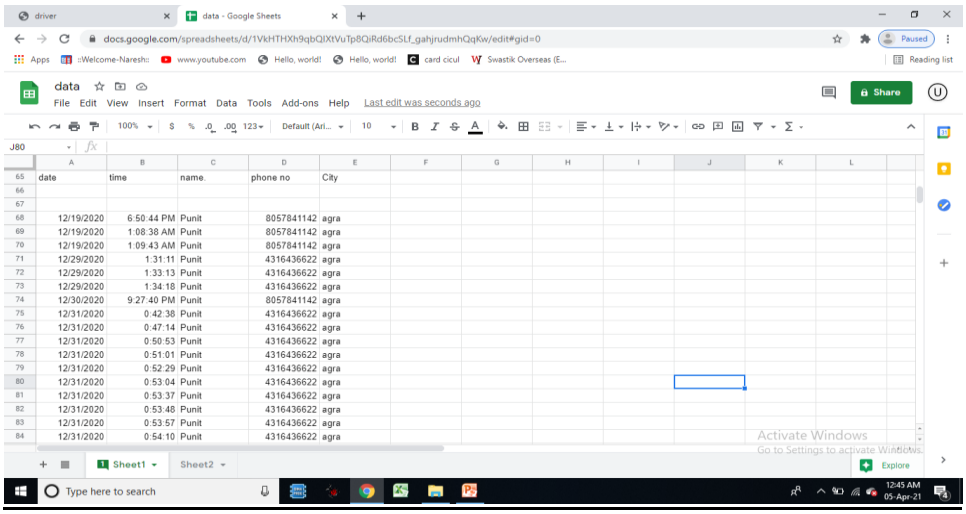

Fig. 4: The information is easily transferred to the google sheet

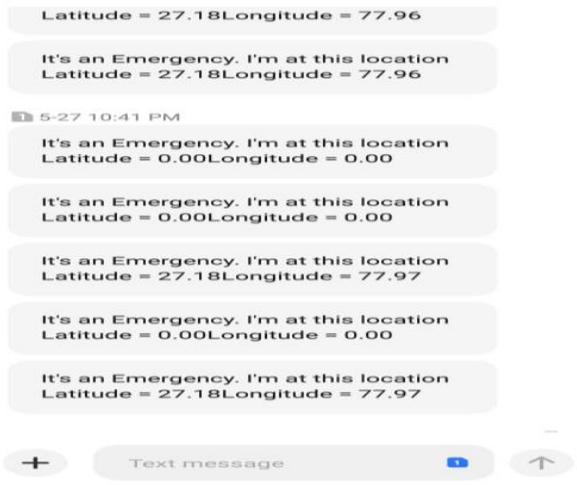

Fig. 5: Messages are being sent from the system to a specific number when needed

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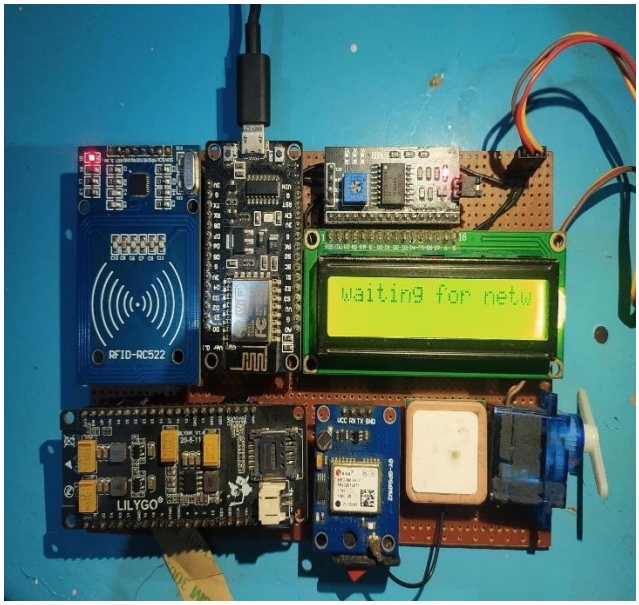

Fig. 6: Prototype of the Project

VI. CONCLUSION

The system designed in which by the authentication process we can secure our vehicle as well as another area like security locks, Railway, Parks, House, Ration shop, Bank, Hotels, or public area and enhanced the vehicle security. If this system is implemented everywhere then it will be very beneficial and will help everyone to deal with a lot of problems. It will help make identification fast and secure, will enhance security, will help fighting in terrorism by not letting any unauthorised person to enter in country. It will also help in reducing cybercrime, and thieves in shops, malls or at any other places.

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