Cashless Rapido Vehicle with Self Drive and Security

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ABSTRACT: In India there are many ways to travel from one place to another place. Road-ways is also one of the major ways to travel from one place to another place. Everyone enjoys traveling by bike or a car in road ways, but due to financial problems some of the travelers doesn't have such facilities. In order to overcome this problem we got an idea that we should have to start the Rapido vehicle service for self drive and security. In order to use this service the user must register with some basic details like Driving License, Aadhar Card, Bank Account details and finger prints. The main intent of this project is to identify the person when he/she place the finger on the fingerprint sensor. It then checks the details of bike registration, license and criminal cases(if any). For example, when the person is going to travel by this bike, firstly when he places the fingerprint then it will check details like bike registration, license and criminal cases are registered on that person or not. If there is no license or if there are any cases registered the vehicle should not started. If everything is perfect, automatically the vehicle will be started and for every 10 kilometers, the respective amount will be deducted from the bank account of that person. Also, the vehicle can be tracked and monitored by using GPS and GSM modules. The entire project can be controlled by microcontroller. This project, once implemented, gives effective results.

KEYWORDS: GSM module; GPS module; Micro controller; Fingerprint sensor; Driving License; Aadhar card;

I. INTRODUCTION

Automation is now a blessing for modern life. As there is an increase in the number of automobiles on the road, the crime involving is also getting increased. Enhanced automobile protection systems expanded mindfulness among automobile proprietors. To protect the precious vehicle the proprietors are currently being compelled to spend huge amount of cash.

II. LITERATURE SURVEY

In the existing system there is no cashless self driving availability. One needs to travel along with driver. Another disadvantage of existing system is, there is no proper detection and indication of the vehicle.

III. PROPOSED METHODOLOGY AND DISCUSSION

By using the GPS and GSM modules we can detect the vehicle. So the proprietors can save huge amount of cash on vehicle protection. Also, if any unauthorised person wants to access the bike then the motor will not be started and the

message will be sent to the Rapido service centre along with the location so that security can be provided for the vehicle.
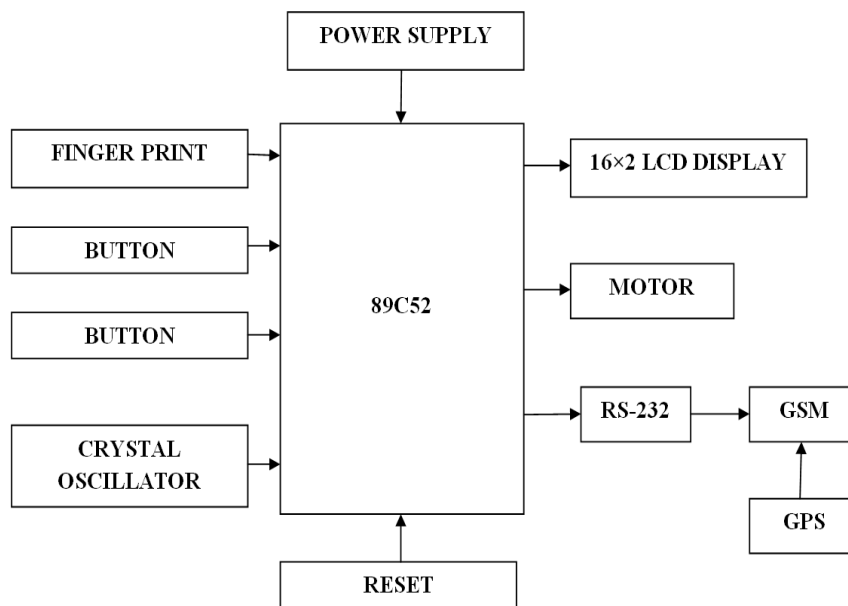
III.A. **BLOCK DIAGRAM**

Fig. 1. Block Diagram of the Project
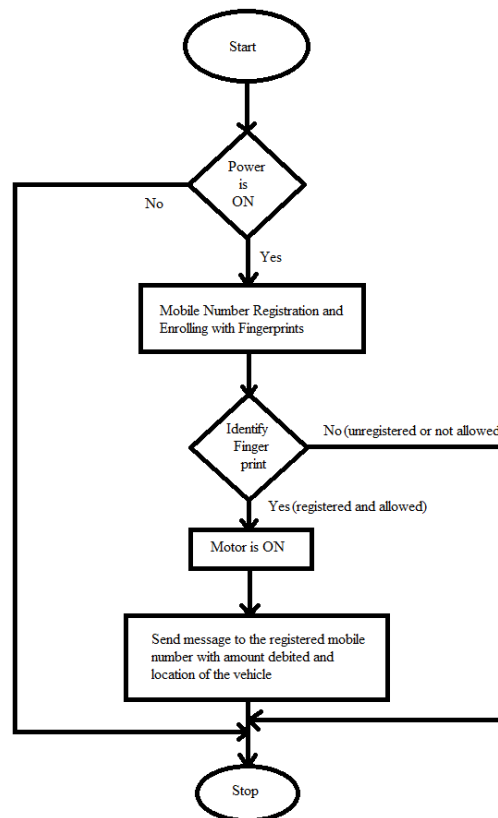
III.B. *Flow chart of the System*

Fig. 2. Flowchart of the Project

III.C. *Overview of the Project*

The user needs to enroll himself with his fingerprints, bank account details etc. Once, the users are registered, the identification process starts. The fingerprint sensor senses the fingerprints. If the user is a registered user, mobile can be registered by sending an SMS to the GSM/GPRS module and the motor of the vehicle starts. When the travel is completed, the respective amount would be deducted from the user's bank account. The amount depends on the measure of kilometers travelled by the vehicle. An SMS would be sent to the registered mobile number with the location of the vehicle and the amount deducted from the bank account. And then the motor stops. If the user identified by the fingerprint sensor is an unregistered person or if the user underwent any criminal acts, the motor of the vehicle would not start and the user cannot travel by the Rapido Vehicle.

III.C.1: *Fingerprint Sensor*

In order to avail the Rapido service, the user needs to enroll himself with his basic details like mobile number and fingerprints. We used AS608 model fingerprint sensor for this purpose. It processes the data and sends data to the Micro controller through serial, the device uses a DSP chip that does image rendering and searching the fingerprint which are stored in flash memory. DSP chip has its own flash memory it can store up to 162 fingerprints.

Fig. 3. Fingerprint Sensor

III. C. 2: *GPRS/GSM MODULE*

The GPRS module find the precise location of the vehicle, We used the SIM800L GPRS module. The reason we used this module is that it performs all the actions a cellular mobile does.

Fig. 4. GPRS/GSM Module

III. C. 3: *Liquid Crystal Display*

Liquid Crystal Display screen is an electronic display module which has a flat-panel display that uses the light-modulating properties of liquid crystals. LCDs help in checking the status of any automated and semi automated devices. 16x2 LCD module is one of the most common devices on the market. A 16x2 LCD means it can display 16 characters per line and there are 2 such lines.
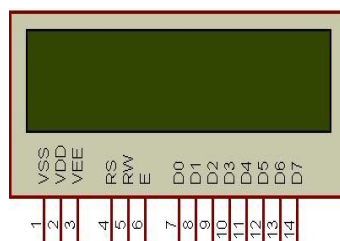

Fig. 5. LCD

III. C. 4: *Push Buttons*

A Push Button is a type of switch which shorts or completes the circuit when it is pressed. In the project, two push buttons are used. One button is used to initiate the enrolling process and the other one is used to identify whether the user is registered or not.

Fig. 6. Push Button

III. C. 5: *Buzzer*

A buzzer is a small yet efficient component to add sound features to our project/system. The buzzer sounds when the identified user is an unregistered user and then the motor of the vehicle stops.

Fig. 7. Buzzer

III. C. 6: *Relays*

Relays are switches that control one circuit through another, without physical contact. Relays are used to provide time delay functions. They are used to time the delay open and delay close of contacts. Relays are used to control high voltage circuits with the help of low voltage signals. Similarly they are used to control high current circuits with the help of low current signals.

Fig. 8. Relays

III. C. 7: *Fan*

We used a toy fan in our project just to indicate that the motor of the vehicle starts when registered user is identified. When the user is an unregistered person or if there are any criminal cases on him, the motor would not start.

Fig. 9. A Toy Fan

IV. EXPERIMENTAL RESULTS

The Final view of the Project is shown in Fig. 10 and the Fig. 11 shows the message sent to the registered mobile number. The message contains the amount debited from the user's bank account and the location of the vehicle.
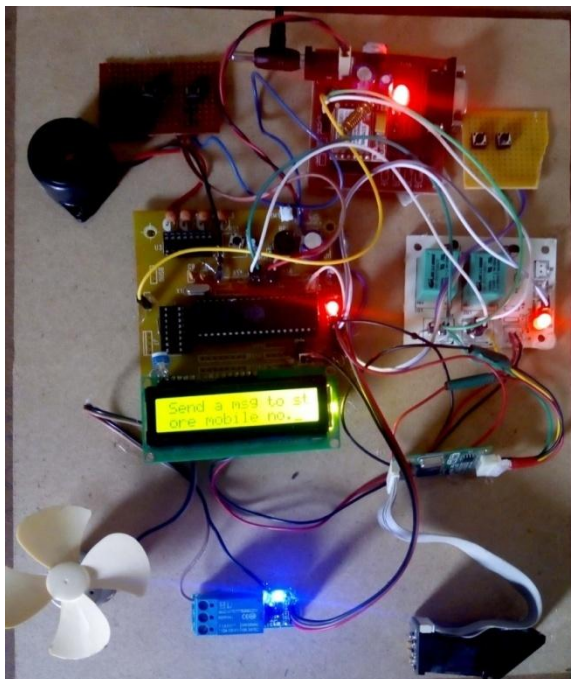

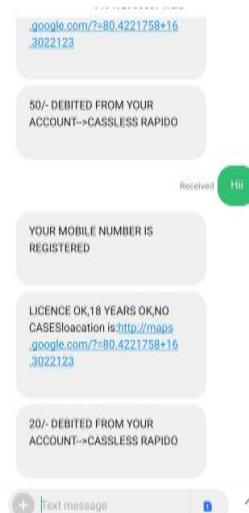Fig. 10: Final view of the Project.   Fig. 11: Message sent by GPRS/GSM module

V. CONCLUSION

In this project the design and development of cashless rapido with self drive and security is achieved. By using 8051 microcontroller the entire system is controlled. In entire system finger print plays very important role. Hence this project is very useful in real time applications.

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