AUTOMATIC TOLL E-TICKTING SYSTEM FOR TRANSPORTATION AND FINDING OF STOLEN VEHICLES

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Abstract -Automatic process of toll collection will save time and man power. During this work propose a coffee cost efficient technique called Electronic Toll Collection using RFID modules automatically collects the toll from moving vehicles. We detect Stolen Vehicle supported wireless communication to send SMS and IOT webpage. If the balance within the owner's account is low or if the vehicle isn't equipped with an RF system. In such a case vehicle owner will got to pay the toll tax in cash and collect the receipt. What percentage vehicles passing through the toll gate stored during a database. We will also determine a vehicle what percentage times passing through the toll gate during a day.

1. INTRODUCTION

This concept of Automatic E-Toll system is efficient method of consuming more amount of time in this world of new age. It provides a way of enhancing the traffic measures in the toll system. Although the fast tag is implemented it is not much efficiently preferable as it has some drawbacks. In this project we develop a Automatic E-Toll system by initializing a RFID Tag in every vehicle which carries all the information about the vehicle including its insurance no and validity, owners detail. The payment in the toll gate is done by transferring amount from the owners bank account and information will be notified through SMS to the owners mobile number. It is not necessary for the vehicle to wait for the acknowledgement. An advanced feature added here is that the stolen vehicles can be found by using this RFID tag and immediate SMS will be sent to the owners mobile number and to the police with the location stating the latitudinal and longitudinal directions.

1.1 What is EMBEDDED SYSTEMS?

An embedded system could also be a special-purpose computer system designed to perform one or a few of dedicated functions, often with real-time computing constraints. In contrast, a general-purpose computer, like a private computer, can do many various tasks counting on programming. Some embedded systems are mass-produced, benefiting from economies of scale. Complexity varies from low, with one microcontroller chip, to very high with multiple units, peripherals and networks mounted inside an outsized chassis or enclosure. In general, "embedded system" isn't an exactly defined term, as many systems have some element of programmability. Kind of pagination anywhere in the paper.

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2. MODULES DESCRIPTION

2.1 ARDUINO

Arduino may be a tool for creating computers which will sense and control more of the physical world than your personal computer .Arduino are often wont to develop interactive objects, taking inputs from a spread of switches or sensors, and controlling a spread of lights, motors, and other physical outputs. Arduino projects are often stand-alone, or they will communicate with software running on your computer (e.g. Flash, Processing, MaxMSP.) The boards are often assembled by hand or purchased preassembled; the open-source IDE are often downloaded for free of charge .The Arduino programing language is an implementation of Wiring, a similar physical computing platform, which is predicated on the Processing multimedia programming environment. There are many other microcontrollers and microcontroller platforms available for physical computing. Parallax Basic Stamp, Netmedia's BX-24, Phidgets, MIT's Handyboard, and lots of others offer similar functionality.

2.2 RFID

Because the most flexible auto-identification technology, RFID are often wont to track and monitor the physical world automatically and with accuracy. RFID can tell you what an object is, where it's , and even its condition, which is why it's integral to the event of the web of Things—a globally interconnected web of objects allowing the physical world itself to .RFID use is increasing rapidly with the potential to "tag" any item with an inexpensive communications chip then read that tag with a reader. Endless applications range from supply chain manage to asset tracking to authentication of frequently counterfeited pharmaceuticals.

2.3 GPS

A variety of GPS modules designed for several different applications. the main difference between these two families is that the inclusion of smart patch antenna. PAx comes with the ceramic antenna, while SLx doesn't. These GPS modules provide a whole GPS solution that excels in positionand

accuracy performances also as high insensitivity and tracking capabilities in urban environment. The GPS module are powered by Mediate Inc. GPS chipset world's leading digital media solution provider and largest fab-less IC Company in.

2.4 GSM

A GSM modem may be a wireless modem that works with a GSM wireless network. The most difference between them is that a dial-up modem sends and receives data through a hard and fast telephone line while a wireless modem sends and receives data through radio waves. A GSM modem are often an external device or a PC Card / PCMCIA Card. TA GSM modem within the sort of a PC Card / PCMCIA Card is meant to be used with a laptop pc. It should be inserted into one among the PC Card / PCMCIA Card slots of a laptop pc. Sort of a GSM mobile, a GSM modem requires a SIM card from a wireless carrier so as to work .As mentioned in earlier sections of this SMS tutorial, computers use AT commands to regulate modems. Both GSM modems and dial-up modems support a standard set of ordinary AT commands. You'll use a GSM modem a bit like a dial-up modem.

2.5 LCD

Rather than having a freezing point, they need a temperature range within which the molecules are almost as mobile as they might be during a liquid but are grouped together in an ordered form almost like a crystal. One each polarizers are pasted outside the 2 glass panels. These polarizers would rotate the sunshine rays passing through them to a particular angle, during a particular direction. When the LCD is within the off state, light rays are rotated by the 2 polarizers and therefore the liquid, such the sunshine rays begin of the LCD with none orientation, and hence the LCD appears transparent. When sufficient voltage is applied to the electrodes, the liquid molecules would be aligned during a selected direction. The light rays passing through the LCD would be rotated by the polarizers, which could end in activating / highlighting the required characters. The LCD's are lightweight with only a couple of millimeters thickness. Since the LCD's consume less power, they're compatible with low power electronic circuits, and may be powered for long durations. The LCD's don't generate light then light is needed to read the display. By using backlighting, reading is feasible within the dark. The LCD's have long life and a good operating temperature range. Changing the display size or the layout size is comparatively simple which makes the LCD's more customer friendly. The LCDs used exclusively in watches, calculators and measuring instruments are the straightforward seven-segment displays, having a limited amount of numeric data. These have resulted within the LCDs being extensively utilized in telecommunications and entertainment electronics. The LCDs have even started replacing the beam tubes (CRTs) used for the display of text and graphics, and also in small TV applications.

3. SYSTEM TECHNIQUES

TESTING METHODOLGIES

The purpose of testing is to discover faults. Testing is the process of trying to determine every possible fault or weakness in a work invention. It provides a way to check the functionality of workings, sub-assemblies, meetings and/or a

Ended product it is the process of training software with the intent of ensuring that the Software system meets its requirements and user opportunities and does not fail in an deplorable manner. There are various types of test. Each test type addresses a specific testing condition.

TYPES OF TESTS

UNIT TESTING

Unit testing includes the design of test belongings that validate that the internal program logic is operative properly, and that program input produces valid outputs. All choice branches and internal code flow should be authorized. It is the testing of separate software units of the request .it is done after the close of an individual unit before integration. This is a structural testing, that relies on data of its structure and is invasive. Unit tests achieve basic tests at factor level and test a specific commercial process, application, and/or system formation. Unit tests ensure that each single path of business process completes accurately to the documented provisions and contains clearly defined inputs and probable results.

INTEGRATION TESTING

Integration tests are calculated to test integrated software components to regulate if they actually run as one program. Testing is occasion driven and is more concerned with the essential results of screens or fields. Integration tests validate that although the workings were individually approval, as shown by positively unit testing, the grouping of components is correct and dependable. Integration testing is specifically aimed at revealing the problems that arise from the grouping of components.

FUNCTIONAL TESTING

Functional tests provide systematic protests that functions tested are accessible as stated by the business and technical necessities, system certification and user guides.

Functional difficult is centered on the subsequent items:

Valid Input -is wont to identified classes of valid input must be accepted.

Invalid Input - is used to identified classes of illegal input must be disallowed.

Functions -is used to identified purposes must be exercised.

Output -is used to classify modules of request outputs.

Systems/Procedures- is used to interfacing systems or events must be appealed. Organization and grounding of functional tests is focused on supplies, key functions, or special test belongings. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and succeeding processes must be well-thought-out for testing. Before functional testing is complete, supplementary tests are identified and the operative value of recent tests is resulted.

SYSTEM TESTING

System testing confirms that the entire combined software system meets supplies. It tests a configuration to ensure known and predictable outcomes. An example of system testing is the arrangement oriented system mixing test. System testing is based on procedure similes and flows, emphasizing pre-driven process links and addition points.

WHITE BOX TESTING

White Box Testing is a challenging in which the software tester has information of the inner workings, construction and language of the software, or at least its drive. It is used to test areas that cannot be stretched from a black box level.

BLACK BOX TESTING

Black Box Testing is testing the software short of any knowledge of the inner mechanisms, building or language of the module actuality tested. Black box tests, as most other kinds of tests, must be printed from a final source document, such as requirement or necessities file, such as specification or requirement file. It is a testing in which the software below test is treated, as a black box .you cannot "see" into it. The test provides inputs and responds to outputs without seeing how the software works.

SYSTEM ARCHITECTURE

Block Diagram:
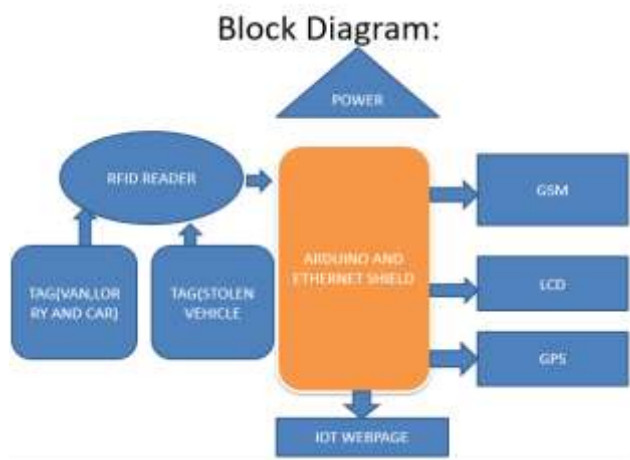
SNAPSHOT

ADVANTAGES

Automatic deduction of money from bank account.SMS is generated and sent as an acknowledgement.Not necessary to wait in toll.Current location of Stolen vehicle is found and intimated to owner and police Station.

FUTURE ENHANCEMENT

We look forward to implement the blocking of vehicles in case of drunk anddrive.It recommends to add an drinking sensor in the vehicle we travel thus we see an improvement in the effectiveness of the safety measures.The method of sensors can be added to make the project livelier and public oriented.An alert mechanism will add a little more flexibility in being aware of the vehicle drove by a drunken people.

CONCLUSION

Hence the automated E-Toll system and finding of the stolen vehicles are often implemented by following all the above mentioned steps.As a result the, crime reporting system must embrace new technologies. This report has presented asimple, convenient, cost-effective, but efficient crime

reporting system with a user-friendly, sensitive and intelligible web interface. Whereby it are often accessed by anytime provided there's internet connection and with use of GPS.

REFERENCES

[1] F. Malbrunot, G. Touminet, and N. Schwab, "Electronic toll service in france, Telepeage Inter Societes (TIS), one of the world's greatest interoperable systems," 2015.

[2] "IEEE Standard for Information technology–Telecommunications and information exchange between systems Local and metropolitan area networks–Specific requirements - part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications," IEEE Std 802.11-2016 (Revision of IEEE Std 802.11-2012), pp. 1–3534, Dec 2016.

[3] ETSI, EN 302 663 v1.2.1: Intelligent Transport Systems (ITS)– Access layer specification for Intelligent Transport Systems operating in the 5 GHz frequency band, ETSI Std., July 2013. [Online].Available: http://www.etsi.org/deliver/etsi_en/302600_302699/302663/ 01.02.01_60/en_302663v010201p.pdf

[4] J. Heinovski, F. Klingler, F. Dressler, and C. Sommer, "Performance comparison of IEEE 802.11p and arib std-t109," in 2016 IEEE Vehicular Networking Conference (VNC), Dec 2016, pp. 1–8.

[5] International Telecommunication Union, "Draft new recommendation itu-r m.(v2x) radio interface standards of vehicle-to-vehicle and vehicleto- infrastructure communications for intelligent transport system application," in Radiocommunication Study Groups, July 2015.

[6] Projet SCOOP: Connected vehicles and Roads, http://www.scoop. developpement-durable.gouv.fr/.

[7] C-Roads - The Platform of Harmonised C-ITS deployment in Europe, https://www.c-roads.eu/platform.html.