THEFT VEHICLE IDENTIFICATION SYSTEM IN TOLL GATE BY USING GSM & RFID

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ABSTRACT

The automated toll collection system using Radio Frequency Identification (RFID) tag, GSM, Visual Basic and Embedded System emerges as a convincing solution to the manual toll collection method employed at tollgates and also identify the theft vehicle. Time and efficiency are a matter of priority of present day. In order to overcome the major issues of vehicle congestion and time consumption RFID technology is used. RFID reader fixed at tollgate frame, reads the tag in vehicle. The object detection sensor in the reader detects the approach of the incoming vehicle's tag and toll deduction takes place through a prepaid card assigned to the concerned RFID tag that belongs to the owners' account. This makes tollgate transaction more convenient for the public use .if the vehicle was theft, the owner enrolled the secret number in toll gate data base, the microcontroller compare the secret code with all vehicle and find out the theft vehicle when the theft vehicle cross the toll gate and also GSM send the message (toll gate name and place) to the vehicle owner, this system avoid the 90% of vehicle theft.

KEYWORDS: Vb , Arduino ,RFID reader , Tag ,GSM

I.   INTRODUCTION

RFID is a remote non-contact utilization of radio recurrence electromagnetic fields to exchange information for the motivations behind naturally recognizing and following labels appended to the protest. The tag contains electronically put away data. A few labels are fueled by and perused at short wraths through attractive fields. Others utilize a neighborhood control source, for example, a battery or else have a no battery yet gather vitality from the examining EM field and after that go about as an aloof transformer to radiate microwaves or UHF (Ultra High Frequency) radio waves. RFID contain somewhere around two sections. An incorporated circuit for putting away and handling data, adjusting and demodulating a radio-recurrence (RF) flag, gathers DC control from the episode per user flag, and the other specific capacities; and a recieving wire for getting and transmitting the flag. The label data is put away in a nonvolatile memory. The RFID tag incorporates either a chip-wired rationale or a modified or programmable information processor for transmission and sensor information, individually. RFID frameworks can be characterized by the kind of tag and per user. a detached per user dynamic tag(ARPT) framework has a uninvolved per user which just gets radio signs from dynamic labels. A functioning per user aloof tag (ARPT) framework has a functioning per user, which transmits investigator signals and furthermore gets confirmation answers from inactive labels. A functioning per user dynamic tag (ARAT) framework utilizes dynamic labels awoken with an investigative specialist motion from the dynamic per user.

II.WORKING PRINCIPE

RFID is a remote non-contact utilization of radio recurrence electromagnetic fields to exchange information for the motivations behind naturally recognizing and following labels appended to the protest. The tag contains electronically put away data. A few labels are fueled by and perused at short wraths through attractive fields. Others utilize a neighborhood control source, for example, a battery or else have a no battery yet gather vitality from the examining EM field and after that go about as an aloof transformer to radiate microwaves or UHF (Ultra High Frequency) radio waves.

A THEFT VEHICLE IDENTIFICATION

On the off chance that the vehicle was stolen the proprietor can advise to toll door and furthermore educated mystery number .When the robbery vehicle cross to the tollgate ,toll entryway controller programming show the vehicle was burglary .after that the toll entryway authority ask the one of a kind code to driver. In the one of a kind code wasn't right we can get the burglary vehicle and furthermore sent SMS for vehicle proprietor (toll entryway name and place).

B RFID

Numerous kinds of RFID exist, however at the most elevated amount, we can separate RFID gadgets into two classes: dynamic and inactive. Dynamic labels require a power source—they're either associated with a fueled framework or utilize vitality put away in an incorporated battery. In the last case, a label's lifetime is constrained by the put away vitality, adjusted against the quantity of perused activities the gadget must experience. One case of a functioning tag is the transponder appended to a flying machine that recognizes its national starting point. Another model is a gadget connected to an auto, which joins cell innovation and a GPS to find the vehicle if stolen. However, batteries make the cost, size, and lifetime of dynamic labels unrealistic for the retail exchange. Latent RFID is of intrigue on the grounds that the labels don't require batteries or support.

little glass vial or a laminar plastic substrate with glue on one side to empower simple connection to products Two essentially unique RFID configuration approaches exist for exchanging power from the per user to the tag: attractive acceptance and electromagnetic (EM) wave catch. These two plans exploit the EM properties related with a RF recieving wire—the close field

and the far field. Both can exchange enough capacity to a remote tag to support its activity—ordinarily between 10 W and 1 MW, contingent upon the label type. (For correlation, the ostensible power an Intel X Scale processor expends is around 500mW, and an Intel Pentium 4 devours up to 50 W.) Through different adjustment strategies, close and far-field-based flag filter additionally transmit and get information

C. RFID card

RFID cards has differing scope of capacities, while gives comfort, as the cards should essentially be postponed or tapped before a per user as opposed to swiped. These cards are utilized for applications as access control in security frameworks, time and participation, organize login security, biometric check, cashless installment, and even occasion administration.

D .RFID reader

A RFID per user is a gadget that is utilized to grill a RFID tag. The per user has an inbuilt reception apparatus that radiates radio waves; the tag reacts by sends back its information.
EM-18 (RFID per user module):

Highlights:
Working Distance – 10cm Operating Voltage – 5V Operating Frequency – 125 KHz Current Consumption - <50 mA
This is the stationary Active RFID beneficiary module arranged at the toll square. It consistently continues observing for the RFID labels. When the label comes in the scope of the recipient, the signal on the module gives a demonstrative blare and sends the information sequentially to the microcontroller

E.GSM module

Worldwide System for Mobile correspondence)
GSM is an advanced versatile communication framework.
GSM digitizes and packs information.
It gives insights about the vehicle proprietor account balance through SMS .
It helps in vehicle following . Highlights:
Quad-Band GSM/GPRS 850/900/1800/1900 MHz Built in RS232 Level Converter MAX3232)
Configurable baud rate
SMA connector with GSM L Type Antenna.
Built in SIM Card holder.
Built in Network Status LED
Inbuilt Powerful TCP/IP convention stack for web information exchange over GPRS.
Normal task temperature: - 20 °C to +55 °C
Input Voltage: 5V-12V DC
stored in the accumulator. The system consists of level detector circuitry integrated with IOT module . Upon reaching the critical water level in the tank ,an indication is sent through IOT module to the technician in charge for further action.

II .FEATURE

ATCS is a programmed gathering framework utilized for gathering charge consequently. In this we do the recognizable proof with the assistance of radio recurrence. Adaptability is the fundamental component and with the scarcest change this can be changed over to a totally new usage. With the assistance of the most recent innovation (RFID), the execution of this undertaking is exceptionally streamlined. RFID innovation together with an extremely secure database yields into a very effective and secure framework. Following are the highlights and headway of ATCS over by and by existing framework: RFID tag can't be cloned, so can't be conned.
Very effective in sparing time and expedient transport.
Wastage of cash is decreased. Consumption of fuel is decreased. Less clog on the roadways. Comparatively less upkeep ,now for the less unmistakable issues . Alternate machines accessible at the time were the Sinclair Spectrum , BBC Micro,TRS-80(if you lived in the US) and Apple II. Aside from being moderately reasonable (much of the time) the other thing that these microcomputers shared was straightforwardness … they booted specifically into a BASIC translator, and you could compose very unpredictable programming totally without anyone else

III.REFERENCES.

[1]Rakhi Kalantri, Anand Parekar, Akshay Mohite, Rohan Kankapurkar, "RFID Based Toll Collection System",
2014 Vol. 5 (2) , 2014, (IJCSIT)

[2]International Journal of Computer Science and Information Technologies.

[3]Janani SP, Meena S, Automatised Toll Gate System Using Passive RFID and GSM Technology, Vol. 5. Issue
ECIA2012-3 Journal of Computer Applications, February 10,2012.

[4]Asif Ali Laghari, M. Sulleman Memon and Agha Sheraz Pathan,"RFID Based Toll Deduction System,"I.J.
Information Technology and Computer Science, 2012, 4,40-46