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Bus Ticket Automation with T Money Card

M. Ananthi, M. Gowsalya, S. Pavithra, B. Vaishnavi, AP/CSE P. S. Velvizhi
Department of Computer Science and Engineering
V.P.M.M Engineering College for Women,
Krishnankovil, Tamilnadu.
ananthi.m225@gmail.com, gowsibala212@gmail.com, pavithrasekar2904@gmail.com, vaishnavibalamurugan999@gmail.com,
velvizhivpmmecw@gmail.com

***Abstract*- These days the public transportation framework like the metro are all around cutting edge. Traveler wellbeing, accommodation and the need to improve the exhibition of existing public transportation is driving interest for shrewd transportation framework on the lookout. The venture based ticket framework for gathering the transport discovered to be a wellspring of major monetary misfortune. It is hard to guarantee the acquisition of ticket by every single traveler .A paper ticket gets pointless to the travelers when the objective is reached. Indeed, even the check of numerous unsold tickets each day is exceptionally high. In the period of innovation, India should zero in on instilling a robotized framework for gathering transport toll. Consequently, this undertaking proposes a computerized card driven framework utilizing Smart Card and GPS Tracking for transport ventures with the assistance of various stages like web, android, IOT. Various situations concerning the execution of this framework here.**

***Keywords*- . Traveler wellbeing , monetary misfortune, Smart Card and GPS Tracking etc.**

I. INTRODUCTION

GPS based vehicle area and global positioning framework will give viable, constant vehicle area, planning and revealing this data worth and adds by improving the degree of administration gave.

A GPS-based vehicle global positioning framework will educate where your vehicle is and where it has been, the manner by which long it has been. The framework utilizes geographic position and time data from the Global Positioning Satellites. The Raspberry Pi can associate with the rest of the world, and has been utilized in a wide cluster of advanced creator projects. With Pi Camera and Open CV We can filter QR code. Quick- reference (QR) codes are like standardized identifications, as they can encode information that is addressed by highly contrasting squares.

1. GPS Overview:
The Global Positioning System(GPS) is a space-based worldwide route satellite framework (GNSS) that gives dependable area and time data in all climate and consistently and anyplace on or close to the Earth when and where there is an unhindered view to at least four GPS satellites. It is kept up by the United States government and is uninhibitedly available by anybody with a GPS recipient.

The GPS project was begun in 1973 to beat the limits of past route frameworks, coordinating thoughts from a few archetypes, including various characterized designing plan concentrates from the 1960s.
GPS was made and acknowledged by the U.S. Branch of Defense (USDOD) and was initially run with 24 satellites. It turned out to be completely operational in 1994.

2. Raspberry PI:
Raspberry Pi, series of small single -board computers developed in the UK by Raspberry Pi Foundation in association with Broadcom.

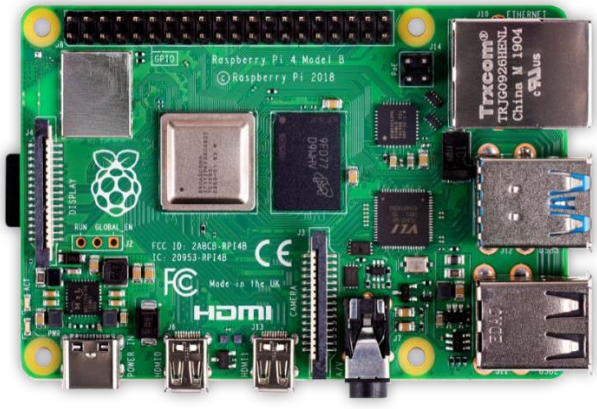

Fig 1. Raspberry Pi.

The Raspberry Pi project initially inclined towards the advancement of showing fundamental software engineering in schools and in agricultural nations.

The first model turned out to be more well known than expected, selling outside its objective market for

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utilizations like advanced mechanics. It is broadly utilized in numerous spaces, for example, for climate observing, in light of its ease, seclusion, and open plan. It is commonly utilized by PC and electronic specialists, because of its selection of HDMI and USB gadgets.

3. PI Camera:

The Raspberry Pi camera module can be used to take high-definition video, as well as stills photographs. It's easy to use for beginners, but has plenty to offer advanced users if you're looking to expand your knowledge. The camera consists of a small (25mm by 20mm by 9mm) circuit board, which connects to the Raspberry Pi's Camera Serial Interface (CSI) bus connector via a flexible ribbon cable. The camera's image sensor has a native resolution of five megapixels and has a fixed focus lens. The software for the camera supports full resolution still images up to 2592x1944 and video resolutions of 1080p30, 720p60 and 640x480p60/90. The camera module is shown below:

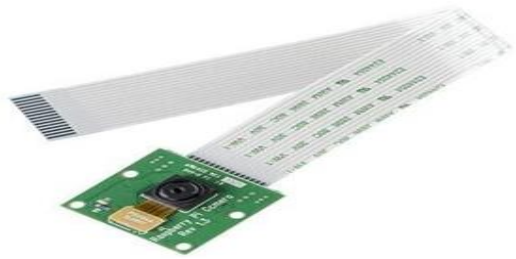

Fig 2. Pi Camera.

This 5 megapixels sensor with OV5647 camera module is capable of 1080p video and still images that connect directly to your Raspberry Pi. This is the plug-and-play-compatible latest version of the Raspbian operating system, making it perfect for time- lapse photography, recording video, motion detection and security applications.

4. Circuit Diagram:

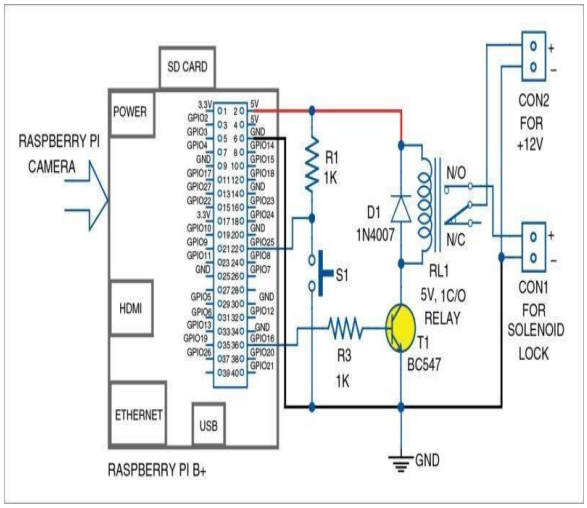

Fig 3. Circuit Diagram.

II. RELATED WORKS

The current framework deals with the idea of manual tagging. The conductor needs to gather the ticket groups from the warehouses and afterward need to offer those to the travelers by tearing or punching those tickets.

The travelers also neglect to get the legitimate changes or in some cases even leave it as the sum is little. Here trouble emerges when the conductor runs out of change (coins),he composes the sum on the rear of the ticket and not in every case each one of those change due are rewarded the travelers. Issue of half Student Reduction application approaches, Registration and Issue of Point to Point card with tokens for every academic year is being done through the specific enlightening schools.

For the unavoidable months, beginning to end card will be given directly to the understudy at the Sales stations. Manual records of transport nuances are not noted reliably and it is a befuddled technique. Fuel records are in like manner not noted honestly and a portion of the time false assessments of cost might be given to the stations.

The E-Ticketing system was set up which removed the old- style ticket boxes which had bundled tickets of different characteristics. It was an extreme and fast work in jam- packed transport to work that conventional ticket box ascertaining distinctive variation of tickets from spaces to be given to suburbanites alongside definite change.

Goes up against of Conductors and travelers on transports was ordinary because of conductor requesting change and travelers not having.

In current framework RFID Reader is utilized to peruse the RFID tag however the end spot ought to be entered by the individual going in console, So that sum will be deducted naturally from the tag. Here if whenever objective is shown up, transport needs to stop.

Genuinely such game plan requires additional time if there should be an occurrence of handling of tag for every person. So to beat that, execution of tagging framework without access is created in this to technique with expansion of utilization move information and data about unintentional crises.

The inner memory chip and RFID based customized transport pass savvy cards contains travelers data like kind of Bus Pass, Duration and date of expiry, Unique pass number, Digitized Photo ID, Name and Gender of pass holder. After embedding this pass into the ETM machines with conductors, tickets can be given and different insights regarding card can be approved. Restoration of these passed should be possible at different retail locations and

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furthermore on the web. Around 1 million RFID cards been as of now being used.

III. PROPOSED SYSTEM

In this paper we added a clever bus card price tag machine the use of QR code in android software and T Money Card that's person friendly. Now the passenger can test the QR code with inside the T Money card via way of means of the tool that's located at the bus. The Generated Fare receives deducted from the centralized E-pockets Database.

The minimal fill up of those playing cards is Rs.100. A Benefit of this cashless playing cards is manifestly the time saving characteristic which happens with the hurdle of having precise extrade of fares. The Transaction records together with extra information about balanced

quantity internal this cashless card is show with inside the cellular software together with adventure information. The database has all of the information associated with the unique man or woman and via way of means of scanning the QR code it receives proven and the information are displayed on a separate web page with inside the app. He can view his stability and can also load cash into his E-pockets. The database is programmed the use of SQL (Structured Query Language).

About card recharge, much like Pre- paid passes, fill up of this cashless playing cards may be finished at any of the bus depots / on line the use of your Credit / Debit playing cards. Some of the very vital advantages of Automations Cashless transactions, Real Time Data to be had for selection making. Eco-Friendly, saving time, and fee of usual infrastructure used all through antique ticketing machine.

The winning ticketing machine had many malfunction, malicious argument amongst public and corruption. It additionally ambitions to lessen fare-associated fraud and sales loss thru open standard, secured transaction technology. Via Mobile Application, vicinity records supply the navigation warning signs relying on his contemporary vicinity supplied that the person has indicated ahead while the vacation spot area is near. By the use of clever card with QR Code test and pay instantly, then the quantity can be withdrawn from the clever card.

A Raspberry Pi primarily based totally QR code machine may be used to test the person ID and debit cash from their pockets. Via admin panel we are able to dynamically upload bus fare and bus fame and realize its vicinity. By enforcing this machine using unfastened coins may be decreased and green ticketing may be implemented.

IV. SOFTWARE DESCRIPTION

Open CV (Open Source Computer Vision Library) is a library of programming capabilities particularly geared toward real-time laptop imaginative and prescient. The library is cross-platform and loose to be used beneathneath the open-supply Apache 2 License. Starting with 2011, Open CV capabilities GPU acceleration for real-time operations. Python is an interpreted, high-stage and fashionable-cause programming language.

It helps a couple of programming paradigms, consisting of structured (particularly, procedural), object-orientated and purposeful programming. Open CV has python bindings with a wealthy set of capabilities for laptop imaginative and prescient and photograph processing.

V. SIMULATION ANALYSIS

1. QR Code Scanner:
Install the Raspberry Pi Camera module by inserting the cable into the Raspberry Pi camera port. The Cable slots into the connector situated between the USB and micro – HDMI ports, with the silver connectors facing the micro-HDMI ports.

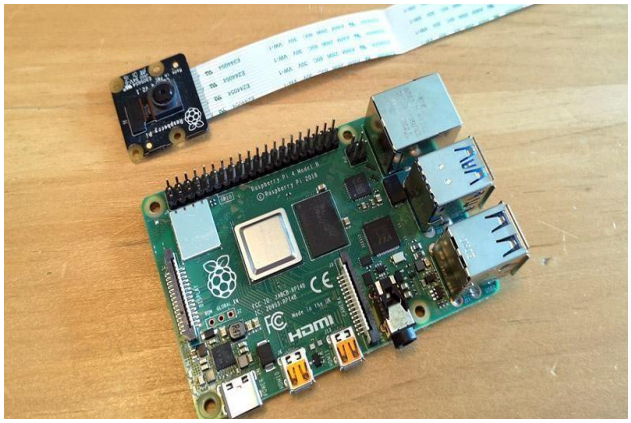

Fig 4. Raspberry pi With Pi Camera.

Now boot the Raspberry Pi (plug the power in and turn it on). Once booted, update the Raspberry Pi by running the following commands in a terminal window:

sudo apt-get-update

Now run the following command to go into the Raspberry Pi configuration tool:

sudo raspi-config

“raspistill” is a command line application that allows to capture images with the camera module. Below is an example of this command in use.
To capture an image in jpeg format, type the following command into terminal window:

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raspistill –o image.jpg

Here, "image" is the name of image that will be saved to the Raspberry Pi.

The Pi Camera module is a portable light weight camera that supports Raspberry Pi. It communicates with Pi using the MIPI camera serial interface protocol. It is normally used in image processing, machine learning or in surveillance projects. It is commonly used in surveillance drones since the payload of camera is very less. Apart from these modules Pi can also use normal USB webcams that are used along with computer.

2. T Money Card:

Fig 5. T Money Card.

For Reading the QR Codes. Firstly, we have to set up the camera and QR detector then Read in a new frame and extract a QR code and then if there is a code, draw a box around it and display its data above.

VI. FUTURE SCOPE

The fate of Smart Cards is looking brilliant. The many existing and potential advantages savvy card has to bring to the table both general society and the private areas of the business raise the interests of numerous huge partnerships like Wachovia and Motorola. Contrasted with the customary attractive stripe cards, shrewd cards offer increment security, accommodation, and monetary benefits.

Diminishing extortion, lessening time to finish repetitive administrative work, and having the capacity to have one card to get to different organizations and applications are only some of such models. The conversation for the fate of the shrewd card across the worldwide ventures can be isolated into public and private areas and are examined beneath.

1. Public Services:
With the increment in the application advancement (because of the execution of the keen card principles) and decreasing expense in innovation, plans for the card's utilization have expanded. In any case, dominant part of the applications are either being guided or executed in Europe, however are not generally acknowledged in the U.S. right now.

2. Wellbeing Services:
Wellbeing cards with numerous capacities are given to patients in France. The card can be utilized to store data like authoritative, clinical, natural, and drug records. The card works on the authoritative interaction and empowers specialists to approach a more complete and thorough medical care data.

3. Training:
Multifunction ID cards are given to understudies at college grounds and schools. The card has the capacity of recognizing the understudy and furthermore goes about as an electronic handbag and can be utilized buy items from stores or passes to public transportation.

4. Transportation:
Battery-powered contact-less cards permit ticket-less and cash-less voyages. Stopping and broadcast communications can likewise be paid utilizing the brilliant card. This will work on the traveler boarding measure.

5. Government Assistance:
Card can be utilized to recognize the holder utilizing a progression of individual keys and unique mark. The card holder at that point utilizes the card to get to government information bases and get the government assistance installment. The security will help dispense with extortion.

6. Media Transmission:
Card can be put away with cash esteems and hence eliminate coins from public telephones. This will diminish defacing and working expenses, and increment income (study has shown that individuals utilizing the card will in general talk longer on the telephone).

VII. CONCLUSION

The manual passage assortment framework has numerous issues which are overwhelmed by our proposed framework.

Computerized charge assortment framework for public vehicle is an inventive thought which diminishes labor. It is accepted that by execution of these framework issues, for example, underutilization of transports armada will be

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decreased. So both traveler and bus stop directors will profit by the framework as Real time data are given.

The tagging frameworks utilizing QR Code can be converged to take care of the previously mentioned issues. This undertaking really proposes a significantly more open well disposed, computerized arrangement of tagging with the utilization of QR Code and Mobile application for Booking Notifications.

This brilliant Embedded System can be carried out in the vehicle framework, which will play out the toll assortment naturally. This framework is reasonable for megacities like Chennai and Bangalore where an enormous no of clients benefit public vehicle framework every day.

REFERENCE

[1] Baburao Kodavati, V. K. Raju, S. Srinivasa Rao, A.V. Prabu, T. AppaRao, Dr. Y. V. Narayana, “GSM and GPS Based Vehicle Location and Tracking System”, International Journal of Engineering Research and Applications (IJERA) ISSN: 2248-9622 www.ijera. com Vol. 1, Issue 3, pp.616- 625 2000.
[2] A. Nunesa, Teresa Galvaoa, “Urban public transport service co-creation: leveraging passenger’s knowledge to enhance travel experience. Antonio” Joao Falcao e Cunhaa 2015.
[3] Kidwell.B, “Predicting Transit Vehicle Arrival Times”, Geographic Laboratory, Bridgewater State College, Bridgewater, Mass., 2001.
[4] ”Public Transport System Ticketing system using RFID and ARM processor Perspective Mumbai bus facility B.E.S.T”, Saurabh Chatterjee, Prof. Balram Timande, International Journal of Electronics and Computer Science and Engineering., 2012.
[5] ”Bus Tracking and Ticketing using USSD Real-time application of USSD protocol in Traffic Monitoring”, Siddhartha Sarma, Journal of Emerging Technologies and Innovative Research (JETIR) www.jetir.org, Dec 2014 (Volume1 Issue 7).

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