GPS Based Railway Ticketing and Checking Application

(Indian Railway Local Ticketing)

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***Abstract*— The technology is growing so rapidly, so the new technology must be enhanced and must be adopted. This paper discusses the issues in purchasing the tickets while travelling through railway. It explains how to purchase tickets through smartphone when the passenger doesn't want to stand in the line for buying tickets. It uses Global Positioning System to detect passenger travelling from any source to any destination. It can help the governmental organization to identify people travelling without ticket and used tickets through trains or metros. As soon as passenger gets down from the train or metro his or her ticket will be automatically deleted from his smartphone. So he or she cannot use this ticket again for travelling. This paper suggest a user friendly automated ticketing system which will automatically deduct the passenger's fare according to the distance travelled as well as detect the passenger's identification. This paper basically deals with the identification and ticketing of the passengers sitting in the train and emergency alerting system by making calls or sms to railway police and also stores ticket in server and user's cloud.**

Keywords:GPS,ANDRIOD,PHP,TICKETING SYSTEM,GPRS.

I. INTRODUCTION

Indian railways is the largest rail network in Asia and world second largest railway management. Effective public transportation systems are seen as a fundamental requirement for modern society, not only to satisfy basic mobility requirements, but increasingly to ensure that time, resources and assets are used in an efficient manner thereby minimizing adverse impact on the environment Our application can be installed only on smartphones. When you will buy tickets, the ticket will be in the form of Quick Response Code. The GPS facility which is available in the Smartphones is used for checking the tickets and the Quick Response code will be deleted from smartphone automatically once the passenger reaches the destination formatter will need to create these components, incorporating the applicable criteria that follow. All the information of passenger will be stored on cloud database for privacy purposes. Ticket checker will be provided with QR code scanner, with which he can get the complete details of the passenger

A.ANDROID

Android is an operating system and a software platform upon which applications are developed. Android, which is a potential game-changer for the mobile development organisation. Android is well placed to address the growing needs of the market place. Android is the first in a new generation technology of mobile development platforms, giving its platform developed opens a distinct edge to the competitors. The latest version of Android is codenamed Gingerbread. Android is an open source platform. For both developers and handset manufacturers, there is no need to pay

royalties or license fees to develop for the platform as in. Android applications are written in a well-respected programming language: Java. On the Android platform, there is no distinction between native and third-party applications, providing the best services comparing other application developers. Each and every Android applications use the existing libraries. Platforms such as Symbian have suffered from setbacks due to MAL-GM. Android's application security model helps protect the user and the system from malicious software .As of October 2012,there are more than 90,000 applications available in the Android Market, which is growing rapidly .There are more than 5,60,000 numerous android developers preferred writing an exciting applications. Android Platform Differences:

- **Complete:** The designers took a comprehensive approach when they developed the Android Platform.
- **Open:** The Android platform provides open source licensing.
- **Free:** Android applications are free to develop. No required signing or certification fees

B.SQLITE

SQLite is a relational database management system contained in a C programming library. In contrast to other database systems, SQLite is not a unique process that is accessed from the user application, but an integral part of it. SQLite is a popular choice as embedded database for local/client storage in application software such as web browsers as in [3]. It is arguably the most widely deployed database engine, as it is used today by now all standard browsers, operating systems, and embedded systems. SQLite uses an unusual type system for an SQL-compatible DBMS; instead of assigning a type to a column as in most SQL database systems, data types are assigned to unique values; in language terms it is not statically typed. Moreover, it is not strongly typed in some of the same ways that Perl is: one can insert a string into an integer column. However, the technique is static to other SQL products as in several computer processes or threads may access the same database concurrently. Several read and write accesses can be satisfied parallely. A write access can only be satisfied if no other accesses are currently being serviced

II. PURPOSE

EXISTING SYSTEM:

In existing system people has to waste their time by standing in queue and also lead to missing their train, peoples in counter and their system are not fast enough to handle the peoples crowds, in metro there is no enough counters to manage crowd and issue tickets, Even the smart Ticketing machines are not smart enough in speed of issuing tickets, they too need a queue, and it is not possible to find all the peoples travelling without tickets and used tickets. To overcome such difficulties we introduce a new system in this paper

PROPOSED SYSTEM:

The main aim of the proposed system is to reform the current season ticket booking process (Ticket) for local travelling. i.e. with the help of this application travelers will able to book tickets through their mobile using Wi –Fi connectivity and GPRS.

This paper deals with the identification and ticketing of the passengers sitting in the train automatically using GPS and the rupees will be detected from account automatically and we can also apply for seasonal tickets, viewing time schedules, and buying tickets for customized days.

III.ANALYSIS:

Literature Survey

The currently existing systems for ticket booking process are as follows:

Window Ticket: This is the oldest and the most widely used system until today. A passenger stands in a queue and the vendor issues the paper printed ticket

Coupon System: A passenger firstly has to buy coupon booklet. Then, he/she punches the coupon in the Coupon Vending Machines according to the corresponding fare.

Smart Card System: A smart card is purchased by the passenger on which specific recharge is to be done. By placing the card into the machine the passenger provides the source

and destination and a ticket is printed. Recently, Indian railways have taken an initiative to provide ticket to user through web portal and mobile but still no application has been made for local commuters.
Drawbacks of these systems: In the Window Ticket System a commuters need to stand in a long queue. This is a tedious task and there is unnecessary wastage of time involved.

The major drawback with the existing ATVM is the scalability issue. Only 6-7 tickets can be issued per minute through a ATVM. Another major issue with this system is the cost of installing the machine. Each machine costs around 175,000 INR excluding the maintenance costs which vary according to the usage intensity.

Another issue is that there are various public grievances reported regarding the functioning of the ATVM. Instead of hopping from machine to platform, passengers have to hop from one machine to another as most are non-functional.

Sadaf Sheikh, Gayatri Shinde, Mayuri Potghan, Tazeen Sheikh proposed application which will be used for the process of booking a ticket for travel through local trains or metros.
Snehal Kalbhor , Ashwini Mangulkar , Mrs. Snehal Kulkarni proposed the various techniques for buying metro tickets or local railway tickets through their Smartphone application and introduced ticket checker.
Tushar Dongare, Akshay Babar provided various techniques for buying tickets through their smartphone application through GPS facility of android mobile so that passenger can easily get the list of station and he can easily buy tickets
Ramadevi. K, Murugan. S, Bharath. S proposed a mobile ticket application developed for android in which user procure ticket in future
Neha sandikar, rane dipti, sachin panday proposed the various techniques for buying metro tickets or local railway tickets through their Smartphone application and introduced ticket checker
Manmohan Swarup, Chanchal Sonkar, Vijendra Singh proposed a system through which railway ticket booking is done through website and also from multimedia phones
Wan Husani Wan Hussin,Paul Coulton proposed a system in which More consumer are expected to engage in mobile commerce transaction ,wider adoption of mobile commerce services

IV. FEASIBILTY STUDY

A. Economic Feasibility

Being a software application, it has the development cost to be negligible. But the WIFI-hotspot on each railway station do incur a cost. The cost per person is very less and can be fitted in the current cost factors of the traditional ticketing systems.

B. Technical Feasibility

The language and the platforms used for the application development are easily available from the organization itself. The team also suffices the requirements of technical IQ required for the proposed system to be completed.

ANDROID EXECUTION ENVIRONMENT

We represent the regular Java and Android execution paths in the figures respectively. It is interesting to note here however is that the Android compilers do not operate on Java Language code. Instead, the Android translators work on the resulting Java bytecode emitted from a traditional Java compiler.

As such, it is possible to reuse existing Java libraries, even if the original source code is not available. Such libraries must meet stringent requirements however, they need to:

1. adhere to the Java SE 5 dialect
2. not use any Java classes or packages found in Java SE 5 not found in the Android platform
3. not use any packages or classes specific to the Sun Microsystems platform

C. Operational Feasibility

If the system is practically implemented, then it will for sure solve the problems' posed in the problem definition and it can be proved with the initial phases of the prototype that'll be downloaded. The proposed system is easily scalable and hence can support the additional users that would be added after every year of the organization's admission.

V.METHODOLOGY AND TECHNOLOGY USED

Mobile Ticketing application is developed to help people to buy ticket through their Mobile via internet using gprs and Wi-fi hotspot provided at every station. Here user have to create his account at the service provider website and install the application on their mobile.
Application launches with display page asking for ID and Password. For authentication they need to come in the Wi-Fi range and connect their mobile to it. After authentication they will be redirected to page wherein they can select various options they want to perform such as (buy ticket, check balance, view ticket info, extensions, etc). It will also display the last ten transactions on the client side.

All the client systems (in a range) are connected to the central server placed in the zonal headquarters for data transfer

B. DEVELOPMENT TOOLS

The Android SDK includes a variety of custom tools that help develop mobile applications on the Android platform. The most important of these are the Android Emulator and the Android Development Tools plugin for Eclipse, but the SDK

also includes a variety of other tools for debugging, packaging, and installing are applications on the emulator.

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Android Development Tools Plugin for the Eclipse IDE

The ADT plugin adds powerful extensions to the Eclipse integrated environment; making creating and debugging are Android applications easier and faster. If use Eclipse, the ADT plugin gives an incredible boost in developing Android applications:

It gives access to other Android development tools from inside the Eclipse IDE. For example, ADT lets access the many capabilities of the DDMS tool — taking screenshots, managing port-forwarding, setting breakpoints, and viewing thread and process information directly from Eclipse.

It provides a New Project Wizard, which helps quickly create and set up all of the basic files will need for a new Android application. It automates and simplifies the process of building are Android application. It provides an Android code editor that helps write valid XML for are Android manifest and resource files.

- **Dalvik Debug Monitor Service (DDMS)**

Integrated with Dalvik, the Android platform's custom VM, this tool lets manage processes on an emulator or device and assists in debugging. Can use it to kill processes, select a specific process to debug, generate trace data, view heap and thread information, take screenshots of the emulator or device, and more.

Android Asset Packaging Tool (AAPT)

The AAPT tool lets create .apk files containing the binaries and resources of Android applications.

Android Interface Description Language (AIDL)

AIDL lets to generate code for an interprocess interface, such as what a service might use. Included as a convenience, this tool lets access the SQLite data files created and used by Android applications.

FRONT END

PHP + MySQL PHP combined with MySQL are cross-platform (means that you can develop in Windows and serve on a Unix platform)

BACK END

MySQL, the most popular Open Source SQL database management system, is developed, distributed, and supported by MySQL AB. MySQL AB is a commercial company, founded by the MySQL developers, that builds its business by providing services around the MySQL database management system. The MySQL Web site (http://www.mysql.com/) provides the latest information about MySQL software and MySQL AB. MySQL is a database management system.

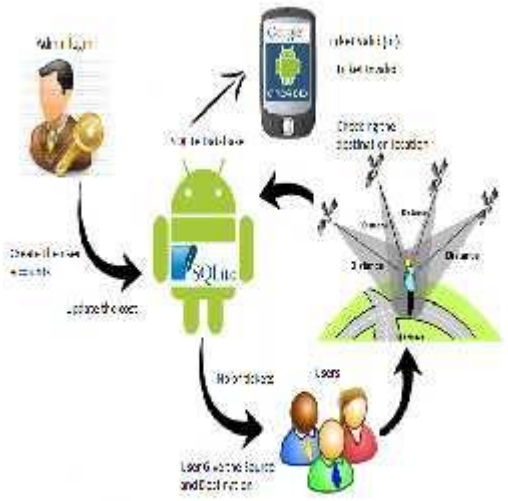
VI.IMPLEMENTATION

1. Database : the database for our project was created, this will store login, password, account details, transactional history, etc.

2. Website : gives an idea about the project as it includes details about the stations, user information, details and login password to enable modification of account.

3. android application: the android application which will be available at each portable device is made

VII. **SYSTEM DESIGN**:



ACKNOWLEDGMENT

We would like to take this opportunity to express our sincere gratitude to our proposed system guide, Mr.NATARAJAN, Head of the Department, Information Technology and Computer science and engg, and our project guide Mr.guhan (M.E) dept of cse for their invaluable support and guidance throughout the process in spite of his busy schedule and appreciating our diligent efforts and providing valuable inputs which helped us to mitigate many problems faced in the software development process.

We are grateful to her for her feedback which helped us track and schedule the process effectively. The time, ideas and encouragement that she gave is appreciable.

VIII CONCLUSION

The key to success is integration: mobile ticketing systems must integrate their customers preferred communication channels into a cohesive customer experience, and further integrate those channels with the existing systems and processes that support the ticketing process.

This application will gather the information regarding the travelling options between stations along with their timing and fares. This application will combine number of functionalities into one

Therefore there is no need to download number of application for booking a ticket. Application saves the huge work for our ticket checkers. It replaces the manual ticket checking process with digital ticket checking process by scanning with Smartphone's. It helps station level security, we can have a hardware device to validate the QR code before the user enters or leaves the station

REFERENCES

[1] Sadaf Sheikh, Gayatri Shinde, Et Al.," Urban Railway Ticketing Application." International Journal Of Advance Research In Computer Science And Software Engineering Vol. 4, Issue 1, Pp. 130-132, Jan 2014.
[2] Snehal Kalbhor, Ashwini Mangulkar, Et Al., "Android Application For Local Railway Ticketing Using GPS Validation "International Journal Of Emerging Trends In Science And Technology Vol.1,Issue 1,Pp.71-74,June 2014.
[3] Tushar Dongare, Akshay Babar, Et Al., "Android Application For Ticket Reservation With GPS As Ticket Validation" International Journal Of Emerging Research In Management And Technology ISSN: 2278-9359, Vol-3, Issue-3, March 2014.
[4] Ramadevi. K, Murugan. S, Bharath. S, Et Al., "Railway Ticketing Using GPS in Metropolitan City." International Journal of Computer Science and Engineering ISSN: 2278- 9960, Vol-3, Issue-3, Pp.9-12, and May 2014.
[5] Neha Sandikar, Rane Dipti, Et Al., "Android Railway Ticketing With GPS as Ticket Checker." Proceedings of National Conference on New Horizons In IT - NCNHIT 2013, Pp.132-134.
[6] Manmohan Swarup, Chanchal Sonkar, Et Al., "A QR Code Based Processing For Dynamic and Transparent Seat Allocation in Indian Railway."