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SMART BUS TICKETING SYSTEM USING QR CODE

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ABSTRACT

Nowadays, transport is the cheapest, therefore always been popular with the masses. The advancement in transport system has been increasing in day-to-day life. The current manual bus ticket system has many problems. One of the main problems is passengers might lose the printed tickets purchased from the counter. This will cause the passenger to buy another bus ticket. In this project, we are proposing a QR reader for the bus ticketing system. The QR code (Quick Response code) becomes popular outside the automotive industry due to its fast readability and greater storage capacity compared to standard bar codes. The proposed system provides an android application for passengers to buy their tickets online. With this application, we can minimize the usage of paper (Tickets) and make it easier for users to buy bus tickets without queueing up at the ticket counter. To develop this android application, the software that will be used is the Android Studio software. Hence, this application is expected to fulfill the requirement through the Mobile application, which helps passengers to get a ticket easily.

1. INTRODUCTION

Public transport bus systems are operated on their decided timetable and bus stops are also decided by the transport system. Passengers are unaware of bus stops and their time that's why passengers wait for the bus at the bus stop which becomes a reason for time wastage. If a passenger is new in that city and not well known about bus stops then there may be chances for reach at the wrong place. Although he reaches the correctdestination he will not get to nearby places. Another is the conductorrequired to conduct fare collection and passengers may face cash problems. If meanwhile in bus route bus gets fail then passengers remain unaware about it and conductor may face problems for getting help. Like these, there are many problems faced by the current system. To overcome these all we come up with a new system using an android application which will reduce waiting time for passengers as well as many other problems. Due to the busy lifestyle importance of the time in t h e day-to-day life, there is a need for effortless transport. So, we are providing an Android application that will provide the information on the bus's live location.

As we know a lot of work is done previously on this system to provide the user with what they need and to solve the various challenges. We develop t h e android- based project. Now day android is a popular Concept. In this application, we use a QR-Code to add money traveling details balance book ticket after the conductor scans the QR Code. Admin has authority to add conductor, update conductor, Delete Conductor, Maintain Conductor Details, Maintain User Details. We develop this application because now a day's passengers face alot of problems regarding tickets. We develop our web as well as an android- based app here traveling details, passengers QR-Code stored. QR-Code is generated for passenger information it will contain passenger information like route information, destination information, etc. A loan facility is also provided in this application.

2. EXISTING SYSTEM

In a general way, every bus is controlled by a conductor. The conductor will collect money from each passenger and issue tickets. Initially, printed papers or tokens are used as tickets.

Nowadays, handheld machines are used to print tickets. This system has many disadvantages. The passenger has to carry the ticket till the end of travel, the conductor should ensure that everyone has got the ticket, [3]the time taken for ticketing is comparatively more and more amount of paper is needed to print the Ticket. Nowadays conductors are trained to operate the handheld ticketing machine. For example, if a passenger wishes to travel by bus. He has to carry money with him. Then the conductor will collect the money and he will give a ticket. This has to repeat for all passengers. This will take more time and waste resources well as energy. Even handheld ticketing machine is comparatively slow and needs are trained person to operate them

In the Existing say, stem RFID Reader is used to reading the RFID tag the ut destination should be entered by the passenger on the keyboard, So that amount will be debited automatically from the tag. Here if once the destination arrives, the bus stops automatically and is intimate with a buzzer sound. Fairly such arrangement consumes more time in case of accessing of the tag by every individual, so to overcome that, implementation of ticketing system without access is developed in this proposal with the addition of application to transfer information about accident occurrence.

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Disadvantage:

1. Hardware debugging is the major problem.
2. We fabricated all the components in PCB and tested the power supply; input and output.
3. If the ports are not working then check the code and rework in hardware.

3. PROBLEM STATEMENT

The problem statement is the description of problems that arise currently and needed to be solved by the end of the project testing and evaluation. The problems arise that resulted in this project are:

- Passengers might lose the printed tickets purchased from the counter.
- Passengers have to go to the ticket counter to purchase tickets and it is not very convenient as it takes much time and effort.
- In the manual System, staff needs to print the ticketduring purchasing process at the counter.
- This will require a relatively high cost to buy paper toprint the tickets.

4. LITERATURE SURVEY

The public transport system (PTS) remains the major source of income in most developing countries like India. However, PTS now faces severe malfunctions and various security problems. First, there is a lot of confusion among the passengers regarding fares which leads to quarrels and chaos. The bus ticketing system is expected to be fully automated, reliable, transparent, and convenient. GPS is a more popular technology that is used in many applications. This existing system gives information about vehicle position and route traveled by vehicle and this information can be monitored from any remote place or location. This system depends on GPS and GSM technology. This system lags in some features like its track vehicle only on PC, not on mobile. And also, there is no application depending on a mobile device to track and get a real-time and current view of the target or vehicle [1].

Kidwell presented an algorithm for predicting bus arrival times based on real-time vehicle location. The algorithm worked by dividing each route into zones and recording the time that each bus passed through each zone. Predictions were based on the most recent observation of a bus passing through each zone. However, this algorithm was not suitable for large cities where both travel time and dwell time could be subject to large variations [2].

The above-stated existing system is based on the ticketing identifications in the public transport for bus passengers. Many passengers are more confused about fares and which leads to corruption. The system will provide automatically a fare collection of passengers according to traveled distance. This system uses RFID and GPS for transactions and it makes traveling very precise. This systemhas some shortcomings as the like system provides only automated ticketing facilities, not provision for tracking the bus. And also, there is no provision for the crowd (density) measurement. This system has not any kind of user application for passengers to track the bus and view the schedule of buses [3].

The methodology and the results from its application to bus service data from Porto. The data relating to an AFC system integrated with an automatic vehicle location system that records a transaction for each passenger boarding a bus, containing attributes regarding the route, the vehicle, the travel card used, and the location where the journey began [4].

Tracking systems are rarely available in the market and available systems are not good and effective systems are costly. The above- stated system is much more economical than other systems that are currently available now in the market. This suggested system helps to get information and location of college buses by using a mobile or smartphone. But we got some lagging points in this system; there is only a provision for tracking this tracking is based only on SMS. There is no real-time view of the location of the bus and also there is no application based on mobile for Tracking [5].

5. PROPOSED SYSTEM

In the proposed method, we are introducing a QR reader. Here, we Location Selection: A user has to select from and to a location and it will create one android application for selecting the traveling route will generate fare details based on that location. Then we have to generating the amount. After generating the amount, the user enter the count of passengers and we get the total amount. After that, amount from our bank details or wallet. Each conductor has one QR reader and after reading that values automatically they will Web Service: Web service is like connecting an android application store them in the database. Then the user will get a message for a and server. The server should run 24 hours and it has to give all the traveling ticket.

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Advantage:

1. No hardware debugging.
2. No change (Amount) problem.

A. Classes And Their Characteristics

i. User Class: Users can search for buses that are traveling through their desired routes. Users can book seats, view the bus and route fares in advance, and can book their seats at later user convenience.

ii. Admin Class: Admins can add routes and fares. Admin can also add buses to the company catalog. The details of routes and fares of the buses specified by the admin are passed on to the manager for verification and validation process.

iii. Manager Class: Manager's approval of the added buses is required for the addition of a new bus in the catalog as well as any change on the original schedule is to be verified by the manager until then the old schedule will be followed

iv. Bus Class: Bus class stores the information about the bus, which includes bus_plate_no, route_details (route locations, route timings, and fares), and payment_methods.

v. Payment Class: The user must be logged on to the system, have a specific amount of money in the wallet, internet connection available for pre-book and post-book, and payment account details of users and manager.

Login and Signup Class (The user or admin must be a member of the system)-

a) Users enter their usernames/email-id or new registration (step 6)
b) Users enter their passwords
c) Users click the login button
d) System connects to the database
e) Homepage for respective users is displayed
f) For a new registration, enter all the required information and then login

Logout Class (The user or admin must be a member of the system)-

g) The system users click the logout button
h) DB connection terminated
i) The system logout the user successfully
j) The system redirects to the home page

6. MODULES

User registration: We will create one android application for users. Users can register them in the android application. Then the users can add bank details to their profile. Users can select from and to a location using that android application when users are going to local or government buses a user can generate an amount according to that bus details to the database which data we are getting from users. Then using the SOAP protocol we can connect the android application to the server. If we are using the SOAP protocol, it will collect all the details from the android application and it will send them to the server.

Database: Admin can see all the details of users like where they are riding the local bus. Then admin has to analyze the details like the user's name, from location to location, the amount for bus fare, and admin id.

Classification: We have classified every 3 hours using the SVM algorithm. Because whenever reaching the bus from one place to another place, it has to collect all the details from users who are all using QR scanners on the bus. Then we analyzed the data like when and where we can give another or extra bus for according to that place.

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7. ARCHITECTURAL OVERVIEW

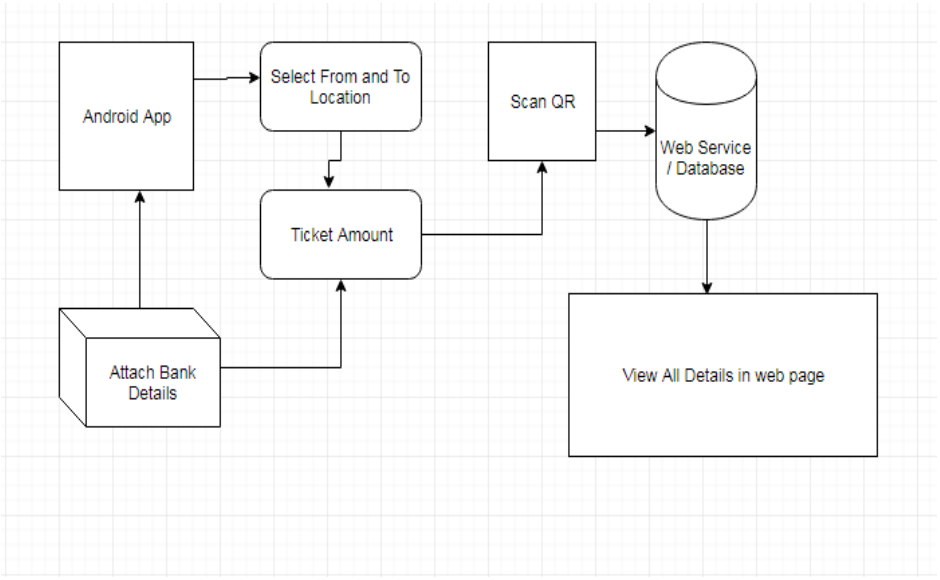

Fig. 1 System Design of Smart Bus Android Application

8. SOFTWARE AND HARDWARE REQUIREMENTS

Hardware:

- OS – Windows 7, 8
- RAM – Min 4GB
- Android Mobile

Software:

- JDK
- Android Eclipse (ADT-Bundle)
- Net beans IDE
- Mysql and SQLyog

9. ADVANTAGES

- Smart bus ticketing system using QR-Code is mainly used to buy bus tickets which are most challenging when compared to booking the long journey tickets with the existing system.
- With our system can be booked with just a smartphone application and ticket information is stored in the form of a QR code.
- In the future traveling by bus is very easy without application so that users can travel without more hard work. with the help of an application.
- We propose this system for better performance to passengers.
- This application reduced passengers waiting time and successfully reach their destination.

10. CONCLUSIONS

The paper summarizes the current issues in the bus ticketing system. To overcome from this we are working towards the android platform. We have identified the current gaps and open research areas. Our research will focus on these open problems and propose effective solutions for the same. To overcome the drawbacks of the manual ticketing system we are using QR codes for security purposes of passengers' information.

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