

Tixmate- The Smart Ticketing Solution

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ABSTRACT. Buses are the integral means of public transport in India. Major part of our population travel through public transport buses daily. Today, in the era of digital India, and cashless economy, public transport need to adapt the technological advancement. Even though they are providing fairly satisfactory services, there is a need for a smart system. The major problem experienced by the passengers is mainly non refund of balance. Thus to provide a smooth ticketing experience, a smart application is necessary. Here we are introducing a solution for the above problem as two applications. One for the passenger and other for the conductor. The user can develop an account in the given application which provide unique IDs for each accounts. This ID will be used for transferring bus ticket fair and hence the problem occurred due to non-refund of balance as well as the problem of counting the money can be rectified.

I. INTRODUCTION

Buses are the best and convenient ways of public transportation in India. Major part of our population uses public transport daily. More than 1.6 million buses are registered in India which is roughly carrying about 70 million people per day. As per the details of expenditure on transport, buses are the most preferred mode of public transport in both rural and urban India, followed by auto rickshaws. In order to serve these many commuters daily, the ticketing facilities available in the existing system of public bus transport is manual i.e. purchasing the ticket from the conductor. However, bus transportation causes discomfort to the travelers in different ways. Several problems exist in the public bus transport sector which includes wastage of too much paper, use of cash for purchasing tickets, etc. Some other common problems faced by commuters in bus transport are undue waiting time, inadequate time

for getting tickets, non-refund of balances, negligence of providing seat to other passengers, etc. Today in the era of digital India and cashless economy, public transport need to adapt to the developing technology. To overcome all the above-mentioned problems, we have proposed a more advanced system which provides e-ticketing and seat allotment facilities for the people. The problem of paper wastage can be overcome by the use of E-tickets whereas the use of cash can be reduced by using Digital wallet. We also provide a means to track the live location of the bus so that the civilians can board the bus on time.

II. LITERATURE SURVEY

- GPS is more popular technology which is employed in many applications. This existing system gives information about vehicle position and route travelled by vehicle and this information are often monitored from any remote place or location. This system depends on GPS and GSM technology. This system lags in some features like it tracks vehicle only on PC not on mobile. And also there is no application depending on mobile device to track and get a real time and current view of the target or vehicle [4].
- Tracking systems are rarely available within the market and available systems aren't good and effective systems are costly. The above stated system is far economical than other systems that are currently available now within the market. This suggested system helps to get information and site of school bus by using mobile or smart phone. But we got some lagging points in this system, there's only provision for tracking & this tracking is predicated only on SMS. There is no real time view of location for bus and also there's no application supported in mobile for tracking [5].

- Bus tracking and ticketing system is extremely useful and important mainly in cities. This system was made of a tracking module containing GPS-GSM model to access dynamic vehicle location and send it to server. Then people can access this information from their android mobile phones. This system does not say anything about digital wallet or the transaction procedure [6].
- In this paper, it aims to give an agile and smooth ticketing experience and an organized way for seat allotment to the commuters. If implemented it will give a new ticketing experience to commuters as well as contribute a part of cashless economy. With the growing popularity of smart-phones and mobile wallets this is the right time to adapt this technology so that people will become familiar with it and this will improve the overall services provided to passengers. This system lacks live tracking of the bus [1].
- The above stated existing system is predicated on the ticketing & identifications within the public transports for bus passengers. There are many passengers having more confusion about fares and which results in corruption. System will provide automatically fare collection of passengers consistent with traveled distance. This system uses RFID & GPS for transactions and it make traveling very precise. This system has some shortcomings as like system provide only automated ticketing facilities not provision for tracking the bus. And also there's no provision for crowd (density) measurement. This system does not have any kind of user application for passengers to track the bus and view the schedule of buses [2].
- The above mentioned paper includes the integrated use of the smart cards with GPS system. In today's world smart cards became mostly used things which contains the users data and GPS used in many areas like tracking and monitoring or surveillance which is used in this system for finding the actual distance traveled by that passenger. The given system does not provide the facility like ticketing and also it has shortcoming like passengers can't buy tickets, who don't have smart card. The system does not give the dynamically changing bus route [7].

EXISTING SYSTEM AND PROBLEMS

The traditional method which we usually use are Giving money, Getting physical ticket and balance. There are several issues which occur due to this

method. The common problem regarding this are as follows,

*Unable to get the balance

*In the current situation physical substances like cash, tickets should be avoided, transmission of viruses can occur through them

*Saving paper

One of the existing system similar to the corresponding project is Oyster Card in London.

Oyster cards are electronic smart cards that are used to pay for conveyance in London. The passengers only need to touch the yellow card reader at the start of their journey on buses and trains. The main problems faced by the users are as follows,

*Carrying physical card

*Readers required for scanning

*Paperwork is required. Such as visiting the office, difficulty in getting the physical card etc.

*Preloading money should be kept in check.

Another existing system is Octopus Card in Hong Kong. The Octopus Card is a smart card in Hong Kong which is mostly used to pay for rides on Mass Transit Railway (MTR), buses, mini buses, ferries, trams and on few taxis equipped with Octopus readers. The problem faced by the users are as follows,

*Carrying physical card

*Readers required for scanning

*Need of maintaining deposit. If balance went below the minimum amount, card will be cancelled

*Knowing exact balance is tricky.

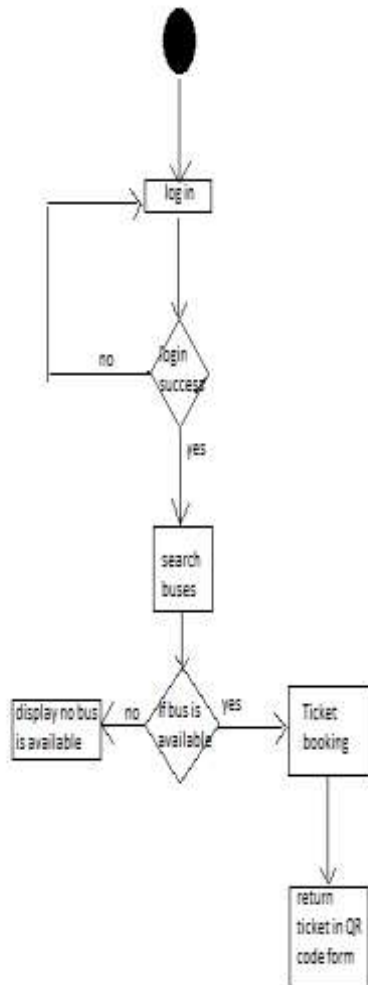
*Paperwork is required. Such as visiting the office, difficulty in getting the physical card etc.

*Preloading money should be kept in check.

PROPOSED SYSTEM IDEA

Here we introduce an application which plays an important role in the cashless economy. In this application user can login to his/her account which provide proper and secure authentication. Then by inputting source and destination he/she can find out the available transport buses in the corresponding time. Here a digital ticketing system is used with the help of wallets. A QR code is generated for the corresponding ticket booked and then it can be scanned using the conductor application. All the data regarding this system is stored in the server which is accessible only by the administrator.

SYSTEM MODEL



III. CONCLUSION AND FUTURE SCOPE

Here we are introducing an android software to solve the problem experienced by the passengers while using public transport, which is non refund of balance for a smooth ticketing experience. This application helps the passengers to search the availability of transport buses by inputting the source and destination and it also introduces to a new ticketing solution using digital transaction. Hence the problem regarding non refund of balance can be solved. This project aims to give an agile and smooth ticketing experience in an organized way. It will give a new ticketing experience to commuters as well as contribute a part in cashless economy. With the growing popularity of smartphones and mobile wallets, this is the right time to adapt the technology so that

people will become familiar with it and this will improve the overall service provided to passengers. Future scopes can include vehicle load, walking distance and safety.

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