(Uni-Ticket Seva) Unified Ticketing System

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Abstract: One of the biggest challenges in the current ticketing facility is "QUEUE" in buying our suburban railway tickets, metro tickets and mono tickets. In this fast growing world of technology we still stand in the queue or buy with Smart cards for our suburban tickets, which is more frustrating at times to stand in the queue or if we forget our cards. Also it is not possible for us to book tickets for multiple systems at a same time. Our system mainly focuses on removing QUEUE in tickets also while travelling by different transport system like mono, metro and railway. We can book single ticket for the same. We are going to develop system which will help to get ticket at our fingertip.

Keywords – UMMR, Railway ticket, QR code, GPS, E-ticket.

I. INTRODUCTION

We propose an android mobile application to buy the unified tickets where you can carry your unified railway tickets in the form of Quick response code which will be saved in the smart phone. For example, if you need to book a ticket from your office to travel from the nearest metro station to your destination then this app comes in handy where you can have access to ticket booking process with just a touch away on your smart phone. This app uses the smart phones to validate the ticket and delete your ticket once the user has reached the destination which is done automatically after certain interval of time. In advancement to this the ticket checker can validate the ticket with a checker application provided to check if the ticket is valid by scanning the QR code and checking in the cloud database if the ticket is valid. The application consists of all the details regarding the schedules of train, the routes taken by the trains with their source and destination places and the cost/expenditure that will be required to reach the destination. The payment can be done directly through the application after booking the ticket and as soon as the payment is done, ticket is generated on the server and sent to the user in the form of QR code. The payment gateways provided will be through credit cards or through prepaid services. The ticket is also stored in the database so that the checker application can cross check from the database if the ticket is valid. The data provided by the user in this app would be saved in the database.

1.1 Scope of the project

One of the biggest challenges in the current ticketing facility is "QUEUE" in buying our suburban railway tickets, metro tickets and mono tickets. In this fast growing world of technology we still stand in the queue or buy with Smart cards for our suburban tickets, which is more frustrating at times to stand in the queue or if we forget our cards. Also it is not possible for us to book tickets for multiple systems at a same time.

Our system mainly focuses on removing QUEUE in tickets also while travelling by different transport system like mono, metro and railway. We can book single ticket for the same. We are going to develop system which will help to get ticket at our fingertip.

1.2 Aims and Objectives

This system Unified Ticket Booking System For MMR (UMMR) ticketing is mainly to buy the suburban tickets for mono, metro and railway which is the most challenging when compared to booking the long journey tickets through 'IRCTC' which fails with suburban(local travel) tickets of the three transport modes.

Our UMMR ticket can be bought with just a smart phone application, where you can carry your tickets in your smart

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phone as a QR (Quick Response) code. We will also keep one Smart phone at all stations for validation. Commuters have to validate the ticket at start station then he can travel in respective modes as per his ticket. User's ticket information is stored in a CLOUD database for security purpose which is missing in the present ticketing system. Also the ticket checker is provided with a checker application to search for the user's ticket with the QR (Quick Response) in the cloud database for checking purposes. Ticket checker just have to scan the QR code generated in the commuters mobile number and he will get all the details associated with the e-ticket. In case if commuter's mobile ran out of charging then ticket checker can verify the ticket using mobile number or ID of user. This information accepted at time of registration of user account. Balance for ticket is deducted from user account which he has to recharge when required.

II. LITERATURE SURVEY

Ticket is the vital part of the transport system in various transport system modes. Currently there are different ticketing systems available for each transport system. In central railway we can get ticket by standing in QUEUE at counter. Sometime queue length is very long. Also currently some other options are available to book railway ticket like smart card, Go card, etc. Go card system currently shut down by central railway. In smart card system we have to depend upon ATVM machines present at the station ticket counter. We can also use CVM coupons for the ticket.

In Mumbai metro and mono rail they have implemented different ticketing system. They are using NFC related technology for ticketing system. When you purchase ticket they provide you one token which you have to scan at start station and have to return this token at end station. Again to purchase this token we have to stand in queue which is also of same type like other ticketing system. Both of the above system will not reduce the problem of queue. As time is money for all the commuters.

III. SYSTEM DESIGN

The main aim of the project is to reduce the queue present at the ticketing counter at various transport system. We will develop the system which consists of different modules. These modules are as follows:-

3.1 Personal Information Gathering

The work here starts during the first time installation of our application. It gathers the basic customer information like first name, last name, date of birth, city, state etc., and it will be stored into MySQL database. So every time when the user buys the ticket this customer information is also sent to the database for security purpose and used also in the QR generation.

3.2 Ticket buying

The user selects source, destination, path, etc. then the user browse goes to pay the amount for the ticket. Then the ticket number is generated at server side.

3.3 Generating QR code

Once the PHP code generates the ticket number and time of buy the details saved in the MySQL database are sent to Google Chart API engine in order to generate the QR code. here all the personal and ticket information are converted into QR codes and sent back to the user mobile as HTTP response and saved in the application memory.

3.4 Ticket validation at start Station

In this module the QR code plays the role of the checker, when user validate the ticket then the validation system check whether the user ticket's start station matches with the validation start station. The ticket is proper only after it's validation at start station.

3.5 Checking QR code with QR reader

In this module the checker will have QR Code reader and scan the QR code with the application in order to validate QR code and verify the journey details, especially the time and date of the ticket. Also it can verify the path or route of journey.

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3.6 Checking with database

If suppose the user's display is being damaged and not able to scan the QR code due to other reason like battery failure, we have Another failsafe option to check the ticket by searching the ticket database with the user's ID card or mobile number for validation purposes

REQUIREMENT ANALYSIS

This phase started at the beginning of our project, we had formed groups and modularized the project. Important points of consideration were,

• Define and visualize all the objectives clearly.

• Gather requirements and evaluate them.

• Consider the technical requirements needed and then collect technical specifications of various peripheral components (hardware) required.

• Analyse the coding languages needed for the project.

• Define the coding strategy.

• Analyse future risks/problems.

• Define strategies to avoid this risk else define alternate solutions to this risk.

• Check financial feasibility.

• Define Gantt charts and assign time span for each phase.

• By studying the project extensively we developed Gantt chart to track and schedule the project.

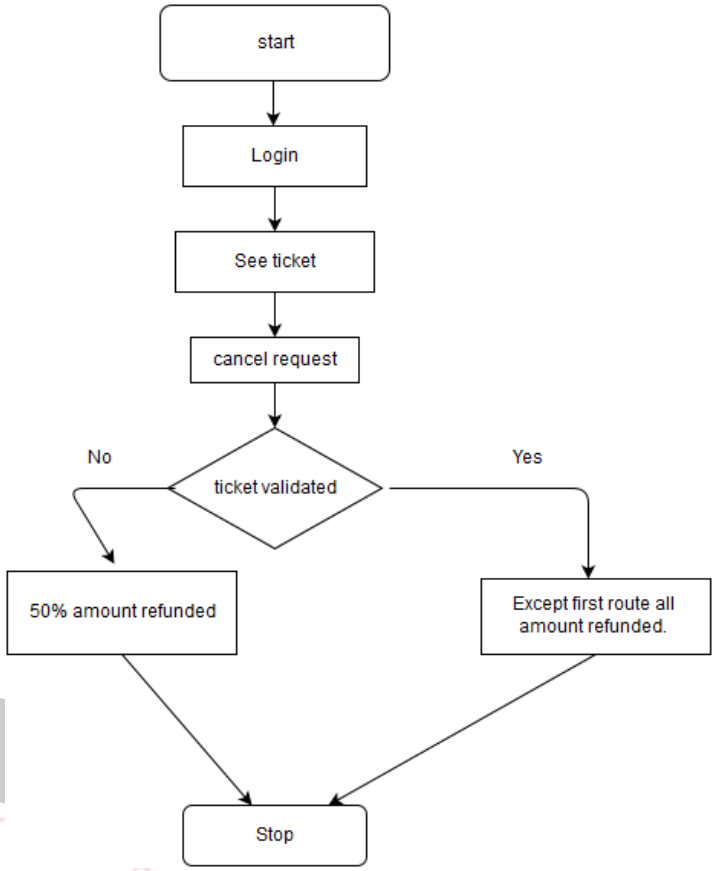

Fig. 2 Data Flow Diagram

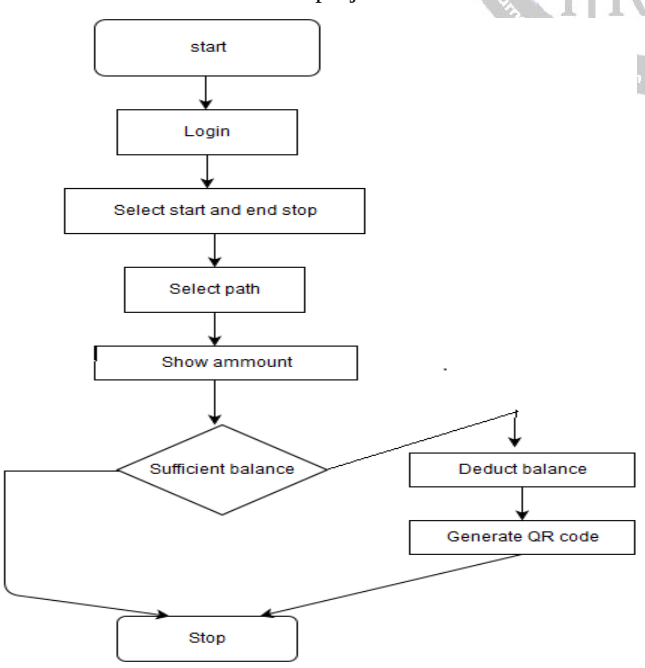

Fig 1 Flowchart for ticket booking

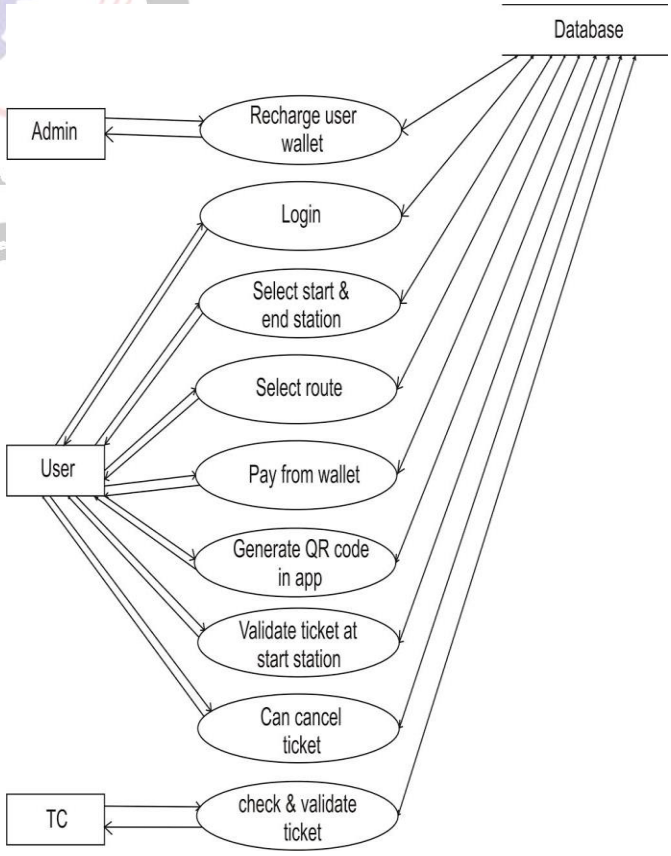

Fig 3 DFD Level 1

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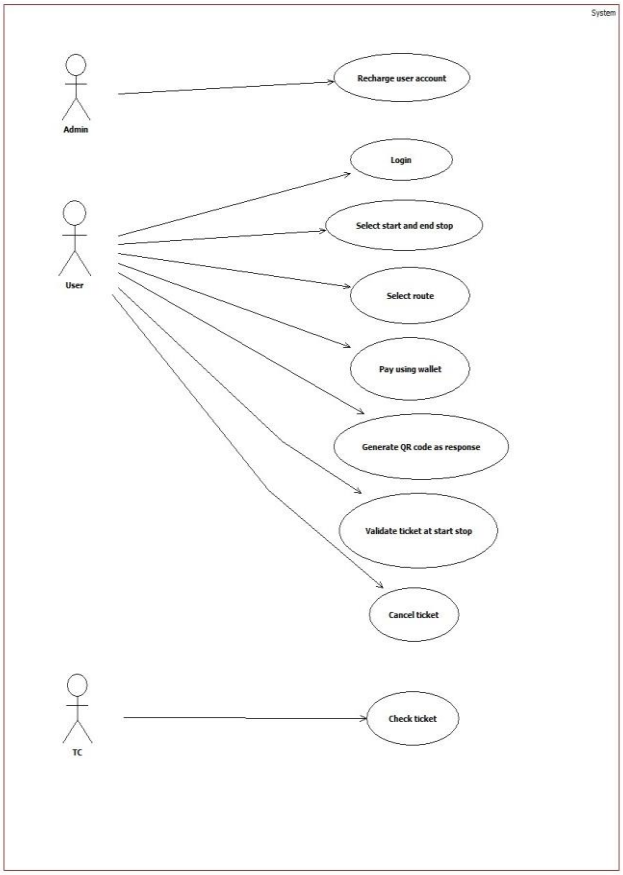

Fig 4 Use Case Diagram

IV. CONCLUSION

In this paper we have presented a mobile ticket application developed for Android using Java, MySQL, and PHP on the server side which can change the way people buy their tickets in future. This kind of ticketing application can be applied to any kind of transport system. Our android app can book ticket for multiple transport system at single point. Also our app saves a huge work for our ticket checkers by providing QR code based validation and ticket checking application of ticket checker. Hence a huge problem of issuing tickets for multiple transport system has been solved with our new application.

V. FUTURE WORK

This system can further expand to use multiple transport system like best, boat, etc. We can use internet banking to pay amount of ticket.

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