Mobile Payment System Using QR Code

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ABSTRACT

In the Era of Computer Technology, We need to communicate and accelerate our life with the help of Information and Technology (ICT). We all require certain types of services on online, which require less workout or interference of Human being. Mobile payment is very significant and critical resolution for mobile commerce. A user-friendly mobile payment solution is robustly needed to carry mobile users to conduct secure and reliable payment transactions using mobile devices. This paper presents a modern mobile payment system based on 2-Dimentional (2D) barcodes called QR-codes for mobile users to recover mobile user experience in mobile payment. Unlike other existing mobile payment systems, the projected payment answer provides distinct advantages to support buy-and-sale products along with services based on QR codes. Safe QR-Pay scheme based on QR-code by expressing 2 dimensional can pay things between User and Merchant.

Keywords— Mobile based Payment Systems, Quick Response Code, Android etc.

I. INTRODUCTION

In the past few years there were more advancement in the field of technology. Considering department of railway, e-ticket facility was introduced where users browse through a governmental website and book their long journey railway tickets which can be printed out after confirmation to show it to the checker when needed. After few months a new technology called M-ticketing (Mobile Ticketing) was introduced where customers messaged to the web portal through mobile phones after which a complete web page was downloaded to the user's mobile phone where users can do the same booking process as it was in the e-ticketing facility.

In the foreign countries, the use of Oyster cards & Octopus card has become mandatory during travel. But we face inconvenience and suffer if we forget our travel cards and we stand in the Queue for our local tickets, which is where m-ticketing; e-ticketing was unable lay their foot marks.

As a solution to these issues an android mobile application can be made which will comprise of all the functionalities where one can buy the railway tickets and carry your railway tickets in your smart phone as a Quick response code.

II. PROBLEM STATEMENT

The current railway reservation system is human dependent, time consuming when it comes to ticket booking process and non-reliable as well as if we lose our octopus or oyster cards. The objective of our project is to develop an android application which will serve as a medium for peoples to book a ticket to travel through railways. The main motive of the app is to ease the process of ticket booking by avoiding the hectic process to stand in a queue and book the ticket for the long distance travelling in the trains.

There are several applications available in the market giving information about the travelling destinations and their fares. But none of these apps include the ticket booking process. Moreover the tickets booked on. Websites have to be saved and printed so as to been shown at the time of boarding. Whereas our app differs as it would not only book the ticket but also save the ticket in the form of QR code.

This QR code can be scanned through other mobiles and saved as well which can be shown to the ticket checker for validation. This makes the entire process very easy.

The data about the ticketing and personal information will be securely stored onto the database. Also our app would require

the user to create an account so that it can be used by multiple users and would be independent of the devices. The user can log in through any mobile device having the app installed.

III. METHODOLOGY

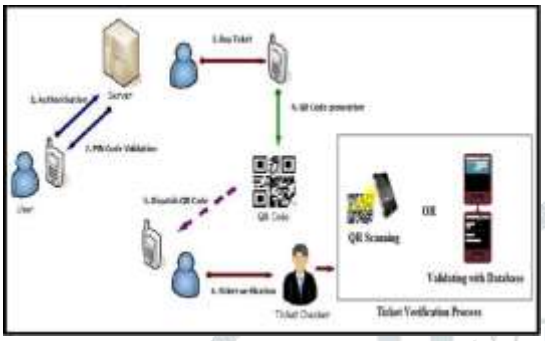

Fig 1: Block diagram representing the architecture of the mobile payment system using QR code

The system involves following steps:

- User need to register.
- In order to buy the ticket the user should select the source and destination locations, train name and other details related to his/her journey.
- Once the ticket is booked it is saved in server database, then server database generates QR code and saved in user mobile device.
- The QR code will be scanned to obtain source and destination, train name, amount and other journey details.

The system is made up of three components:

a) Admin application
b) User android application

a) Admin Application

This system provides desktop application for an admin. Using this application the admin can make changes in the system. These changes may include:

- Add new location
- Add new route
- Manage route

b) User Application

Using the user application, the user (passenger) can do the following tasks

Signup and Login

This is the first procedure to know the users information.

User need to register before using this application. During the registration user must fill his personal information like name, set a username, password, phone number and email-id for his account. The next time whenever user wishes to buy a ticket, user can simply login into his account using username and password which he has registered. All these information are stored and can be accessed from the server.

Buy ticket

In order to buy the ticket the user should select the source and destination locations. These source and destination will be checked from the database. The user will check schedule of trains according to source and destination. Once the user has selected source and destination he/she can book the ticket. Before buying the ticket the user has to ensure if there is enough balance in his/her account.

After selecting source and destination by the user, he need to hit the buy button. The server records the journey details and information regarding user in the server's MySQL Database will be saved.

Ticket Number and time of buying is generated and balance amount value is displayed.

Generating QR Code

Once the ticket number and time of buying the ticket is saved in server database, the transaction id is send to server database to generate QR code. Then generated QR code is send to the user mobile and saved within the device memory. This QR code contains the transaction ID, status of ticket, source and destination and amount

The ticket generated will be stored in the form of QR code which can be used by the ticket checker. By using QR code scanner ticket checker will scan the QR code with the application to obtain user transaction ID, status of ticket, source and destination and amount.

IV. IMPLEMENTATION

This system implements a mobile Qpay scanning program using android eclipse software. It also implements a Customized Qpay Generator which will generate the QR codes which represents the ticket using java eclipse software. It enables to make an electronic transaction between client and customer. The data about the ticketing and personal information will be securely stored onto the database.

V. EXPERIMENTAL RESULTS

Fig 2.1

Fig 2.1 shows the registration page for admin where the admin registers by providing the personal information such as name, password, email id and contact details.

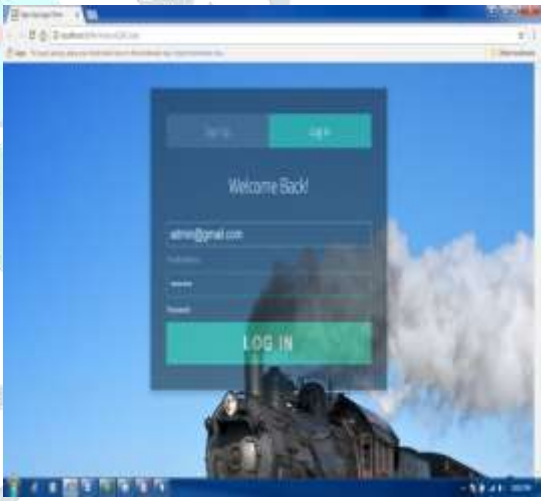

Fig 2.2

Fig 2.2 shows the login page for admin where the registered admin can login by providing the username and password details with which he has registered.

Fig 2.3

Fig 2.3 shows the train details adding page where the admin can add new route, new location, manage route, he can also add train timings, details and ticket fair.

Fig 2.5

Fig 2.5 shows the user login screen where user whenever wishes to buy a ticket, user can simply login into his account using username and password which he has registered.

Fig 2.4

Fig 2.4 shows the user registration screen where the user can register by filling his personal information like name, set a username, password, phone number and email-id for his account.

Fig 2.6

Fig 2.6 shows the user booking screen where the user is provided with all features required for booking a train ticket such as train route and the corresponding train with their arrival and departure time respectively.

Fig 2.7

Fig 2.7 shows the user booking screen where the user can specify the number tickets need to be booked.

Fig 2.8

Fig 2.8 shows the user booking screen where the user is notified with the path where the ticket in the form of QR code is stored in the user mobile device.

Fig 2.9

Fig 2.9 shows train ticket generated in the form of QR code once the user press or clicks the book now button.

Fig 2.9

Fig 2.9 shows train ticket generated in the form of QR code once the user press or clicks the book now button.

CONCLUSION

This paper gives the idea of a mobile ticket application on android phones. This application developed by using smart phones which can change the way people buy their tickets in future. This application can be

modified according to any type of transport system. This android application is one of its kinds and finds immense application to buy railway tickets through an android mobile.

This android application reduces the manual work of both ticket bookers and ticket checkers. A huge problem of issuing local train tickets can be solved with this new application as no one has to stand in queues and also the headache of carrying the ticket is avoided. Also this app saves a huge work for ticket checkers and also moving from manual ticket checking process to digital ticket checking process by just scanning QR code to validate the ticket.

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