Mumbai Suburban Train Ticketing System

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Abstract - *The passenger flow in the western division of Mumbai Suburban Railway system is multiplying day by day. The existing ticketing system is causing a considerable increase in the travel time due to a major drawback- "long queues". which absorbs a significant portion of the travelling time. On an average, a passenger spends almost 15 minutes in the queue at the ticket windows of Mumbai western express railways. In this study we aim to explain the use of mobile services by looking at an area where it has been quite successful; that is, mobile ticketing in public transportation. Through this scenario we intend to provide a brief overview at the current available systems ATVMs (Automatic Ticket Vending Machines) and (CVM) Coupon Validating Machines; technologies which are already implemented in the Mumbai Suburban Railways, along with a statistical insight of its drawbacks. Later it provides an insight into our proposed technology Mumbai-Suburban Train Ticket System which uses a simple smart phone and internet. The scope of this project is particularly for the "Mumbai Suburban Railways" (MSR). The challenge was to design a system that would be least costly, eco-friendly Hence something beyond ATVMs and CVM was needed. Thus the application of Mumbai-Suburban Train Ticket System (MSTTS) put forth by us is something "new and original*

Key Words: **Mumbai-Suburban Train Ticket System (MSTTS)**

"Mumbai Suburban Railways" (MSR)

1. INTRODUCTION

This project basically focuses on the ease of passengers of Mumbai Suburban Railways" (MSR) where time effectiveness is of paramount importance. The challenge was to design a system that would be less time consuming, eco-friendly, as MSR is massively used by middle class people who mostly be in a hurry state A effectiveness and convenient measure replacing the long queues can help in betterment of situation. Hence something beyond ATVMs and CVM was needed. The concept and implementation of M-Suburban Train Ticket System (MSTTS) was introduced to ease the paramount of queries and make it effective for people travelling in daily needs.

1.1 LITERATURE REVIEW

On 10th October, 2007, "ATVM (Automatic Ticket Vending Machine)" technology was introduced in the Mumbai

Suburban Railway in order to curb the long queues for tickets. The Mumbai Suburban Railway system is operated by the Western Railway (WR) and the Central Railway (CR) division of the Indian Railways (IR). But the main problem with the existing ATVM is the ticket providance issue. Only 6-7 tickets can be issued per minute through a ATVM. Whereas with our technology "M-Suburban Train Ticket System Scalability issue get solved as it involves use of passengers computer and mobile phones for booking and issuing a ticket. 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. Whereas, with our implementatiom of M-Suburban Train Ticket System the cost of hardware only includes installation of gateways and server. 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. This is because the commuters instead of touching the screen while using the machines banged on the touch screen. This has drastically reduced the efficiency of the existing machines. Another major issue is that each machine occupies 2m x 3m x 3m which is a major concern in existing densely populated railway stations of Mumbai. Also ATVM is not eco-friendly as it issues "paper" ticket. Around 100 meters of paper per 2000 tickets are used. Nearly 40000 tickets in WR and 110,000 tickets in CR are issued per day through the machine. Also, normal paper tickets issued though ticket windows come to around 600,000 per day (WR only). Hence a lot of paper is consumed. Another technology currently under use is the CVM (Coupon Validating Machine). CR has 343 CVMs while WR has 230 CVMs and it issues around 100,000 tickets per day in WR and 291,000 in CR. Major drawback with this system is that fraud coupons can be pushed into circulation many times as CVM network is not linked with Centre for Railway Information System (CRIS) operated unreserved ticketing system that accounts for all the transaction done through booking windows and ATVMs. Our propose model "M-Suburban Train Ticket System" eliminates all the above.

1.2 THE PROPOSED SYSTEM

In the proposed system model the new users need to register themselves to the site and then the user need to fill up the basic details like source, destination, single ticket, return ticket, date.
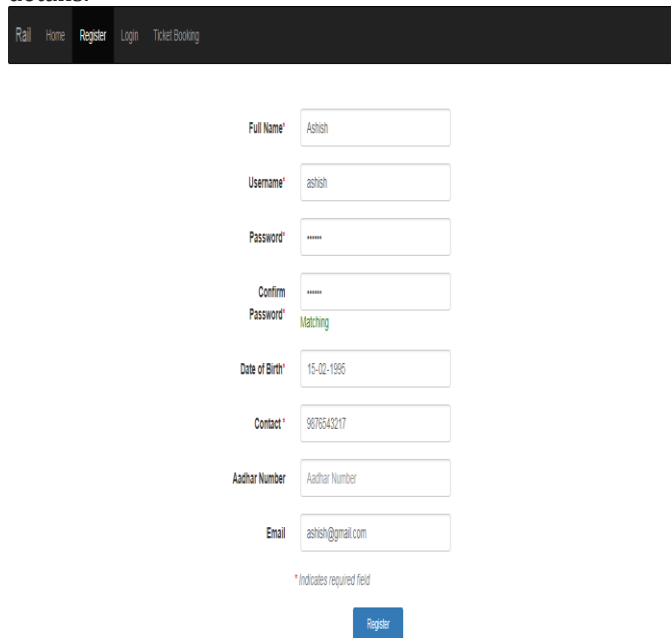
Once the user enter the details a QR will be generated to the user as a ticket and the user can simply travel with the same.

On a ticket checker side the TC can scan the QR code and get the information related to the person travelling and validate the ticket.

For security concerns the ticket once checked will be allotted a message that its verified to the intended 1st user and if the same is found with any other person travelling then the QR scan will notify that it is already verified and then the ticket checker can ask for the validated message received in terms of security and if the user is not the intended ticket holder then he would not have the validating message and can be simply identified

Step1.REGISTRATION PHASE
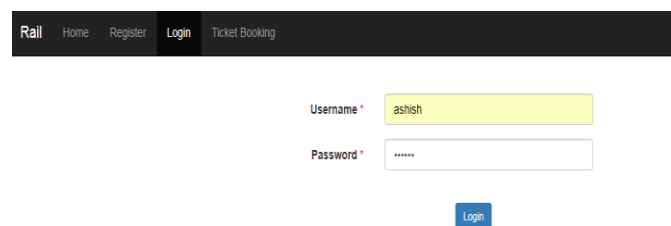
Registration phase: The new user has to register with the site filling up all the required details.

Step2. LOGIN PHASE

Login Phase: The registered users can directly login to the page to book the ticket by entering the user name and password in case the password or user name doesn't match the error would be generated
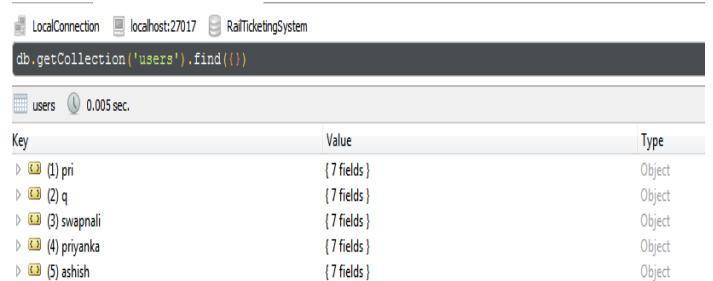

Step3. DATABASE GENERATION

Database Generation: The database will be generated for the registered users. There will be a detailed collection of user names who are registered to the site.
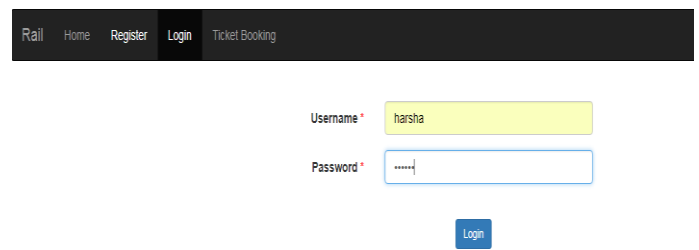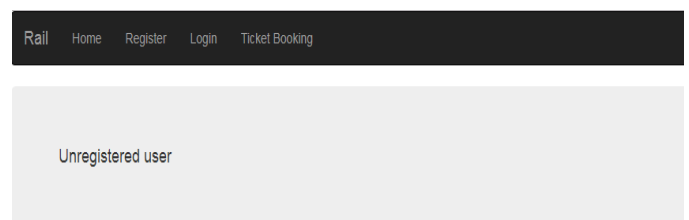
Step 4: UNREGISTERED USER

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Unregistered User: When the unregistered user tries to login and the details of the person is not stored in the database an error occurs.

ERROR:

2. ALGORITHMS & SOFTWARES

Mongo DB:

Mongo DB is the best available platform source for database which gives good quality of scalaibility increases the performances and availability.

Database

Database is a physical container for collections. Each database has there set of files on the file system. One Mongo DB server typically has multiple databases.

Collection

Collection is a group of Mongo DB documents. It is the equivalent of an RDBMS table. A collection exists within a single database. Collections do not enforce a schema. Documents within a collection can have different fields. Thus, all the set of documents in a collection are of similar or related purpose.

Document

A document is a set of key-value pairs. Documents have dynamic schema. Dynamic schema means that documents do not need to have the same set of fields or structure, and common fields in a collection's documents may hold different types of data.

Mongo db is the database server which runs on port 27017. Robo3T has been used as the client to connect with the database.
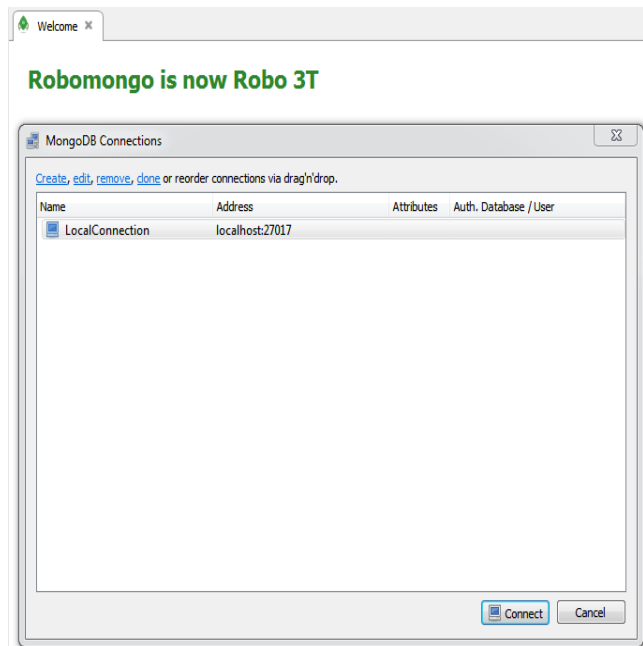

Name of Database: Rail Ticketing System

Snapshot of Database:
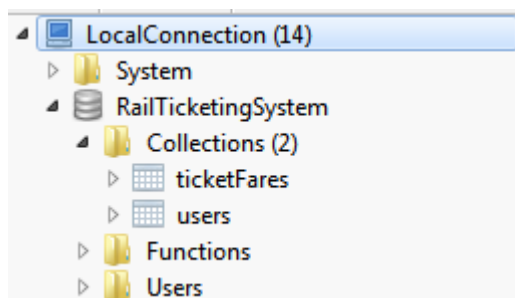
Maven Build Tool:

Maven is a powerful build tool for Java software projects. Maven is centered around the concept of POM files (Project Object Model). A Project Object Model file is an XML representation of its project resources like source code, test code, dependencies (external JARs used) etc. The POM contains references to all of these resources. The POM file should be located in the root directory of the project it belongs to.
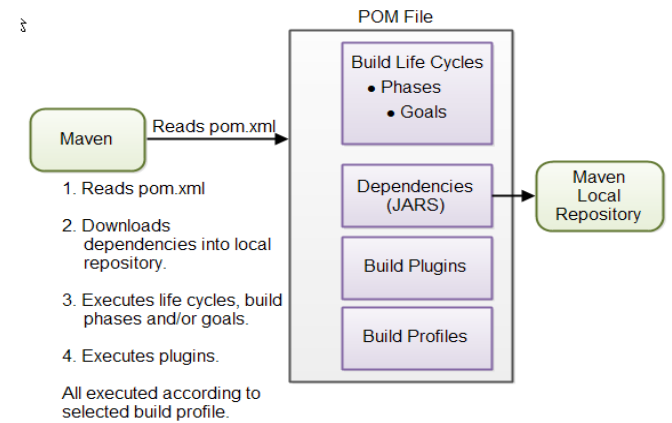
3. CONCLUSION

Over here in this paper, we have proposed Simple train ticketing system for suburban areas of Mumbai in which the user can easily can easy book a ticket using technology according to the convenience avoid the long standing queue Our main was to create a system that would ease peoples effort.

4. REFERENCES

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