



Pin Oriented Metro Ticket

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Abstract: More people prefer to public transports for transporting at shorter time. Metro trains are one of them. These are installed in heavy traffic metropolitan cities. In this pandemic situation, metro trains are closed. Now trains are running so government made online ticketing system. Until now there are applications which generate tickets and get information using 4-digit pin, token and smart card. Using of QR code makes us use a smart phone which all members don't have it. In our work, we are replacing QR code with an SMS with pin which they can use pin as their ticket. This project performs better as it generates pin for every ticket without scanning QR code.

Index Terms – QR code, SMS, Pin

I. INTRODUCTION

1.1 Overview

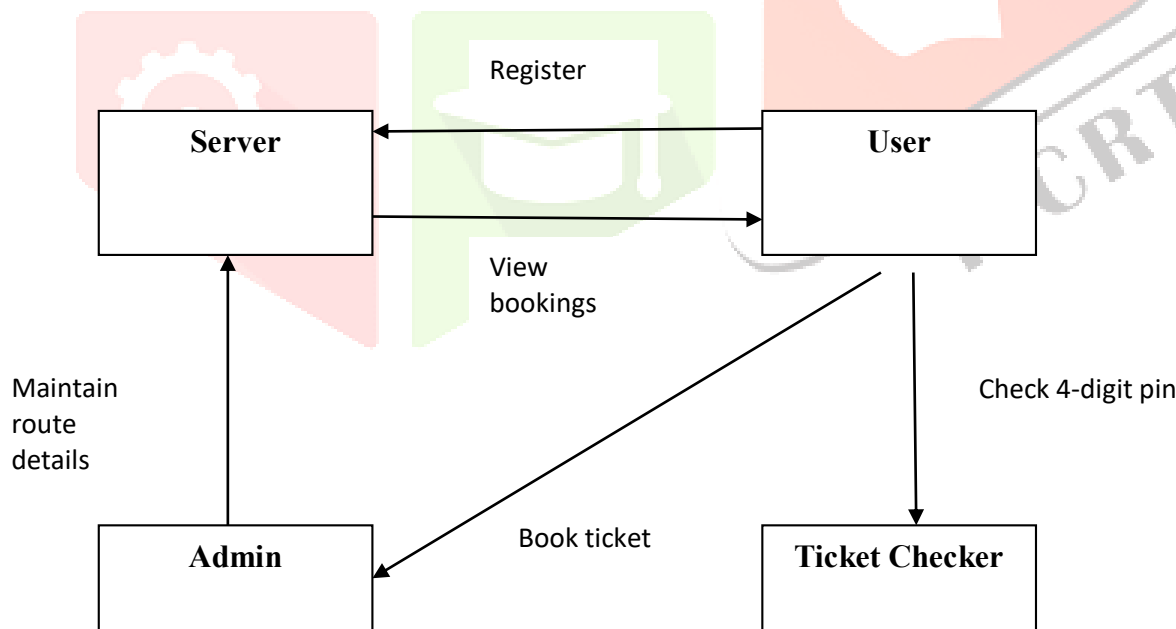


Figure 1.1: Flow Chart of process

The concept here is same as QR code ticketing system, a person need to enter his personal details like name, Age, Gender, Aadhar, Mobile no. and book the ticket from source to destination station, payment action need to be done. After payment only a 4-digit pin need to be generated to the mobile no. Which he entered. This pin need to be validated at the metro gates in source station and need to be terminated at destination station gates. There is a no time period for the pin when he ends his journey at destination station it should be terminated (because in metro station there are some food, Shopping scope which a person may choose to do). We need to check his destination station if he wants to get out at previous metro station rather than destination station it should allow him to do so. In case if he overcome his destination station (next to the specified station) it should not allow him and he will be taken up care by the in charge at the metro gates what to do. Here no ticket need to be carried or shown that 4-digit pin acts as ticket.

1.2 Feasibility Study

The feasibility of the project is analyzed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For System analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are

1.2.1 Economic Feasibility

1.2.2 Technical Feasibility

1.2.3 Social Feasibility

1.2.1 Economical Feasibility

An organization makes good investment on the system. So, they should be worth for the amount they spend in the system. the cost of the system, but should not exceed the cost.

- The cost of investment is analyzed for the entire system
- The cost of Software is also noted.
- Analyzing the way in which the cost can be reduced.

Every organization wants to reduce their cost but at the same time quality of the Service should also be maintained. The system is developed according the estimation of the cost made by the concern. In this project, the proposed system will definitely reduce the cost and also the manual work is reduced and speed of work is also increased.

1.2.2 Technical Feasibility

The Technical feasibility is the study of the software and how it is included in the study of our project. Regarding this there are some technical issues that should be noted they are as follows:

- Is the necessary technique available and how it is suggested and acquired?
- Does the proposed Equipment have the technical capacity to hold the data required using the new system?
- Will the system provide adequate response that is made by the requester at a periodic time interval?
- Can has system be expanded after this development.
- Is there a technique guarantees of accuracy, reliability in case of access of Data and Security?

The technical issues are raised during the feasibility study of investigating our System. Thus, the technical consideration evaluates the hardware requirements, software etc. This system uses Java as front end and Oracle as back end. They also provide sufficient memory to hold and process the data. As the company is going to install all the process in the system it is the cheap and efficient technique.

This system technique accepts the entire request made by the user and the response is done without failure and delay. It is a study about the resources available and how they are achieved as an acceptable system. It is an essential process for analysis and definition of conducting a parallel assessment of technical feasibility.

Though storage and retrieval of information is enormous, it can be easily handled by Oracle. As the oracle can be run in any system and the operation does not differ from one to another. So, this is effective.

1.2.3 Social Feasibility

Proposed project will be beneficial only when they are turned into an information system and to meet the organization operating requirements. The following issues are considered for the operation:

- Does this system provide sufficient support for he user and the management?
- What is the method that should be used in this project?
- Have the users been involved in the planning and development of the projects?
- Will the proposed system cause any harm, bad result, loss of control and accessibility of the system will have lost?

Issues that may be a minor problem will sometimes cause major problem in the operation. It is the measure of how people can able to work with the system. Finding out the minor issues that may be the initial problem of the system. It should be a user-friendly environment. All these aspects should be kept in mind and steps should be taken for developing the project carefully.

Regarding the project, the system is very much supported and friendly for the user. The methods are defined in an effective manner and proper conditions are given in other to avoid the harm or loss of data. It is designed in GUI interface, as working will be easier and flexible for the user.

They are three basic feasibility studies that are done in every project.

II. LITERATURE REVIEW

S. No	Title of the paper	Authors	Journal	Description
1.	A QR Code Based Processing For Dynamic and Transperent Seat allocation in Indian Railway	Man Mohan Swarup, Abhiram Dwivedi, Chanchal Sonkar, Rajendra Prasad, Monark Bag, Vrijendra singh	IJCSI International Journal of Computer Science Issues, and Vol. 9, Issue 3, No 1, May 2019	In this paer a suggested a model which provide various techniques for buying tickets through their smart phones application through GPS facility of android mobile so that passenger can easily get the list of stations and he can easily buy ticket, but sometimes GPS signals are not accurate due to some obstacles to the signals.
2.	Cloud Ticket Validator	Baia A, Ferreira J, Filipe P, Cunha G. Android as a Cloud Ticket Validator	IEEE International Conference on Cloud & Ubiquitous Computing and Emerging Technologies; 2018. P. 1-7	Inthis paper, proposed a Dynamic Seat Allocation (DSA) system which considers the advantage of QR-code processing along with one of the Standards of wireless communication. Their approach is to make fair processing in seat reservation or allocation in Indian Railway. The Android Metro Railway Ticketing System carries a ticket in the encoded form thereby ensuring constant availability and security.
3.	Urban Railway Ticketing Application	Sadaf Shaikh, Gayatri Shinde, Mayuri Potghan, Tazeen Shaikh, Ranjeetsingh Suryawanshi	IJARCSE International Journal of Advanced Research in Computer Science and Engineering, Vol. 4, Issue No. 1, Jan 2014	The objective of our project is to develop an android application which will serve as a medium for students or employees or anyone to book a ticket to travel through locals or mentors. The main motive of the app is to easy the process of ticket booking by avoiding the problematic process to stand in a queue and book the ticket for the short distance travelling in the trains
4.	Prototype of train ticketing Application using near field communication technology on Android device	Surya Michrandi Nasution, Emir Mauludi Husni, Aciek Ida Wuryandari	ICSET International Conference on System Engineering and Technology, Sept. 2012	This study will be focused in application of NFC technology as transaction tool for transportation System, specialized in train so that the passengers can easily perform the ticketing payment can be done through the NFC technology application.

Table 2.1: Literature Review

III. PROBLEM DEFINITION

3.1 Existing System

The existing system runs based on key system, where the user needs to submit the key in the corresponding station. Since if the key is missed or some situation the system may not provide a solution. So instead of key to the user there needs an alternate method in checking the user while exiting the station.

The “Android Metro Railway Ticketing” is implemented in a smart phone only and the ticket will be present in the client’s phone in the form of “QR code”.

3.1.1 Disadvantages of Existing System

- QR code Generation.
- Not in web-based application

3.2 Proposed Approach

The client in the website need to complete payment details, then only the valid 4-digit PIN ticket need to be generated from source station - to destination station. This project is processed to expire the PIN validity when the customer enters it at the specified destination end. PIN generated need to be valid, only for that specific day alone. Validation of PIN generated ticket should also be done.

3.2.1 Advantages:

- Personal Information Gathering
- Ticket Buying
- 4-digit pin

IV. REQUIREMENTS

4.1 Requirement Description

The Java SDK, Enterprise Edition (J2EE SDK) is the reference implementation provided by Sun Microsystems, Inc. The following figure shows the major elements of the architecture for the J2EE SDK.

The J2EE server provides the following services:

- Naming and Directory – it allows programs to locate services and components through the Java Naming and Directory Interface(JNDI) API
- Authentication – It enforces security by requiring users to log in
- HTTP – It enables Web browsers to access servlets and Java Server Page (JSP) files
- EJB – It allows clients to invoke methods on enterprise beans

Web Container:

The Web container is a runtime environment for JSP files and web servlets. Although these Web components are an important part of a J2EE application, this manual focuses on enterprise beans. For more information on developing Web components, see for the home pages for the Java Servlet technologies.

4.2 Software requirements

SERVER

Operating System	:	Windows 7 to 10
Technology Used	:	JSP
Database	:	MySQL
Database Connectivity	:	Any Native Connectivity
Web Server	:	Apache
Browser	:	Any browser is supportable

CLIENT

Operating System	:	Windows 7 to 10
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V. SYSTEM DESIGN

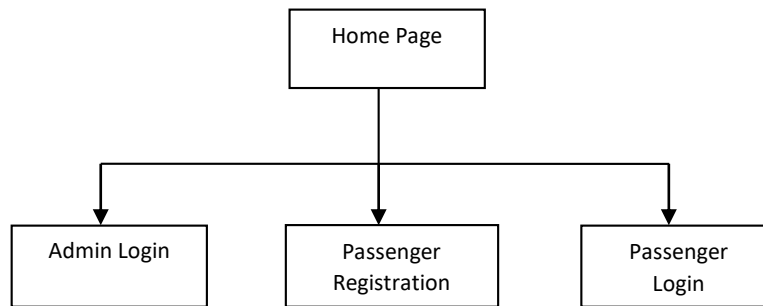


Figure 5.1: Flow Chart on login names

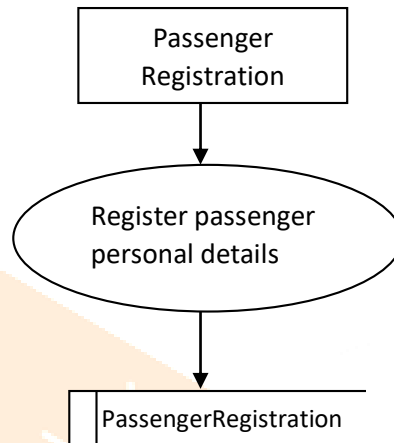


Figure 5.2: Flow diagram on Passenger registration.

5.1 Design Constraints and standards

This application considers two constraints namely, social and sustainability. The entire application is built with the help of open-source frameworks leveraging jsp markup coding. Hence this application is sustainable. Various instructions are to be given to assist the client. The language processing and computer assisted instruction implies to IEEE 610.2-1987 - IEEE Standard Glossary of Computer Applications Terminology.

VI. DESIGN ALTERNATIVES

6.1 Module Information:

The modes which we discuss here are of two types:

- Input mode
- Output mode

6.1.1 Input Design

The input design is the link between the information system and the user. It comprises the developing specification and procedures for data preparation and those steps are necessary to put transaction data in to a usable form for processing can be achieved by inspecting the computer to read data from a written or printed document or it can occur by having people keying the data directly into the system. The design of input focuses on controlling the amount of input required, controlling the errors, avoiding delay, avoiding extra steps and keeping the process simple. The input is designed in such a way so that it provides security and ease of use with retaining the privacy. Input Design considered the following things:

- What data should be given as input?
- How the data should be arranged or coded?
- The dialog to guide the operating personnel in providing input.
- Methods for preparing input validations and steps to follow when error occur.

6.1.2 Output Design

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making.

The output form of an information system should accomplish one or more of the following objectives.

- Convey information about past activities, current status or projections of the future.
- Signal important events, opportunities, problems or warnings.
- Trigger an action.

Personal Information Gathering:

The work of the application here starts with installing it. It collects basic information about the user like Aadhar number, Name, mobile number, etc and these details are stored in the server.

Ticket Buying:

Once the user has successfully login using the registered username and password, then he can book the ticket by selecting details of journey such as the source station, destination station and number of tickets required. The total cost of booked tickets will be displayed below when user click on submit button the amount will be deducted from user railway wallet and ticket will be generated.

4-digit pin:

When the client books the ticket then the information is sent to web server and the 4-digit pin is generated on the server side and sent back to the application.

VII. SCREEN SHOTS

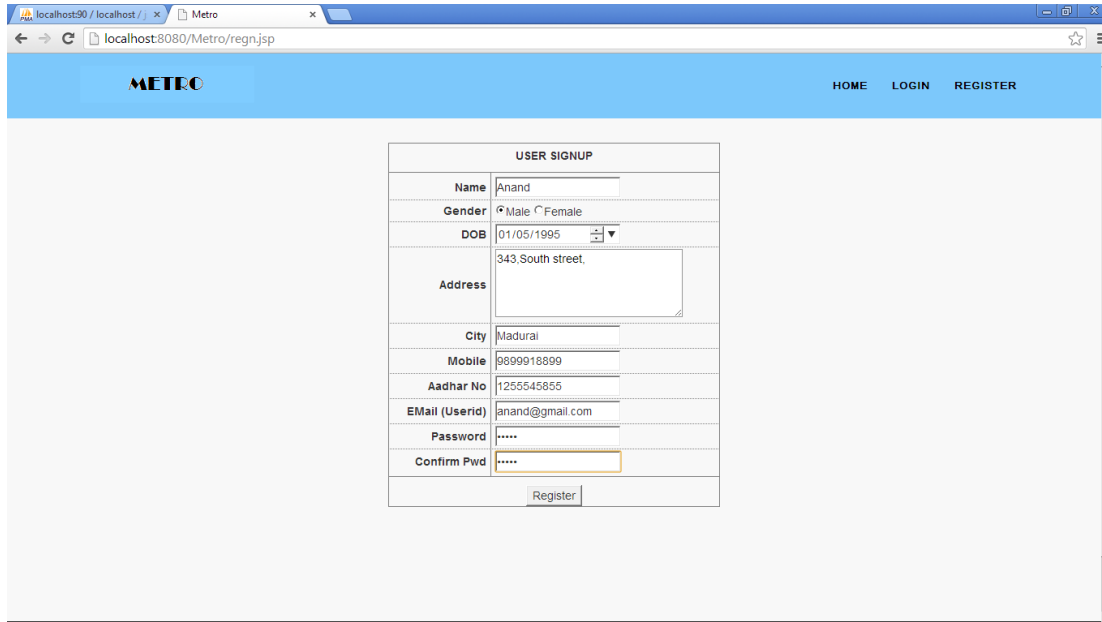


Figure 6.1: User Signup

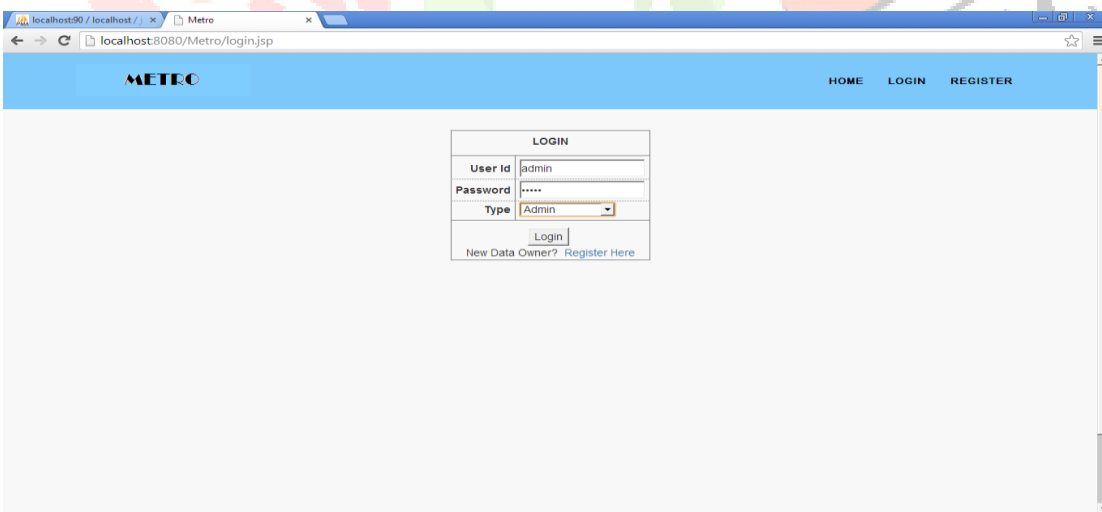


Figure 6.2: Admin Login

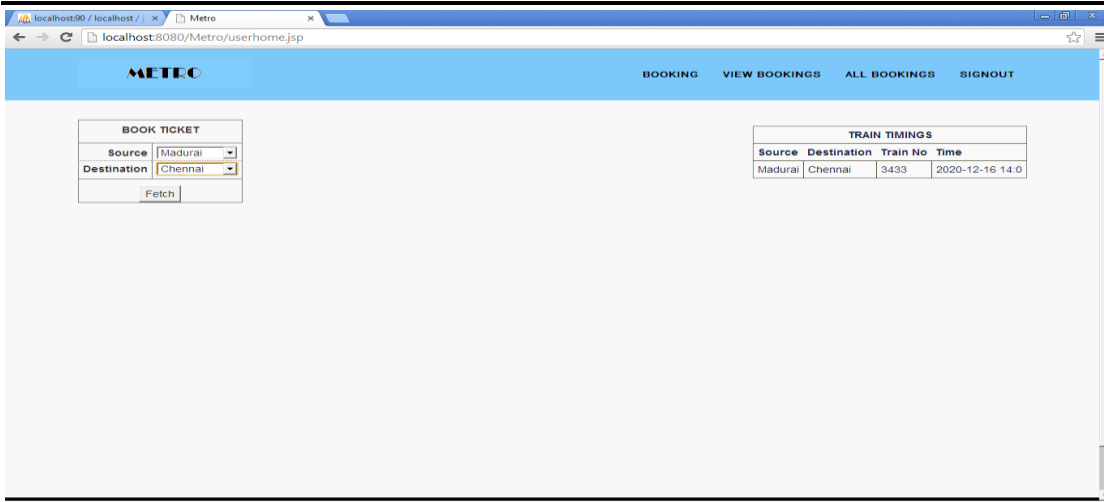


Figure 6.3: List of Trains

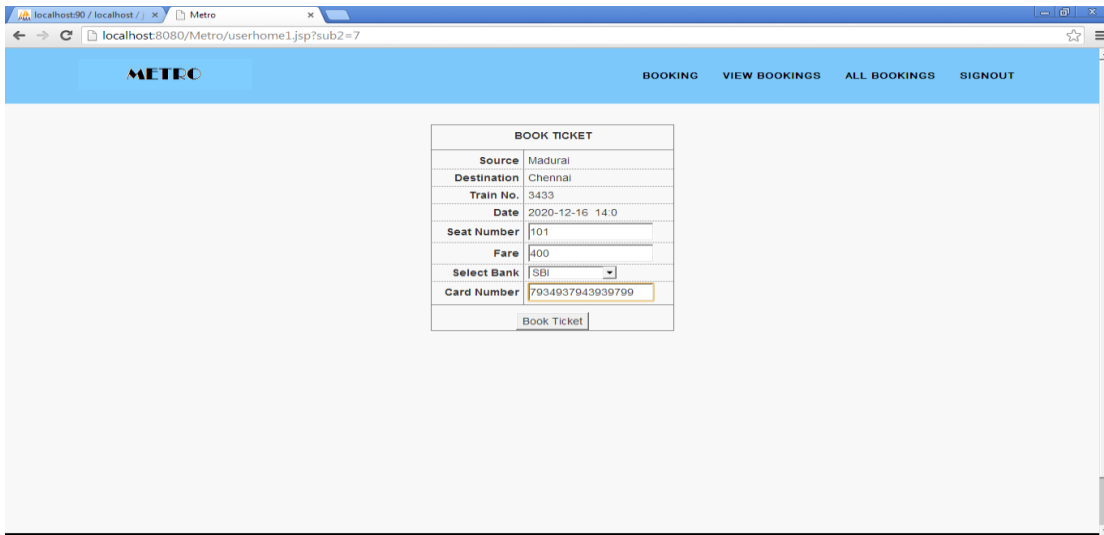


Figure 6.4: Payment of Seat Booking

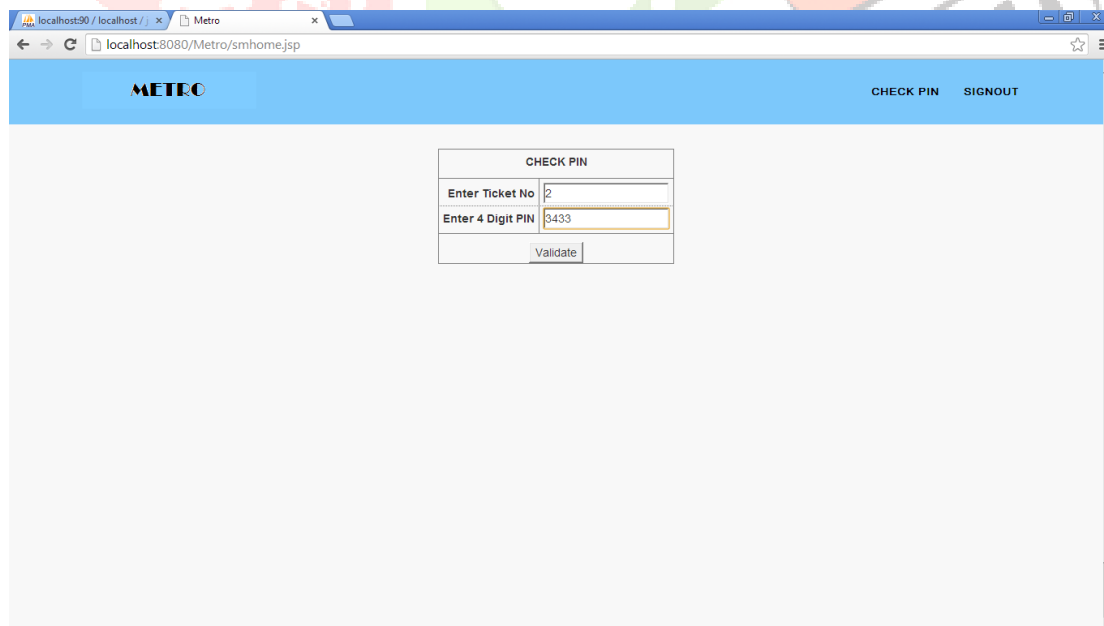


Figure 6.5: Checking Pin

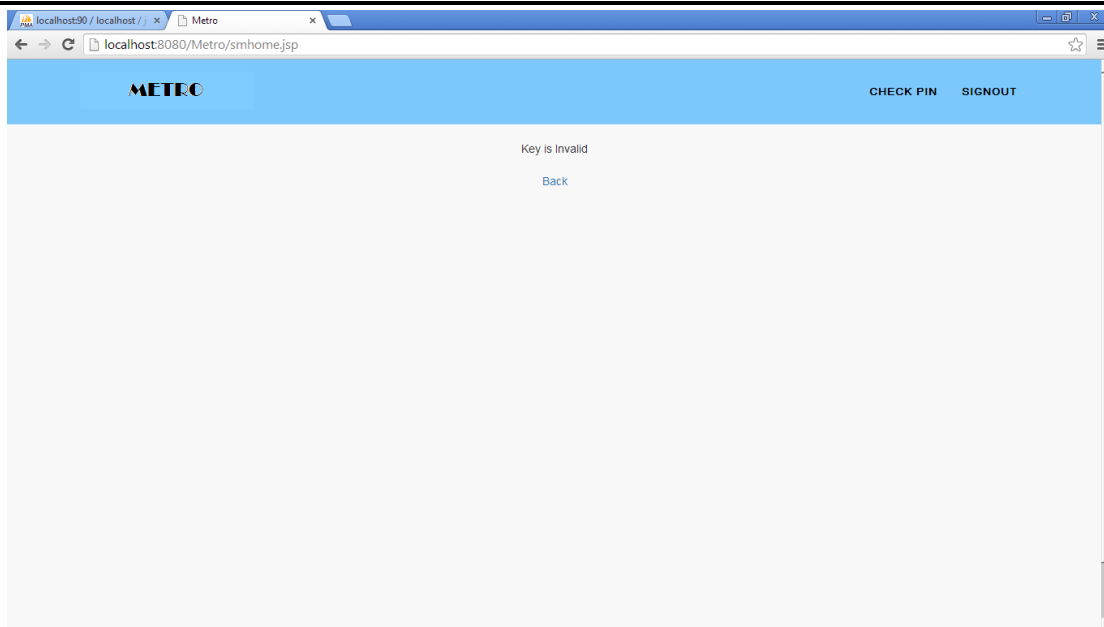


Figure 6.6: Message of validation

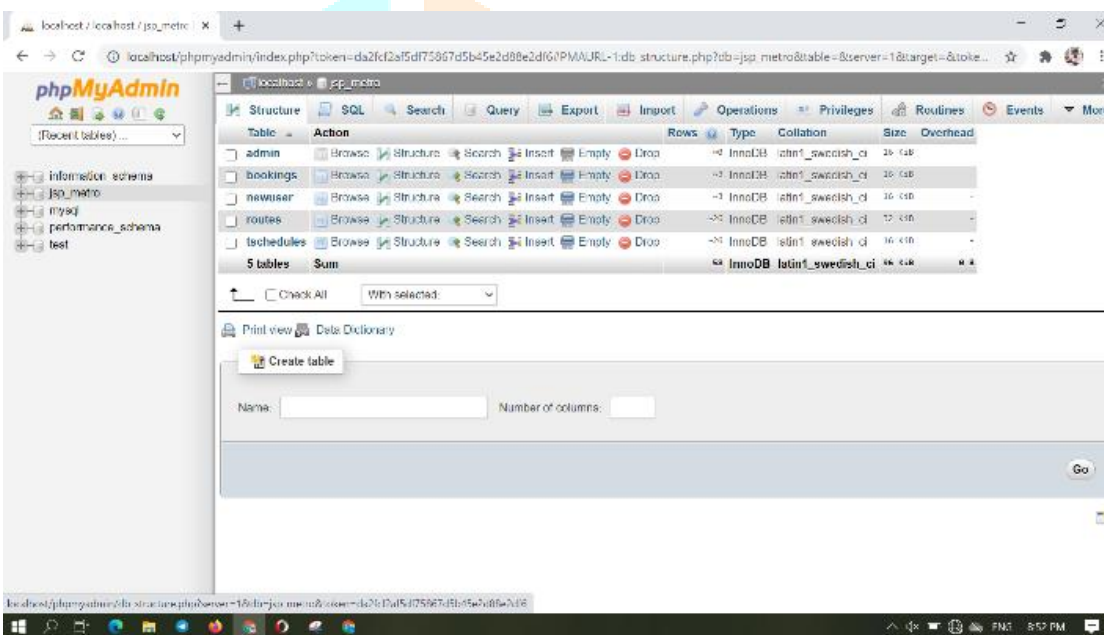


Figure 6.7: Database tables

VIII. CONCLUSION AND FUTURE WORK

Hence a feasible solution for the train ticket is achieved without additional technology like GPS or other. So this system can be implemented in any places and is useful for the community. This project is to design a web-based application for maintaining the details of the user and client, 4-digit pin generation and validation of the ticket.

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