



iJRASET

International Journal For Research in
Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 Issue: IV Month of publication: April 2022

DOI: <https://doi.org/10.22214/ijraset.2022.41901>

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Implementation of Cloud Computing Technology for Ticket Booking

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Abstract: *The current railway or bus ticket booking system is human dependent and tedious with regards to the ticket booking process. The core objective of our project is to develop the web-application which will serve as a medium for students/employees/anyone to book the tickets to travel through trains or bus. The principle motive force of this web-application is to ease the process of ticket booking by avoiding the hectic and boisterous process to stand in a queue and book the ticket for the short distance for travelling in the trains. Several applications are available in the market which gives information about the travelling destinations and their fares. However, none of these applications incorporate the ticket booking process coordinated for both train and bus. Our application contrasts from such a lot of existing applications as it would book the ticket as well as save the ticket in the clouddatabase for both train and bus.*

Ticket can be bought with the help of smart phone, laptop using the web-application where your railway tickets can be carried in your phone. The ticketing information of the user is securely stored in the cloud database. Additionally, the ticket checker is given the checker application which is utilized for the approval of the ticket appeared by the user. This framework gives the ticket checker web-application to look for the user's ticket with the ticket number or other appropriate information in the cloud database for checking purposes. Consider that the user's display is being damaged and not able to show the ticket due to other reasons like battery failure we have another safeguard alternative to check the ticket by searching in the ticket database with the ticket number or user's other relevant information for validation purpose.

Keywords: *Ticket Booking, Railway, Cloud Database, Ticket Checker.*

I. INTRODUCTION

There has been no advancement in Indian public transport system particularly railways and bus, still follows the regular old pattern of ticket booking and checking. With the growing population, the number of travellers ready to travel day by day is expanding abruptly and now the circumstances are deteriorating that individuals don't bother whether they have a ticket or not, they knowingly or sometimes because of some issue they are entered in the train or bus without a ticket. Indian public transport system and IT are loosely bounded. Presently the use of Information Technology is only limited to online checking of schedules and fares of public transport. The main motive of this web-application is to ease the process of ticket booking by avoiding the hectic process to stand in long queues and book the ticket for the short distance travelling in the trains and bus. Users can purchase the ticket over the Internet, 24 hours a day throughout the year, this solves the issue of bus ticket being misplaced or stolen in a real-life scenario. The application may get overloaded due to a huge number of users visiting at once. Thus to solve the issue this system is built up using cloud infrastructure for improved performance.

A. Cloud Computing

Cloud Computing [1] is a form of distributed computing which has been evolving recently. Typically, the cloud symbol is used to represent the Internet. Cloud computing is now widely used to describe the delivery of software, infrastructure and storage services over the internet. Cloud computing provides tools and technologies for various parallel applications with far more affordable prices compared to traditional parallel computing techniques.

The main purpose of cloud computing is to profit from all of these technologies without the necessity for deep knowledge or expertise with each of them. At present, whether large or small, all companies depend on public cloud platforms to host and implement applications because they supply flexibility, mobility, scalability, sustainability and it is cost-effective. Cloud Computing Service Models can be mainly placed into three types: SaaS (Software as a Service), IaaS (Infrastructure as a Service) and PaaS (Platform as a Service). Each of the cloud models has its collection of benefits that will meet the wants of assorted companies.

II. LITERATURE SURVEY

A Study by Mohezar et. al. [5] identified trends in e-tickets among urban communities, especially in Kuala Lumpur. This research explores the trends and patterns of use of e-tickets. The study also focused on consumer perspectives for e-tickets in terms of their usability, reliability, protection, convenience and performance. The research also explores the effect of demographic variables on e-ticket acceptance of e-tickets. A survey was conducted amongst Internet users in Kuala Lumpur. Questionnaires were randomly distributed to 5,000 individuals. Kuala Lumpur was selected to have the largest number of Internet users. The study found that e-tickets are not a new trend, as an almost good number of respondents have been purchasing online tickets for the past two years and the purchase of rail and bus tickets seems to have dominated online ticketing services. It was also found that comfort and ease of use were among the factors that inspired respondents to buy tickets online. The study [5] also found that online ticket purchasers are young, qualified and with a higher income bracket, Sahney et al. found that the modus operandi of the online ticket booking system needs particular attention to factors such as the functionality of online search information, website design, and the capacity of all time network availability for online booking. We propose that the flexibility of the Internet should be combined with the convenience of a simplified decision making and collaborative booking from traditional travel agents. The expertise of travel agents should help online customers to find the best travel option under given constraints and provide efficient support for impulsive decision.

III. PROBLEM STATEMENT

The need to build this website was the technological development of almost everything around us. The user needs all the tasks to be accomplished in an effective and relaxed manner. In such a time, there was a desperate need to construct a website for the convenience of the user. Also, this website will aim to solve the tiresome task of managing the crowd easy, without confusion, during ticket booking times. Cloud Technology will help to add flexibility and scalability.

A. Project Modules

- 1) *Registration:* This module is meant to record user details on the website database. It collects general information about the user such as name, mobile number, email address, etc. This module also includes a unique Email Id. and Password that would allow the user to sign-in to the website. The information received by the user is recorded in the 'Register' database. Once the user has given all the information needed for registration, the website redirects the user to the sign-in page.
- 2) *Sign-In and Authentication:* This module facilitates the user to sign-in on to the website. It collects user information, such as email address and password, and compares the information against the entries in the database. If the user entered information that matches the authentication parameters that is email address and password entered during the registration process, the user shall be authenticated and will be redirected to the user homepage. If the user entered information that does not satisfy the requirements for authentication, the user will not be authenticated and cannot access the user homepage.
- 3) *Booking and Allocation:* This module is available once the user has signed-in onto the website, our application displays two modes of transport to the user that are the train and the bus. User can select any one mode according to his choice. If the user selects train he is prompted with the form where he has to enter his desired selection for booking process, that form includes source station, final destination, train class, train type, number of tickets, route. Once the user selects these parameters the script code accepts the entries and checks for matching entries in the server database and accordingly displays the fare amount. after that user can go forward and proceed to checkout. Similar functionality is available for bus booking but form choices are different.
- 4) *Transaction:* This module displays a confirmation message that the user has successfully booked the ticket. It also makes an entry in the transaction database and the unique transaction id is allocated to the user in this module. User can print a ticket in the next step.
- 5) *Admin:* This module is designed for Ticket-Checker. Firstly, Ticket-Checker must sign-in to use the application. Once he has signed-in, he is provided with the transaction database for both bus and train ticket. The checker can select any one of this option to verify and validate the ticket. In this module the checker is provided with an option to search a particular keyword this will help checker to save time if he has to select any specific entry.

B. Project Review

- 1) *User:* Open web-application in the appropriate browser. Enter desired information to book the ticket.
- 2) *Admin:* Manipulate and manage the system database by adding new bus stops or train stations, removing stops. Adding new Verifier if required.
- 3) *Server:* Takes the desired entries from the user. Calculates the fare by checking in the database. Displays the ticket in a valid format. Post the details of user on cloud with its ticket.

- 4) **Verifier:** Open the web application in the appropriate browser Takes booking id or other relevant information of the user and verifies.

C. Project Implementation

- 1) **User M-Ticket Booking System:** User can buy our ticket with the help of a mobile phone or a laptop or any other device which can access a web- application where your tickets are transported on your computer. Firstly, the user has to set up an account to book a ticket. After an account has been established, the user can sign-in using his or her credential. Our application shows two modes of transportation to the users that are train and bus. Once the user selects one of the options, he has to enter his desired source and destination address. For train, In our system user has to input whether he has to book a ticket for first class, second class. Enter the total number of passengers and type of journey whether single or return. After that our system displays the fares. User has to confirm all the details and then he is forwarded to payment gateway. Once the payment process is completed our system prints a ticket and that will be uploaded on the cloud in users account. Similar process for booking bus ticket.
- 2) **Admin M-Ticket Booking System:** Ticket-Checker is equipped with the checker application used for validation of the train ticket or bus ticket. Ticket information for users is stored in a cloud database for security purposes. This web application provides the Ticket-Checker with checker application to search for the user's ticket with the ticket number or other valid credentials in the cloud database for checking purposes.

IV. RESULTS AND DISCUSSIONS

The web application M-Ticket booking system was developed using Hypertext Markup Language (HTML), Cascading Style Sheet (CSS), PHP Hypertext Pre-processor (PHP), Structure Query Language (SQL), Bootstrap Theme, JavaScript, Data tables.

A. Application Home Page

The web application home page displays the ticket booking menu. It also displays the login page for current users at the top of the application and a path for new users to register quickly onto the application.

B. User Home Page (after the user has signed in)

The user home page has the header which has options such as Train Ticket, Bus Ticket, User Bookings and displays users name and has log out and my profile options in drop down list. The body of user home page has a menu which has two options which are Book Train Ticket, Book Bus Ticket, respectively.

C. Checkout Page

The Checkout page has the header which is similar to that of User Home Page, The body of this page displays the Route and Fare according to user choice, user can check out if he is satisfied by displayed fare. The checkout page also has a Go Back option which will head the user to Train Ticket Booking Page.

D. Payment Gateway Page

The Payment Gateway Page has the form where user has to enter his card details to complete the ticket booking process.

E. Booking Info and Print Ticket Page

This page is displayed after payment is completed, it show- cases the ticket booking information that the user has selected and allocates a unique transaction id which is known as Booking Id. This page also has a print ticket option which prints the ticket.

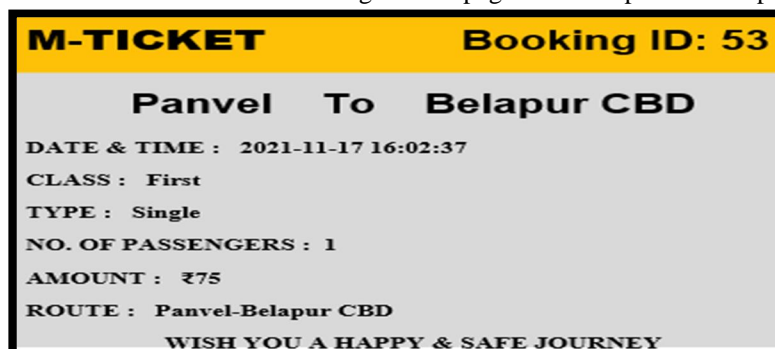


Fig.1.Print Ticket Information Page.

V. CONCLUSION AND FUTURE WORK

There are many issues in existing railways [6] and bus ticket booking system, To deal over this issue, we are working towards a web-based platform. We have identified the loopholes and started our systematic investigation. Our investigation focuses on these major issues and have put forward a desired result for the same. We have introduced an application on how to secure passenger information. With this experimental analysis, there will be an increased usage of public transport systems, as everything can be done independently. There is no need of any dependence on the conductor or ticket collector while entering into the bus or railways for collecting the ticket, all that we need to do is get a digital ticket by using the web application available in the mobile device and verify it by using users Booking Id or other credentials. This would eventually boost the will of the people and people will use the transport very often. We can visualize that M-Ticket system will have an application portfolio with a mix of cloud-based services delivered across a combination of private, hybrid, and public cloud-based infrastructure deployment models. Thus, using cloud computing technology in train and bus system is the most efficient, cost-saving, time-saving and sterilisable technique for waiting ticket holders.

VI. ACKNOWLEDGEMENT

First and foremost, I thank God for granting me the patience, letting me live to see this project through and availing positive people who support me in my entire journey. With profound sense of gratitude and regards, I acknowledge with great pleasure the guidance and support extended by, I thank Dr. Eshwaran Iyer, Dean, Jain Knowledge Campus, Bangalore, Dr. Dinesh Nilkant, Director & Center Head, Jain Knowledge Campus, Bangalore, Dr. M. N. Nachappa, Head, School of CS & IT, Jain (Deemed-to-Be University), Bangalore, Dr. Suchithra R., HoD - MSc [IT], School of CS & IT, Jain (Deem-To-Be University), Bangalore for their interest & encouragement throughout the project. I am very fortunate and grateful to my advisor Asst. Professor Pallavi V Patil, for her valuable comments, continuous support, commitment, encouragement, and suggestions which enabled me pass difficulties with courage and finalize the project work. I don't know where I would be now without huge help in editing my many mistakes. You are truly an outstanding person and an able educator and, I thank you from the bottom of my heart. For my entire friend the feedbacks and experience you share me have a great contribution to complete my project. You are the one who sacrificing the precious time you spent in commenting, encouraging and trying all your best to make my project keep in scope. I hope you find some kind of satisfaction in the completion of this paper. Thank you so much!

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