

“Railway Reservation System :Case and Comparative Study”

Javed Akhtar Khan¹, Dr.MR Aloney²

^{1,2} Dept of Computer Science & Engineering

^{1,2} Bhagwant University Ajmer (India)

Abstract- A Comparative analysis of Train Ticket reservation system . In this study we are include the some existing approach related to train ticket reservation for providing the good facilities to passenger . This case study is god collection of train ticket reservation existing polices proposed by the researcher .

Keywords- Reservation System, Data mining , Cluster

I. INTRODUCTION

Indian Railway is biggest network in the world . So this biggest network total 6853 railway stations are located and approx 13 million of passenger are travel in a day . In 2013-14, a total of 840 crore passengers travelled via Indian Railways.

Symbol	Description
CAN / MOD	Cancelled or Modified Passenger
CNF / Confirmed	Confirmed (Coach/Berth number will be available after chart preparation)
RAC	Reservation Against Cancellation
WL #	Waiting List Number
RLWL	Remote Location Wait List
GNWL	General Wait List
PQWL	Pooled Quota Wait List
REGRETIWL	No More Booking Permitted
RELEASED	Ticket Not Cancelled but Alternative Accommodation Provided
R# #	RAC Coach Number Berth Number
WEBCAN	Railway Counter Ticket Passenger cancelled through internet and Refund not collected
WEBCANRF	Railway Counter Ticket Passenger cancelled through internet and Refund collected

Table 1 Abbreviation used by Indian Railway ^[1]

II. RESEARCH ANALYSIS

Ref[1]- This paper explores the need, development of computerized passenger reservation system for Indian railways. The passenger reservation system is based on online transaction processing. It was given the name Integrated Multi train Passenger REServation System (IMPRESS) which later developed into single image system called Countrywide Network Of Computerized Enhanced ReserVaTion

(CONCERT). In this paper author are proposed the general architecture of the system which is 3-tier client server architecture. Apart from the obvious advantage of being computerized over manual reservation and enquiry, this paper explores other advantage of implementing this system and its future. In this paper CONCERT is able to give the multiple facilities to the passenger like route based reservation system it means passenger are able to make ticket any ware from the India .passenger are able to change the train profile , this is store the automatic database recovery .

Ref[2]- It is always difficult to book confirmed tickets for the journey. This paper presents the Railway Reservation System which is at Bapat Chourah, Indore, M.P, India, after studying advantages and disadvantages of system structure, This paper recommends changing the present queuing system to alternate queuing system, to avoid the inconvenience of passengers. It was proved that this model of the queuing system is feasible and the results are effective and practical. Here is the proposing alternate queuing model. When the passenger arrive at reservation counter, service provider will provide a appointment slip (which is mentioned with serial number, date and time of the service on that) to the passenger, as soon as passenger gets the appointment slip, he/she will be free from the waiting line, and again he/she joins the queue for service according to the mentioned time on the appointment slip.

Ref[3]- The study also covers the consumers’ perspectives towards IRCTC’S e-ticketing services. Analysis shows that the consumers’ perception towards IRCTC e-ticketing services is positive, however there are some glitches which need to be overcome. the main objective of this paper is To understand the concept of E-commerce and E-ticketing in India • To analyze the strategies developed by ICRTC in e-ticketing. • To study the consumers’ perception towards IRCTC’s e-ticketing services. During the study of this domain researcher are introduce the concept of Understanding Ecommerce RCTC- An Analysis E-Ticketing .

Ref [4]- The passenger reservation system of Indian Railways is one of the world’s largest reservation models. Daily about one million passengers travel in reserved accommodation with Indian Railways. Another sixteen million travel with

unreserved tickets in Indian Railways. In this vast system, it is a herculean task to efficiently handle the passenger data, which is a key point of consideration now-a-days. In this paper, the authors have explored different issues of implementing smart computing in railway systems pertaining to reservation models. For Indian railways, modifying the existing setup with Unique Identification (UID) based input will bypass a huge overhead of manual entry of passenger details. Also the verification of passenger-identity will be comprehensive and secure further. The introduction of a more efficient **UID-based reservation system** will facilitate in handling the data more efficiently with the help of inter-database interaction. The UID (E.g. Aadhaar Number in India) would serve as a major backbone for this entire **smart Passenger Reservation System model**.

Ref[5]- This paper proposes the **Dynamic Seat Allocation (DSA) system** considering the advantage of **QR code processing** along with one of the standards of wireless communication. Moreover, dynamic authentication to the wireless device is incorporate which is passenger specific. Through this research paper our approach is to make fair processing in seat reservation or allocation in Indian Railway. The acronym for Quick Response is QR. The bar code used in commercial product is beneficiary because of its reading speed, supreme accuracy and functionality, Our proposed DSA model is an attempt to solve the above problem with the help of QR code. QR code is used to embed the URL in the ticket. It facilitates faster ticket checking process. One of the wireless standards is used for connectivity between HHT and DSA server by which authentication is provided to every ticket. In this work author are proposed the some sub module for this work these are Our proposed DSA model is divided in the following sub-module.

- (A) Little modification in current Passenger Reservation System.
- (B) Check-in, Check-out and Booking procedure.
- (C) Automatic up gradation procedure.
- (D) Allocation Procedure.

Ref[6]- Indian Railway Catering and Tourism Corporation Limited (I.R.C.T.C), the online ticket reservation site of Indian Railways is also the largest Indian e-Commerce website , With over 450,000 tickets bookings in a day and more than 800,000 views between 10:00 am to 12:00 pm reflects the load on the servers. Since the site with a bandwidth of 450 mbps cannot book more tickets than it is doing at present, here are some suggestions which could improve the successful transaction rate and also help the in-emergency passengers to get tickets easily, though at a higher cost. During the Tatkal reservation time, 10:00 am to 12:00 pm, the customers face the problem of

booking ticket due to heavy traffic. One of the step to help solve this problem to a great extent is that by providing a three-tier system of ticket booking inside IRCTC, i.e. to divide the booking timings into three slots:

1. 8:00 am – 10:00 am : in-Emergency Reservation
2. 10:00 am – 12:00pm : TATKAL Reservation
3. 12:00 pm onwards : Normal Reservation

Dividing the booking timing into these three parts will definitely decrease the load on the servers of IRCTC during the TATKAL timing and also help the Indian Railways in earning more from the emergency tickets booked in between 8-10 am. The work we propose is that IRCTC should divide the booking period into three intervals In-Emergency (8-10 am):. TATKAL (10am – 12 noon):. Regular (12 noon onwards):

Ref[7]- This is manual introduce by the intel system that are describe the all the step for making the online reservation using the Indian railway web site www.irctc.co.in, in this manual technology are describe the Steps to create an IRCTC Account:

- A. Opening the IRCTC site
- B. Creating an Account
- C. Activate your Account
- D. Booking a ticket
- E. Printing your ticket
- F. Printing/ Cancelling a ticket
- G. Sign out of your IRCTC account

Ref[8]- As per this paper the Indian Railways' attempt to modernize its reservation systems. The recent moves; Indian Railways have given some contracts to the IT companies to enhance their passenger reservation system, software- aided train scheduling and install Wi-Fi services in selected trains and e-ticketing via smart phones. Railways have planned to inaugurate a new ticket reservation system that will sell 7200 tickets per minute while current system that can reserved 2000 tickets per minute and able to handle about 1.2 lakh concurrent connections on web servers simultaneously against 40,000. The railway is going to modernize itself to embrace cutting-edge technologies like cloud computing technology for better efficiency and minimize the cost This cloud technology will be extensively employed in railway reservation. In this research we shall investigate an impact of cloud based railway reservation system on passengers as well as government. Here we explain Service Oriented Architecture (SOA) for cloud based e-ticketing railway reservation system, how IRCTC (Indian Railway Catering and Tourism Corporation) can make tatkal booking easier, features of proposed system

architecture, benefits of the proposed system and issues and challenges. In this paper author are include the brief history of rail ticket reservation system in the introduction part of this paper .in the second part of this paper is include the introduction of cloud technology , in this part author are include the all model of cloud technology like IAAS, SAAS, PAAS and its advantage over the e –ticket reservation system . Researcher also introduce the deployment model of cloud computing . the third part of this paper explain the work of this concept , in this researcher introduce the concept of e-ticket cloud system based e-ticket reservation system .

Ref[9]-In this paper author are find the some of problem in the existing reservation system in this Indian railway system , so in this paper regarding the solutions of the problems related in consumption of time during the Ticketing Process in Indian Railways and the mode of payment other than the specified by the Indian Railways while taking ticket from their Ticketing Counters. In this paper author are find the two problem. the lack of exact change money and insufficient cash available at the time of ticketing is a problem faced at the ticket counter and it creates a major problem at ticket counter, as it is non resolved problem and may be faced at the time of ticketing without any solution or the business to the Indian railways or the ticket to the customer. in this paper author are also introduce the SMS-based ticketing with two dedicated numbers - 139 and 5676714 - for the service. In order to give improved customer service and empower the common man who does not have access to internet and cannot afford to buy smart phones, Indian Railways Launched SMS ticket booking service. For the above mention problem author are make a possible solution these solution are there are four ways of payment option available for the payment at the ticketing counter:

- 1) Pre-paid cards/Smart Cards/Loyalty Cards
- 2) Credit Cards
- 3) Debit Cards
- 4) Mobile Phones

The either of the above means can be used for the payment at the time of ticketing, The pre-paid cards can be issued by the Indian Railways and it can be obtained as a voucher at the railway stations or at any authorized retail shop, it may be used as an when required at the time of ticketing, there is possibility of the theft or unauthorized use of the pre-paid cards, but this can be checked with the integration of the pre-paid cards with the registered mobile number of the user and while ticketing the generated ticket will be sent to the registered mobile number only.

Analysis Table –

Reference	Objective of Research	Method/Tool Used	Impact of Research
Ref[1]	Improve the current reservation system using the new concept of topology that is mesh topology this system is called CONCERT	Mesh Topology used This is based on 3 tier client server architecture	-Based on the Mesh Topology for improving the current reservation system of Indian railway
Ref[2]	The objective of this paper is make a new architecture over the current reservation architecture that is based on the Queuing system , with some modification researcher are proposed the new architecture that gives confirm reservation to maximum passenger via alternate queuing model.	model of the queuing system.	-A advance Queuing model are proposed by the researcher for improving the reservation system
Ref[3]	This paper objective is to describe the roll of e-commerce for the e-ticket	E-commerce strategies used, g. businesses model .	-This paper is only gives the information about the e-commerce related to reservation and some other revenue generate resource
Ref[4]	This is UID based Reservation System..	Passenger information retrieve from UID database model Author study country is India so Author are used the Adhar Card number for retrieve the data . with the help of this author are optimize a data entry process and save the time of passenger .	-In this paper a author are used the new concept of E-ticket reservation using the concept of UID card.
Ref[5]	This paper propose the Dynamic Seat Allocation System for this work researcher are used the QR code processing	DSA Server Module based on the QR system..	-QR image based dynamic seat allocation system are introduce by the researcher in this paper
Ref[6]	In this paper author are introduce the TATKAL reservation system of India.. researcher are put the all introduction of Reservation system . now in this paper author are proposed the Three Time slot for the making a reservation .	No model are used, case study.	-with the help of good time fragmentation system researcher are make a good, possible solution for improving the TATKAL ticket reservation system .
Ref[7]	This is e- ticket reservation manual introduce by the intel system	Reservation manual guide .	-This is e-ticket reservation guide manual .
Ref[8]	Cloud based E-ticket Reservation System , this system also applicable for the tatkal booking easier . the main concept is used by the author are server clustering .	Here author proposed the new System architecture service oriented architecture SOA for the cloud based e-ticket railway reservation system .	-This is used the new technology sasy cloud computing concept for making or improving the reservation service of Indian Railway .
Ref[9]	This paper work for the two problem face by the passenger during the reservation time that is lack of exact change money, insufficient cash available at the time of ticketing for the solution of this problem author are make a new concept that is SMS based reservation system and Swapping machine based payment system .	New modle are used , like ATM researcher called swapping machine based payment system .	-in this paper author introduce the SMS and Cash swapping machine concept for the passenger for making a reservation and saving the time and extra money .

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