An Auction Based 'TATKAL' Scheme For Indian Railway

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Abstract—The Indian railways works on three trains local, passenger and express. Express trains require reservation of two types normal and TATKAL scheme, but these schemes works on the FCFS (First Come First Serve) basis. The project auction based TATKAL scheme uses bidding, admin decide the time then session will starts. The highest base price is decided depends on that passenger will bid the, each passenger having maximum five times bidding after session expires and the maximum bid times complete then passenger can't do bidding. This is useful to those passengers who having emergency and who can able to pay highest price for ticket. Depends on highest bid value tickets are allocated to the passenger. This paper security is provided at the time user login OTP (One Time Password) is used.

Keywords-*Auction, Bidding, Passenger, emergency*

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I. INTRODUCTION

The introduction In Indian railway runes on three types of train:

1] Local Trains
2] Passenger Trains
3] Express Trains

A local train runs on small distance, in cities. Passenger trains runes on medium distance, for nearer distance cities. Express train's runs on longer distance cities require reservation, normal and TATKAL scheme are two types of reservation. Normal reservation starts before one month of date of journey (DOJ). TATKAL scheme starts for one day before of DOJ. These two types of reservations total tickets are sold on a first-cum-first-service basis. But from our experience we have seen that there is a huge demand for the tickets that are reserved through this scheme. And people in urgent need of a ticket are ready to pay extra amount to get it. So our statement is to point out that if people are ready to pay extra amount for a ticket than the fixed rate, is the present scheme a good scheme when we look in terms of benefit we earn? Obviously the answer is no as the price is fixed and we are not considering the urgency of the people for purchasing the same ticket with a much higher price. An auction based TATKAL system provide a way to book ticket to people having more urgency [3][4][5]. They book ticket with more prices it provides more profit to reservation system. By using security mechanism then strong password

is created, the OPT mechanism is used to give highest security to the password.

II. EXISTING SYSTEM

Use Indian Railways have one of the biggest infrastructures in terms of number of trains run per day in city. It is comparable to any railways in the world. For each express train there is a "TATKAL" scheme that reserves few seats on emergency basis. In existing system there are two type of reservation system general and TATKAL. General and TATKAL ticket rates are different, 15-20% more rates are applied to the TATKAL than the general. In the existing scheme for each seat a ticket is issued after charging a fixed price. However, for different distance different fixed price is charged. The allocations of tickets are purely based on the first-come-first-serve basis. In existing system people having more emergency let suppose they stand in a row at second last or third last, it may happen ticket get finish before their reservation number come. So existing system not having any other options for book the ticket, and it cannot provide more security [1].

A. VCG mechanism

VCG stands for VickeryClarkeGroves(VCG) Mechanism [2][3]. It is a famous Vickery Clark Groves auction where passenger submit their bids without knowing the bid of the other passenger in the auction. It is a conserved bid auction. Straightforward is vital property of VCG.
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III. PPROPOSED SYSTEM

We propose an auction based tatkal scheme for passengers to book tickets for the train journey. We mainly focus on the passengers travelling from the source to the destination. In this system, the registered passengers will submit their bids for the tickets accordingly in the given time slot. Passengers can view the bids coming from other passengers and update their bids accordingly. The administrator will sort the bids according to the bid price and ticket will be allocated to the highest bidder accordingly. A confirmation SMS will be sent to the user winning the auction[3].

1] Admin decide the time slot and base price of bid, then bidding will starts.[Bid price will be higher than general, TATKAL ticket rates.]

2] User starts bidding, each user can bid maximum five times.

3] Depends on bid, admin sort and display the highest bid values.

4] After session expires then the highest bidder allocates the ticket then, they do reservation.
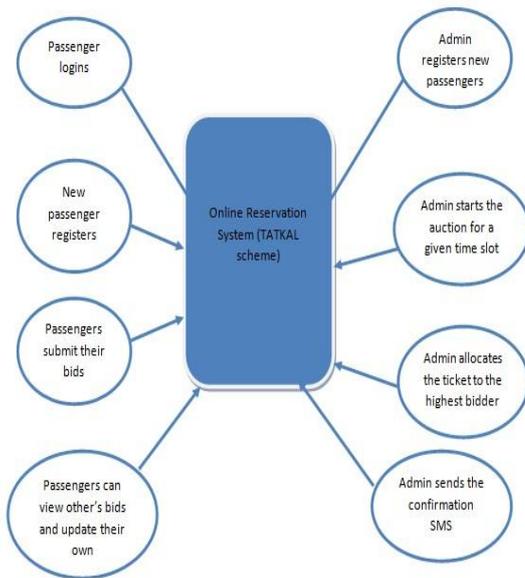

Fig. 1 Block Diagram

Helpful Hints For this paper we are adding the data hiding techniques. At the time of registration passenger enters his/her whole information like e-mail, phone-number, that must not known to the administrator, he should be aware about the bid values only which are entered by the passenger. The OPT (One Time Password) is used to improve the security of password; it is now-a-days used in Gmail.

A. One time password system

1] User does the registration then he got the username. User first authenticates himself using the username.

2] System will ask verification code where to send on mobile number or email-id, user have to select the option.

3] System will send 4-6 digit verification code to the user.

4] User has to enter that verification code on screen in given blank space.

5] System verifies the code, and then user can get his/her own user-friendly password.
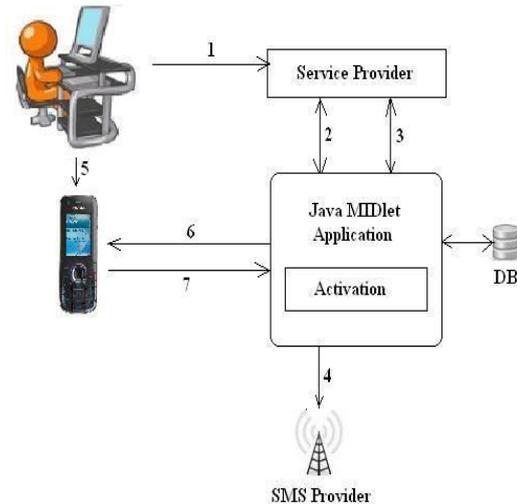

Fig. 2 Working Of OTP(One Time Password) System

The one time password system give highest security and increase the confidentiality level of user to the software, system.

IV. EXPERIMENTAL STUDY

A. Data Hiding

For security purpose we hide passenger detail from administrator by using data hiding algorithm. The hidden message is encrypted using a simple encryption algorithm. Using secret key. The LSB (Least Significant Bit) substitution method is used for hiding the data [2]. We eliminate this by using data grids of the vb.net.

B. OPT Mechanism

One Time Password system is used to improve security of system. MID is a client side application and we suppose that this runs in client mobile phones which can be capable of receive time OTP.

C. Cost factors

The tickets are sold by highest, double or more than double pries so that Indian Railways income will increase. So the income rate is depends on the number of tickets sold by auction scheme. X-axis shows the number of tickets and Y-axis gives the price or income rate. New income shown by red line. The highest income which uses the auction scheme. Auction scheme have more income than normal

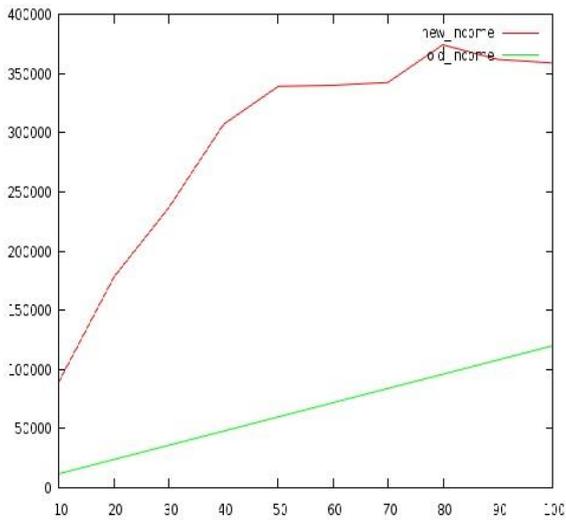scheme shown by green line. Green line uses the present scheme of IRCTS, Indian railways.

Fig. 3 COST FACTOR

V. CONCLUSIONS

An Indian railway generally all trains are bookedbefore one month. An auction based tatkal scheme is started for emergency travelers who able to pay more price.Asthetatkal booking time is started, everypassenger is try for reservation in such condition if the passenger having serious emergency then he could not book the ticket so using an auction based tatkalschema we provide way to book the ticket. It provide more benefit to Indian railway reservation system. Using an OTP we provide more security to existing system.

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