INTELLIGENT SEAT - ALLOCATION SYSTEM

By

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Student Declaration

This is to declare that this report has been written by us. No part of the report is copied from other sources. All information included from other sources have been duly acknowledged. We ever that if any part of the report is found to be copied, we are shall take full responsibility for it.

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1. Background

Revenue is one of the most important indices for the management of train industry. The practical situations of the revenue managemen in train companies are complicated. Many dimensions must be considered such as customer behavior, demand forecasting, control system, revenue factors, variable cost factors, fare products, problem scale, and problem interfaces. Besides these dimensions train companies also own two characteristics, i.e. high fixed cost and perishable products.

However, seat selling is nearly the only revenue. Therefore, every train is dedicated to develop various strategies to raise the performance of seat selling. Donaghy et al. (1995) reported that revenue management has been successfully adopted by the train industry after deregulation in the late 1970's.

With introducing revenue management train companies raised the net profit. For example, American Train earned a net profit of 450 million to 500 million in 1989 and United Train made 100 million to 200 million net profits in 1990. In the open literature, train revenue management problems can be classified as Forecasting, overbooking, pricing and seat inventory control.

In this paper, we concern the issues on seat inventory control to implement the revenue management. Seat in- Ventry control is to allocate the seats with respect to several fare classes in order to reach maximal revenue. The revenue management can be performed through seat inventory management.

The current system to book seats is first-come first-served. This approach tends to sell low-price seats because low-price requests often appear earlier. It also results in low revenue. In this paper, an expected dynamic probability method and a case-based seat allocation system are proposed to enhance the performance of the seat inventory management.
Extensive studies are conducted to compare the performance of first-come first-served method, expected dynamic probability method, and case-based decision support system. The result indicates that the case-based seat allocation system outperforms the other methods.

2. Intelligent seat allocation system

How to predict RAC and Waitlist ticket Confirmation?
As much fun it is to travel in train in India. The suspense factor is more whether your wait listed ticket will get confirmed or not. Until the last time of chart preparation, all we do is just cross their fingers and hope that the ticket gets confirmed.

We log on to check the PNR status again and again. Each time with the hope to see a "Confirm- CNF" sign on the page. Sometimes we even wait till the chart preparation. Some get lucky while others not.

How predicting will help?
Any travel or journey will be smoother and more comfortable, and you will not have to make last minute arrangements. Sure we also have tricks to travel without a confirmed ticket . But that may not be suitable for everyone. Maybe you are traveling with your family or you just don't like the idea of traveling without a confirmed seat.

You might probably weigh your options that if there are less chances of getting a train ticket confirmed I will book a flight. If you wait to book the flight only to see that your ticket has not been confirmed, you will end up purchasing flight tickets at an even higher price.

So, it will be beneficial if you can sort of predict the chances of getting the tickets confirmed.

Is it possible to predict future?
Now, predicting wait-list tickets getting confirmed is like predicting human nature. It's like predicting how your girlfriend will be behaving with you this evening! It is not easy to tell! Really!

It depends upon several factors. So, it cannot be 100% accurate. But there are indeed some formula and algorithm when used properly you can get a fair idea weather if your ticket will get confirmed or not!

Modules Used

Frontend:

- Html
- CSS
- JS
- Some JS Libraries
- Sass
- Bootstrap
- Font Awesome

Backend:

- Python – version=3.7.3
- Flask
- Flask-login
- Flask-wtf
- Flask-SQLAlchemy

Database:

- MySQL

Description of peer to peer connections

Roll No 2: Dookur Keshava reddy

❯ Worked out with the report of complete project

Roll No 3: Soham Nandi –

❯ Did the complete backend along writing the main seat allocation algorithm and linking the Data Base with the Frontend and Backend

Roll No: 25: Kommaraju Sai Prakash –

❯ Helped in the Frontend

Roll no: 26: Rishi Khandelwal –

❯ Helped Setting Up for the database

BONAFIDE CERTIFICATE

Certified that this project report **"INTELLIGENT SEAT – ALLOCATION SYSTEM"**

is the bonafide work of

"Dookur Keshava Reddy, Soham Nandi, Kommaraju Sai Prakash , Rishi Khandelwal"

who carried out the project work under my supervision.

Signature of the Supervisor

Ashish Shrivastava

(Supervisor)

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