**Railway Reservation**

The railway reservation system facilitates the passengers to enquire about the trains

available on the basis of source and destination, booking and cancellation of tickets, enquire

about the status of the booked ticket, etc.

The aim of case study is to design and develop a database maintaining the records of different

trains, train status, and passengers. The record of train includes its number, name, source,

destination, and days on which it is available, whereas record of train status includes dates for

which tickets can be booked, total number of seats available, and number of seats already

booked. The database has been developed and tested on the Oracle.

**Description:**

Passengers can book their tickets for the train in which seats are available. For this, passenger

has to provide the desired train number and the date for which ticket is to be booked. Before

booking a ticket for a passenger, the validity of train number and booking date is checked. Once

the train number and booking date are validated, it is checked whether the seat is available. If

yes, the ticket is booked with confirm status and corresponding ticket ID is generated which is

stored along with other details of the passenger. After all the available tickets are booked,

certain numbers of tickets are booked with waiting status. If waiting lot is also finished, then

tickets are not booked and a message of non‐availability of seats is displayed.

The ticket once booked can be cancelled at any time. For this, the passenger has to provide the

ticket ID (the unique key). The ticket ID is searched and the corresponding record is deleted.

With this, the first ticket with waiting status also gets confirmed.

**List of Assumption**

Since the reservation system is very large in reality, it is not feasible to develop the case study

to that extent and prepare documentation at that level. Therefore, a small sample case study

has been created to demonstrate the working of the reservation system. To implement this

sample case study, some assumptions have been made, which are as follows:

1. The number of trains has been restricted to 5.

2. The booking is open only for next seven days from the current date.

3. Only two categories of tickets can be booked, namely, AC and General.

4. The total number of tickets that can be booked in each category (AC and General) is 10.

5. The total number of tickets that can be given the status of waiting is 2.

6. The in‐between stoppage stations and their bookings are not considered.

**Description of Tables and Procedures**

Tables and procedures that will be created are as follows:

1. TrainList: This table consists of details about all the available trains. The information

stored in this table includes train number, train name, source, destination, fair for AC

ticket, fair for general ticket, and weekdays on which train is available.

Constraint: The train number is unique.

2. Train\_Status: This table consists of details about the dates on which ticket can be

booked for a train and the status of the availability of tickets. The information stored in

this table includes train number, train date, total number of AC seats, total number of

general seats, number of AC seats booked, and number of general seats booked.

Constraint: Train number should exist in TrainList table.

3. Passenger: This table consists of details about the booked tickets. The information

stored in this table includes ticket ID, train number, date for which ticket is booked,

name, age, sex and address of the passenger, status of reservation (either confirmed or

waiting), and category for which ticket is booked.

Constraint: Ticket ID is unique and the train number should exist in TrainList table.

4. Booking: In this procedure, the train number, train date, and category is read from the

passenger. On the basis of the values provided by the passenger, corresponding record

is retrieved from the Train\_Status table. If the desired category is AC, then total number

of AC seats and number of booked AC seats are compared in order to find whether

ticket can be booked or not. Similarly, it can be checked for the general category. If

ticket can be booked, then passenger details are read and stored in the Passenger table.

5. Cancel: In this procedure, ticket ID is read from the passenger and corresponding record is

searched in the Passenger table. If the record exists, it is deleted from the table. After

deleting the record (if it is confirmed), first record with waiting status for the same train and

same category are searched from the Passenger table and its status is changed to confirm

*Note – this is a high level description of entities, others exist with each entity description. Consider these descriptions at a high level… make sample data in a spreadsheet, think it through, normalize.*