

# Railway Ticket Management System

LAB ASSIGNMENT 7

GUIDED BY: ATUL SHARMA

# **GROUP MEMBERS**

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# **TASK 1**

## **TABLE : ADMIN**

- **USER\_ID FIRST\_NAME**
- **USER\_ID MIDDLE\_NAME**
- **USER\_ID LAST\_NAME**
- **USER\_ID PIN\_CODE**
- **USER\_ID CITY**
- **USER\_ID STATE**
- **USER\_ID DOB**
- **USER\_ID GENDER**
- **USER\_ID AGE**
- **PINCODE CITY**
- **PINCODE STATE**
- **CITY STATE**

# **TASK 1**

## **TABLE : PASSENGER**

- PASSENGER\_ID FIRST\_NAME
- PASSENGER\_ID MIDDLE\_NAME
- PASSENGER\_ID LAST\_NAME
- PASSENGER\_ID PINCODE
- PASSENGER\_ID CITY
- PASSENGER\_ID STATE
- PASSENGER\_ID DOB
- PASSENGER\_ID GENDER
- PASSENGER\_ID AGE
- PINCODE CITY
- PINCODE STATE
- CITY STATE

# TASK 1

## TABLE : PAYMENT

- TRANSACTION\_ID PASSENGER\_ID
- TRANSACTION\_ID PNR\_NO
- TRANSACTION\_ID AMOUNT
- PASSENGER\_ID PNR\_NO
- PASSENGER\_ID AMOUNT
- PNR\_NO PASSENGER\_ID
- PNR\_NO AMOUNT

## TABLE : TICKET

- PNR\_NO TRAIN\_NO
- PNR\_NO ARRIVAL\_TIME
- PNR\_NO DEPARTURE\_TIME
- PNR\_NO DISTANCE
- PNR\_NO PERSON\_SOURCE
- PNR\_NO PERSON\_DESTINATION
- TRAIN\_NO PNR\_NO
- TRAIN\_NO ARRIVAL\_TIME
- TRAIN\_NO DEPARTURE\_TIME
- TRAIN\_NO DISTANCE
- TRAIN\_NO PERSON\_SOURCE
- TRAIN\_NO PERSON\_DESTINATION

# **TASK 1**

## **TABLE : TRAIN**

- **TRAIN\_NO** **TRAIN\_NAME**
- **TRAIN\_NO** **TRAIN\_SOURCE**
- **TRAIN\_NO** **TRAIN\_DESTINATION**
- **TRAIN\_NO** **SEATS\_AVAILABLE**



# TASK 2

WHILE ANALYZING THE RELATIONAL MODEL OF OUR PROJECT WE CONCLUDED THAT THE TABLES WE MADE OUR NOT HAVING MULTIVALUED ATTRIBUTES AND EACH TABLE HAD ITS OWN PRIMARY KEY. THUS OUR RELATIONAL TABLES ARE IN 3RD NORMAL FORM ITSELF. AS FOR EXAMPLE , IN THE TABLE TRAIN WE HAVE TRAIN\_NO AS THE PRIMARY KEY.THE RELATIONS FROM TRAIN\_NO TO TRAIN\_NAME,TRAIN\_SOURCE,TRAIN\_DESTINATION,SEATS\_AVAILABLE ARE HAVING FUNCTIONAL DEPENDENCIES ON TRAIN\_NO.

train_no	train_name	train_source	train_destination	seats_available
4353	Rajdhani Superfast Express	Jaipur	Surat	12
4534	Mumbai Mail Express	Mumbai	Diu	55
6573	Ayodya Mail Express	Patna	Ayodya	100
6933	Vande Bharat	Kashmir	Kanyakumari	66
8465	Rajrani Express	Kolkata	Delhi	72
NULL	NULL	NULL	NULL	NULL

SIMILARLY, IN THE TABLE PASSENGER WE HAVE PASSENGER\_ID AND WE CAN FOLLOW THE ABOVE STEPS AND CONCLUDE THAT IT IS ALSO IN THE 3RD NORMAL FORM.

# TASK 2

**SIMILARLY, IN THE TABLE USER WE HAVE USER\_ID AND WE CAN FOLLOW THE ABOVE STEPS AND CONCLUDE THAT IT IS ALSO IN THE 3RD NORMAL FORM.**

# **TASK 3**

**In this part of the assignment we have considered the Train table from our database. The table has been separated into two different tables each having a different primary keys(i.e Pnr\_no,Train\_No). According to the BCNF form we need to map the primary key of the two tablets .**

**Table\_1:**

Pnr_no	Arrival_Time	Departure_Time	Amount
123324	11:20	14:40	2000
223423	13:56	19:40	1500
323423	23:45	13:10	3500
324323	23:45	17:45	6900
234333	03:00	07:00	4400

# TASK 3

Table\_2:

Train_No	Train_Name	Source - Destination	Distance
1234	Elite Express	Surat - Diu	900
2343	Rajyrahi Express	Delhi - Jaipur	600
3234	Tirupati Express	Pondicherry - Madurai	1200
4243	Rajdhani Dux express	Delhi - New Jalpaiguri	2300
5234	Mewar Express	Kota - Jaipur	2000

Thus the mapping of the tables using their respective primary keys:

Pnr_no	Train_No
123324	1234
223423	2343
323423	3234
324323	4243
234333	5234