

# Anubhav Kumar Gupta

17BIT0339

## PROJECT TITLE: "RAILWAYRESERVATION SYSTEM"

### PROJECT DESCRIPTION:

This project is about creating the database about Railway Reservation System. 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. 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. 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.

#### 1. ENTITES ATTRIBUTES

**User** :User\_id Password First\_name Last\_name Gender Age Email  
Aadhar\_no Mobile\_no City State Pincode

**Passenger**: Passenger\_id Name Gender Age  
Pnr\_no Seat\_no Booked\_by Reservation\_status

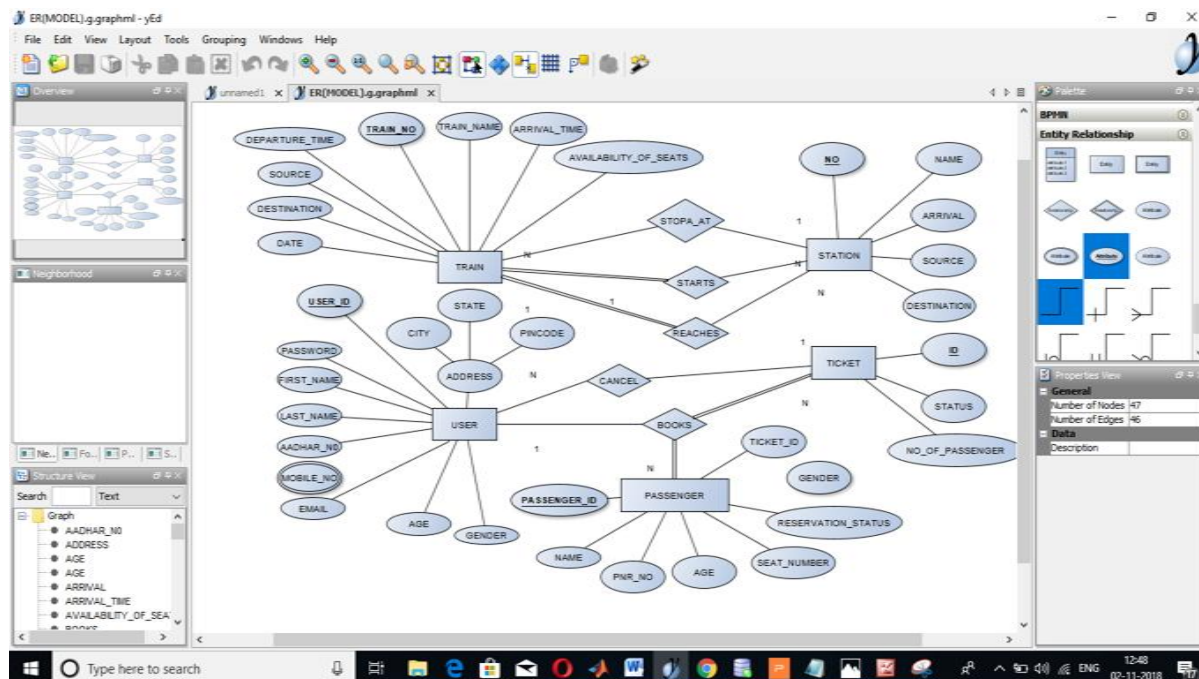
**Train**: Train\_no Train\_name Source Destination  
Arrival\_time Departure\_time Availability\_of\_seats

**Station**: Name No Train\_no Arrival\_time Hault

**Ticket**: Id Train\_no Booked\_user Status No\_of\_passengers

## CHAPTER 2: DESIGN

## 2.1 ENTITY RELATIONSHIP DIAGRAM



## 2.2 MAPPING OF ER TO TABLE

User_id	First_name	Last_name	Aadhar_no	gender	age
Mobile_no	Email	city	state	Pincode	password

### PASSENGER

Passenger_id	Pnr_no	age	gender	User_id

### TRAIN

Train_no	Train_name	Arrival_time	Departure_time
Source	destination	availability	date

### STATION

no	name	Arrival_time	source	destination	Train_no
----	------	--------------	--------	-------------	----------

### TICKET

ID	User_ID	status	No_of_passenger	Train_no
----	---------	--------	-----------------	----------

### CANCEL

User_ID	ID	Passenger_ID
---------	----	--------------

## BOOKS

User_id	ID
---------	----

## STARTS

Train_no	Station_no
----------	------------

## REACHES

Train_no	Station_no	time
----------	------------	------

## STOPS\_AT

Train_no	Station_no
----------	------------

## NORMALIZED TABLE:

User_id	First_name	Last_name	Aadhar_no	gender	age
Mobile_no	email	city	state	Pincode	password

## PASSENGER

Passenger_id	Pnr_no	age	gender	User_id

## TRAIN

Train_no	Train_name	Arrival_time	Departure_time
Source	destination	availability	date

## STATION

no	name	Arrival_time	source	destination	Train_no
----	------	--------------	--------	-------------	----------

## TICKET

ID	User_ID	status	No_of_passenger	Train_no
----	---------	--------	-----------------	----------

## CANCEL

User_ID	ID	Passenger_ID
---------	----	--------------

## BOOKS

User_id	ID
---------	----

## STARTS

Train_no	Station_no
----------	------------

**REACHES**

Train_no	Station_no	time
----------	------------	------

**STOPS\_AT**

Train_no	Station_no
----------	------------

## CHAPTER 3 : IMPLEMENTATION

### 3.1 CREATE WITH CONSTRAINTS

USER1:

```
create table user1(  
user_id numeric(2) primary key,  
first_name varchar(10),  
last_name varchar(10),  
adhar_no varchar(10),  
gender varchar(1),  
age numeric(2),  
mobile_no numeric(10),  
email varchar(30),  
city varchar(10),  
state varchar(10),  
pincode varchar(10),  
password varchar(20));
```

TRAIN:

```
create table TRAIN(  
train_no varchar(10) primary key,  
train_name varchar(20),  
arrival_time time,  
departure_time time,  
availability_of_seats varchar(5),  
date1 date);
```

STATION:

```
create table STATION(  
no1 numeric(3) ,  
name varchar(20),  
arrival_time time,  
train_no varchar(10),  
primary key(no1,train_no),  
foreign key(train_no) references TRAIN(train_no));
```

TICKET:

```
create table TICKET(  
id varchar(10) primary key,  
user_id numeric(2),  
status varchar(5),  
no_of_passengersint,  
train_no varchar(10),  
foreign key(user_id) references user1(user_id),  
foreign key(train_no) references TRAIN(train_no));
```

## PASSENGER:

```
create table PASSENGER(  
passenger_id varchar(10) primary key,  
pnr_no varchar(11),  
ageint,  
gender varchar(1),  
user_id numeric(2),  
reservation_status varchar(5),  
seat_number varchar(5),  
name varchar(20),  
ticket_id varchar(10),  
foreign key (user_id) references user1(user_id),  
foreign key(ticket_id) references TICKET(id));
```

## STARTS:

```
create table STARTS(  
train_no varchar(10) primary key,  
station_no numeric(3),  
foreign key(train_no) references TRAIN(train_no),  
foreign key(station_no) references STATION(no1));
```

## STOPS\_AT:

```
create table STOPS_AT(  
train_no varchar(10),  
station_no numeric(3),  
foreign key(train_no) references TRAIN(train_no),  
foreign key(station_no) references STATION(no1));
```

## REACHES:

```
create table REACHES(  
train_no varchar(10),  
station_no numeric(3),  
time1 time,  
foreign key(train_no) references TRAIN(train_no),  
foreign key(station_no) references STATION(no1));
```

## BOOKS:

```
create table BOOKS(  
user_id numeric(2),  
id varchar(10),  
foreign key(user_id) references user1(user_id),  
foreign key(id) references TICKET(id));
```

## CANCEL:

```
create table CANCEL(  
user_id numeric(2),  
id varchar(10),  
passenger_id varchar(10),  
foreign key(id) references TICKET(id) ,  
foreign key(passenger_id) references PASSENGER(passenger_id),  
foreign key(user_id) references user1(user_id));
```



OUTPUT:

```
Activities Terminal Tue 8:27 AM
harsha@17b1t0267: ~
File Edit View Search Terminal Help
mysql> create table user1(
-> user_id numeric(2) primary key,
-> first_name varchar(10),
-> last_name varchar(10),
-> adhar_no varchar(10),
-> gender varchar(1),
-> age numeric(2),
-> mobile_no numeric(10),
-> email varchar(30),
-> city varchar(10),
-> state varchar(10),
-> pincode varchar(10),
-> password varchar(20));
Query OK, 0 rows affected (0.34 sec)

mysql> create table TRAIN(
-> train_no varchar(10) primary key,
-> train_name varchar(20),
-> arrival_time time,
-> departure_time time,
-> availability_of_seats varchar(5),
-> date1 date);
Query OK, 0 rows affected (0.30 sec)

mysql> create table STATION(
-> no1 numeric(3),
-> name varchar(20),
-> arrival_time time,
-> train_no varchar(10),
-> primary key(no1,train_no),
-> foreign key(train_no) references TRAIN(train_no));
Query OK, 0 rows affected (0.39 sec)

mysql> create table TICKET(
-> id varchar(10) primary key,
-> user_id numeric(2),
-> status varchar(5),
-> no_of_passengers int,
```

```
Activities Terminal Tue 8:28 AM
harsha@17b1t0267: ~

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mysql> create table TICKET(
-> id varchar(10) primary key,
-> user_id numeric(2),
-> status varchar(5),
-> no_of_passengers int,
-> train_no varchar(10),
-> foreign key(user_id) references user1(user_id),
-> foreign key(train_no) references TRAIN(train_no));
Query OK, 0 rows affected (0.48 sec)

mysql> create table PASSENGER(
-> passenger_id varchar(10) primary key,
-> pnr_no varchar(11),
-> age int,
-> gender varchar(1),
-> user_id numeric(2),
-> reservation_status varchar(5),
-> seat_number varchar(5),
-> name varchar(20),
-> ticket_id varchar(10),
-> foreign key (user_id) references user1(user_id),
-> foreign key(ticket_id) references TICKET(id));
Query OK, 0 rows affected (0.40 sec)

mysql> create table STARTS(
-> train_no varchar(10) primary key,
-> station_no numeric(3),
-> foreign key(train_no) references TRAIN(train_no),
-> foreign key(station_no) references STATION(no1));
Query OK, 0 rows affected (0.35 sec)

mysql> create table STOPS_AT(
-> train_no varchar(10),
-> station_no numeric(3),
-> foreign key(train_no) references TRAIN(train_no),
-> foreign key(station_no) references STATION(no1));
Query OK, 0 rows affected (0.41 sec)
```

```
Activities Terminal Tue 8:28 AM
harsha@17b1t0267: ~

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-> station_no numeric(3),
-> foreign key(train_no) references TRAIN(train_no),
-> foreign key(station_no) references STATION(no1));
Query OK, 0 rows affected (0.35 sec)

mysql> create table STOPS_AT(
-> train_no varchar(10),
-> station_no numeric(3),
-> foreign key(train_no) references TRAIN(train_no),
-> foreign key(station_no) references STATION(no1));
Query OK, 0 rows affected (0.41 sec)

mysql> create table REACHES(
-> train_no varchar(10),
-> station_no numeric(3),
-> time1 time,
-> foreign key(train_no) references TRAIN(train_no),
-> foreign key(station_no) references STATION(no1));
Query OK, 0 rows affected (0.49 sec)

mysql>
mysql> create table BOOKS(
-> user_id numeric(2),
-> id varchar(10),
-> foreign key(user_id) references user1(user_id),
-> foreign key(id) references TICKET(id));
Query OK, 0 rows affected (0.45 sec)

mysql> create table CANCEL(
-> user_id numeric(2),
-> id varchar(10),
-> passenger_id varchar(10),
-> foreign key(id) references TICKET(id),
-> foreign key(passenger_id) references PASSENGER(passenger_id),
-> foreign key(user_id) references user1(user_id));
Query OK, 0 rows affected (0.45 sec)

mysql>
```

### 3.2 INSERT:

insert into user1 values('15','harsha1','battula1','48108-2000','M','18','9959548866','welcome@gmail.com','Vellore','Tamil Nadu','632014','mylife');

```
mysql> insert into user1 values('15','harsha1','battula1','48108-2000','M','18','9959548866','welcome@gmail.com','Vellore','Tamil Nadu','632014','mylife');
Query OK, 1 row affected (0.05 sec)
```

```
4 rows in set (0.00 sec)
```

```
mysql> insert into TRAIN values('x1x1x1x1x5','Goa Express2','08:00:00','11:00:00','Yes','2018-10-22');
Query OK, 1 row affected (0.04 sec)
```

insert into TRAIN values('x1x1x1x1x5','Goa Express2','08:00:00','11:00:00','Yes','2018-10-22');

```
mysql> insert into STATION values('127','Nampally2','17:00:00','x1x1x1x1x5','Goa','Hyderabad');
Query OK, 1 row affected (0.05 sec)
```

insert into STATION values('127','Nampally2','17:00:00','x1x1x1x1x5','Goa','Hyderabad');

```
mysql> insert into TICKET values('1222X126','15','RES','1','x1x1x1x1x5');
Query OK, 1 row affected (0.04 sec)
```

insert into TICKET values('1222X126','15','RES','1','x1x1x1x1x5');

```
mysql> insert into PASSENGER values('d21216','123-11117','17','M','15','RES','c12','harsha2','1222X126');
Query OK, 1 row affected (0.03 sec)
```

insert into PASSENGER values('d21216','123-11117','17','M','15','RES','c12','harsha2','1222X126');

```
mysql> insert into STARTS values('x1x1x1x1x5','127');  
Query OK, 1 row affected (0.04 sec)
```

```
insert into STARTS values('x1x1x1x1x5','127');
```

```
mysql> insert into STOPS_AT values('x1x1x1x1x5','122');  
Query OK, 1 row affected (0.04 sec)
```

```
insert into STOPS_AT values('x1x1x1x1x5','122');
```

```
mysql> insert into REACHES values('x1x1x1x1x5','122','07:00:00');  
Query OK, 1 row affected (0.03 sec)
```

```
insert into REACHES values('x1x1x1x1x5','122','07:00:00');
```

```
mysql> insert into BOOKS values('15','1222X126');  
Query OK, 1 row affected (0.04 sec)
```

```
insert into BOOKS values('15','1222X126');
```

```
insert into CANCEL values('15','1222X126','d21216');
```

```
mysql> insert into CANCEL values('15','1222X126','d21216');  
Query OK, 1 row affected (0.04 sec)
```

```
mysql> █
```

### 3.3 ALTER:

```
alter table STATION add source varchar(20);
```

```
mysql> alter table STATION add source varchar(20);
Query OK, 0 rows affected (0.88 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

alter table STATION change source sou\_ce varchar(20);

```
mysql> alter table STATION change source sou_ce varchar(20);
Query OK, 0 rows affected (0.09 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> 
```

### 3.4 DELETE

delete from CANCEL where user\_id='12';

delete from BOOKS where user\_id='12';

```
mysql> delete from CANCEL where user_id='12';
Query OK, 1 row affected (0.05 sec)

mysql> delete from BOOKS where user_id='12';
Query OK, 1 row affected (0.02 sec)

mysql> 
```

### 3.5 UPDATE

update BOOKS set user\_id='12',id='1222X123' where user\_id='15';

update CANCEL set user\_id='12',id='1222X123',passenger\_id='d21212' where user\_id='15';

```
mysql> update BOOKS set user_id='12',id='1222X123' where user_id='15';
Query OK, 1 row affected (0.05 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> update CANCEL set user_id='12',id='1222X123',passenger_id='d21212' where user_id='15';
Query OK, 1 row affected (0.04 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> 
```

### 3.6 SELECT....WHERE

select first\_name from user1 where adhar\_no='48108-1059';

select gender from user1 where adhar\_no='48108-1059' and last\_name='Gupta';

```
mysql> select first_name from user1 where adhar_no='48108-1059';
+-----+
| first_name |
+-----+
| Rahul      |
+-----+
1 row in set (0.00 sec)

mysql> select gender from user1 where adhar_no='48108-1059' and last_name='Gupta';
+-----+
| gender |
+-----+
| M      |
+-----+
1 row in set (0.00 sec)

mysql> 
```

### 3.7 ORDER BY:

select \* from user1 order by age desc;

select first\_name, user\_id, age from user1 order by user\_id, age desc;

```
Activities Terminal
Fri 5:01 AM
harsha@17b1t0267: ~

File Edit View Search Terminal Help
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| user_id | first_name | last_name | adhar_no | gender | age | mobile_no | email | city | state | pincode | password |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 11 | Rahul | Gupta | 48108-1059 | M | 18 | 8562065090 | rahulkunarg@gmail.com | Vellore | Tamil nadu | 632014 | kingshouse |
| 12 | Harsha | Battula | 48118-1058 | M | 17 | 7730804285 | harshabat@gmail.com | Vellore | Tamil nadu | 632014 | mylife |
| 13 | Anubhav | Gupta | 48118-1057 | M | 19 | 9441810831 | anubhav_gup@gmail.com | Hyderabad | Telangana | 500090 | nypassion |
| 14 | Rupal | Jain | 47115-1059 | F | 18 | 9441810887 | rupal_cat@gmail.com | Jaipur | Rajasthan | 3222201 | mydestiny |
| 15 | harsha1 | battula1 | 48108-2000 | M | 18 | 9959548866 | welcome@gmail.com | Vellore | Tamil Nadu | 632014 | mylife |
| 19 | Ritika | Singh | 45115-1859 | F | 18 | 8441810887 | ritika_yo@gmail.com | Patna | Bihar | 841223 | really?me? |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> select * from user1 order by age desc;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| user_id | first_name | last_name | adhar_no | gender | age | mobile_no | email | city | state | pincode | password |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 13 | Anubhav | Gupta | 48118-1057 | M | 19 | 9441810831 | anubhav_gup@gmail.com | Hyderabad | Telangana | 500090 | nypassion |
| 11 | Rahul | Gupta | 48108-1059 | M | 18 | 8562065090 | rahulkunarg@gmail.com | Vellore | Tamil nadu | 632014 | kingshouse |
| 14 | Rupal | Jain | 47115-1059 | F | 18 | 9441810887 | rupal_cat@gmail.com | Jaipur | Rajasthan | 3222201 | mydestiny |
| 15 | harsha1 | battula1 | 48108-2000 | M | 18 | 9959548866 | welcome@gmail.com | Vellore | Tamil Nadu | 632014 | mylife |
| 19 | Ritika | Singh | 45115-1859 | F | 18 | 8441810887 | ritika_yo@gmail.com | Patna | Bihar | 841223 | really?me? |
| 12 | Harsha | Battula | 48118-1058 | M | 17 | 7730804285 | harshabat@gmail.com | Vellore | Tamil nadu | 632014 | mylife |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> select first_name, user_id, age from user1 order by user_id, age desc;
+-----+-----+-----+
| first_name | user_id | age |
+-----+-----+-----+
| Rahul | 11 | 18 |
| Harsha | 12 | 17 |
| Anubhav | 13 | 19 |
| Rupal | 14 | 18 |
| harsha1 | 15 | 18 |
| Ritika | 19 | 18 |
+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> 
```

### 3.8 PATTERN MATCHING

select user\_id from user1 where adhar\_no like '%1059';

```
mysql> select user_id from user1 where adhar_no like '%1059';
+-----+
| user_id |
+-----+
|      11 |
|      14 |
+-----+
2 rows in set (0.00 sec)
```

select first\_name, last\_name from user1 where email like 'a%\_\_p%';

```
mysql> select first_name, last_name from user1 where email like 'a%__p%';
+-----+-----+
| first_name | last_name |
+-----+-----+
| Anubhav    | Gupta     |
+-----+-----+
1 row in set (0.00 sec)
```

### 3.9 AGGREGATE FUNCTIONS

select avg(age) from user1;

select count(user\_id), age from user1 group by age order by age desc;

```
mysql> select avg(age) from user1;
+-----+
| avg(age) |
+-----+
|  18.0000 |
+-----+
1 row in set (0.00 sec)

mysql> select count(user_id), age from user1 group by age order by age desc;
+-----+-----+
| count(user_id) | age |
+-----+-----+
|              1 |  19 |
|              4 |  18 |
|              1 |  17 |
+-----+-----+
3 rows in set (0.00 sec)

mysql> 
```

```
mysql> select max(age) from user1;
```

```
+-----+
```

```
| max(age) |
```

```
+-----+
```

```
|      19 |
```

```
+-----+
```

```
1 row in set (0.04 sec)
```

```
mysql> select min(age) from user1;
```

```
+-----+
```

```
| min(age) |
```

```
+-----+
```

```
|      17 |
```

```
+-----+
```

```
1 row in set (0.00 sec)
```

```
5 rows in set (0.00 sec)
```

```
mysql> select sum(fare) from TICKET where user_id>12;
```

```
+-----+
```

```
| sum(fare) |
```

```
+-----+
```

```
|      650 |
```

```
+-----+
```

```
1 row in set (0.00 sec)
```

### 3.10 DATE FUNCTION

```
select train_name, extract(day from date1) as on_date from TRAIN;
```

```
5 rows in set (0.00 sec)
```

```
mysql> select train_name, extract(day from date1) as on_date from TRAIN;
```

```
+-----+
```

```
| train_name      | on_date |
```

```
+-----+
```

```
| Goa Express     |      22 |
```

```
| Hyderabad Deccan |      23 |
```

```
| PJV Express     |      23 |
```

```
| Sanghamitra Express |      26 |
```

```
| Goa Express2    |      22 |
```

```
+-----+
```

```
5 rows in set (0.00 sec)
```



SELECT curdate() as today\_date

```
mysql> SELECT curdate() as today_date;
+-----+
| today_date |
+-----+
| 2018-10-30 |
+-----+
1 row in set (0.00 sec)
```

select now();

```
mysql> select now();
+-----+
| now() |
+-----+
| 2018-10-30 12:45:50 |
+-----+
1 row in set (0.00 sec)
```

select datediff('2018-10-23','2018-10-20');

```
+-----+
| datediff('2018-10-23','2018-10-20') |
+-----+
| 3 |
+-----+
1 row in set (0.00 sec)
```

select date\_format(now(),'%d %b %y');

```
mysql> select date_format(now(),'%d %b %y');
+-----+
| date_format(now(),'%d %b %y') |
+-----+
| 30 Oct 18 |
+-----+
1 row in set (0.05 sec)
```

### 3.11 NUMERIC FUNCTION

select abs(age) as approx\_age from PASSENGER where user\_id between 12 and 14;

```
mysql> select abs(age) as approx_age from PASSENGER where user_id between 12 and 14;
+-----+
| approx_age |
+-----+
|          17 |
|          19 |
|          18 |
+-----+
3 rows in set (0.00 sec)
```

select sqrt(sum(fare)) as SQRT\_SUM from TICKET;

select ceil(sqrt(sum(fare))) as ROUND\_SQRT\_SUM from TICKET;

```
mysql> select sqrt(sum(fare)) as SQRT_SUM from TICKET;
+-----+
| SQRT_SUM          |
+-----+
| 29.154759474226502 |
+-----+
1 row in set (0.00 sec)

mysql> select ceil(sqrt(sum(fare))) as ROUND_SQRT_SUM from TICKET;
+-----+
| ROUND_SQRT_SUM    |
+-----+
|                  30 |
+-----+
1 row in set (0.00 sec)
```

### 3.12 STRING FUNCTION

select concat(first\_name,last\_name) c as name from user1 where length(first\_name)>10;

```
mysql> select concat(first_name,last_name) as name from user1;
+-----+
| name |
+-----+
| RahulGupta |
| HarshaBattula |
| AnubhavGupta |
| RupalJain |
| harshaibattula1 |
| RitikaSingh |
+-----+
6 rows in set (0.00 sec)
```

select char\_length(first\_name) from user1;

```
mysql> select char_length(first_name) from user1;
+-----+
| char_length(first_name) |
+-----+
| 5 |
| 6 |
| 7 |
| 5 |
| 7 |
| 6 |
+-----+
6 rows in set (0.34 sec)
```

select find\_in\_set('a',first\_name) from user1 where user\_id=11;

```
mysql> select find_in_set('a',first_name) from user1 where user_id=11;
+-----+
| find_in_set('a',first_name) |
+-----+
| 0 |
+-----+
1 row in set (0.00 sec)

mysql> 
```

select left(first\_name,5) from user1 where user\_id=11;

```
mysql> select left(first_name,5) from user1 where user_id=11;
+-----+
| left(first_name,5) |
+-----+
| Rahul              |
+-----+
1 row in set (0.07 sec)

mysql> 
```

select lower(first\_name) from user1;

```
mysql> select lower(first_name) from user1;
+-----+
| lower(first_name) |
+-----+
| rahul             |
| harsha            |
| anubhav           |
| rupal             |
| harsha1           |
| ritika            |
+-----+
```

3.13

GROUP BY....HAVING

select count(user\_id),age from user1 group by age having count(user\_id)>1;

```
mysql> select count(user_id),age from user1 group by age having count(user_id)>1;
+-----+-----+
| count(user_id) | age |
+-----+-----+
| 4              | 18  |
+-----+-----+
1 row in set (0.00 sec)

mysql> 
```

3.14 JOIN

select PASSENGER.pnr\_no,user1.first\_name from PASSENGER inner join user1 on PASSENGER.user\_id = user1.user\_id where user1.gender = 'M' and user1.age> 18;

```
mysql> select PASSENGER.pnr_no,user1.first_name from PASSENGER inner join user1 on PASSENGER.user_id = user1.user_id where user1.gender = 'M' and user1.age > 18;
+-----+
| pnr_no | first_name |
+-----+
| 123-11112 | Anubhav |
+-----+
1 row in set (0.00 sec)
```

select user1.adhar\_no,user1.mobile\_no from user1 left outer join TICKET on user1.user\_id = TICKET.user\_id where TICKET.status='NORES';

```
mysql> select user1.adhar_no,user1.mobile_no from user1 left outer join TICKET on user1.user_id = TICKET.user_id where TICKET.status='NORES';
+-----+
| adhar_no | mobile_no |
+-----+
| 48118-1057 | 9441810831 |
+-----+
1 row in set (0.00 sec)
```

3.15 SUBQUERY:

## 4.CHAPTER 4: QUERY OPTIMIZATION

4.1 QUERY TREE-1

4.2 QUERY TREE-2

## CHAPTER 5: PROCEDURAL QUERIES

5.1 PL/SQL FUNCTION

GET THE TRAIN\_NO ,TIME IN HOURS AND MINUTES USING FUNCTION

```
Administrator: Start Database - sqlplus
SQL> set serveroutput on;
SQL> declare
  2   n number(10);
  3   train_name varchar(15);
  4   pd train24%rowtype;
  5   begin
  6     n:=&n;
  7     select * into pd from train24 where trainno=n;
  8     dbms_output.put_line(pd.arrival_time);
  9   end;
 10 /
Enter value for n: 2345
old 6:      n:=&n;
new 6:      n:=2345;
3:24

PL/SQL procedure successfully completed.
SQL>
```

```
Administrator: Start Database - sqlplus
SQL> set serveroutput on;
SQL> declare
  2   n number(10);
  3   train_name varchar(15);
  4   pd train24%rowtype;
  5   begin
  6     n:=&n;
  7     select * into pd from train24 where trainno=n;
  8     dbms_output.put_line(pd.arrival_time);
  9   end;
 10 /
Enter value for n: 2345
old 6:      n:=&n;
new 6:      n:=2345;
3:24

PL/SQL procedure successfully completed.
SQL> /
Enter value for n: 4537
old 6:      n:=&n;
new 6:      n:=4537;
12:23

PL/SQL procedure successfully completed.
SQL>
```

GET THE TICKET\_ID AND RETURN THE TOTAL TICKET\_FARE;

```
Administrator: Start Database - sqlplus
SQL> declare
2   ticket_id number(4);
3   pd ticket3%rowtype;
4   begin
5   ticket_id:= '&ticket_id';
6   select * into pd from ticket3 where ticket_id=2005;
7   dbms_output.put_line(pd.ticket_fare);
8   end;
9   /
Enter value for ticket_id: 2005
old 5:   ticket_id:= '&ticket_id';
new 5:   ticket_id:= '2005';
879

PL/SQL procedure successfully completed.

SQL>
```

## 5.2 PL/SQL PROCEDURE

Display name ,password where user\_id =100 using pl/sql

```
Select Administration: Start Database - sqlplus

SQL> update train24 set trainno=2346 where trainno=2345;
update train24 set trainno=2346 where trainno=2345
*
ERROR at line 1:
ORA-02292: integrity constraint (SYSTEM.SYS_C007866) violated - child record
found

SQL> set serveroutput on;
SQL> declare
2   v_name varchar(15);
3   v_password varchar(15);
4   begin
5   select name,password
6   into v_name,v_password
7   from user1
8   where user_id=100;
9   dbms_output.put_line(v_name);
10  dbms_output.put_line(v_password);
11  end;
12  /
rahul
my way

PL/SQL procedure successfully completed.

SQL> _
```

## 5.3 TRIGGERS

When a passenger cancels a ticket, do the necessary process and update the cancellation history table.

```
SQL> CREATE OR REPLACE TRIGGER TRG1
2  AFTER DELETE ON TICKET
3  FOR EACH ROW
4  BEGIN
5  INSERT INTO CANCEL_HIS
6  SELECT * FROM DELETED
7  END TRG1;
8  /

Trigger created.
```

UPDATE PASSENGER\_DETAIL SET RES\_ST='WAITING' WHERE PNR\_NO IN (2434,2123);

When a passenger record is inserted reservation status should be automatically updated.



```
SQL>
SQL> CREATE OR REPLACE TRIGGER TRG3
  2  AFTER INSERT ON PASSENGER_DETAIL
  3  FOR EACH ROW
  4  BEGIN
  5  UPDATE PASSENGER_DETAIL SET RES_ST=:NEW.RES_ST WHERE
  6  RES_ST=:OLD.RES_ST;
  7  END TRG3;
  8  /

Trigger created.
```

```
INSERT INTO PASSENGER(PNRNUM,SR_NUM,NAME,AGE) VALUES('2434','100','rahul',18);
```