Exercise 2

Name: Siddhi Singh

Registration no :17BIT0028

WEEK 4

1. Find the passengers whose date of journey is one month from today.

select * from ticket where DOJ=to_date((select add_months(sysdate,1) from dual));

```
SQL> select * from ticket where DOJ=to_date((select add_months(sysdate,1) from d
ual));

     PNRNO TRANSACTIONID FROM_STATION    TO_STAION       DOJ       CL DOB
---------- ------------- --------------- --------------- --------- -- ---------
TOTAL_TICKET_FARE TRAIN_NUMBER
----------------- -------------
     30008          5610 Chennai         Mumbai          13-OCT-17 3A 12-MAY-17
             1742         11121
```

2. Print the train names in upper case.

Select upper(name) from trains;

```
SQL> select upper(name) from trains;

UPPER(NAME)
--------------------
SANGHAMITRA
DURONTO_EXP
JIARATH EXP
TURBO
RAJDHANI
CHENNAI EXP
CHENNAI_SUPER EXP
SUNDAY EXP
NEW EXPRESS

9 rows selected.

SQL>
```

3. Print the passenger names with left padding character.

Select lpad(name,20,'_') from trains;

```
SQL> select lpad(name,20,'_') from trains;

LPAD(NAME,20,'_')
--------------------
_________Sanghamitra
_________Duronto_Exp
_________Jiarath Exp
_______________Turbo
____________Rajdhani
_________Chennai Exp
___Chennai_Super Exp
_________SUNDAY Exp
_________New Express

9 rows selected.

SQL>
```

4.Print station code replacing ‘K’ with ‘M’.

Select station_code,name, translate(station_code,’K’,’M’) from train_route;

Left column shows the original value of the column and the rightmost column shows the value after using the translate.

```
SQL> select station_code,name,translate(station_code,'K','M') from train_route;

STA NAME       TRA
--- ---------- ---
NGP Nagpur     NGP
ODS Ongole     ODS
ARA ARA        ARA
Mak Mokama     Mak
KAO Kaola      MAO
KAT Katpadi    MAT
KAL Kalka      MAL

7 rows selected.

SQL>
```

5. Translate all the SL in class column (Train_fare) to CC and display.

select class, translate(class,'SL','CC') from train_ticket_fare;

```
SQL> select class, translate(class,'SL','CC') from train_ticket_fare;

CL TR
-- --
1A 1A
2A 2A
3A 3A
1A 1A
SL CC
SL CC
SL CC

7 rows selected.

SQL>
```

6. Display the fare details of all trains, if any value is ZERO, print as NULL value.

select pnrno,transactionid,doj, decode(total_ticket_fare,'0','NULL',total_ticket_fare) as Total_time from ticket;

```
SQL> select pnrno,transactionid,doj, decode(total_ticket_fare,'0','NULL',total_t
icket_fare) as Total_time from ticket;

     PNRNO TRANSACTIONID DOJ       TOTAL_TIME
---------- ------------- --------- ----------------------------------------
     30008          5610 13-OCT-17 1742
     30001          7001 05-AUG-17 4805
     30002          7002 13-DEC-17 NULL
     30003          7003 13-DEC-17 2600
     30004          7004 15-AUG-17 NULL
     30005          7005 16-AUG-17 NULL
     30006          8521 12-SEP-17 1564
     30007          8701 12-SEP-17 1564

8 rows selected.

SQL>
```

7. Display the pnrno and transaction id, if transaction id is null, print 'not generated'

select pnrno, decode(transactionid,NULL,'Not generated',transactionid) as transactionid from ticket;

```
SQL> select pnrno, decode(transactionid,NULL,'Not generated',transactionid) as t
ransactionid from ticket;

     PNRNO TRANSACTIONID
---------- ----------------------------------------
     30008 Not generated
     30001 7001
     30002 7002
     30003 7003
     30004 7004
     30005 Not generated
     30006 8521
     30007 8701

8 rows selected.
```

8. Print the date_of_jounrney in the format '27th November 2010'.

select (to_char(doj,'DDTH MONTH YYYY')) as date_of_journey from ticket;

```
SQL> select (to_char(doj,'DDTH MONTH YYYY')) as date_of_journey from ticket;

DATE_OF_JOURNEY
--------------------
13TH OCTOBER   2017
05TH AUGUST    2017
13TH DECEMBER  2017
13TH DECEMBER  2017
15TH AUGUST    2017
16TH AUGUST    2017
12TH SEPTEMBER 2017
12TH SEPTEMBER 2017

8 rows selected.
```

9. Find the maximum fare (total fare).

select max(total_ticket_fare) from ticket;

```
SQL> select max(total_ticket_fare) from ticket;

MAX(TOTAL_TICKET_FARE)
----------------------
                  4805
```

10. Find the average age of passengers in one ticket.

select avg(age) from passenger_details where pnrno=30004;

```
SQL> select avg(age) from passenger_details where pnrno=30004;

  AVG(AGE)
----------
     20.25
```

11. Find the maximum length of station name available in the database.

SQL> select name from train_route where length(name)=(select max(length(name)) from train_route);

```
SQL> select name from train_route where length(name)=(select max(length(name)) f
rom train_route);

NAME
----------
Nagpur
Ongole
Mokama
```

12. Print the fare amount of the passengers as rounded value.

SQL> select pnrno,round(total_ticket_fare) from ticket;

```
SQL> select pnrno,round(total_ticket_fare) from ticket;

     PNRNO ROUND(TOTAL_TICKET_FARE)
---------- ------------------------
     30008                     1742
     30001                     4805
     30002                     3248
     30003                     2600
     30004                     1701
     30005                     2200
     30006                     1564
     30007                     1564

8 rows selected.
```

13. Add the column halt time to train route.

SQL> alter table train_route add (halt_time number(4,2));

```
SQL> alter table train_route
  2  add (halt_time number(4,2));

Table altered.
```

14. Update values to it from arrival time and depart time.

SQL> update train_route set halt_time= to_number(depart_time)-to_number(arrival_time);

```
SQL> select depart_time, arrival_time , halt_time from train_route;

DEPART_TIME ARRIVAL_TIME  HALT_TIME
----------- ------------ ----------
       20.4        20.25        .15
      18.25         18.2        .05
      12.18        12.15        .03
       13.2        13.12        .08
```

15.Update values to arrival time and depart time using conversion functions.

```
SQL> Update train_route set Arrival_time = '10-AUG-17,06:00:00 PM',Depart_time =
 '10-AUG-17,06:05:00 PM' where train_number=10001;

1 row updated.
```

16.Display the arrival time, depart time in the format HH:MI (24 hours and minutes).

Select to_char(arrival_time, 'HH:MM') from train_route;

```
SQL> Select TO_CHAR(arrival_time,'HH:MM') from train_route;

TO_CH
-----
05:08
10:08
```

WEEK 5

1. Find the train numbers for which reservation have not yet been made.

SQL> select train_number from trains

2. minus

3. select train_number from ticket;

```
SQL> select train_number from trains
  2  minus
  3  select train_number from ticket;

TRAIN_NUMBER
------------
       11114
       11115
       11123
       11124
```

2. Find the train names that do not have a first AC class coach.

```
SQL> select name from trains where train_number in (select train_number from tra
in_ticket_fare where class not like('%A%'));

NAME
--------------------
Sanghamitra
Duronto_Exp
Jiarath Exp
Turbo
Rajdhani
Chennai Exp
Chennai_Super Exp
SUNDAY Exp
New Express

9 rows selected.
```

3. Print all the PNR nos available in the database.

SQL> select distinct(pnrno) from passenger_details

2. union all

3. select distinct(pnrno) from ticket;

```
SQL> select distinct(pnrno) from passenger_details
  2  union all
  3  select distinct(pnrno) from ticket;

     PNRNO
----------
     10010
     30001
     30002
     30003
     30004
     30001
     30002
     30003
     30004
     30005
     30006

     PNRNO
----------
     30007
     30008

13 rows selected.
```

4. Find passenger names who have booked to 'Pune'.

SQL> select name from passenger_details, ticket where (passenger_details.pnrno=ticket.pnrno and ticket.to_station='Pune');

```
SQL> select name from passenger_details, ticket where (passenger_details.pnrno=t
icket.pnrno and ticket.to_station='Pune');

NAME
--------------------
Raj
```

USE NESTED QUERY

1. Find the train names that stop in 'Katpadi'.

SQL> select trains.name from trains, train_route where train_route.name='Katpadi' and train_route.train_no=trains.train_number;

```
SQL> select trains.name from trains, train_route where train_route.name='Katpadi
' and train_route.train_no=trains.train_number;

NAME
--------------------
Sanghamitra

SQL>
```

2. Find the train names that are superfast and the service tax is zero.

SQL> select name from trains

2 where train_number=(select train_no from train_ticket_fare where service_tax=0);

```
SQL> select name from trains
  2  where train_number=(select train_no from train_ticket_fare where service_ta
x=0);

NAME
--------------------
Sanghamitra

SQL>
```

3. Find the Passenger name who have booked for the train that starts from 'chennai'.

SQL> select name from passenger_details where pnrno in (select pnrno from ticket where from_station ='Chennai');

```
SQL> select name from passenger_details where pnrno in (select pnrno from ticket
 where from_station ='Chennai');

NAME
--------------------
Raj
```

4. Find the trains names that have all the AC coaches and the base fare is less than 3000 for each case.

```
SQL> select name from trains where train_number in (select train_number from tra
in_ticket_fare where class like '%A' and base_fare<3000);

NAME
--------------------
Sanghamitra
Duronto_Exp
Jiarath Exp
Turbo
Rajdhani
Chennai Exp
Chennai_Super Exp
SUNDAY Exp
New Express
```

USE JOIN QUERY

1. **Find the train names that stop in 'Chennai'.**

   Select name from trains join ticket on trains.train_number=ticket.train_number where ticket.to_station='Chennai';

```
SQL> select name from trains join ticket on trains.train_number=ticket.train_num
ber where ticket.to_station='Chennai';

NAME
--------------------
Rajdhani
```

2. **Find the train names that are superfast and the service tax is zero.**

   Select name from trains join train_ticket_fare on trains.traub_number = train_ticket_fare.train_no where train_ticket_fare.service_tax=0 and trains.type="Superfast";

```
SQL> select  name from trains join train_ticket_fare on trains.train_number=trai
n_ticket_fare.train_no where train_ticket_fare.service_tax=0 and trains.type='Su
perfast';

NAME
--------------------
Duronto_Exp
```

3. **Find the Passenger name (and train name) who have booed the train that starts from Chennai.**

Select name from passenger_details join ticket on passenger_details.pnrno=ticket.pnrno;

```
SQL> Select  name from passenger_details join ticket on passenger_details.pnrno=
ticket.pnrno;

NAME
--------------------
Rohan
Rohini
Anupriyam
Astha
Hrithik
Ghosh
Ishan
Niket
Varun
Krishna
Teja

11 rows selected.
```

4. Display the trains names , each type of class and the total fare for each type of class.

Select tr.name ,tr.class, fare.base_fare from trains tr, train_ticket_fare fare where tr.train_number= fare.train_number;

```
SQL> Select tr.name ,tr.class, fare.base_fare from trains tr, train_ticket_fare
fare where tr.train_number= fare.train_no;

NAME                 CLASS       BASE_FARE
-------------------- ---------- ----------
Sanghamitra          1A,2A,3A          1950
Sanghamitra          1A,2A,3A          2850
Sanghamitra          1A,2A,3A          4050
Duronto_Exp          1A,2A,3A,S        1650
```

5. Display all the train details and the ticket details(if booked any).

Select * from trains t, ticket ti where t.train_number = ti.Train_number;

```
SQL> Select * from trains t, ticket ti where t.train_number = ti.Train_number;

TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
------------ -------------------- --------------- --------------- ----------
REACH_TIME TRAVEL_TIME   DISTANCE CLASS      TYPE                 PNRNO
---------- ----------- ---------- ---------- --------------- ----------
TRANSACTIONID FROM_STATION    TO_STATION      DOJ       CL DOB
------------- --------------- --------------- --------- -- ---------
TOTAL_TICKET_FARE TRAIN_NUMBER
----------------- ------------
       11111 Sanghamitra          Bengaluru       Patna                10.3
      18.3          36       2456 1A,2A,3A   Superfast            30001
         7001 Bengaluru        Patna           05-AUG-17 1A 27-JUL-17
            4805        11111


TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
------------ -------------------- --------------- --------------- ----------
REACH_TIME TRAVEL_TIME   DISTANCE CLASS      TYPE                 PNRNO
---------- ----------- ---------- ---------- --------------- ----------
TRANSACTIONID FROM_STATION    TO_STATION      DOJ       CL DOB
------------- --------------- --------------- --------- -- ---------
TOTAL_TICKET_FARE TRAIN_NUMBER
----------------- ------------
       11112 Duronto_Exp          Kolkata         Patna                8.15
      14.3          6.15       564 1A,2A,3A,S  Superfast            30005
         7005 Kolkata          Patna           16-AUG-17 3A 08-AUG-17
            2200        11112


TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
------------ -------------------- --------------- --------------- ----------
REACH_TIME TRAVEL_TIME   DISTANCE CLASS      TYPE                 PNRNO
---------- ----------- ---------- ---------- --------------- ----------
TRANSACTIONID FROM_STATION    TO_STATION      DOJ       CL DOB
------------- --------------- --------------- --------- -- ---------
TOTAL_TICKET_FARE TRAIN_NUMBER
----------------- ------------
       11112 Duronto_Exp          Kolkata         Patna                8.15
      14.3          6.15       564 1A,2A,3A,S  Superfast            30004
         7004 Kolkata          Patna           15-AUG-17 2A 12-MAY-17
          1700.5        11112


TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
------------ -------------------- --------------- --------------- ----------
REACH_TIME TRAVEL_TIME   DISTANCE CLASS      TYPE                 PNRNO
---------- ----------- ---------- ---------- --------------- ----------
TRANSACTIONID FROM_STATION    TO_STATION      DOJ       CL DOB
------------- --------------- --------------- --------- -- ---------
TOTAL_TICKET_FARE TRAIN_NUMBER
----------------- ------------
       11116 Rajdhani             Delhi           Mumbai               12.3
      20.3             8        657 1A,2A,3A    Superfast            30003
         7003 Delhi            Mumbai          13-DEC-17 3A 26-APR-17
            2600        11116
```

```
TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
------------ -------------------- --------------- --------------- ----------
REACH_TIME TRAVEL_TIME   DISTANCE CLASS      TYPE                PNRNO
---------- ---------- ---------- ---------- --------------- ----------
TRANSACTIONID FROM_STATION    TO_STATION      DOJ       CL DOB
------------- --------------- --------------- --------- -- ---------
TOTAL_TICKET_FARE TRAIN_NUMBER
----------------- ------------
       11116 Rajdhani             Delhi           Mumbai              12.3
      20.3           8        657 1A,2A,3A    Superfast           30002
         7002 Delhi             Mumbai          13-DEC-17 2A 12-JUL-17
           3248.2        11116

TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
------------ -------------------- --------------- --------------- ----------
REACH_TIME TRAVEL_TIME   DISTANCE CLASS      TYPE                PNRNO
---------- ---------- ---------- ---------- --------------- ----------
TRANSACTIONID FROM_STATION    TO_STATION      DOJ       CL DOB
------------- --------------- --------------- --------- -- ---------
TOTAL_TICKET_FARE TRAIN_NUMBER
----------------- ------------
       11120 Chennai Exp                          Mumbai              12.3
      20.3           8        800 2A,3A       Express             30006
         8521 Chennai           Mumbai          12-SEP-17 3A 10-SEP-17
             1564        11120

TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
------------ -------------------- --------------- --------------- ----------
REACH_TIME TRAVEL_TIME   DISTANCE CLASS      TYPE                PNRNO
---------- ---------- ---------- ---------- --------------- ----------
TRANSACTIONID FROM_STATION    TO_STATION      DOJ       CL DOB
------------- --------------- --------------- --------- -- ---------
TOTAL_TICKET_FARE TRAIN_NUMBER
----------------- ------------
       11121 Chennai_Super Exp    Chennai         Mumbai              12.3
      20.3           8        800 2A,3A       Express             30007
         8701 Chennai           Mumbai          12-SEP-17 3A 10-SEP-17
             1564        11121

TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
------------ -------------------- --------------- --------------- ----------
REACH_TIME TRAVEL_TIME   DISTANCE CLASS      TYPE                PNRNO
---------- ---------- ---------- ---------- --------------- ----------
TRANSACTIONID FROM_STATION    TO_STATION      DOJ       CL DOB
------------- --------------- --------------- --------- -- ---------
TOTAL_TICKET_FARE TRAIN_NUMBER
----------------- ------------
       11121 Chennai_Super Exp    Chennai         Mumbai              12.3
      20.3           8        800 2A,3A       Express             30008
         5610 Chennai           Mumbai          13-OCT-17 3A 12-MAY-17
             1742        11121

8 rows selected.
```

6. Create a sequence to provide values for the PNR no.

Select t.pnrno, p.pnrno from trains t, passenger_details p where t.pnrno=p.pnrno;

```
SQL> SELECT T.PNRNo,P.PNRNo FROM PASSENGER_DETAILS P,TICKET T WHERE T.PNRNo=P.P
RNo;

     PNRNO      PNRNO
---------- ----------
1203456789 1203456789
2346457520 2346457520
2567032471 2567032471
4647577549 4647577549
6783452234 6783452234
8389034127 8389034127

6 rows selected.
```

7.Write a query for all full outer join using any of the tables above

Select * from trains t, ticket ti where t.train_number= ti.train_number;

```
SQL> Select to_station, count(*) as num from ticket GROUP BY to_station havin
ount(*)=(select max(num) from (select to_station ,count(*) as num from  ticke
roup by to_station));

TO_STATION           NUM
-------------- ----------
Mumbai                  5

SQL> Select * from trains t, ticket ti where t.train_number= ti.train_number;

TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
------------ -------------------- --------------- --------------- ----------
REACH_TIME TRAVEL_TIME   DISTANCE CLASS      TYPE                PNRNO
---------- ----------- ---------- ---------- ---------------- ----------
TRANSACTIONID FROM_STATION    TO_STATION      DOJ        CL DOB
------------- --------------- --------------- --------- -- ---------
TOTAL_TICKET_FARE TRAIN_NUMBER
----------------- ------------
       11111 Sanghamitra          Bengaluru       Patna                10.3
      18.3           36       2456 1A,2A,3A   Superfast           30001
         7001 Bengaluru          Patna           05-AUG-17 1A 27-JUL-17
              4805         11111


TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
------------ -------------------- --------------- --------------- ----------
REACH_TIME TRAVEL_TIME   DISTANCE CLASS      TYPE                PNRNO
---------- ----------- ---------- ---------- ---------------- ----------
TRANSACTIONID FROM_STATION    TO_STATION      DOJ        CL DOB
------------- --------------- --------------- --------- -- ---------
TOTAL_TICKET_FARE TRAIN_NUMBER
----------------- ------------
       11112 Duronto_Exp          Kolkata         Patna                8.15
      14.3          6.15        564 1A,2A,3A,S  Superfast           30005
         7005 Kolkata            Patna           16-AUG-17 3A 08-AUG-17
              2200         11112
```

```
TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
REACH_TIME TRAVEL_TIME   DISTANCE CLASS       TYPE                PNRNO
TRANSACTIONID FROM_STATION    TO_STATION      DOJ        CL DOB
TOTAL_TICKET_FARE TRAIN_NUMBER
------------ -------------------- --------------- --------------- ----------
---------- ---------- ---------- ---------- ---------------- ----------
------------ --------------- --------------- --------- -- ---------
---------------- ------------

       11112 Duronto_Exp          Kolkata         Patna                8.15
      14.3          6.15         564 1A,2A,3A,S  Superfast            30004
        7004 Kolkata              Patna            15-AUG-17 2A 12-MAY-17
          1700.5          11112

TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
REACH_TIME TRAVEL_TIME   DISTANCE CLASS       TYPE                PNRNO
TRANSACTIONID FROM_STATION    TO_STATION      DOJ        CL DOB
TOTAL_TICKET_FARE TRAIN_NUMBER
------------ -------------------- --------------- --------------- ----------
---------- ---------- ---------- ---------- ---------------- ----------
------------ --------------- --------------- --------- -- ---------
---------------- ------------

       11116 Rajdhani             Delhi           Mumbai               12.3
      20.3             8         657 1A,2A,3A    Superfast            30003
        7003 Delhi                Mumbai           13-DEC-17 3A 26-APR-17
            2600          11116

TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
REACH_TIME TRAVEL_TIME   DISTANCE CLASS       TYPE                PNRNO
TRANSACTIONID FROM_STATION    TO_STATION      DOJ        CL DOB
TOTAL_TICKET_FARE TRAIN_NUMBER
------------ -------------------- --------------- --------------- ----------
---------- ---------- ---------- ---------- ---------------- ----------
------------ --------------- --------------- --------- -- ---------
---------------- ------------

       11116 Rajdhani             Delhi           Mumbai               12.3
      20.3             8         657 1A,2A,3A    Superfast            30002
        7002 Delhi                Mumbai           13-DEC-17 2A 12-JUL-17
          3248.2          11116

TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
REACH_TIME TRAVEL_TIME   DISTANCE CLASS       TYPE                PNRNO
TRANSACTIONID FROM_STATION    TO_STATION      DOJ        CL DOB
TOTAL_TICKET_FARE TRAIN_NUMBER
------------ -------------------- --------------- --------------- ----------
---------- ---------- ---------- ---------- ---------------- ----------
------------ --------------- --------------- --------- -- ---------
---------------- ------------

       11120 Chennai Exp                          Mumbai               12.3
      20.3             8         800 2A,3A       Express              30006
        8521 Chennai              Mumbai           12-SEP-17 3A 10-SEP-17
            1564          11120

TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
REACH_TIME TRAVEL_TIME   DISTANCE CLASS       TYPE                PNRNO
TRANSACTIONID FROM_STATION    TO_STATION      DOJ        CL DOB
TOTAL_TICKET_FARE TRAIN_NUMBER
------------ -------------------- --------------- --------------- ----------
---------- ---------- ---------- ---------- ---------------- ----------
------------ --------------- --------------- --------- -- ---------
---------------- ------------

       11121 Chennai_Super Exp    Chennai         Mumbai               12.3
      20.3             8         800 2A,3A       Express              30007
        8701 Chennai              Mumbai           12-SEP-17 3A 10-SEP-17
            1564          11121

TRAIN_NUMBER NAME                 SOURCE          DESTINATION     START_TIME
REACH_TIME TRAVEL_TIME   DISTANCE CLASS       TYPE                PNRNO
TRANSACTIONID FROM_STATION    TO_STATION      DOJ        CL DOB
TOTAL_TICKET_FARE TRAIN_NUMBER
------------ -------------------- --------------- --------------- ----------
---------- ---------- ---------- ---------- ---------------- ----------
------------ --------------- --------------- --------- -- ---------
---------------- ------------

       11121 Chennai_Super Exp    Chennai         Mumbai               12.3
      20.3             8         800 2A,3A       Express              30008
        5610 Chennai              Mumbai           13-OCT-17 3A 12-MAY-17
            1742          11121


8 rows selected.
```

WEEK 6

Use co-related Query

1. **Find the train names for which ten ticket have been reserved.**

Select name from trains were train_number in (select train_number from trains intersect select train_number from train where train_number in (select pnrno from ticket group by pnrno having count(*) >10);

```
SQL> SELECT Name FROM TRAIN WHERE Train_Number IN(SELECT Train_Number FROM TRAIN
 INTERSECT SELECT Train_Number FROM TRAIN WHERE Train_Number IN(SELECT PNRNo FRO
M TICKET GROUP BY PNRNo HAVING count(*)>10));

no rows selected
```

2. **Find the trains that have mote the ten substations.**

Select name from train t where train_number in (select train_number from ticket ti where t.train_number= ti.train_number and ti.sub_station>10);

```
SQL> SELECT Name FROM TRAIN T WHERE Train_Number IN(SELECT Train_Number FROM TIC
KET Q WHERE T.Train_Number=Q.Train_Number AND Q.sub_station>10);

NAME
--------------------
Lalbagh
Double Decker
Brindavan
BGKT MQ
```

3. **Find the passengers who do not pass through 'Mettupalam'.**

Select name from passenger_detatils p where pnrno in(select pnrno from ticket t where exists (select 1 from train_route r where t.train_number=r.train_number and q.route_no in ('1','4')));

```
SQL> SELECT Name FROM PASSENGER_DETAILS P WHERE PNRNo IN(SELECT PNRNo FROM TICKE
T T WHERE EXISTS(SELECT 1 FROM TRAIN_ROUTE Q WHERE T.Train_Number=Q.Train_Number
 AND Q.Routeno IN('1','4')));

NAME
--------------------
Shivan
Armaan
```

4. **Find passenger who have booked for super fast trains.**

Select name from passenger_details where pnrno in (select pnrno from passenger_details intersect select pnron from ticket where train_number in(select train_number from ticket intersect select train_number from train_ticket_fare where superfast_charge is NOT NULL));

```
SQL> SELECT Name FROM PASSENGER_DETAILS WHERE PNRNo IN(SELECT PNRNo FROM PASSENG
ER_DETAILS INTERSECT SELECT PNRNo FROM TICKET WHERE Train_Number IN(SELECT Train
_Nunber FROM TICKET INTERSECT SELECT Train_Number FROM TRAIN_TICKET_FARE WHERE S
uperfast_Charge IS NOT NULL));

NAME
--------------------
Ayan
Nidhi
Armaan
Rohan
Shivan
```

Complex queries

1. **Take the start station code and end station code and display the train details.**

Select t.train_number, t.name, q.from_station,q.in_station from train t left outer join ticket q on t.train_number=q.train_number;

```
SQL> Select t.train_number, t.name, q.from_station,q.to_station from trains t le
ft outer join ticket q on t.train_number=q.train_number;

TRAIN_NUMBER NAME                 FROM_STATION    TO_STATION
------------ -------------------- --------------- ---------------
       11121 Chennai_Super Exp    Chennai         Mumbai
       11111 Sanghamitra          Bengaluru       Patna
       11116 Rajdhani             Delhi           Mumbai
       11116 Rajdhani             Delhi           Mumbai
       11112 Duronto_Exp          Kolkata         Patna
       11112 Duronto_Exp          Kolkata         Patna
       11120 Chennai Exp          Chennai         Mumbai
       11121 Chennai_Super Exp    Chennai         Mumbai
       11124 New Express
       11115 Turbo
       11114 Jiarath Exp
```

2. **List the train names and the number of sub stations it has..**

Select t.name , q.sub_station from trains t left outer join train_route q on t.train_number=q.train_no;

```
SQL> Select t.name , q.station_code from trains t left outer join train_route q
on t.train_number=q.train_no;

NAME                 STA
-------------------- ---
Sanghamitra          NGP
Sanghamitra          ODS
Duronto_Exp          ARA
Duronto_Exp          Mak
```

3. **List the stations where all types of trains stop.**

Select distinct (q.to_station) from train t right outer join ticket q on t.train_number=q.train_number;

```
SQL> Select distinct (q.to_station) from trains t right outer join ticket q on t
.train_number=q.train_number;

TO_STATION
---------------
Patna
Mumbai
```

4. **List the train names hat has atleast four bookings.**

Select t.name from trains t where t.train_number in (select train_number from ticket q where q.pnrno in(select pnrno from passenger_details p where p.reservation_status='CNF'));

```
SQL> Select t.name from trains t where t.train_number
  2  in (select train_number  from ticket q where
  3  q.pnrno in(select pnrno from passenger_details p
  4  where p.reservation_status='CNF'));

NAME
--------------------
Sanghamitra
Rajdhani
```

5. **Create a table cancellation history(inset values from ticket and passenger table).**

Create table cancellation_history(
DOC date,pnrno number(5));

```
SQL> Create table cancellation_history(
  2  DOC date,pnrno number(5));

Table created.
```

6. **Create a table for all the train numbers and class available in train_ticket_fare total seats.**

```
SQL> SELECT Name FROM PASSENGER_DETAILS WHERE PNRNo IN(SELECT PNRNo FROM PASSENG
ER_DETAILS INTERSECT SELECT PNRNo FROM TICKET WHERE Train_Number IN(SELECT Train
_Number FROM TICKET INTERSECT SELECT Train_Number FROM TRAIN_TICKET_FARE WHERE S
uperfast_Charge IS NOT NULL));

NAME
--------------------
Ayan
Nidhi
Armaan
Rohan
Shivan
```

7. **Find the station name that has the largest number of trains stopping at.**

Select to_station, count(*) as num from ticket GROUP BY to station having count(*)=(select max(num) from (select to_station ,count(*) as num from ticket group by to_station));

Railway Reservation System - (Redesigning IRCTC database)
Train (train Number, name, source, destination,start_time, reach_time, traveltime, distance, class, days, type)
Ticket (PNRNo,Transactionid, from_station, To_station, date_of_journey, class date_of_booking, total_ticket_fare,train number)
Passenger (PNR No, Serial no, Name, Age, Reservation_status)
Train_Route (Train_No, route_no, station_code, name, arrival_time, depart_time, distance,day) Train_Ticket_fare (Train_No, class, base_fare, reservation_charge, superfast_charge, other_charge,

tatkal_charge, service_tax)

WEEK-6

Write Queries to.

Use Correlated (and nested) Query

1. Find the train names for which ten tickets have been reserved.

2. Find the trains that have more than ten substations.

```
SQL> select train.name from train inner join ticket on ticket.train_number1=train.train_number group by train.name having count(ticket.train_number1)>1;

NAME
--------------------
GT
MyssExp

SQL>
```

```
SQL> select train.name,train.train_number from train inner join train_route ON train.train_number=train_route.train_number2 group by tr
in_route.train_number2)>1;

NAME                 TRAIN_NUMBER
-------------------- ------------
Awadh                       12203
GT                          12201

SQL>
```

3. Find the passengers who do not pass through 'Mettupalam'.

```
SQL> select passenger.name name,passenger.age age from train_route,ticket,passenger where passenger.pnrno1=ticket.pnr_no and ticket.train_number1=train_route.train_num
in_route.name!='Mettupalam';

NAME                      AGE
-------------------- ----------
ashish                    20
ashish                    20
ashish                    20
adarsh                    30
adarsh                    30
bhawin                    61
akash                     25
shashwat                  65

8 rows selected.

SQL>
```

4. Find passengers who have booked for super fast trains.

```
SQL> select passenger.name,passenger.age,train.type from train inner join ticket on ticket.train_number1=train.train_number inner join passenger on passenger.pnrno1=ti
where(type='Superfast');

NAME                      AGE TYPE
------------------- --------- --------------------
adarsh                     30 Superfast
bhawin                     61 Superfast

SQL>
```

Complex queries (use groupby/groupby having/join/nested)

1. Take the start station code and end station code and display the train details.

```
SQL> select * from train,ticket where train.train_number=ticket.train_number1 and ticket.from_station='Chennai' and to_station='Lucknow';

no rows selected

SQL> select * from train,ticket where train.train_number=ticket.train_number1 and ticket.from_station='Kolkata' and to_station='Pune';

TRAIN_NUMBER NAME                 SOURCE              DESTINATION
------------ -------------------- ------------------- -------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
--------------------------------------------------------------------------------
REACH_TIME
--------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO   TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS               TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
       12203 Awadh               Kolkata             Pune

TRAIN_NUMBER NAME                 SOURCE              DESTINATION
------------ -------------------- ------------------- -------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
--------------------------------------------------------------------------------
REACH_TIME
--------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO   TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS               TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
      2200 Superfast
```

```
TRAIN_NUMBER NAME                 SOURCE               DESTINATION
------------ -------------------- -------------------- --------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
-------------------------------------------------------------------------------
REACH_TIME
-------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO   TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS                TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
10-OCT-17 09.10.00.000000 AM

TRAIN_NUMBER NAME                 SOURCE               DESTINATION
------------ -------------------- -------------------- --------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
-------------------------------------------------------------------------------
REACH_TIME
-------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO   TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS                TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
11-OCT-17 09.10.00.000000 AM

TRAIN_NUMBER NAME                 SOURCE               DESTINATION
------------ -------------------- -------------------- --------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
-------------------------------------------------------------------------------
REACH_TIME
-------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO   TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS                TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
```

```
D_O_J     D_O_BOOKI
--------- ---------
24hrs                   711092     115209 Kolkata

TRAIN_NUMBER NAME                 SOURCE              DESTINATION
------------ -------------------- ------------------- -------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
-------------------------------------------------------------------------------
REACH_TIME
-------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO    TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS               TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
Pune                 3A                                2500         12203

TRAIN_NUMBER NAME                 SOURCE              DESTINATION
------------ -------------------- ------------------- -------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
-------------------------------------------------------------------------------
REACH_TIME
-------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO    TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS               TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
10-OCT-17 10-JUL-17

TRAIN_NUMBER NAME                 SOURCE              DESTINATION
------------ -------------------- ------------------- -------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
-------------------------------------------------------------------------------
REACH_TIME
-------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO    TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
```

```
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS                TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------


TRAIN_NUMBER NAME                 SOURCE               DESTINATION
------------ -------------------- -------------------- --------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
--------------------------------------------------------------------------------
REACH_TIME
--------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO   TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS                TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
       12202 MyssExp              Mumbai               Myssore

TRAIN_NUMBER NAME                 SOURCE               DESTINATION
------------ -------------------- -------------------- --------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
--------------------------------------------------------------------------------
REACH_TIME
--------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO   TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS                TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
      1500 Expr

TRAIN_NUMBER NAME                 SOURCE               DESTINATION
------------ -------------------- -------------------- --------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
--------------------------------------------------------------------------------
REACH_TIME
```

```
--------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO   TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS                TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
12-AUG-17 08.05.00.000000 AM

TRAIN_NUMBER NAME                 SOURCE               DESTINATION
------------ -------------------- -------------------- --------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
--------------------------------------------------------------------------------
REACH_TIME
--------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO   TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS                TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
48hrs                243625     789586 Kolkata

TRAIN_NUMBER NAME                 SOURCE               DESTINATION
------------ -------------------- -------------------- --------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
--------------------------------------------------------------------------------
REACH_TIME
--------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO   TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS                TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
Pune                 3A                             2500         12202

TRAIN_NUMBER NAME                 SOURCE               DESTINATION
------------ -------------------- -------------------- --------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
```

```
TRAIN_NUMBER NAME                 SOURCE              DESTINATION
------------ -------------------- ------------------- -------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
--------------------------------------------------------------------------------
REACH_TIME
--------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO   TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS                TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------
10-OCT-17 10-AUG-17

TRAIN_NUMBER NAME                 SOURCE              DESTINATION
------------ -------------------- ------------------- -------------------
  DISTANCE TYPE
---------- --------------------
START_TIME
--------------------------------------------------------------------------------
REACH_TIME
--------------------------------------------------------------------------------
TRAVEL_TIME              PNR_NO   TRANS_ID FROM_STATION
-------------------- ---------- ---------- --------------------
TO_STATION           CLASS                TOTAL_TICKET_FARE TRAIN_NUMBER1
-------------------- -------------------- ----------------- -------------
D_O_J     D_O_BOOKI
--------- ---------


SQL>
```

2. List the train names and the number of sub stations it has.

3. List the stations where all types of trains stop.

4. List the train names that have at least four bookings.

```
SQL> select train.name,count(train_route.train_number2) from train inner join train_route on train_route.train_number2=train_number group by train.name,train.train_num
ount(train_route.train_number2)>=1;

NAME                 COUNT(TRAIN_ROUTE.TRAIN_NUMBER2)
-------------------- --------------------------------
Ltt                                                 1
Awadh                                               2
Rajdhani                                            1
MyssExp                                             1
GT                                                  3

SQL>
```

```
SQL> select train_route.name from train_route inner join train on train.train_number=train_route.train_number2 group by train_route.name having count(type)>=2;

NAME
--------------------
Lucknow
Rajdhani

SQL>
```

```
SQL> select train.name from train inner join ticket on ticket.train_number1=train.train_number group by train.name having count(train.train_number)>=3;

NAME
--------------------
GT
MyssExp

SQL>
```

5. Create a table cancellation history (Insert values from ticket and passenger table).

6. Create a table for all the train numbers and class available in train_ticket_fare with total seats.

```
SQL> create table cancellation_history as select ticket.train_number1,name,ticket.pnr_no,trans_id,d_o_j from ticket,passenger where ticket.pnr_no=passenger.pnrno1;

Table created.

SQL> select * from cancellation_history;

TRAIN_NUMBER1 NAME                 PNR_NO   TRANS_ID D_O_J
------------- -------------------- ---------- ---------- ---------
        12201 ashish               701091               13-SEP-17
        12203 adarsh               711092     115209 10-OCT-17
        12204 bhawin               710911     112561
        12205 akash                729110     116521 05-DEC-17
        12202 shashwat             711091     115225 10-AUG-17

SQL>
```

```
SQL> create table seats as select train_number3,class1 from train_ticket_fare;

Table created.
```

```
SQL> select *from seats order by train_number3;

TRAIN_NUMBER3 CLASS1
------------- --------------------
        12201 1A
        12202 2A
        12203 3A
        12204 SL
        12205 C

SQL>
```

7. Find the station name that has highest number of trains stopping at.

```
SQL> select name,count(name) from train_route group by name having count(name)=(select max(mycount) from (select name,count(name) mycount from train_route group by nam

NAME                 COUNT(NAME)
-------------------- -----------
Rajdhani                       2
Lucknow                        2

SQL>
```

WEEK-7

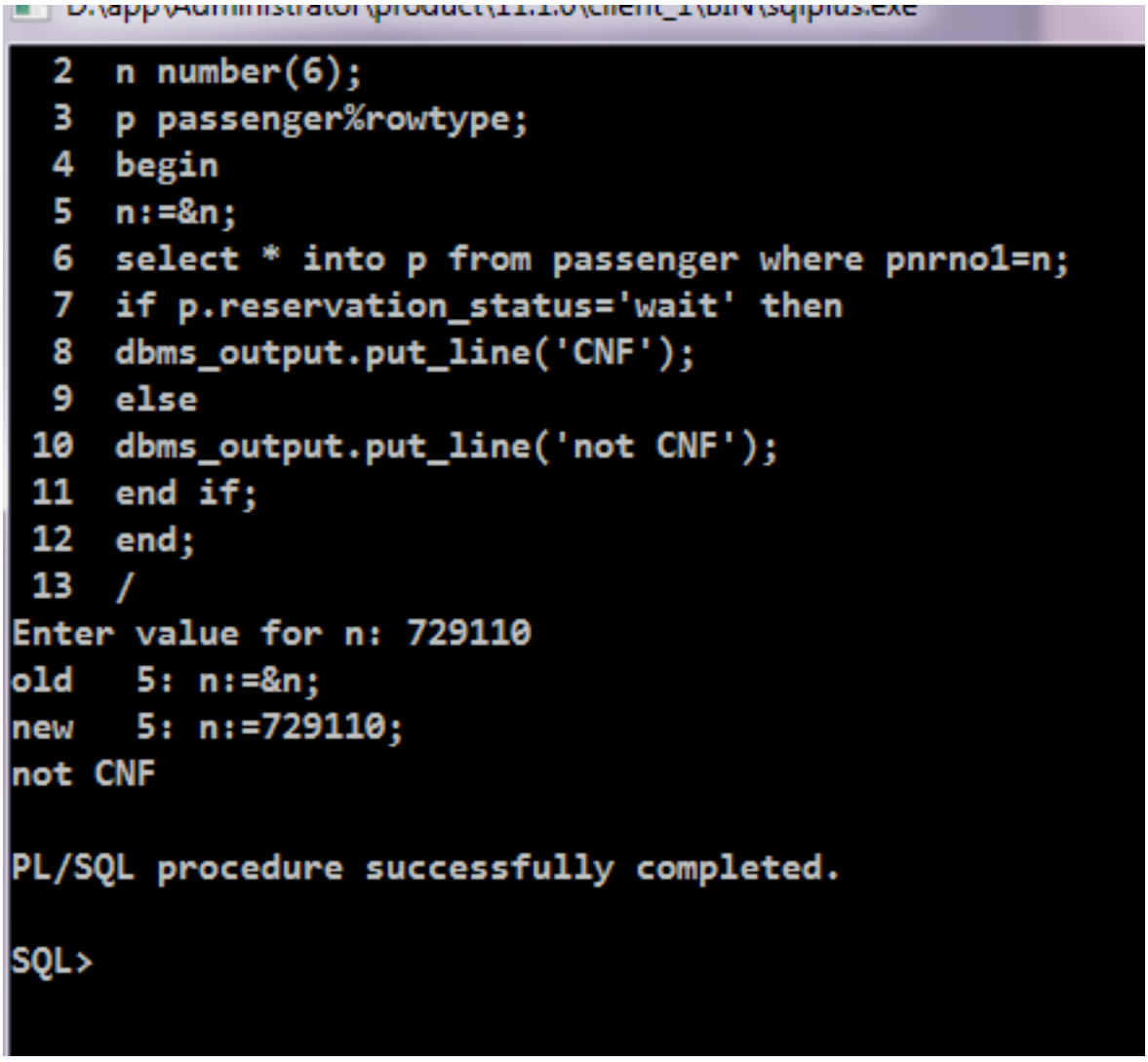
1. Write a simple PL/SQL block to. 1. Print the Fibonacci series.

```
SQL> DECLARE
  2  first number:=0;
  3  second number:=1;
  4  third number;
  5  n number:=&n;
  6  i number;
  7  begin
  8  dbms_output.put_line('Fibonacci series');
  9  dbms_output.put_line(first);
 10  dbms_output.put_line(second);
 11  for i in 2..n
 12  loop
 13  third:=first+second;
 14  first:=second;
 15  second:=third;
 16  dbms_output.put_line(third);
 17  end loop;
 18  end;
 19  /
Enter value for n: 4
old   5: n number:=&n;
new   5: n number:=4;
Fibonacci series
0
1
1
2
3

PL/SQL procedure successfully completed.

SQL>
```

2. Print the factorial of a given number.

```
SQL>  set serveroutput on;
SQL> declare
  2   n number;
  3  fac number:=1;
  4  i number;
  5  begin
  6  n:=&n;
  7  for i in 1..n
  8  loop
  9  fac:=fac*i;
 10  end loop;
 11  dbms_output.put_line('factorial='||fac);
 12  end;
 13  /
Enter value for n: 6
old   6: n:=&n;
new   6: n:=6;
factorial=720

PL/SQL procedure successfully completed.
```

3. Print 'NOT confirmed' based on the reservation status, of a particular passenger.



4. Print the total seats available for a particular train and for a particular class.

2. Write a cursor for the following.

1. Retrieve the passenger details for “x” train number and given journey date.

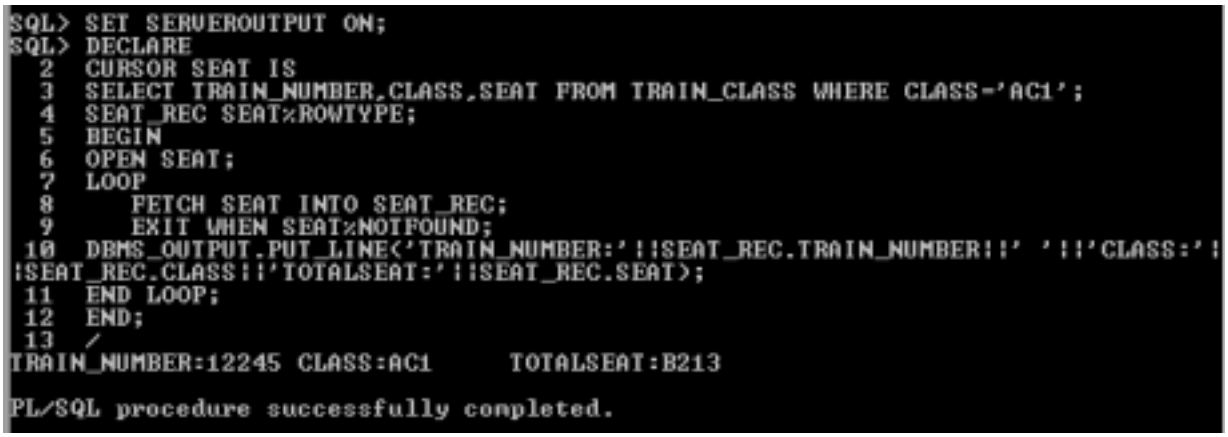
```
SQL> SET SERVEROUTPUT ON;
SQL> DECLARE
  2  TRAIN NUMBER;
  3  JDT DATE;
  4  CURSOR PAS_CUR IS
  5  SELECT NAME,AGE FROM PASSENGER WHERE PNRNO IN(SELECT PNRNO FROM TICKET WHER
E TRAIN_NUMBER='&TRAIN' AND DATE_OF_JOURNAY='&JDT');
  6  PAS_REC PAS_CUR%ROWTYPE;
  7  BEGIN
  8
  9  OPEN PAS_CUR;
 10  LOOP
 11     FETCH PAS_CUR INTO PAS_REC;
 12     EXIT WHEN PAS_CUR%NOTFOUND;
 13     DBMS_OUTPUT.PUT_LINE(PAS_REC.NAME||''||PAS_REC.AGE);
 14  END LOOP;
 15  END;
 16  /
Enter value for train: 12245
Enter value for jdt: 12-JUL-17
old   5: SELECT NAME,AGE FROM PASSENGER WHERE PNRNO IN(SELECT PNRNO FROM TICKET
WHERE TRAIN_NUMBER='&TRAIN' AND DATE_OF_JOURNAY='&JDT');
new   5: SELECT NAME,AGE FROM PASSENGER WHERE PNRNO IN(SELECT PNRNO FROM TICKET
WHERE TRAIN_NUMBER='12245' AND DATE_OF_JOURNAY='12-JUL-17');

PL/SQL procedure successfully completed.
```

2. Display the train name (once) and the substation names.

```
SQL> SET SERVEROUTPUT ON;
SQL> DECLARE
  2  SOURCE VARCHAR(10);
  3  DEST VARCHAR(10);
  4  CURSOR PAS_CUR IS
  5     SELECT PNRNO FROM TICKET WHERE FROM_STATION='&SOURCE'AND TO_STATION='DES
T';
  6  PAS_REC PAS_CUR%ROWTYPE;
  7  BEGIN
  8  OPEN PAS_CUR;
  9  LOOP
 10     FETCH PAS_CUR INTO PAS_REC;
 11     EXIT WHEN PAS_CUR%NOTFOUND;
 12     DBMS_OUTPUT.PUT_LINE(PAS_REC.PNRNO);
 13  END LOOP;
 14  CLOSE PAS_CUR;
 15  END;
 16  /
Enter value for source: MUGS
old   5:        SELECT PNRNO FROM TICKET WHERE FROM_STATION='&SOURCE'AND TO_STAT
ION='DEST';
new   5:        SELECT PNRNO FROM TICKET WHERE FROM_STATION='MUGS'AND TO_STATION
='DEST';

PL/SQL procedure successfully completed.
```

3. Display the fare details of a particular train (use basic exceptions)

4. Write a cursor to update the reservation status of the passengers (generate seat number, if seats have reached maximum, put waiting list number(30% of total seats), if waiting list number reaches maximum, put PQWL (10%of total seats), RAC-20%)


SQL> SET SERVEROUTPUT ON;
SQL> DECLARE
2 CURSOR SEAT IS
3 SELECT TRAIN_NUMBER,CLASS,SEAT FROM TRAIN_CLASS WHERE CLASS='AC1';
4 SEAT_REC SEAT%ROWTYPE;
5 BEGIN
6 OPEN SEAT;
7 LOOP
8 FETCH SEAT INTO SEAT_REC;
9 EXIT WHEN SEAT%NOTFOUND;
10 DBMS_OUTPUT.PUT_LINE('TRAIN_NUMBER:'||SEAT_REC.TRAIN_NUMBER||' '||'CLASS:'|
|SEAT_REC.CLASS||'TOTALSEAT:'||SEAT_REC.SEAT);
11 END LOOP;
12 END;
13 /
TRAIN_NUMBER:12245 CLASS:AC1 TOTALSEAT:B213
PL/SQL procedure successfully completed.

ALTERNATE QUERIES

WEEK 4

1. Find the passengers whose date of journey is one month from today.

```
select * from ticket where DOJ=to_date((select add_months(sysdate,1) from dual));
```

2. Print the train names in upper case.

```
select upper(name) from trains;
```

3. Print the passenger names with left padding character.

```
select lpad(name,20,'_') from train;
```

4.Print station code replacing 'K' with 'M'.

```
select station_code,name, translate(station_code,'K','M') from train_route;
```

5. Translate all the SL in class column (Train_fare) to CC and display.

```
select class, translate(class,'SL','CC') from train_ticket_fare;
```

6. Display the fare details of all trains, if any value is ZERO, print as NULL value.

```
select pnrno, transactionid, doj, decode(total_ticket_fare,'0','NULL',total_ticket_fare) as Total_time from
ticket;
```

7. Display the pnrno and transaction id, if transaction id is null, print 'not generated'

```
select pnrno, decode(transactionid,NULL,'Not generated',transactionid) as transactionid from ticket;
```

8. Print the date_of_jounrney in the format '27th November 2010'.

```
select (to_char(doj,'DDTH MONTH YYYY')) as date_of_journey from ticket;
```

9. Find the maximum fare (total fare).

```
select max(total_ticket_fare) from ticket;
```

10. Find the average age of passengers in one ticket.

```
select avg(age) from passenger_details where pnrno=30004;
```

11. Find the maximum length of station name available in the database.

```
select name from train_route where length(name)=(select max(length(name)) from train_route);
```

12. Print the fare amount of the passengers as rounded value.

select pnrno,round(total_ticket_fare) from ticket;

13. Add the column halt time to train route.

alter table train_route add (halt_time number(4,2));

14. Update values to it from arrival time and depart time.

update train_route set halt_time= to_number(depart_time)-to_number(arrival_time);

15. Update values to arrival time and depart time using conversion functions.

update train_route set Arrival_time = '10-AUG-17, 06:00:00 PM', Depart_time ='10-AUG-17,06:05:00 PM' where train_number=10001;

16. Display the arrival time, depart time in the format HH:MI (24 hours and minutes).

select to_char(arrival_time, 'HH:MM') from train_route;

QUES 5

SET OPERATION

1. Find the train numbers for which reservation have not yet been made.

select train_number from trains
minus
select train_number from ticket;

2. Find the train names that do not have a first AC class coach.

select name from trains where train_number in <select train_number from train_ticket_fare where class not like<'%A%'>>;

3. Print all the PNR nos available in the database.

select distinct(pnrno) from passenger_details
union all
select distinct(pnrno) from ticket;

4. Find passenger names who have booked to 'Pune'.

SQL> select name from passenger_details, ticket where (passenger_details.pnrno=ticket.pnrno and ticket.to_station='Pune');

USE NESTED QUERY

1. Find the train names that stop in 'Katpadi'.

SQL> select trains.name from trains, train_route where train_route.name='Katpadi' and train_route.train_no=trains.train_number;

2. Find the train names that are superfast and the service tax is zero.

select name from trains where train_number=(select train_no from train_ticket_fare where service_tax=0);

3. Find the Passenger name who have booked for the train that starts from 'chennai'.

select name from passenger_details where pnrno in (select pnrno from ticket where from_station ='Chennai');

4. Find the trains names that have all the AC coaches and the base fare is less than 3000 for each case.

select name from trains where train_number in <select train_number from train_ticket_fare where class like '%A' and base_fare<3000>;

USE JOIN QUERY

1. Find the train names that stop in 'Chennai'.

Select name from trains join ticket on trains.train_number=ticket.train_number where ticket.to_station='Chennai';

2. Find the train names that are superfast and the service tax is zero.

Select name from trains join train_ticket_fare on trains.train_number = train_ticket_fare.train_no where train_ticket_fare.service_tax=0 and trains.type="Superfast";

3. Find the Passenger name (and train name) who have booked the train that starts from Chennai.

Select name from passenger_details join ticket on passenger_details.pnrno=ticket.pnrno;

4. Display the train names , each type of class and the total fare for each type of class.

Select tr.name ,tr.class, fare.base_fare from trains tr, train_ticket_fare fare where tr.train_number= fare.train_number;

5. Display all the train details and the ticket details(if booked any).

6. Create a sequence to provide values for the PNR no.

Select t.pnrno, p.pnrno from trains t, passenger_details p where t.pnrno=p.pnrno;

7. Write a query for all full outer join using any of the tables above

Select * from trains t, ticket ti where t.train_number= ti.train_number;

QUES 6

Use co-related Query

1. **Find the train names for which ten ticket have been reserved.**

select name from trains were train_number in (select train_number from trains intersect select train_number from train where train_number in (select pnrno from ticket group by pnrno having count(*) >10);

2. **Find the trains that have more then ten substations.**

select name from train t where train_number in (select train_number from ticket ti where t.train_number= ti.train_number and ti.sub_station>10);

3. **Find the passengers who do not pass through 'Mettupalam'.**

select name from passenger_detatils p where pnrno in(select pnrno from ticket t where exists (select 1 from train_route r where t.train_number=r.train_number and q.route_no in ('1','4')));

4. **Find passenger who have booked for super fast trains.**

select name from passenger_details where pnrno in (select pnrno from passenger_details intersect select pnron from ticket where train_number in(select train_number from ticket intersect select train_number from train_ticket_fare where superfast_charge is NOT NULL));

Complex queries

1. **Take the start station code and end station code and display the train details.**

select t.train_number, t.name, q.from_station,q.in_station from train t left outer join ticket q on t.train_number=q.train_number;

2. **List the train names and the number of sub stations it has..**

select t.name , q.sub_station from trains t left outer join train_route q on t.train_number=q.train_no;

3. **List the stations where all types of trains stop.**

select distinct (q.to_station) from train t right outer join ticket q on t.train_number=q.train_number;

4. **List the train names hat has atleast four bookings.**

select t.name from trains t where t.train_number in (select train_number from ticket q where q.pnrno in(select pnrno from passenger_details p where p.reservation_status='CNF'));

5. **Create a table cancellation history(inset values from ticket and passenger table).**

Create table cancellation_history(
DOC date,pnrno number(5));

6. **Create a table for all the train numbers and class available in train_ticket_fare total seats.**

7. **Find the station name that has the largest number of trains stopping at.**

Select to_station, count(*) as num from ticket GROUP BY to station having count(*)=(select max(num) from (select to_station ,count(*) as num from ticket group by to_station));