DATABSE MANAGEMENT SYSTEMS(ITE1003)

ASSESSMENT-3

NAME-MATHEW JERRY MELETH
REG NO-17BIT0050

Use Coorelated (and nested) Query

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

   select name from tttrain where train_number in (select train_number from tttrain intersect select train_number from tticket where pnr_no in (select pnr_no from tticket group by pnr_no having count(*) >10));

```
SQL> select name from tttrain where train_number in (select train_number from tt
train intersect select train_number from tticket where pnr_no  in (select pnr_no
  from tticket group by pnr_no  having count(*) >10));

no rows selected
```

If count=2;

```
SQL> select name from tttrain where train_number in (select train_number from tt
train intersect select train_number from tticket where pnr_no  in (select pnr_no
  from tticket group by pnr_no  having count(*) <10));

NAME
------------------------------
TATA ALLEPPEY
GETANJALI
```

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

```
select train_number from train_route where
station_code in (select station_code from
train_route group by station_code having
count(*)>10);
```

```
SQL>          select train_number from train_route where station_code in (selec
t station_code
  2            from train_route group by station_code having count(*)>10);

no rows selected
```

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

```
Select name from passenger  minus
select name from passenger  where
PNR_NO in (select PNR_NO from
tticket where train_number  in
(select train_number from
train_route where
name=’mettupalayam’));
```

```
SQL> Select name from passenger
  2  minus
  3  select name from passenger  where PNR_NO in (select PNR_NO from tticket whe
re train_number  in (select train_number from train_route where name='mettupalay
am'));

NAME
--------------------
ADARSH
AKSHAY
NISHANT
RAJEEV
RISHABH
SHIVAM
SWETA

7 rows selected.
```

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

select name from passenger where pnr_no in (select pnr_no from passenger intersect select pnr_no from tticket where train_number in (select train_number from tticket intersect select train_number from train_ticket_fare where superfast_charge is not null));

```
SQL> select name from passenger where pnr_no in (select pnr_no from passenger  i
ntersect select pnr_no from tticket where train_number in (select train_number
from tticket intersect select train_number from train_ticket_fare where  superfa
st_charge is not null));

NAME
--------------------
SHIVAM
```

Complex queries(use group by/group by having/join/nested)

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

select name,source,destination from tttrain,tticket WHERE tttrain.train_number = tticket.train_Number AND tticket.from_station=’chennai' AND tticket.to_station='katpadi';

```
SQL> select  name,source,destination from tttrain,tticket WHERE tttrain.train_nu
mber = tticket.train_Number  AND      tticket.from_station='chennai'  AND  ttick
et.to_station='katpadi';

NAME                           SOURCE               DESTINATION
------------------------------ -------------------- --------------------
TATA ALLEPPEY                  katpadi              ALLEPPEY
```

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

select train_Number , count(station_code) from Train_Route group by Train_Number;

```
SQL> select train_Number , count(station_code) from Train_Route group by Train_N
umber;

TRAIN_NUMBER COUNT(STATION_CODE)
------------ --------------------
        1435                    1
        5677                    1
```

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

select station_code from train_route where train_number in (select train_number from tttrain);

```
SQL> select station_code from train_route where train_number  in (select train_n
umber from tttrain);

STATION_CO
----------
KPD
KNR
```

4. List the trains names that has atleast four bookings.

select name from tttrain where train_number in (select train_number from tttrain intersect select train_number from tticket where pnr_no in (select pnr_no from tticket group by pnr_no having count(*)>));

```
SQL> select name from tttrain where train_number in (select train_number from tt
train intersect select train_number from tticket where pnr_no in (select pnr_no
 from tticket group by pnr_no  having count(*)>4));

no rows selected
```

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

create table cancellation_history (cancel_ID varchar(10) primary key, Cancel_date date, pnr_no char(10), constraint fk_tp foreign key (pnr_no) references ticket(pnr_no), Train_number number(5), constraint fk_tn foreign key(train_number) references train(train_number));

```
SQL> create table cancellation_history
  2  (cancel_ID varchar(10) primary key,
  3  Cancel_date date,
  4  pnr_no char(10), constraint fk_tp foreign key (pnr_no) references ticket(pn
r_no),
  5  Train_number  number(5), constraint fk_tn foreign key(train_number) referen
ces train(train_number));

Table created.
```

CREATE Sequence
cancel_id start with 1
increment by 1 maxvalue 9
nocycle ;

```
SQL> CREATE Sequence cancel_id
  2  start with 1
  3  increment by 1
  4  maxvalue 9
  5  nocycle ;

Sequence created.
```

INSERT into cancellation_history
values('cancel_id.nextval','10-nov-2017','WQ12345',123);

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

Create table seat as select train_number,class ,total_seats from train_ticket_fare;

```
SQL> CREATE TABLE SEATS AS SELECT Train_Number,Class,Total_Seat FROM TRAIN_TICKE
T_FARE;

Table created.

SQL> SELECT * FROM SEATS;

TRAIN_NUMBER CLA TOTAL_SEAT
------------ --- ----------
       12640 3A
       10002 2S
       12466 CC
       16863 2A
       12264 3A
```

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

Select to_station, count(*) as nor from tticket group by to_station having count(*)=(select max(nor) from (select to_station,count(*) as nor from tticket group by to_station));

```
SQL> Select to_station, count(*)  as nor from tticket group by to_station having
 count(*)=(select max(nor) from (select to_station,count(*) as nor from tticket
group by to_station));

TO_STATION                NOR
-------------------- ----------
delhi                         1
assam                         1
katpadi                       1
patna                         1
jsr                           1
```

1. Write a simple PL/SQL block to.

1. **Print the fibonacci series.**

```
set serveroutput on
declare a number:=-
1; b number:=1; c
number:=0; n
number; i number;
begin n:=&n;
for i in 1..n loop
c:=a+b;
a:=b;    b:=c;
         dbms_output.put_line(c);
end loop; end;
/
```

```
SQL> set serveroutput on
SQL> declare
  2  a number:=-1;
  3  b number:=1;
  4  c number:=0;
  5  n number;
  6  i number;
  7  begin
  8  n:=&n;
  9  for i in 1..n loop
 10     c:=a+b;
 11     a:=b;
 12     b:=c;
 13     dbms_output.put_line(c);
 14  end loop;
 15  end;
 16  /
Enter value for n: 10
old   8: n:=&n;
new   8: n:=10;
0
1
1
2
3
5
8
13
21
34

PL/SQL procedure successfully completed.

SQL>
```

2. **Print the factorial of a given number.**

```
set serveroutput on
declare f
number:=1; i
number; n number;
begin
dbms_output.put_line('Enter the number to find factorial:');
n:=&n;
for i in  1..n loop
        f:=f*i;
end loop;
dbms_output.put_line('The factorial of '||n'number is:'||f); end;
/
```

```
SQL> set serveroutput on
SQL> declare
  2  f number:=1;
  3  i number;
  4  n number;
  5  begin
  6  dbms_output.put_line('Enter the number to find factorial:');
  7  n:=&n;
  8  for i in  1..n loop
  9     f:=f*i;
 10  end loop;
 11  dbms_output.put_line('The factorial of '||n'number is:'||f);
 12  end;
 13  /
Enter value for n: 5
old   7: n:=&n;
new   7: n:=5;
Enter the number to find factorial:
The factorial of number is:120

PL/SQL procedure successfully completed.

SQL>
```

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

set serveroutput on declare
Passenger_pnr_no passenger.pnr_no%type:=&Passenger_pnr_no; Passenger_status passenger.reservation_status%type; begin select reservation_status into Passenger_status from passenger where pnr_no=Passenger_pnr_no; if(Passenger_status!='CNF') then dbms_output.put_line('Not confirmed'); else dbms_output.put_line('confirmed'); end if; end;
/

```
SQL> set serveroutput on
SQL> declare
  2  Passenger_pnr_no passenger.pnr_no%type:=&Passenger_pnr_no;
  3  Passenger_status passenger.reservation_status%type;
  4  begin
  5  select reservation_status into Passenger_status from passenger where pnr_no
=Passenger_pnr_no;
  6  if(Passenger_status!='CNF') then
  7  dbms_output.put_line('Not confirmed');
  8  else
  9  dbms_output.put_line('confirmed');
 10  end if;
 11  end;
 12  /
Enter value for passenger_pnr_no: 45675
old   2: Passenger_pnr_no passenger.pnr_no%type:=&Passenger_pnr_no;
new   2: Passenger_pnr_no passenger.pnr_no%type:=45675;
Not confirmed

PL/SQL procedure successfully completed.

SQL>
```

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

```
set serveroutput on declare  tn
train_ticket_fare.train_number%type; tclass
train_ticket_fare.class%type; total_seat
train_ticket_fare.total_seats%type; begin
        tn:=&tn;
        tclass:='&tclass';          select total_seats into total_seat from train_ticket_fare where
train_number=tn and class=tclass;          dbms_output.put_line('Total Seats:'||total_seat); end;
/
```

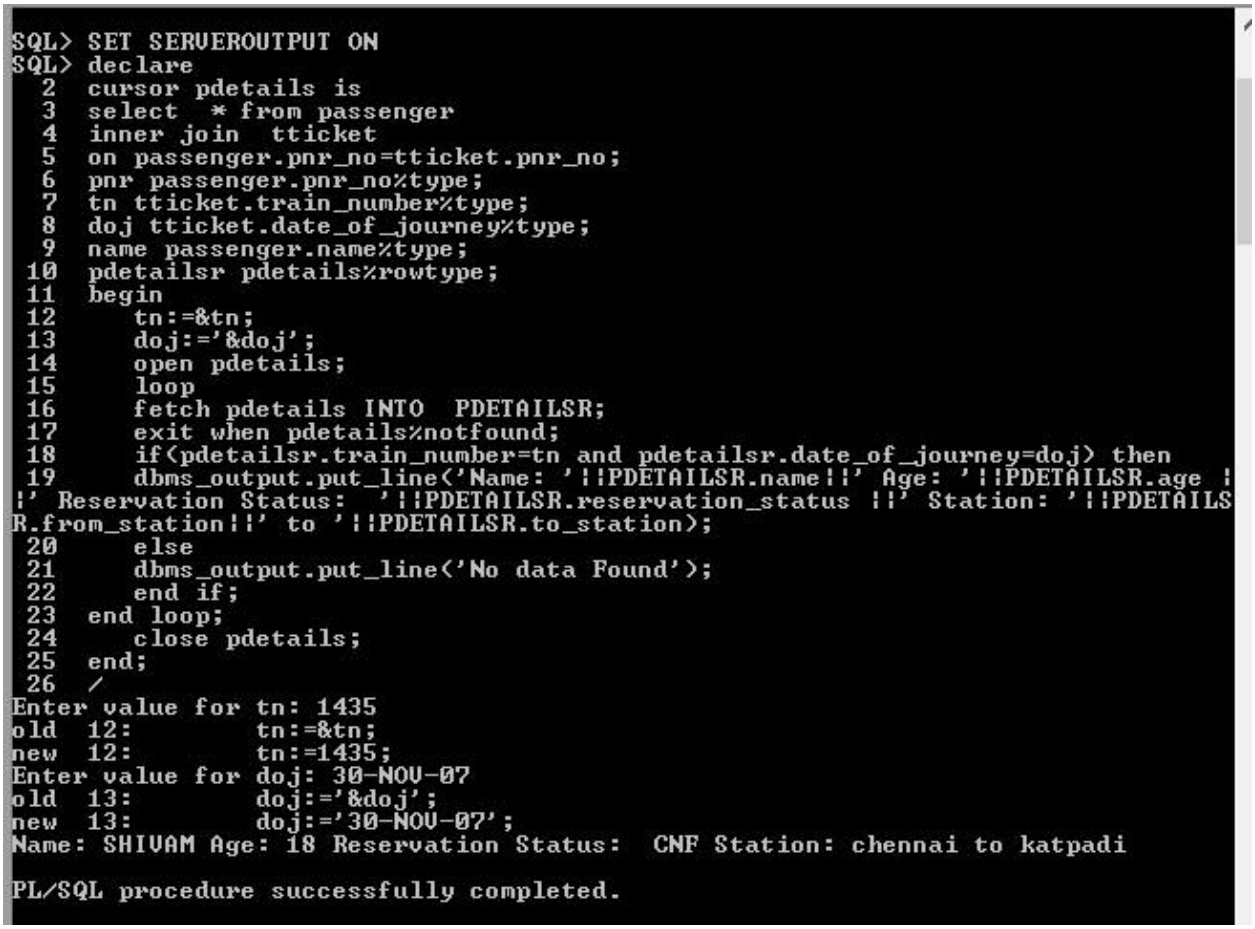
```
SQL> set serveroutput on
SQL> declare
  2  tn train_ticket_fare.train_number%type;
  3  tclass train_ticket_fare.class%type;
  4  total_seat train_ticket_fare.total_seats%type;
  5  begin
  6     tn:=&tn;
  7     tclass:='&tclass';
  8     select total_seats into total_seat from train_ticket_fare where train_nu
mber=tn and class=tclass;
  9     dbms_output.put_line('Total Seats:'||total_seat);
 10  end;
 11  /
Enter value for tn: 1435
old   6:        tn:=&tn;
new   6:        tn:=1435;
Enter value for tclass: 1A
old   7:        tclass:='&tclass';
new   7:        tclass:='1A';
Total Seats:250

PL/SQL procedure successfully completed.

SQL>
```

2. Write a cursor for the following.

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

```
SET SERVEROUTPUT ON
declare cursor pdetails is select  *
from passenger  inner join  tticket on
passenger.pnr_no=tticket.pnr_no; pnr
passenger.pnr_no%type;              tn
tticket.train_number%type;          doj
tticket.date_of_journey%type;  name
passenger.name%type;          pdetailsr
pdetails%rowtype; begin
        tn:=&tn;
doj:='&doj';      open
pdetails;
        loop
```

```
        fetch pdetails INTO  PDETAILSR;        exit when pdetails%notfound;
    if(pdetailsr.train_number=tn and pdetailsr.date_of_journey=doj) then
    dbms_output.put_line('Name: '||PDETAILSR.name||' Age: '||PDETAILSR.age ||'
Reservation Status:  '||PDETAILSR.reservation_status ||' Station: '||PDETAILSR.from_station||' to
'||PDETAILSR.to_station);
        else
        dbms_output.put_line('No data Found');
    end if;
    end loop;
        close pdetails;
    end;
    /
```



```
SQL> SET SERVEROUTPUT ON
SQL> declare
  2  cursor pdetails is
  3  select  * from passenger
  4  inner join  tticket
  5  on passenger.pnr_no=tticket.pnr_no;
  6  pnr passenger.pnr_no%type;
  7  tn tticket.train_number%type;
  8  doj tticket.date_of_journey%type;
  9  name passenger.name%type;
 10  pdetailsr pdetails%rowtype;
 11  begin
 12     tn:=&tn;
 13     doj:='&doj';
 14     open pdetails;
 15     loop
 16     fetch pdetails INTO  PDETAILSR;
 17     exit when pdetails%notfound;
 18     if(pdetailsr.train_number=tn and pdetailsr.date_of_journey=doj) then
 19     dbms_output.put_line('Name: '||PDETAILSR.name||' Age: '||PDETAILSR.age |
|' Reservation Status:  '||PDETAILSR.reservation_status ||' Station: '||PDETAILS
R.from_station||' to '||PDETAILSR.to_station);
 20     else
 21     dbms_output.put_line('No data Found');
 22     end if;
 23  end loop;
 24     close pdetails;
 25  end;
 26  /
Enter value for tn: 1435
old  12:        tn:=&tn;
new  12:        tn:=1435;
Enter value for doj: 30-NOV-07
old  13:        doj:='&doj';
new  13:        doj:='30-NOV-07';
Name: SHIVAM Age: 18 Reservation Status:  CNF Station: chennai to katpadi

PL/SQL procedure successfully completed.
```

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

```
    set serveroutput on  declare cursor train is
    select * from tttrain inner join tticket on
    tttrain.train_number=tticket.train_number;
    train_name train%rowtype; begin
        open train;
    loop
        fetch train into train_name;        exit when train%notfound;
    dbms_output.put_line('Train name: '||train_name.name ||' Substaions:
'||train_name.from_station);
        dbms_output.put_line(train_name.to_station);
```

```
        dbms_output.put_line(train_name.source||','||train_name.destination);
end loop;       close train;
end;
/
```

```
SQL> set serveroutput on
SQL> declare
  2  cursor train is
  3  select * from tttrain
  4  inner join tticket on
  5  tttrain.train_number=tticket.train_number;
  6  train_name train%rowtype;
  7  begin
  8     open train;
  9     loop
 10     fetch train into train_name;
 11     exit when train%notfound;
 12     dbms_output.put_line('Train name: '||train_name.name ||' Substaions: '||
train_name.from_station);
 13     dbms_output.put_line(train_name.to_station);
 14     dbms_output.put_line(train_name.source||','||train_name.destination);
 15     end loop;
 16     close train;
 17  end;
 18  /
Train name: TATA ALLEPPEY Substaions: chennai
katpadi
kolkata,ALLEPPEY
Train name: GETANJALI Substaions: katpadi
assam
DELHI,mumbai

PL/SQL procedure successfully completed.
```

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

```
set serveroutput on  declare
cursor train_fare is select *
from train_ticket_fare; fare
train_fare%rowtype;
train_number number; begin

        open train_fare;
        loop
        fetch train_fare into fare;       exit when train_fare%notfound;
train_number:=&train_number;        if(fare.train_number=train_number) then
dbms_output.put_line(' Base Fare:'||fare.base_fare);     dbms_output.put_line('
Reservation Charge:'||fare.reservation_charge);  dbms_output.put_line('
Superfast Charge:'||fare.superfast_charge);      dbms_output.put_line(' Other
Charge:'||fare.other_charge);    dbms_output.put_line(' Tatkal
Charge:'||fare.tatkal_charge);
        else
        dbms_output.put_line('Train number not found');
end if;  end loop;
end;
/
```

```
SQL> set serveroutput on
SQL> declare
  2  cursor train_fare is
  3  select * from train_ticket_fare;
  4  fare train_fare%rowtype;
  5  train_number number;
  6  begin
  7
  8     open train_fare;
  9     loop
 10     fetch train_fare into fare;
 11     exit when train_fare%notfound;
 12     train_number:=&train_number;
 13     if(fare.train_number=train_number) then
 14     dbms_output.put_line(' Base Fare:'||fare.base_fare);
 15     dbms_output.put_line(' Reservation Charge:'||fare.reservation_charge);
 16     dbms_output.put_line(' Superfast Charge:'||fare.superfast_charge);
 17     dbms_output.put_line(' Other Charge:'||fare.other_charge);
 18     dbms_output.put_line(' Tatkal Charge:'||fare.tatkal_charge);
 19     else
 20     dbms_output.put_line('Train number not found');
 21     end if;
 22     end loop;
 23  end;
 24  /
Enter value for train_number: 1435
old  12:        train_number:=&train_number;
new  12:        train_number:=1435;
Base Fare:334
Reservation Charge:546
Superfast Charge:444
Other Charge:454
Tatkal Charge:342
```

4. Write a cursor to update the reservation status of the passengers(generate seat number, if seats have reached maximum, put wating 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  pnr ticket.pnrno%type;
  3  seat seats.no_of_seats%type;
  4  rs passenger_details.reservation_status%type;
  5  msg varchar(2);
  6  wl number(2);
  7  pqwl number(2);
  8  begin
  9     wl:=0;
 10     pqwl:=0;
 11     select pnrno into pnr from ticket where train_no=11101;
 12     select count(no_of_seats) into seat from seats where train_no=11101;
 13     select reservation_status into rs from passenger_details where pnrno=(select pnrno from ticket where train_no=11101);
 14     if seat>100 then
 15     dbms_output.put_line('Seats have reached maximum...You are now added in waiting list');
 16     wl:=wl+1;
 17     if wl>30 then
 18     dbms_output.put_line('Waiting list reaches maximum. You are now in PQWL');
 19     pqwl:=pqwl+1;
 20     end if;
 21     else
 22     dbms_output.put_line('Seats allocated');
 23     end if;
 24  end;
 25  /
```