**15IT302J-DATABASE MANAGEMENT SYSTEMS**

DATE-:3/8/19

EXPERIMENT-3

NAME-: NANDISH SHAH

REG NO-:RA1711008010143

**4. SUBQUERIES WITH SET OPERATION, JOIN AND CONSTRAINTS**

**---------------------------------------------------------------------------------------------------------**

1. **FIND THE AVERAGE BALANCE FOR EACH CUSTOMER WHO LIVES IN MADURAI AND HAS AT LEAST THREE ACCOUNT.**

SQL> select depositor.customer\_name, avg(balance) from depositor, account, customer where depositor.account\_no = account.account\_no and depositor.customer\_name = customer.customer\_name and customer\_city = 'mardurai' group by depositor.customer\_name having count(distinct depositor.account\_no)>=2**;**

CUSTOMER\_NAME AVG(BALANCE)

------------------------------ ------------

aditya 4750

**2. FIND THE AVERAGE LOAN AMOUNT OF EACH CUSTOMER WHO LIVES IN MADURAI AND HAS AT LEAST TWO LOANS.**

SQL> select borrower.customer\_name, avg(amount) from borrower, loan,customer where borrower.loan\_no=loan.loan\_no and borrower.customer\_name=customer.customer\_name and customer\_city='mardurai' group by borrower.customer\_name having count(distinct borrower.loan\_no)>=2;

CUSTOMER\_NAME AVG(AMOUNT)

-------------------- -----------

aditya 22500

**SET MEMBERSHIP:**

**USING KEYWORD IN:**

**3.FIND THE CUSTOMER WHO LIVES IN CHENNAI OR MADURAI**.

SQL> select customer\_name from customer where customer\_city in ('trichy','mardurai');

CUSTOMER\_NAME

--------------------

aditya

ankit

atif

akshit

akshil

anshul

freya

faizan

1. rows selected.

**4.FIND THE ACCOUNT NUMBER WHOSE BALANCE IS BETWEEN 1000 AND 5000**.

SQL> select account\_no from account where balance between 1000 and 5000;

ACCOUNT\_NO

----------

10001

10002

10003

10004

10005

10006

10007

10008

10009

10011

10012

ACCOUNT\_NO

----------

10013

12 rows selected.

**5. FIND THE ACCOUNT NUMBER WHOSE BALANCE IS NOT BETWEEN 1000 AN 5000.**

SQL> select account\_no from account where balance not between 1000 and 5000;

ACCOUNT\_NO

----------

10010

**6. FIND THE CUSTOMER WHO HAS LOAN AND ACCOUNT.**

SQL> select distinct customer\_name from borrower where customer\_name in(select customer\_name from depositor);

CUSTOMER\_NAME

------------------------------

atif

kadam

namya

aman

ankit

aditya

nitya

7 rows selected**.**

**7. FIND ALL CUSTOMERS WHO HAVE BOTH AN ACCOUNT AND LOAN AT icici BANK**

select customer\_name from borrower,loan where borrower.loan\_no=loan.loan\_no and branch\_name='icici' and (branch\_name,customer\_name) in (select branch\_name, customer\_name from depositor, account where depositor.account\_no=account.account\_no);

no rows selected

**8. FIND ALL CUSTOMERS WHO DO HAVE LOAN AT THE BANK, BUT DO NOT HAVE AN ACCOUNT AT the bank.**

SQL> select distinct customer\_name from borrower where customer\_name not in(select customer\_name from depositor);

CUSTOMER\_NAME

--------------------

raju

atif

nitya

ankit

namya

ramesh

shweta

aman

kadam

kartik

rakesh

CUSTOMER\_NAME

--------------------

ankita

12 rows selected.

**9. FIND ALL CUSTOMERS WHO DO HAVE ACCOUNT AT THE BANK BUT DO NOT**

**HAVE LOAN AT THE bank.**

SQL> select distinct customer\_name from depositor where customer\_name not in(select customer\_name from borrower);

CUSTOMER\_NAME

------------------------------

amish

akshit

shwet

atif

akshil

namya

kadam

freya

aman

ankit

aditya

CUSTOMER\_NAME

------------------------------

manish

faizaan

astha

nitya

anshul

16 rows selected.

**10. FIND ALL ACCOUNT HOLDER NAME EXCEPT ADITYA AND KADAM**

SQL> select distinct customer\_name from depositor where customer\_name not in('aditya','kadam');

CUSTOMER\_NAME

------------------------------

aditya

akshil

akshit

aman

amish

ankit

anshul

astha

atif

faizaan

freya

CUSTOMER\_NAME

------------------------------

kadam

manish

namya

nitya

shwet

16 rows selected.

**SET COMPARAISON:**

**11. FIND THE NAMES OF ALL BRANCHES THAT HAVE ASSETS GREATER THAN**

**THOSE OF AT LEAT ONE BRANCH LOCATED IN SALEM.**

SQL> select distinct t.branch\_name from branch t, branch s where t.assets>s.assets and s.branch\_city='salem';

BRANCH\_NAME

---------------

iob

sbi

pnb

**12. FIND THE NAMES OF ALL BRANCHES THAT HAVE ASSETS GREATER THAN**

**THOSE OF AT LEAT ONE BRANCH LOCATED IN MADURAI USING ‘SOME’ KEYWORD**

SQL> select branch\_name from branch where assets>some(select assets from branch where branch\_city='mardurai');

BRANCH\_NAME

---------------

pnb

sbi

iob

**13. FIND THE NAMES OF ALL BRANCHES THAT HAVE AN ASSET VALUE GREATER THAN THAT OF EACH BRANCH IN MADURAI**

SQL> select branch\_name from branch where assets>all(select assets from branch where branch\_city='mardurai’);

BRANCH\_NAME

---------------

iob

pnb

sbi

**14.FIND THE BRANCH THAT HAS THE HIGHEST AVERAGE BALANCE.**

SQL> select branch\_name from account group by branch\_name having avg(balance)>=all (select avg(balance)from account group by branch\_name);

BRANCH\_NAME

---------------

Sbi

**15. FIND THE BRANCH THAT HAS THE HIGHEST AVERAGE BALANCE.**

SQL> select branch\_name,avg(balance) from account group by branch\_name having avg(balance)<=all(select avg(balance) from account group by branch\_name);

BRANCH\_NAME AVG(BALANCE)

--------------- ------------

hdfc 3000

**TEST FOR EMPTY RELATION:**

**16. FIND ALL CUSTOMERS WHO HAVE BOTH AN ACCOUNT AND LOAN AT THE BANK**

SQL> select customer\_name from borrower where exists(select \* from depositor where depositor.customer\_name=borrower.customer\_name);

CUSTOMER\_NAME

--------------------

aditya

Aditya

**17.FIND ALL CUSTOMERS WHO DO NOT HAVE BOTH AN ACCOUNT AND LOAN AT THE BANK**

SQL> select customer\_name from borrower where not exists(select \* from depositor where depositor.customer\_name=borrower.customer\_name);

CUSTOMER\_NAME

--------------------

kadam

kartik

rakesh

raju

ankita

namya

atif

nitya

shweta

ramesh

ankit

CUSTOMER\_NAME

--------------------

aman

12 rows selected.

**18. FIND ALL CUSTOMERS WHO HAVE AN ACCOUNT AT ALL BRANCHES LOCATED IN MADURAI**

SQL> select distinct s.customer\_name from depositor s where not exists((select branch\_name from branch where branch\_city='sbi')minus(select r.branch\_name from depositor t ,account r where t.account\_no=r.account\_no and s.customer\_name=t.customer\_name));

CUSTOMER\_NAME

------------------------------

aditya

**VIEWS:**

**19. CREATE A VIEW ALLCUSTOMER WITH ACCOUNT AND LOAN DETAILS.**

SQL> create view allcustomer as(select branch\_name,customer\_name

2 from depositor,account where

3 depositor.account\_no=account.account\_no) union(select branch\_name,customer\_name from borrower,loan where borrower.loan\_no=loan.loan\_no);

View created.

SQL> select \* from allcustomer;

BRANCH\_NAME CUSTOMER\_NAME

-------------------- ------------------------------

hsbc aditya

hsbc kadam

hsbc namya

hsbc rakesh

icici aditya

icici aman

icici ramesh

icici shweta

iob ankit

iob raju

pnb ankita

BRANCH\_NAME CUSTOMER\_NAME

-------------------- ------------------------------

pnb atif

pnb nitya

sbi aditya

14 rows selected.

**20. CREATE A VIEW BRTOT WITH BRANCH NAME AND LOAN AMOUNT IN**

**SORTED LOAN AMOUNT AND CLUSTERED BASED ON BRANCH NAME.**

SQL> create view brtot(branch\_name,totloan)as select

2 branch\_name,sum(amount)from loan group by branch\_name;

View created.

SQL> select \* from brtot;

BRANCH\_NAME TOTLOAN

-------------------- ----------

hsbc 45000

iob 55000

icici 80000

pnb 30000

**UPDATE:**

**21. UPDATE THE BALANCE BY CREDIT CASH GIFT 100 FOR ALL.**

SQL> update account set balance=balance+100;

14 rows updated.

SQL> select \* from account;

ACCOUNT\_NO BRANCH\_NAME BALANCE

---------- --------------- ----------

10001 icici 1100

10002 sbi 1600

10003 hdfc 2100

10004 hsbc 2600

10005 icici 3100

10006 sbi 3600

10007 hdfc 4100

10008 hsbc 4600

10009 icici 5100

10010 sbi 5600

10011 sbi 5100

ACCOUNT\_NO BRANCH\_NAME BALANCE

---------- --------------- ----------

10012 hsbc 4600

10013 icici 3400

10015 sbi

14 rows selected.

**22. UPDATE THE BALANCE WITH BALANCE \*1.05.**

13 rows updated.

SQL> select \* from account;

ACCOUNT\_NO BRANCH\_NAME BALANCE

---------- --------------- ----------

10001 icici 1155

10002 sbi 1680

10003 hdfc 2205

10004 hsbc 2730

10005 icici 3255

10006 sbi 3780

10007 hdfc 4305

10008 hsbc 4830

10009 icici 5355

10010 sbi 5880

10011 sbi 5355

ACCOUNT\_NO BRANCH\_NAME BALANCE

---------- --------------- ----------

10012 hsbc 4830

10013 icici 3570

10015 sbi

14 rows selected.

**23. UPDATE THE BALANCE OF ACCOUNT WITH BALANCE \*1.06 WHO MAINTAINS BALANCE GREATER THAN AVERGAGE BALANCE.**

SQL> update account set balance=balance\*1.06where balance&gt;(select

2

SQL> update account set balance=balance\*1.06where balance>=(select avg(balance) from account);

7 rows updated.

SQL> select \* from account;

ACCOUNT\_NO BRANCH\_NAME BALANCE

---------- --------------- ----------

10001 icici 1155

10002 sbi 1680

10003 hdfc 2205

10004 hsbc 2730

10005 icici 3255

10006 sbi 4006.8

10007 hdfc 4563.3

10008 hsbc 5119.8

10009 icici 5676.3

10010 sbi 6232.8

10011 sbi 5676.3

ACCOUNT\_NO BRANCH\_NAME BALANCE

---------- --------------- ----------

10012 hsbc 5119.8

10013 icici 3570

10015 sbi

14 rows selected**.**

**24. UPDATE THE ACCOUNT BALANCE WITH FOLLOWING CONDITION**

**o IF BALANCE GRETER THAN 2000 WITH INTEREST 30%**

**o IF BALANCE IN BETWEEN 1000 AND 2000 WITH INTEREST 10%**

**o IF BALANCE IN BETWEEN 500 AND 1000 WITH INTEREST 5%**

**o OTHERS WITH 1% INTEREST.**

SQL> select \* from account;

ACCOUNT\_NO BRANCH\_NAME BALANCE

---------- --------------- ----------

10001 icici 1155

10002 sbi 1680

10003 hdfc 2205

10004 hsbc 2730

10005 icici 3255

10006 sbi 4006.8

10007 hdfc 4563.3

10008 hsbc 5119.8

10009 icici 5676.3

10010 sbi 6232.8

10011 sbi 5676.3

ACCOUNT\_NO BRANCH\_NAME BALANCE

---------- --------------- ----------

10012 hsbc 5119.8

10013 icici 3570

10015 sbi

14 rows selected.

SQL> update account set balance=case when balance>=500 and balance<=1000 then balance\*0.05 when balance>=1000 and balance<=2000 then balance \* 0.10 when balance>2000 then balance\*0.3 else balance\*0.01 end;

14 rows updated.

SQL> select \*from account;

ACCOUNT\_NO BRANCH\_NAME BALANCE

---------- --------------- ----------

10001 icici 115.5

10002 sbi 168

10003 hdfc 661.5

10004 hsbc 819

10005 icici 976.5

10006 sbi 1202.04

10007 hdfc 1368.99

10008 hsbc 1535.94

10009 icici 1702.89

10010 sbi 1869.84

10011 sbi 1702.89

ACCOUNT\_NO BRANCH\_NAME BALANCE

---------- --------------- ----------

10012 hsbc 1535.94

10013 icici 1071

10015 sbi

14 rows selected.

**JOIN:**

**CARTESIAN JOIN:**

**25. DISPLAY ALL RECORDS OF ACCOUNT WITH BRANCH DETAILS.**

**SQL> select account.account\_no,account.balance, branch.branch\_name, branch.branch\_city, branch.assets from account,branch where account.branch\_name=branch.branch\_name;**

ACCOUNT\_NO BALANCE BRANCH\_NAME BRANCH\_CITY ASSETS

---------- ---------- --------------- ------------------------------ ----------

10007 1368.99 hdfc salem 40000

10003 661.5 hdfc salem 40000

10008 1535.94 hsbc ahemdabad 40000

10012 1535.94 hsbc ahemdabad 40000

10004 819 hsbc ahemdabad 40000

10009 1702.89 icici mardurai 40000

10005 976.5 icici mardurai 40000

10001 115.5 icici mardurai 40000

10013 1071 icici mardurai 40000

10002 168 sbi trichy 80000

10011 1702.89 sbi trichy 80000

ACCOUNT\_NO BALANCE BRANCH\_NAME BRANCH\_CITY ASSETS

---------- ---------- --------------- ------------------------------ ----------

10015 sbi trichy 80000

10006 1202.04 sbi trichy 80000

10010 1869.84 sbi trichy 80000

14 rows selected.

**NATURAL JOIN:**

**26. DISPLAY ALL ACCOUNT DETAILS ALONG WITH BRANCH USING NATURAL JOIN.**

SQL> select a.account\_no, a.branch\_name, b.branch\_name, b.branch\_city from account a, branch b where a.branch\_name = b.branch\_name;

ACCOUNT\_NO BRANCH\_NAME BRANCH\_NAME BRANCH\_CITY

---------- --------------- --------------- ------------------------------

10007 hdfc hdfc salem

10003 hdfc hdfc salem

10008 hsbc hsbc ahemdabad

10012 hsbc hsbc ahemdabad

10004 hsbc hsbc ahemdabad

10009 icici icici mardurai

10005 icici icici mardurai

10001 icici icici mardurai

10013 icici icici mardurai

10002 sbi sbi trichy

10011 sbi sbi trichy

ACCOUNT\_NO BRANCH\_NAME BRANCH\_NAME BRANCH\_CITY

---------- --------------- --------------- ------------------------------

10015 sbi sbi trichy

10006 sbi sbi trichy

10010 sbi sbi trichy

14 rows selected.

**LEFT OUTER JOIN:**

**27. FIND ALL ACCOUNT NUMBER WITH BRANCH DETAILS**

SQL> select a.account\_no, a.branch\_name, b.branch\_name,b.branch\_city from account a,branch b where a.branch\_name(+)=b.branch\_name;

ACCOUNT\_NO BRANCH\_NAME BRANCH\_NAME BRANCH\_CITY

---------- --------------- --------------- ------------------------------

10007 hdfc hdfc salem

10003 hdfc hdfc salem

10008 hsbc hsbc ahemdabad

10012 hsbc hsbc ahemdabad

10004 hsbc hsbc ahemdabad

10009 icici icici mardurai

10005 icici icici mardurai

10001 icici icici mardurai

10013 icici icici mardurai

iob chennai

pnb mumbai

ACCOUNT\_NO BRANCH\_NAME BRANCH\_NAME BRANCH\_CITY

---------- --------------- --------------- ------------------------------

10002 sbi sbi trichy

10011 sbi sbi trichy

10015 sbi sbi trichy

10006 sbi sbi trichy

10010 sbi sbi trichy

16 rows selected.

SQL> select account.account\_no, account.branch\_name, branch.branch\_name, branch.branch\_city from account left outer join branch on account.branch\_name=branch.branch\_name;

ACCOUNT\_NO BRANCH\_NAME BRANCH\_NAME BRANCH\_CITY

---------- --------------- --------------- ------------------------------

10013 icici icici mardurai

10009 icici icici mardurai

10005 icici icici mardurai

10001 icici icici mardurai

10015 sbi sbi trichy

10011 sbi sbi trichy

10010 sbi sbi trichy

10006 sbi sbi trichy

10002 sbi sbi trichy

10007 hdfc hdfc salem

10003 hdfc hdfc salem

ACCOUNT\_NO BRANCH\_NAME BRANCH\_NAME BRANCH\_CITY

---------- --------------- --------------- ------------------------------

10012 hsbc hsbc ahemdabad

10008 hsbc hsbc ahemdabad

10004 hsbc hsbc ahemdabad

14 rows selected.

**RIGHT OUTER JOIN:**

**28. FIND ALL ACCOUNT NUMBER WITH BRANCH DETAILS.**

SQL> select a.account\_no, a.branch\_name, b.branch\_name,b.branch\_city from account a,branch b where a.branch\_name = b.branch\_name (+);

ACCOUNT\_NO BRANCH\_NAME BRANCH\_NAME BRANCH\_CITY

---------- --------------- --------------- ------------------------------

10013 icici icici mardurai

10009 icici icici mardurai

10005 icici icici mardurai

10001 icici icici mardurai

10015 sbi sbi trichy

10011 sbi sbi trichy

10010 sbi sbi trichy

10006 sbi sbi trichy

10002 sbi sbi trichy

10007 hdfc hdfc salem

10003 hdfc hdfc salem

ACCOUNT\_NO BRANCH\_NAME BRANCH\_NAME BRANCH\_CITY

---------- --------------- --------------- ------------------------------

10012 hsbc hsbc ahemdabad

10008 hsbc hsbc ahemdabad

10004 hsbc hsbc ahemdabad

14 rows selected.

SQL> select account.account\_no, account.branch\_name,

2 branch.branch\_name, branch.branch\_city from account right outer

3 join branch on account.branch\_name=branch.branch\_name;

ACCOUNT\_NO BRANCH\_NAME BRANCH\_NAME BRANCH\_CITY

---------- --------------- --------------- ------------------------------

10007 hdfc hdfc salem

10003 hdfc hdfc salem

10008 hsbc hsbc ahemdabad

10012 hsbc hsbc ahemdabad

10004 hsbc hsbc ahemdabad

10009 icici icici mardurai

10005 icici icici mardurai

10001 icici icici mardurai

10013 icici icici mardurai

iob chennai

pnb mumbai

ACCOUNT\_NO BRANCH\_NAME BRANCH\_NAME BRANCH\_CITY

---------- --------------- --------------- ------------------------------

10002 sbi sbi trichy

10011 sbi sbi trichy

10015 sbi sbi trichy

10006 sbi sbi trichy

10010 sbi sbi trichy

16 rows selected.

**NATURAL LEFT OUTER JOIN:**

**29. FIND ALL ACCOUNT NO WITH BRANCH DETAILS.**

SQL> select \* from account natural left outer join branch;

BRANCH\_NAME ACCOUNT\_NO BALANCE BRANCH\_CITY ASSETS

--------------- ---------- ---------- ------------------------------ ----------

icici 10013 1071 mardurai 40000

icici 10009 1702.89 mardurai 40000

icici 10005 976.5 mardurai 40000

icici 10001 115.5 mardurai 40000

sbi 10015 trichy 80000

sbi 10011 1702.89 trichy 80000

sbi 10010 1869.84 trichy 80000

sbi 10006 1202.04 trichy 80000

sbi 10002 168 trichy 80000

hdfc 10007 1368.99 salem 40000

hdfc 10003 661.5 salem 40000

BRANCH\_NAME ACCOUNT\_NO BALANCE BRANCH\_CITY ASSETS

--------------- ---------- ---------- ------------------------------ ----------

hsbc 10012 1535.94 ahemdabad 40000

hsbc 10008 1535.94 ahemdabad 40000

hsbc 10004 819 ahemdabad 40000

14 rows selected.

**NATURAL RIGHT OUTER JOIN:**

**30. FIND ALL ACCOUNT NO WITH BRANCH DETAILS.**

**SQL> select \* from account natural left outer join branch;**

BRANCH\_NAME ACCOUNT\_NO BALANCE BRANCH\_CITY ASSETS

--------------- ---------- ---------- ------------------------------ ----------

icici 10013 1071 mardurai 40000

icici 10009 1702.89 mardurai 40000

icici 10005 976.5 mardurai 40000

icici 10001 115.5 mardurai 40000

sbi 10015 trichy 80000

sbi 10011 1702.89 trichy 80000

sbi 10010 1869.84 trichy 80000

sbi 10006 1202.04 trichy 80000

sbi 10002 168 trichy 80000

hdfc 10007 1368.99 salem 40000

hdfc 10003 661.5 salem 40000

BRANCH\_NAME ACCOUNT\_NO BALANCE BRANCH\_CITY ASSETS

--------------- ---------- ---------- ------------------------------ ----------

hsbc 10012 1535.94 ahemdabad 40000

hsbc 10008 1535.94 ahemdabad 40000

hsbc 10004 819 ahemdabad 40000

14 rows selected.

**KEY CONSTRAINT**:

**31. ADD FOREIGN KEY TO BARNCH NAME IN ACCOUNT TABLE TO REFER BRANCH NAMES IN BRANCH TABLE WITH CONSTRAINT NAME**

SQL> alter table account add constraint acbr foreign key(branch\_name) references branch(branch\_name)deferrable initially immediate;

Table altered**.**

**32. ADD FOREIGN KEY TO BRANCH NAME IN LOAN TABLE TO REFER BRANCH NAMES IN BRANCH TABLE WITH CONSTAINT NAME**.

SQL> alter table loan add constraint lobr foreign key(branch\_name) references branch(branch\_name) deferrable initially deferred;

Table altered.

**33. ENFORE THE CONSTRAINT IMMEDIATELY ON THE TABLE**.

SQL> alter session set constraint=immediate;

Session altered.

**34. ENFORE THE CONSTAINT WITH DEFERRED OPTION.**

SQL> alter session set constraint=deferred;

Session altered.

**35. CHECK THE FOREGIN KEY CONSTRAINTS IS VALID ON ACCOUNT TABLE.**

SQL> alter table account modify constraint acbr enable validate;

Table altered.

**36. DISBALE THE VALIDATE OPTION FOR CONSTRAINT ON ACCOUNT TABLE.**

alter table loan modify constraint lobr enable novalidate

2 ;

Table altered.

**37. DISABLE THE FOREIGN KEY CONSTRAINTS IN LOAN TABLE**

**S**QL> alter table account modify constraint acbr disable novalidate;

Table altered.

**38. DROP THE PRIMARY KEY OF ACCOUNT TABLE**

SQL> alter table account drop primary key;

Table altered**.**

**DROPPING A TABLE:**

**39. DROP THE USER DEFINED CONSTRAINT ON ACCOUNT TABLE.**

SQL> alter table account drop constraint acbr;

Table altered.

**40. DROP THE USER DEFINED CONSTRAINT ON LOAN TABLE.**

SQL> alter table loan drop constraint lobr;

Table altered.