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VIT®

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

Programme	:	**B.Tech - CSE**	Semester	:	**Winter 18 - 19**
Course	:	**Database Management Systems (Embedded Lab)**	Code	:	**CSE2004**
Faculty	:	**Prof. A. Vijayalakshmi Prof. M. Premalatha**	Slot	:	**L3 + L4**

Ex. No. 4
09/02/18

SQL – Joins

Create the table for the banking enterprise and set sufficient key attributes for the following schemas and insert sufficient tuples

customer(cust_name, cust_street, cust_city)
branch(bname, bcity, assets)
account(acct_no, bname, balance)
loan(loan_no, bname, balance)
depositor(cust_name,acct_no)
borrower(cust_name, loan_no)

SQL> create table customer(cust_name varchar(20),cust_street varchar(20),cust_city varchar(10));
Table created.
SQL> insert into customer values('Ram','CP','Delhi');

1 row created.

SQL> insert into customer values('Ash','Chanakyapuri','Delhi');

1 row created.

SQL> insert into customer values('Jyoti','Dwarka','Delhi');

1 row created.

SQL> insert into customer values('Sam','Vashi','Mumbai');

1 row created.

SQL> insert into customer values('Simran','Borivali','Mumbai');

1 row created.

SQL> insert into customer values('Siddhi','Andheri','Mumbai');

1 row created.

SQL> select * from customer;

CUST_NAME	CUST_STREET	CUST_CITY
Ram	CP	Delhi
Ash	Chanakyapuri	Delhi
Jyoti	Dwarka	Delhi
Sam	Vashi	Mumbai
Simran	Borivali	Mumbai
Siddhi	Andheri	Mumbai

SQL> create table branch(bname varchar(20), bcity varchar(20), assets varchar(20));
Table created.

SQL> insert into branch values('Janpath','Delhi','10000000');

1 row created.

SQL> insert into branch values('Janpath','Delhi','10000000');

1 row created.

SQL> delete from branch where bname='Janpath';

2 rows deleted.

SQL> insert into branch values('Janpath','Delhi','10000000');

1 row created.

SQL> insert into branch values('Sainik Farms','Delhi','15000000');

1 row created.

SQL> insert into branch values('Gurgaon','Delhi','25000000');

1 row created.

SQL> insert into branch values('Goregaon','Mumbai','3000000');

1 row created.

SQL> insert into branch values('Bandra','Mumbai','26000000');

1 row created.

SQL> insert into branch values('Lokhandwala','Mumbai','26000000');

1 row created.

SQL> select * from branch;

```
BNAME              BCITY              ASSETS
------------------ ------------------ ------------------
Janpath            Delhi              10000000
Sainik Farms       Delhi              15000000
Gurgaon            Delhi              25000000
Goregaon           Mumbai             3000000
Bandra             Mumbai             26000000
Lokhandwala        Mumbai             26000000
```

6 rows selected.

SQL> create table account(acct_no varchar(15),bname varchar(20),balance
number(10),constraint pk_accno primary key(acct_no));
Table created.

SQL> insert into account values('HDFC00001','Janpath',260000);

1 row created.

SQL> insert into account values('HDFC00023','Sainik Farms',450000

1 row created.

SQL> insert into account values('HDFC00125','Sainik Farms',110000

1 row created.

SQL> insert into account values('HDFC01034','Bandra',1050000);

1 row created.

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SQL> insert into account values('HDFC010456','Goregaon',650000);

1 row created.

SQL> insert into account values('HDFC010658','Goregaon',850000);

1 row created.

SQL> select * from account;

```
ACCT_NO          BNAME              BALANCE
--------------- -------------------- ----------
HDFC00001       Janpath             260000
HDFC00023       Sainik Farms         450000
HDFC00125       Sainik Farms         1100000
HDFC01034       Bandra             1050000
HDFC010456      Goregaon             650000
HDFC010658      Goregaon             850000
```

6 rows selected.

SQL> create table loan(loan_no varchar(10),bname varchar(20),balance number(10));
Table created.

SQL> insert into loan values('LNO001','Goregaon',850000);

1 row created.

SQL> insert into loan values('LNO005','Sainik Farms',450000);

1 row created.

SQL> insert into loan values('LNO002','Bandra',1050000);

1 row created.

SQL> insert into loan values('LNO004','Goregaon',650000);

1 row created.

SQL> insert into loan values('LNO006','Sainik Farms',1100000);

1 row created.

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SQL> insert into loan values('LNO003','Janpath',260000);

1 row created.

SQL> select * from loan;

LOAN_NO	BNAME	BALANCE
LNO001	Goregaon	850000
LNO005	Sainik Farms	450000
LNO002	Bandra	1050000
LNO004	Goregaon	650000
LNO006	Sainik Farms	1100000
LNO003	Janpath	260000

6 rows selected.

SQL> create table depositor(cust_name varchar(20),acct_no varchar(15),constraint pk_acno primary key(acct_no));
Table created.

SQL> create table borrower(cust_name varchar(20),loan_no varchar(10),constraint pk_loan primary key(loan_no));
Table created.

SQL> alter table loan add constraint pk_lno primary key(loan_no);
Table altered.

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Write SQL queries for the following
      1. Find all customer details with his account number who lives in Chennai.

SQL> select * from customer NATURAL JOIN depositor where cust_city='Chennai';

no rows selected

SQL> select * from customer NATURAL JOIN depositor where cust_city='Delhi';

CUST_NAME	CUST_STREET	CUST_CITY	ACCT_NO
Ram	CP	Delhi	HDFC00001
Ash	Chanakyapuri	Delhi	HDFC00023
Jyoti	Dwarka	Delhi	HDFC00125

      2. List the name of the account numbers of the accounts taken at 'vandalur' branch.

SQL> select acct_no,bname,bcity from account NATURAL JOIN branch where bname='Goregaon';

ACCT_NO	BNAME	BCITY
HDFC010456	Goregaon	Mumbai
HDFC010658	Goregaon	Mumbai

SQL> select acct_no,bname,bcity from account NATURAL JOIN branch where bname='Vandalur';
no rows selected

      3. Find the customer names who lives in delhi and has a loan.

SQL> select cust_name,cust_city from customer NATURAL JOIN loan where cust_city='Delhi';

CUST_NAME	CUST_CITY
Ram	Delhi
Ash	Delhi
Jyoti	Delhi
Ram	Delhi
Ash	Delhi
Jyoti	Delhi
Ram	Delhi

6 rows selected.

4. List the customer name, customer street with loan number.

SQL> select cust_name,cust_street,loan_no from customer NATURAL JOIN borrower;

```
CUST_NAME           CUST_STREET         LOAN_NO
-------------------- -------------------- ----------
Jyoti           Dwarka          LNO006
Ash             Chanakyapuri      LNO005
Ram              CP             LNO003
Sam             Vashi           LNO002
Simran           Borivali         LNO004
Siddhi           Andheri         LNO001
```

6 rows selected.

5. List all the loan details with its customer names.

SQL> select * from loan natural join borrower;

```
LOAN_NO   BNAME                 BALANCE CUST_NAME
---------- -------------------- ---------- --------------------
LNO006    Sainik Farms        1100000 Jyoti
LNO005    Sainik Farms         450000 Ash
LNO003    Janpath             260000 Ram
LNO002    Bandra             1050000 Sam
LNO004    Goregaon             650000 Simran
LNO001    Goregaon             850000 Siddhi
```

6 rows selected.

6. List the balance of all accounts hold by the customer name 'sai'.

SQL> select balance from account natural join depositor where cust_name='sai';

no rows selected

SQL> select balance from account natural join depositor where cust_name='Sam';

```
  BALANCE
----------
  1050000
```

7. List the account number, branch name of the customers who lives in the same city as their branch city.

8. List all the account details with its customer names.

SQL> select cust_name,acct_no,bname,balance from account natural join depositor;

CUST_NAME	ACCT_NO	BNAME	BALANCE
Ram	HDFC00001	Janpath	260000
Ash	HDFC00023	Sainik Farms	450000
Jyoti	HDFC00125	Sainik Farms	1100000
Sam	HDFC01034	Bandra	1050000
Simran	HDFC010456	Goregaon	650000
Siddhi	HDFC010658	Goregaon	850000

9. List all the loan details with its customer names.

SQL> select cust_name,loan_no,bname,balance from borrower natural join loan;

CUST_NAME	LOAN_NO	BNAME	BALANCE
Jyoti	LNO006	Sainik Farms	1100000
Ash	LNO005	Sainik Farms	450000
Ram	LNO003	Janpath	260000
Sam	LNO002	Bandra	1050000
Simran	LNO004	Goregaon	650000
Siddhi	LNO001	Goregaon	850000

6 rows selected.

10. List all the account details with its customer names.

SQL> select cust_name,acct_no,bname,balance from account natural join depositor;

CUST_NAME	ACCT_NO	BNAME	BALANCE
Ram	HDFC00001	Janpath	260000
Ash	HDFC00023	Sainik Farms	450000
Jyoti	HDFC00125	Sainik Farms	1100000
Sam	HDFC01034	Bandra	1050000
Simran	HDFC010456	Goregaon	650000
Siddhi	HDFC010658	Goregaon	850000

6 rows selected.

11. List all branches, its sum of balances with branch city.

SQL> select bname,bcity,balance from branch natural join account;

BNAME	BCITY	BALANCE
Janpath	Delhi	260000
Sainik Farms	Delhi	450000
Sainik Farms	Delhi	1100000
Bandra	Mumbai	1050000
Goregaon	Mumbai	650000
Goregaon	Mumbai	850000

6 rows selected.

12. List all customers with its account numbers and loan numbers [using natural join].

SQL> select cust_name,acct_no,loan_no from borrower natural join depositor;

CUST_NAME	ACCT_NO	LOAN_NO
Ram	HDFC00001	LNO003
Ash	HDFC00023	LNO005
Jyoti	HDFC00125	LNO006
Sam	HDFC01034	LNO002
Simran	HDFC010456	LNO004
Siddhi	HDFC010658	LNO001

6 rows selected.

13. List all customers with its account numbers and loan numbers [using left outer join].

SQL> select depositor.cust_name,depositor.acct_no,borrower.loan_no from depositor left join borrower on depositor.cust_name=borrower.cust_name;

CUST_NAME	ACCT_NO	LOAN_NO
Jyoti	HDFC00125	LNO006
Ash	HDFC00023	LNO005
Ram	HDFC00001	LNO003
Sam	HDFC01034	LNO002
Simran	HDFC010456	LNO004
Siddhi	HDFC010658	LNO001

14. List all customers with its account numbers and loan numbers [using right outer join].

SQL> select depositor.cust_name,depositor.acct_no,borrower.loan_no from depositor right join borrower on depositor.cust_name=borrower.cust_name;

CUST_NAME	ACCT_NO	LOAN_NO
Ram	HDFC00001	LNO003
Ash	HDFC00023	LNO005
Jyoti	HDFC00125	LNO006
Sam	HDFC01034	LNO002
Simran	HDFC010456	LNO004
Siddhi	HDFC010658	LNO001

6 rows selected.

15. List all customers with its account numbers and loan numbers [using full outer join].

SQL> select depositor.cust_name,depositor.acct_no,borrower.loan_no from depositor full outer join borrower on depositor.cust_name=borrower.cust_name;

CUST_NAME	ACCT_NO	LOAN_NO
Jyoti	HDFC00125	LNO006
Ash	HDFC00023	LNO005
Ram	HDFC00001	LNO003
Sam	HDFC01034	LNO002
Simran	HDFC010456	LNO004
Siddhi	HDFC010658	LNO001

6 rows selected.