## SWE1004 - (L 9 + L10)

## Lab Sheet 6

## Join Operations

# SQL – Joins

```
customer(custname, custst, custcity)pk
branch(branchname, branchcity, assets)pk account(acctno,
branchname, balance) pk, fk loan(loanno, branchname,
amount) pk, fk
 depositor(custname, acctno)fk,
fk borrower(custname, loanno)fk,
fk
```

1. **list the name and the city of the customer [Tables involved customer]**

```
SQL> SELECT custname,custcity FROM customer_MIA1119;

CUSTNAME             CUSTCITY
-------------------- --------------------
aditya               delhi
pooja                chennai
sai                  bangalore
```

2. **list all account details of chennai city [branch, account]**

```
SQL> SELECT*FROM branch_MIA1119 NATURAL JOIN account_MIA1119
  2  WHERE branchcity='chennai';

BRANCHNAME BRANCHCITY                ASSSESTS     ACCTNO    BALANCE
---------- -------------------- ---------- ---------- ----------
anna salai chennai                  122321        101       2332
```

3. **list the customer name with the account details [depositor, account]**

   <span style="color:red">select custname, acctno, branchname, balance from depositor natural join account;</span> **or**
   <span style="color:red">select * from depositor natural join account;</span>

```
SQL> SELECT*FROM depositor_MIA1119 NATURAL JOIN account_MIA1119;

    ACCTNO CUSTNAME   BRANCHNAME    BALANCE
---------- ---------- ---------- ----------
       102 sai        hal              1221
```

4. list the customer name with the acctno and the loanno [depositor,
   borrower]

```
SQL> SELECT*FROM customer_MIA1119 NATURAL JOIN account_MIA1119 NATURAL JOIN loan_MIA1119;

BRANCHNAME      CUSTNAME             CUSTST               CUSTCITY
--------------- -------------------- -------------------- --------------------
    ACCTNO    BALANCE    LOANNO     AMOUNT
---------- ---------- ---------- ----------
hal             aditya               janpath              delhi
       102       1221        501    300459

hal             pooja                avadi                chennai
       102       1221        501    300459

hal             sai                  jayanagar            bangalore
       102       1221        501    300459


BRANCHNAME      CUSTNAME             CUSTST               CUSTCITY
--------------- -------------------- -------------------- --------------------
    ACCTNO    BALANCE    LOANNO     AMOUNT
---------- ---------- ---------- ----------
vandalur        aditya               janpath              delhi
       103       4433        503    665544

vandalur        pooja                avadi                chennai
       103       4433        503    665544

vandalur        sai                  jayanagar            bangalore
       103       4433        503    665544

6 rows selected.
```

5. list the customer name with the acctno, its branchname and the
   loanno, its branchname [depositor, borrower, loan, account]

```
SQL> SELECT CUSTNAME,ACCTNO,BRANCHNAME,LOANNO FROM depositor_MIA1119 NATURAL JOIN account_MIA1119 NATURAL JOIN loan_MIA1119 NATURAL JOIN borrower_MIA1119;

CUSTNAME          ACCTNO BRANCHNAME       LOANNO
--------------- -------- --------------- ----------
sai                  102 hal                 501
```

### Customer Relation

```
SQL> create table customer(custname varchar2(10),custst
varchar2(10),custcity varchar2(10),primary key(custname)); Table
created.


SQL> select * from customer;

CUSTNAME    CUSTST     CUSTCITY --
--------- ---------- ----------
aditya     janpath    delhi pooja
avadi      chennai sai
jayanagar  bangalore anaya
rajpath    delhi seetha      park
st    bangalore aryan
vandalur   chennai


6 rows selected.
SQL> commit;

Commit complete.
```

### Branch Relation

```
SQL> create table branch(branchname varchar2(10),branchcity
varchar2(10),assets number(10,2), primary key(branchname));

Table created.


SQL> select * from branch;

BRANCHNAME BRANCHCITY     ASSETS ---
------- ---------- ---------- ring
road   delhi          233222 anna
salai chennai        122321 hal
bangalore       43344 vandalur
chennai       333211

SQL> commit;

Commit complete.
```

### Account Relation

```
SQL> create table account(acctno number(5) primary key,branchname
varchar2(10),balance number(10,2),foreign key(branchname) references
branch);

Table created.


SQL> select * from account;
    ACCTNO BRANCHNAME    BALANCE
---------- ---------- ----------
101 anna salai      2332
102 hal             1221
103 vandalur        4433
104 ring road       5445
105 vandalur        7764

SQL> commit;

Commit complete.
```

**Loan Relation**

```
SQL> create table loan(loanno number(5) primary key,branchname
varchar2(15),amount number(10,2),foreign key(branchname) references
branch);

Table created.


SQL> select * from loan;

    LOANNO BRANCHNAME          AMOUNT
---------- --------------- ----------
501 hal                300459
502 ring road          211222
503 vandalur           665544
504 vandalur           232221
```

**Depositor Relation [Association between customer and account]**

```
SQL> create table depositor(custname varchar2(10), acctno
number(5),foreign key(custname) references customer, foreign
key(acctno) references account);

Table created.


SQL> select * from depositor;
```

```
CUSTNAME        ACCTNO ---
------- ---------- aditya
104 pooja              105
sai            102
anaya          101
aryan          103

SQL> commit;
Commit complete.
```

**<u>Borrower Relation [Association between customer and loan]</u>**

```
SQL> create table borrower(custname varchar2(15), loanno number(5),
foreign key(custname) references customer, foreign key(loanno)
references loan);

Table created.

SQL> select * from borrower;

CUSTNAME          LOANNO ---
------------ ---------- sai
501 seetha            501
aryan          504
aryan          503
anaya          502

SQL> commit;

Commit complete.
```

# Table instances

**Banking Schema**
**customer(<u>custname</u>, custst, custcity)pk**
**branch(<u>branchname</u>, branchcity, assets)pk account(acctno,**
**branchname, balance) pk, fk loan(loanno, branchname,**
**amount) pk, fk**
 **depositor(custname, acctno)fk,**
**fk borrower(custname, loanno)fk,**
**fk**

```
  create table customer(custname varchar2(10),custst
varchar2(10),custcity varchar2(10),primary key(custname));
insert into customer values('aditya','janpath','delhi');
insert into customer values('pooja','avadi','chennai');
insert into customer values('sai','jayanagar','bangalore');
insert into customer values('anaya','rajpath','delhi');
insert into customer values('seetha','park st','bangalore');
insert into customer values('aryan','vandalur','chennai');
create table branch(branchname varchar2(10),branchcity
varchar2(10),assets number(10,2), primary key(branchname));
insert into branch values('ring road','delhi',233222);
insert into branch values('anna salai','chennai',122321);
insert into branch values('hal','bangalore',43344); insert
into branch values('vandalur','chennai',333211);

create table account(acctno number(5) primary key,branchname
varchar2(10),balance number(10,2),foreign key(branchname) references
branch);
insert into account values(101,'anna salai',2332);
insert into account values(102,'hal',1221); insert
into account values(103,'vandalur',4433); insert
into account values(104,'ring road',5445); insert
into account values(105,'vandalur',7764);

create table loan(loanno number(5) primary key,branchname
varchar2(15),amount number(10,2),foreign key(branchname) references
branch);
insert into loan values(501,'hal',300459);
insert into loan values(502,'ring road',211222);
insert into loan values(503,'vandalur',665544);
insert into loan values(504,'vandalur',232221);
```

**Depositor Relation [Association between customer and account]**

```
 create table depositor(custname varchar2(10), acctno
number(5),foreign key(custname) references customer, foreign
key(acctno) references account);
insert into depositor values('aditya',104);
insert into depositor values('pooja',105);
insert into depositor values('sai',102);
insert into depositor values('anaya',101);
insert into depositor values('aryan',103);
```

**Borrower Relation [Association between customer and loan]**

```
 create table borrower(custname varchar2(15), loanno number(5),
foreign key(custname) references customer, foreign key(loanno)
references loan);
insert into borrower values('sai',501); insert
into borrower values('seetha',501); insert
into borrower values('aryan',504); insert into
borrower values('aryan',503); insert into
borrower values('anaya',502); commit;
```