1. Create below tables with appropriate constraints like primary key, foreign key, check constrains, not null etc.

Account(Acc_no, branch_name,balance)

branch(branch_name,branch_city,assets)

customer(cust_name,cust_street,cust_city)

Depositor(cust_name,acc_no)

Loan(loan_no,branch_name,amount)

Borrower(cust_name,loan_no)

```
SQL> create table Branch(branc_name varchar(255) primary key,
  2                      branch_city varchar(255),
  3                      asset int);

Table created.

SQL> insert into Branch values('moshi','pune',100000);

1 row created.

SQL> insert into Branch values('bhosari','pune',1230000);

1 row created.

SQL> insert into Branch values('nigdi','pune',1240000);

1 row created.

SQL> insert into Branch values('akurdi','pune',123600);

1 row created.

SQL> select * from branch;

BRANC_NAME BRANCH_CITY              ASSET
---------- -------------------- ----------
moshi      pune                     100000
bhosari    pune                    1230000
nigdi      pune                    1240000
akurdi     pune                     123600

SQL> create table account(acc_no int primary key,
  2                       branc_name varchar(255),
  3                       balance int,
  4                       foreign key(branc_name) references branch(branc_name));

Table created.
```

```
SQL> insert into account values('123456011','moshi',16000);

1 row created.

SQL> select * from account;

    ACC_NO BRANC_NAME    BALANCE
---------- ---------- ----------
 123456011 moshi           16000

SQL> insert into account values('123456012','bhosari',50000);

1 row created.

SQL> select * from account;

    ACC_NO BRANC_NAME    BALANCE
---------- ---------- ----------
 123456011 moshi           16000
 123456012 bhosari         50000

SQL> insert into account values('123456013','nigdi',100000);

1 row created.

SQL> insert into account values('123456014','akurdi',34000);

1 row created.

SQL> select * from account;

    ACC_NO BRANC_NAME    BALANCE
---------- ---------- ----------
 123456011 moshi           16000
 123456012 bhosari         50000
 123456013 nigdi          100000
 123456014 akurdi          34000

SQL> create table customer(cust_id int primary key,
  2                        cust_name varchar(255),
  3                        cust_street varchar(255),
  4                        cust_city varchar(255));

Table created.

SQL> select * from customer;

   CUST_ID CUST_NAME  CUST_STREE CUST_CITY
---------- ---------- ---------- ----------
      1111 anjali     lane 1     pune

SQL> insert into customer values(1112,'pragati','lane 2','sanagli');

1 row created.

SQL> insert into customer values(1113,'sneha','lane 3','satara');

1 row created.

SQL> insert into customer values(1114,'anushka','lane 4','pune');

1 row created.

SQL> select * from customer;

   CUST_ID CUST_NAME  CUST_STREE CUST_CITY
---------- ---------- ---------- ----------
      1111 anjali     lane 1     pune
      1112 pragati    lane 2     sanagli
      1113 sneha      lane 3     satara
      1114 anushka    lane 4     pune
```

```
SQL> create table depositor(cust_id int ,
  2                         acc_no int,
  3                         foreign key(cust_id) references customer(cust_id) on delete
 cascade,
  4                         foreign key(acc_no) references account(acc_no) on delete ca
scade);

Table created.

SQL> insert into depositor values(1111,123456011);

1 row created.

SQL> select * from depositor;

   CUST_ID     ACC_NO
---------- ----------
      1111  123456011

SQL> insert into depositor values(1112,123456012);

1 row created.

SQL> insert into depositor values(1113,123456013);

1 row created.

SQL> insert into depositor values(1114,123456014);

1 row created.

SQL> select * from depositor;

   CUST_ID     ACC_NO
---------- ----------
      1111  123456011
      1112  123456012
      1113  123456013
      1114  123456014

SQL> create table loan(loan_no int primary key,
  2                    branc_name varchar(50),
  3                    amount int,
  4                    foreign key(branc_name) references branch(branc_name) on delete
 cascade);

Table created.

SQL> insert into loan values(2001,'moshi',50000);

1 row created.

SQL> insert into loan values(2002,'bhosari',100000);

1 row created.

SQL> insert into loan values(2003,'nigdi',30000);

1 row created.

SQL> insert into loan values(2004,'akurdi',12000);

1 row created.
```

```
SQL> select * from loan;

   LOAN_NO BRANC_NAME     AMOUNT
---------- ---------- ----------
      2001 moshi           50000
      2002 bhosari        100000
      2003 nigdi           30000
      2004 akurdi          12000
```

```
SQL> create table borrower(cust_id int,
  2                        loan_no int,
  3                        foreign key(cust_id) references customer(cust_id) on delete
 cascade,
  4                        foreign key(loan_no) references loan(loan_no) on delete cas
cade);

Table created.

SQL> insert into borrower values(1111,2001);

1 row created.

SQL> insert into borrower values(1114,2004);

1 row created.

SQL> select * from borrower;

   CUST_ID    LOAN_NO
---------- ----------
      1111       2001
      1114       2004
```

1.Find the names of all branches in loan relation.

```
SQL> select branc_name from loan;

BRANC_NAME
----------
moshi
bhosari
nigdi
akurdi
```

2. Find all loan numbers for loans made at Akurdi Branch with loan amount >12000.

```
SQL> select loan_no from loan where amount>12000;

   LOAN_NO
----------
      2001
      2002
      2003
```

3. Find no. of depositors at each branch.

```
SQL> select count(cust_id) from depositor;

COUNT(CUST_ID)
--------------
             4
```

4. Delete all loans with loan amount between 1300 and 1500.

```
SQL> select * from loan;

   LOAN_NO BRANC_NAME     AMOUNT
---------- ---------- ----------
      2001 moshi           50000
      2002 bhosari        100000
      2003 nigdi           30000
      2004 akurdi          12000
      2005 nigdi            1355
      2006 moshi            1400
      2007 akurdi          10000

7 rows selected.

SQL> delete from loan where amount between 1300 and 1500;

2 rows deleted.

SQL> select * from loan;

   LOAN_NO BRANC_NAME     AMOUNT
---------- ---------- ----------
      2001 moshi           50000
      2002 bhosari        100000
      2003 nigdi           30000
      2004 akurdi          12000
      2007 akurdi          10000
```

5. Delete all tuples at every branch located in Nigdi.

```
SQL>  delete from branch where branc_name='nigdi';

1 row deleted.

SQL> select * from branch;

BRANC_NAME BRANCH_CITY              ASSET
---------- -------------------- ----------
moshi      pune                    100000
bhosari    pune                   1230000
akurdi     pune                    123600

SQL> select * from account;

    ACC_NO BRANC_NAME    BALANCE
---------- ---------- ----------
 123456011 moshi           16000
 123456012 bhosari         50000
 123456014 akurdi          34000
```

6. Delete all account tuples at every branch located in a specific city.

```
SQL> select * from account;

    ACC_NO BRANC_NAME    BALANCE
---------- ---------- ----------
 123456011 moshi           16000
 123456012 bhosari         50000
 123456014 akurdi          34000
 123456015 akurdi            200
 123456016 moshi             100
 123456017 bhosari           230

6 rows selected.

SQL> delete from account where branc_name in(select branc_name from branch where branch
_city='pune');

6 rows deleted.
```

8. Find the names of all customers who have taken loans.

```
SQL> select customer.cust_name, customer.cust_street,customer.cust_city from customer join
borrower on customer.cust_id=borrower.cust_id;

CUST_NAME  CUST_STREE CUST_CITY
---------- ---------- ----------
anjali     lane 1     pune
anushka    lane 4     pune
```

9. Find the names of all customers who have not taken loans.

```
SQL> select customer.cust_name from customer left join borrower on customer.cust_id=borrowe
r.cust_id where borrower.cust_id is null;

CUST_NAME
----------
sneha
pragati
```

10. Find the name, account number, and balance of all customers who have an account with

account balance of 400 or less.

```
SQL> select customer.cust_name , depositor.acc_no, account.balance from depositor join cust
omer on depositor.cust_id=customer.cust_id
  2  join account on depositor.acc_no=account.acc_no where account.balance<=400;

CUST_NAME      ACC_NO    BALANCE
---------- ---------- ----------
sneha       123456017        230
```

11. Find the name, account number, and balance of all customers who have an account.

```
SQL> select customer.cust_name , account.acc_no, account.balance from depositor join custom
er on depositor.cust_id=customer.cust_id
  2  join account on depositor.acc_no=account.acc_no;

CUST_NAME      ACC_NO    BALANCE
---------- ---------- ----------
anjali      123456011      16000
pragati     123456012      50000
anushka     123456014      34000
sneha       123456017        230
```

12. Find the name of all branches with assets between one and four million.

```
SQL>  select branc_name from branch where asset between 1000000 and 4000000;

BRANC_NAME
----------
bhosari
kolhapur
```

13. Alter table customer by adding Contact_details column.

```
SQL> alter table customer add cust_details varchar(255);

Table altered.
```

```
SQL> select * from customer;

   CUST_ID CUST_NAME  CUST_STREE CUST_CITY  CUST_DETAILS
---------- ---------- ---------- ---------- --------------------
      1111 anjali     lane 1     pune
      1112 pragati    lane 2     sanagli
      1113 sneha      lane 3     satara
      1114 anushka    lane 4     pune
```

14. Alter table customer by removing Contact_details column.

```
SQL> select * from customer;

   CUST_ID CUST_NAME            CUST_STREE CUST_CITY  CUST_DETAI
---------- -------------------- ---------- ---------- ----------
      1111 anjali               lane 1     pune
      1112 pragati              lane 2     sanagli
      1113 sneha                lane 3     satara
      1114 anushka              lane 4     pune

SQL> alter table customer drop column cust_details;

Table altered.

SQL> select * from customer;

   CUST_ID CUST_NAME            CUST_STREE CUST_CITY
---------- -------------------- ---------- ----------
      1111 anjali               lane 1     pune
      1112 pragati              lane 2     sanagli
      1113 sneha                lane 3     satara
      1114 anushka              lane 4     pune
```

15. Drop table Depositor.

```
SQL> drop table depositor;

Table dropped.
```

16. Truncate table Borrower.

```
SQL> truncate table borrower;

Table truncated.
```

2. Create table college (college_id primary key, college_code, college-name)

```
SQL> create table college(college_id int primary key,
  2                       college_code int,
  3                       college_name varchar(255));

Table created.
```

2.1. Create Index College_Index using using any column.

```
SQL> create index college_index on college(college_code);

Index created.
```

2.2. Create unique index for unique values.

```
SQL> create unique index collegename_index on college(college_name DESC);

Index created.
```

2.3. Remove index from tables.

```
SQL> drop index college_index;

Index dropped.

SQL> drop index collegename_index;

Index dropped.

SQL>
```

Q.3 Create synonym for customer table as cust.

```
SQL> create synonym cust
  2  for customer;

Synonym created.

SQL> select * from cust;

CUST_NAME
-------------------------------------
CUST_STREET
-------------------------------------
CUST_CITY                           CONTACT_DETAILS
----------------------------------- --------------
harshal
dighiroad
pune

onkar
akurdiroad
pune
```

Q.4 Create sequence roll_seq and use in student table for roll_no column.

```
SQL> create sequence roll_no
  2  increment by 1
  3  start with 2007001
  4  maxvalue 2007080
  5  cycle
  6  cache 20;

Sequence created.

SQL> create table student(
  2                             roll_no int,
  3                             stud_name varchar(255),
  4                             stud_branch varchar(255),
  5                             stud_city varchar(255)
  6                     );

Table created.
```

```
SQL> insert into student values(roll_no.nextval,'anjali','CS','pune');

1 row created.
```

```
SQL> insert into student values(roll_no.nextval,'pragati','CS','sangli');

1 row created.

SQL> insert into student values(roll_no.nextval,'sneha','IT','PUNE');

1 row created.

SQL> insert into student values(roll_no.nextval,'shreya','IT','satara');

1 row created.

SQL> select * from student;

   ROLL_NO STUD_NAME  STUD_BRANCH          STUD_CITY
---------- ---------- -------------------- ----------
   2007001 anjali     CS                   pune
   2007002 pragati    CS                   sangli
   2007003 sneha      IT                   PUNE
   2007004 shreya     IT                   satara
```