practice DQL statement

Write SQL statement for the following

1. To find all managers with salary >1500

```
SQL> select * from emp where job='MANAGER' and sal>1500;

    EMPNO ENAME      JOB             MGR HIREDATE      SAL       COMM     DEPTNO
---------- ---------- --------- ---------- --------- ---------- ---------- ----------
      7566 JONES      MANAGER        7839 02-APR-81   2975                   20
      7698 BLAKE      MANAGER        7839 01-MAY-81   2850                   30
      7782 CLARK      MANAGER        7839 09-JUN-81   2450                   10

SQL>
```

2. list all employees with sal >1200 and < 2000

```
SQL> select * from emp where sal between 1200 and 2000;

    EMPNO ENAME      JOB             MGR HIREDATE      SAL       COMM     DEPTNO
---------- ---------- --------- ---------- --------- ---------- ---------- ----------
      7499 ALLEN      SALESMAN       7698 20-FEB-81   1600       300        30
      7521 WARD       SALESMAN       7698 22-FEB-81   1250       500        30
      7654 MARTIN     SALESMAN       7698 28-SEP-81   1250       1400       30
      7844 TURNER     SALESMAN       7698 08-SEP-81   1500       0          30
      7934 MILLER     CLERK          7782 23-JAN-82   1300                  10

SQL>
```

3. list all employees with sal is 1600 or sal is 800 or sal is 1900

```
SQL> select * from emp where sal in (1600,800,1900);

    EMPNO ENAME      JOB             MGR HIREDATE      SAL       COMM     DEPTNO
---------- ---------- --------- ---------- --------- ---------- ---------- ----------
      7369 SMITH      CLERK          7902 17-DEC-80   800                    20
      7499 ALLEN      SALESMAN       7698 20-FEB-81   1600       300         30

SQL>
```

4. list all employees with R at second last position in name

```
SQL> select * from emp where ename like '%R_';

    EMPNO ENAME      JOB             MGR HIREDATE      SAL       COMM     DEPTNO
---------- ---------- --------- ---------- --------- ---------- ---------- ----------
      7521 WARD       SALESMAN       7698 22-FEB-81   1250       500        30
      7782 CLARK      MANAGER        7839 09-JUN-81   2450                  10
      7902 FORD       ANALYST        7566 03-DEC-81   3000                  20

SQL>
```

With regexp

```
SQL> select * from emp where REGEXP_LIKE(ename,'R.$');

    EMPNO ENAME      JOB          MGR HIREDATE       SAL       COMM     DEPTNO
---------- ---------- --------- ---------- --------- ---------- ---------- ----------
      7521 WARD       SALESMAN      7698 22-FEB-81      1250        500         30
      7782 CLARK      MANAGER       7839 09-JUN-81      2450                    10
      7902 FORD       ANALYST       7566 03-DEC-81      3000                    20

SQL>
```

5. List all employees with name starts with A and ends with N

```
SQL> select * from emp where ename like 'A%N';

    EMPNO ENAME      JOB          MGR HIREDATE       SAL       COMM     DEPTNO
---------- ---------- --------- ---------- --------- ---------- ---------- ----------
      7499 ALLEN      SALESMAN      7698 20-FEB-81      1600        300         30

SQL>
```

Q2. Solve following

1. list all employees with salary > 1250 and dept no=30

```
SQL> select * from emp where sal>1250 and deptno=30;

    EMPNO ENAME      JOB          MGR HIREDATE       SAL       COMM     DEPTNO
---------- ---------- --------- ---------- --------- ---------- ---------- ----------
      7499 ALLEN      SALESMAN      7698 20-FEB-81      1600        300         30
      7698 BLAKE      MANAGER       7839 01-MAY-81      2850                    30
      7844 TURNER     SALESMAN      7698 08-SEP-81      1500          0         30

SQL>
```

2. list all employees with salary >=1250 and <= 3000

```
SQL> select * from emp where sal between 1250 and 3000;

    EMPNO ENAME      JOB          MGR HIREDATE       SAL       COMM     DEPTNO
---------- ---------- --------- ---------- --------- ---------- ---------- ----------
      7499 ALLEN      SALESMAN      7698 20-FEB-81      1600        300         30
      7521 WARD       SALESMAN      7698 22-FEB-81      1250        500         30
      7566 JONES      MANAGER       7839 02-APR-81      2975                    20
      7654 MARTIN     SALESMAN      7698 28-SEP-81      1250       1400         30
      7698 BLAKE      MANAGER       7839 01-MAY-81      2850                    30
      7782 CLARK      MANAGER       7839 09-JUN-81      2450                    10
      7788 SCOTT      ANALYST       7566 09-DEC-82      3000                    20
      7844 TURNER     SALESMAN      7698 08-SEP-81      1500          0         30
      7902 FORD       ANALYST       7566 03-DEC-81      3000                    20
      7934 MILLER     CLERK         7782 23-JAN-82      1300                    10

10 rows selected.

SQL>
```

3. list all employees with salary >1250 and < 3000

```
SQL> select * from emp where sal between 1250 and 3000;

    EMPNO ENAME      JOB              MGR HIREDATE         SAL       COMM     DEPTNO
--------- ---------- --------- ---------- --------- ---------- ---------- ----------
     7499 ALLEN      SALESMAN        7698 20-FEB-81      1600        300         30
     7521 WARD       SALESMAN        7698 22-FEB-81      1250        500         30
     7566 JONES      MANAGER         7839 02-APR-81      2975                    20
     7654 MARTIN     SALESMAN        7698 28-SEP-81      1250       1400         30
     7698 BLAKE      MANAGER         7839 01-MAY-81      2850                    30
     7782 CLARK      MANAGER         7839 09-JUN-81      2450                    10
     7788 SCOTT      ANALYST         7566 09-DEC-82      3000                    20
     7844 TURNER     SALESMAN        7698 08-SEP-81      1500          0         30
     7902 FORD       ANALYST         7566 03-DEC-81      3000                    20
     7934 MILLER     CLERK           7782 23-JAN-82      1300                    10

10 rows selected.

SQL>
```

4. list all employees with salary either equal to 3000 or 1250 or 2500

```
SQL> select * from emp where sal in (3000,1250,2500);

    EMPNO ENAME      JOB              MGR HIREDATE         SAL       COMM     DEPTNO
--------- ---------- --------- ---------- --------- ---------- ---------- ----------
     7521 WARD       SALESMAN        7698 22-FEB-81      1250        500         30
     7654 MARTIN     SALESMAN        7698 28-SEP-81      1250       1400         30
     7788 SCOTT      ANALYST         7566 09-DEC-82      3000                    20
     7902 FORD       ANALYST         7566 03-DEC-81      3000                    20

SQL>
```

5. list all employee with name=SMITH

```
SQL> select * from emp where ename='SMITH';

    EMPNO ENAME      JOB              MGR HIREDATE         SAL       COMM     DEPTNO
--------- ---------- --------- ---------- --------- ---------- ---------- ----------
     7369 SMITH      CLERK           7902 17-DEC-80       800                    20

SQL>
```

6. list all employees with name starting with S

```
SQL> select * from emp where ename like 'S%';

    EMPNO ENAME      JOB              MGR HIREDATE         SAL       COMM     DEPTNO
--------- ---------- --------- ---------- --------- ---------- ---------- ----------
     7369 SMITH      CLERK           7902 17-DEC-80       800                    20
     7788 SCOTT      ANALYST         7566 09-DEC-82      3000                    20

SQL>
```

7. list all employees with name ending with S

```
SQL> select * from emp where ename like '%S';

    EMPNO ENAME      JOB              MGR HIREDATE       SAL       COMM    DEPTNO
---------- ---------- ---------- ---------- --------- ---------- ---------- ----------
      7566 JONES      MANAGER         7839 02-APR-81    2975                     20
      7876 ADAMS      CLERK           7788 12-JAN-83    1100                     20
      7900 JAMES      CLERK           7698 03-DEC-81     950                     30

SQL>
```

8. list all employees with name contains I at 2nd position

```
SQL> select * from emp where ename like '_I%';

    EMPNO ENAME      JOB              MGR HIREDATE       SAL       COMM    DEPTNO
---------- ---------- ---------- ---------- --------- ---------- ---------- ----------
      7839 KING       PRESIDENT            17-NOV-81    5000                     10
      7934 MILLER     CLERK           7782 23-JAN-82    1300                     10

SQL>
```

9. list all employees with name starts with A ends witn N and somewhere in between L is there

```
SQL> select * from emp where REGEXP_LIKE(ename,'^A.*L.*N$');

    EMPNO ENAME      JOB              MGR HIREDATE       SAL       COMM    DEPTNO
---------- ---------- ---------- ---------- --------- ---------- ---------- ----------
      7499 ALLEN      SALESMAN        7698 20-FEB-81    1600       300         30

SQL>
```

10. list all employees with name starts with A and B at 3 rd position and P at second last position

```
SQL> select * from emp where REGEXP_LIKE(ename,'^A.B.*P.$');

no rows selected
```

11. List all employees with name starts with either A or starts with S or starts with W

```
SQL> select * from emp where REGEXP_LIKE(ename,'^[ASW]');

    EMPNO ENAME      JOB              MGR HIREDATE       SAL       COMM    DEPTNO
---------- ---------- ---------- ---------- --------- ---------- ---------- ----------
      7369 SMITH      CLERK           7902 17-DEC-80     800                     20
      7499 ALLEN      SALESMAN        7698 20-FEB-81    1600       300         30
      7521 WARD       SALESMAN        7698 22-FEB-81    1250       500         30
      7788 SCOTT      ANALYST         7566 09-DEC-82    3000                     20
      7876 ADAMS      CLERK           7788 12-JAN-83    1100                     20

SQL>
```

practice Aggregate functions

12. find max sal and min sal for each job

```
SQL> select max(sal) from emp
  2  /

  MAX(SAL)
----------
      5000

SQL> select job, max(sal),min(sal) from emp group by job;

JOB           MAX(SAL)   MIN(SAL)
---------   ----------  ----------
CLERK            1300        800
SALESMAN         1600       1250
PRESIDENT        5000       5000
MANAGER          2975       2450
ANALYST          3000       3000
```

13. find how many employess have not received commission

```
                 10
SQL> select count(*) from emp where comm is null or comm=0;

  COUNT(*)
----------
        11

SQL>
```

List of all employees

```
SQL> select * from emp where comm is null or comm=0;

    EMPNO ENAME      JOB          MGR HIREDATE       SAL       COMM    DEPTNO
--------- --------   ---------  ----- ---------  ---------- ---------- ----------
     7369 SMITH      CLERK       7902 17-DEC-80       800                    20
     7566 JONES      MANAGER     7839 02-APR-81      2975                    20
     7698 BLAKE      MANAGER     7839 01-MAY-81      2850                    30
     7782 CLARK      MANAGER     7839 09-JUN-81      2450                    10
     7788 SCOTT      ANALYST     7566 09-DEC-82      3000                    20
     7839 KING       PRESIDENT        17-NOV-81      5000                    10
     7844 TURNER     SALESMAN    7698 08-SEP-81      1500          0         30
     7876 ADAMS      CLERK       7788 12-JAN-83      1100                    20
     7900 JAMES      CLERK       7698 03-DEC-81       950                    30
     7902 FORD       ANALYST     7566 03-DEC-81      3000                    20
     7934 MILLER     CLERK       7782 23-JAN-82      1300                    10

11 rows selected.
```

14. find sum of sal of all employees working in dept no 10

```
SQL> select deptno,sum(sal) from emp where deptno=10 group by deptno;

    DEPTNO    SUM(SAL)
---------- ----------
        10        8750

SQL>
```

15. find maximum salary,average sal for each job in every department

```
SQL> select deptno,job,max(sal) max_salary,round(avg(sal)) avg_salary from emp group by deptno,job;

   DEPTNO JOB       MAX_SALARY AVG_SALARY
---------- --------- ---------- ----------
       20 CLERK           1100        950
       30 SALESMAN        1600       1400
       20 MANAGER         2975       2975
       30 CLERK            950        950
       10 PRESIDENT       5000       5000
       30 MANAGER         2850       2850
       10 CLERK           1300       1300
       10 MANAGER         2450       2450
       20 ANALYST         3000       3000

9 rows selected.
```

16. find max salary for every department if deptno is > 15 and arrange data in deptno order.

```
SQL> select deptno,max(sal) from emp where deptno>15 group by deptno order by deptno;

    DEPTNO    MAX(SAL)
---------- ----------
        20        3000
        30        2850

SQL>
```

17. find sum salary for every department if sum is > 3000

```
SQL> select deptno,sum(sal) from emp group by deptno having sum(sal)>3000;

    DEPTNO    SUM(SAL)
---------- ----------
        30        9400
        20       10875
        10        8750

SQL>
```

18. list all department which has minimum 5 employees

```
SQL> select deptno, count(*) from emp group by deptno having count(*)>=5;

    DEPTNO    COUNT(*)
--------- ----------
       30          6
       20          5

SQL>
```

19. count how many employees earn salary more than 2000 in each job

```
SQL> select job,count(*) from emp where sal>2000 group by job;

JOB          COUNT(*)
--------- ----------
PRESIDENT          1
MANAGER            3
ANALYST            2

SQL>
```

20. list all enames and jobs in small case letter

```
SQL> select lower(ename) ename,lower(job) job from emp;

ENAME      JOB
--------- ---------
smith      clerk
allen      salesman
ward       salesman
jones      manager
martin     salesman
blake      manager
clark      manager
scott      analyst
king       president
turner     salesman
adams      clerk
james      clerk
ford       analyst
miller     clerk

14 rows selected.

SQL>
```

21. list all names and jobs so that the length of name should be 15 if it is smaller then add

spaces to left

```
SQL> select lpad(ename,15,' ') ename,lpad(job,15,' ') job from emp;

ENAME              JOB
---------------    ---------------
          SMITH              CLERK
          ALLEN           SALESMAN
           WARD           SALESMAN
          JONES            MANAGER
         MARTIN           SALESMAN
          BLAKE            MANAGER
          CLARK            MANAGER
          SCOTT            ANALYST
           KING          PRESIDENT
         TURNER           SALESMAN
          ADAMS              CLERK
          JAMES              CLERK
           FORD            ANALYST
         MILLER              CLERK

14 rows selected.

SQL>
```

22. display min sal,max sal, average sal for all employees working under same manager

```
SQL> select mgr,min(sal),max(sal),avg(sal) from emp group by mgr;

       MGR   MIN(SAL)    MAX(SAL)    AVG(SAL)
---------  ----------  ----------  ----------
      7839        2450        2975  2758.33333
                  5000        5000        5000
      7782        1300        1300        1300
      7698         950        1600        1310
      7902         800         800         800
      7566        3000        3000        3000
      7788        1100        1100        1100

7 rows selected.

SQL>
```

23. find sum of total earnings(sal+comm), average of sal+comm for all employees who earn sal >

2000 and work in either dept no 10 or 20

#####

```
SQL> select sum(sal+nvl(comm,0)) total,avg(sal+nvl(comm,0)) average from emp where sal>2000 and deptno in (10,20);

     TOTAL     AVERAGE
---------- ----------
     16425        3285

SQL>
```

```
SQL> select deptno, sum(sal+nvl(comm,0)) total_salary, avg(sal+nvl(comm,0)) average_salary
  2  from emp
  3  where sal>2000 and deptno in (10,20)
  4  group by deptno;

   DEPTNO TOTAL_SALARY AVERAGE_SALARY
---------- ------------ --------------
       20         8975     2991.66667
       10         7450           3725

SQL>
```

24. list all employees who joined in Aug 1980 and salary is >1500 and < 2500

```
SQL> select * from emp where extract(month from hiredate)=08
  2  and extract(year from hiredate)=1980
  3  and sal between 1501 and 2499;

no rows selected
```

25. list all employees joined in either aug or may or dec

```
SQL> select * from emp where extract(month from hiredate) in (08,05,12);

     EMPNO ENAME      JOB              MGR HIREDATE         SAL       COMM     DEPTNO
---------- ---------- --------- ---------- --------- ---------- ---------- ----------
      7369 SMITH      CLERK           7902 17-DEC-80        800                    20
      7698 BLAKE      MANAGER         7839 01-MAY-81       2850                    30
      7788 SCOTT      ANALYST         7566 09-DEC-82       3000                    20
      7900 JAMES      CLERK           7698 03-DEC-81        950                    30
      7902 FORD       ANALYST         7566 03-DEC-81       3000                    20

SQL>
```

Another method

```
SQL> select * from emp where to_char(hiredate,'mon') in ('aug','may','dec');

     EMPNO ENAME      JOB              MGR HIREDATE         SAL       COMM     DEPTNO
---------- ---------- --------- ---------- --------- ---------- ---------- ----------
      7369 SMITH      CLERK           7902 17-DEC-80        800                    20
      7698 BLAKE      MANAGER         7839 01-MAY-81       2850                    30
      7788 SCOTT      ANALYST         7566 09-DEC-82       3000                    20
      7900 JAMES      CLERK           7698 03-DEC-81        950                    30
      7902 FORD       ANALYST         7566 03-DEC-81       3000                    20

SQL>
```

26. display name and hiredate in dd/mm/yy format for all employees whose job is clerk and

they earn some commission

```
SQL> select ename,to_char(hiredate,'dd/mm/yy') from emp
  2  where job='CLERK' and comm >0;

no rows selected
```

If taking SALESMAN instead of clerk as a job

```
SQL> select ename,to_char(hiredate,'dd/mm/yy') from emp
  2  where job='SALESMAN' and comm >0;

ENAME       TO_CHAR(
---------- ---------
ALLEN       20/02/81
WARD        22/02/81
MARTIN      28/09/81

SQL>
```

27. list empcode,empno,name and job for each employee. (note :empcode is 3 to 5 characters

from name and last 2 characters of job)

```
SQL> select concat(substr(ename,3,3),substr(job,length(job)-1,2)) empcode,empno,ename,job from emp;

EMPCO     EMPNO ENAME      JOB
----- ---------- ---------- ---------
ITHRK      7369 SMITH      CLERK
LENAN      7499 ALLEN      SALESMAN
RDAN       7521 WARD       SALESMAN
NESER      7566 JONES      MANAGER
RTIAN      7654 MARTIN     SALESMAN
AKEER      7698 BLAKE      MANAGER
ARKER      7782 CLARK      MANAGER
OTTST      7788 SCOTT      ANALYST
NGNT       7839 KING       PRESIDENT
RNEAN      7844 TURNER     SALESMAN
AMSRK      7876 ADAMS      CLERK
MESRK      7900 JAMES      CLERK
RDST       7902 FORD       ANALYST
LLERK      7934 MILLER     CLERK

14 rows selected.

SQL>
```

28. display thousand separator and $ symbol for commission if it is null then display it as 0 for all

employees whose name starts with A and ends with N

```
SQL> select ename,to_char(nvl(comm,0),'$99,99,999.99') commision
  2  from emp
  3  where ename like 'A%N'
  4  /

ENAME      COMMISION
---------- --------------
ALLEN              $300.00

SQL>
```

29. Display empid,name,sal,comm,remark Remark should base on following conditions

comm >= 600 "excellent Keep it up"

if it < 600 or not null "good"

otherwise "Need improvement"

```
  1  select empno,ename,sal,nvl(comm,0),case
  2  when comm>=600 then 'excellent keep it up'
  3  when comm>0 then 'good'
  4  else 'need improvement'
  5  end remark
  6* from emp
SQL>
SQL> /

    EMPNO ENAME           SAL NVL(COMM,0) REMARK
---------- ---------- ---------- ----------- --------------------
     7521 WARD           1250         500 good
     7566 JONES          2975           0 need improvement
     7654 MARTIN         1250        1400 excellent keep it up
     7698 BLAKE          2850           0 need improvement
     7782 CLARK          2450           0 need improvement
     7788 SCOTT          3000           0 need improvement
     7839 KING           5000           0 need improvement
     7844 TURNER         1500           0 need improvement
     7876 ADAMS          1100           0 need improvement
     7900 JAMES           950           0 need improvement
     7902 FORD           3000           0 need improvement
     7934 MILLER         1300           0 need improvement

12 rows selected.

SQL>
```

30. Display empid, name, deptno and department name by using following conditions.

dept 10 then "Hr"

if 20 then "Admin"

if 30 then "accounts"

otherwise purchase

```
  1  select empno,ename,deptno,case
  2  when deptno=10 then 'HR'
  3  when deptno=20 then 'ADMIN'
  4  when deptno=30 then 'ACCOUNTS'
  5  else 'PURCHASE'
  6  end department_name
  7* from emp
SQL> /

    EMPNO ENAME              DEPTNO DEPARTME
---------- ----------    ---------- --------
     7521 WARD               30 ACCOUNTS
     7566 JONES              20 ADMIN
     7654 MARTIN             30 ACCOUNTS
     7698 BLAKE              30 ACCOUNTS
     7782 CLARK              10 HR
     7788 SCOTT              20 ADMIN
     7839 KING               10 HR
     7844 TURNER             30 ACCOUNTS
     7876 ADAMS              20 ADMIN
     7900 JAMES              30 ACCOUNTS
     7902 FORD               20 ADMIN
     7934 MILLER             10 HR

12 rows selected.

SQL>
```

Topic ----------------- create Table, DML , subquery and joins

31. Practice creating following tables

create table mydept_DBDA

(

deptid number primary key,

dname varchar2(20) not null unique,

dloc varchar2(20)

)

```
SQL> create table mydept_DBDA(
  2  deptid number primary key,
  3  dname varchar2(20) not null unique,
  4  dloc varchar2(20));

Table created.

SQL> select * from mydept_DBDA;

no rows selected

SQL> desc mydept_DBDA;
 Name                                                     Null?    Type
 -------------------------------------------------------- -------- ----------------
 DEPTID                                                   NOT NULL NUMBER
 DNAME                                                    NOT NULL VARCHAR2(20)
 DLOC                                                              VARCHAR2(20)
```

insert into mydept_DBDA values(30,'Purchase','Mumbai');

```
SQL> insert into mydept_DBDA values(30,'Purchase','Mumbai');

1 row created.

SQL> select * from mydept_DBDA;

    DEPTID DNAME                DLOC
---------- -------------------- --------------------
        30 Purchase             Mumbai

SQL>
```

create table myemployee

(

empno number(5) primary key,

fname varchar2(15) not null,

mname varchar2(15),

lname varchar2(15) not null,

sal number(9,2) check(sal >=1000),

doj date default sysdate,

passportnum varchar2(15) unique,

deptno number constraint fk_deptno references mydept_DBDA(deptid) on delete

cascade

)

```
SQL> create table myemployee(
  2   empno number(5) primary key,
  3   fname varchar2(15) not null,
  4   mname varchar2(15),
  5   lname varchar2(15) not null,
  6   sal number(9,2) check(sal >=1000),
  7   doj date default sysdate,
  8   passportnum varchar2(15) unique,
  9   deptno number constraint fk_deptno references mydept_DBDA(deptid) on delete cascade
 10   )
 11   /

Table created.

SQL> desc myemployee
 Name                                              Null?    Type
 ------------------------------------------------- -------- -----------------------------

 EMPNO                                             NOT NULL NUMBER(5)
 FNAME                                             NOT NULL VARCHAR2(15)
 MNAME                                                      VARCHAR2(15)
 LNAME                                             NOT NULL VARCHAR2(15)
 SAL                                                        NUMBER(9,2)
 DOJ                                                        DATE
 PASSPORTNUM                                                VARCHAR2(15)
 DEPTNO                                                     NUMBER

SQL>
```

32. Create following tables Student, Course

Student (sid,sname) ---------------- sid ---primary key

```
  1   create table Student(
  2   sid number primary key,
  3   sname varchar2(20)
  4*  )
SQL> /

Table created.
```

Course(cid,cname)-------------- cid ---primary key

```
SQL> create table Course(
  2   cid number primary key,
  3   cname varchar2(20));

Table created.
```

Marks(studid,courseid,marks)

```
SQL> create table Marks(
  2  studid number,
  3  courseid number,
  4  marks number);

Table created.
```

Sample data for marks table

studid,courseid,marks

1 1 99

1 3 98

2 1 95

2 2 97

```
SQL> insert into Marks values(1,1,99);

1 row created.

SQL> insert into Marks values(1,3,98);

1 row created.

SQL> insert into Marks values(2,1,95);

1 row created.

SQL> insert into Marks values(2,2,97);

1 row created.
```

```
SQL> select * from marks;

    STUDID    COURSEID        MARKS
---------- ---------- ----------
         1          1          99
         1          3          98
         2          1          95
         2          2          97
```

create table marks(

studid number,

courseid number,

marks number,

constraint pk primary key(studid,courseid),

constraint fk_sid foreign key (studid) references student(sid) on delete cascade,

constraint fk_cid foreign key (courseid) references course(cid)

)

```
SQL> ed
Wrote file afiedt.buf

  1  create table marks1(
  2  studid number,
  3  courseid number,
  4  marks number,
  5  constraint pk primary key(studid,courseid),
  6  constraint fk_sid foreign key (studid) references student(sid) on delete cascade,
  7  constraint fk_cid foreign key (courseid) references course(cid)
  8* )
  9  .
SQL> /

Table created.

SQL>
```

33. Create empty table emp10 with table structure same as emp table.

create table emp10 as

(

select *

from emp

where 1=2;

)

```
  1  create table emp10 as
  2  (
  3  select *
  4  from emp
  5  where 1=2
  6* )
SQL> /

Table created.

SQL> desc emp10;
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------------

 EMPNO                                              NUMBER(4)
 ENAME                                              VARCHAR2(10)
 JOB                                                VARCHAR2(9)
 MGR                                                NUMBER(4)
 HIREDATE                                           DATE
 SAL                                                NUMBER(7,2)
 COMM                                               NUMBER(7,2)
 DEPTNO                                             NUMBER(2)

SQL>
```

34. Solve following using alter table

add primary key constraint on emp,dept,salgrade

emp ----☐ empno

```
SQL> ed
Wrote file afiedt.buf

  1  alter table emp
  2* add primary key (empno)
SQL> /

Table altered.

SQL> desc emp;
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------------

 EMPNO                                      NOT NULL NUMBER(4)
 ENAME                                               VARCHAR2(10)
 JOB                                                 VARCHAR2(9)
 MGR                                                 NUMBER(4)
 HIREDATE                                            DATE
 SAL                                                 NUMBER(7,2)
 COMM                                                NUMBER(7,2)
 DEPTNO                                              NUMBER(2)

SQL>
```

```
  1  select constraint_name,constraint_type,table_name
  2  from user_constraints
  3* where table_name='EMP'
SQL> /

CONSTRAINT_NAME                 C TABLE_NAME
------------------------------- - ----------------------------
SYS_C00114753                   P EMP
```

dept---▯ deptno

```
SQL> alter table dept
  2  add primary key (deptno);

Table altered.

SQL> desc dept;
 Name                                              Null?    Type
 ------------------------------------------------- -------- -----------------------

 DEPTNO                                            NOT NULL NUMBER(2)
 DNAME                                                      VARCHAR2(14)
 LOC                                                        VARCHAR2(13)

SQL>
```

salgrade---▯ grade

```
SQL> alter table salgrade
  2  add primary key (grade);

Table altered.

SQL> desc salgrade;
 Name                                              Null?    Type
 ------------------------------------------------- -------- -----------------------

 GRADE                                             NOT NULL NUMBER
 LOSAL                                                      NUMBER
 HISAL                                                      NUMBER
```

add foreign key constarint in emp

deptno --->> dept(deptno)

```
  1  alter table emp
  2* add constraint fk1_deptno foreign key(deptno) references dept(deptno)
SQL> /

Table altered.
```

```
SQL> ed
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  1  select constraint_name,constraint_type,table_name
  2  from user_constraints
  3* where table_name='EMP'
SQL> /

CONSTRAINT_NAME                 C TABLE_NAME
------------------------------- - -------------------------------
FK1_DEPTNO                      R EMP

SQL>
```

add new column in emp table netsal with constraint default 1000

```
SQL> alter table emp
  2  add NETSAL number default 1000;

Table altered.
```

```
SQL> select * from emp
  2  /

    EMPNO ENAME      JOB            MGR HIREDATE       SAL      COMM    DEPTNO     NETSAL
--------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7369 SMITH      CLERK          7902 17-DEC-80      800                    20       1000
     7499 ALLEN      SALESMAN       7698 20-FEB-81     1600       300          30       1000
     7521 WARD       SALESMAN       7698 22-FEB-81     1250       500          30       1000
     7566 JONES      MANAGER        7839 02-APR-81     2975                    20       1000
     7654 MARTIN     SALESMAN       7698 28-SEP-81     1250      1400          30       1000
     7698 BLAKE      MANAGER        7839 01-MAY-81     2850                    30       1000
     7782 CLARK      MANAGER        7839 09-JUN-81     2450                    10       1000
     7788 SCOTT      ANALYST        7566 09-DEC-82     3000                    20       1000
     7839 KING       PRESIDENT           17-NOV-81     5000                    10       1000
     7844 TURNER     SALESMAN       7698 08-SEP-81     1500         0          30       1000
     7876 ADAMS      CLERK          7788 12-JAN-83     1100                    20       1000
     7900 JAMES      CLERK          7698 03-DEC-81      950                    30       1000
     7902 FORD       ANALYST        7566 03-DEC-81     3000                    20       1000
     7934 MILLER     CLERK          7782 23-JAN-82     1300                    10       1000

14 rows selected.

SQL>
```

35. Update employee sal ---- increase sal of each employee by 15 % sal +comm, change the job

to manager and mgr to 7777 for all employees in deptno 10.

```
SQL> update emptest set sal=(sal+comm+(sal*0.15)) where comm >0;

3 rows updated.
```

```
SQL> select * from emptest;

    EMPNO ENAME      JOB          MGR HIREDATE        SAL      COMM    DEPTNO      NETSAL
---------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7369 SMITH      CLERK       7902 17-DEC-80      800                    20       1000
     7499 ALLEN      SALESMAN    7698 20-FEB-81     2140        300         30       1000
     7521 WARD       SALESMAN    7698 22-FEB-81   1937.5        500         30       1000
     7566 JONES      MANAGER     7839 02-APR-81     2975                    20       1000
     7654 MARTIN     SALESMAN    7698 28-SEP-81   2837.5       1400         30       1000
     7698 BLAKE      MANAGER     7839 01-MAY-81     2850                    30       1000
     7782 CLARK      MANAGER     7839 09-JUN-81     2450                    10       1000
     7788 SCOTT      ANALYST     7566 09-DEC-82     3000                    20       1000
     7839 KING       PRESIDENT        17-NOV-81     5000                    10       1000
     7844 TURNER     SALESMAN    7698 08-SEP-81     1500          0         30       1000
     7876 ADAMS      CLERK       7788 12-JAN-83     1100                    20       1000
     7900 JAMES      CLERK       7698 03-DEC-81      950                    30       1000
     7902 FORD       ANALYST     7566 03-DEC-81     3000                    20       1000
     7934 MILLER     CLERK       7782 23-JAN-82     1300                    10       1000

14 rows selected.

SQL>
```

B

```
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  1  update emptest
  2  set job='MANAGER',mgr=7777
  3* where deptno=10
SQL> /

3 rows updated.
```

```
SQL> select * from emptest where deptno=10
  2  /

    EMPNO ENAME      JOB          MGR HIREDATE        SAL      COMM    DEPTNO      NETSAL
---------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7782 CLARK      MANAGER     7777 09-JUN-81     2450                    10       1000
     7839 KING       MANAGER     7777 17-NOV-81     5000                    10       1000
     7934 MILLER     MANAGER     7777 23-JAN-82     1300                    10       1000

SQL>
```

36. change job of smith to senior clerk

```
SQL> update emptest
  2  set job='SENIOR CLERK'
  3  where ename = 'SMITH'
  4  /

1 row updated.
```

```
SQL> select * from emptest where ename ='SMITH'
  2 /

    EMPNO ENAME      JOB                      MGR HIREDATE       SAL       COMM     DEPTNO     NETSAL
--------- ---------- -------------------- ---------- --------- ---------- ---------- ---------- ----------
     7369 SMITH      SENIOR CLERK             7902 17-DEC-80       800                     20       1000

SQL>
```

37. increase salary of all employees by 15% if they are earning some commission

```
SQL> select * from emptest where comm>0;

    EMPNO ENAME      JOB                      MGR HIREDATE       SAL       COMM     DEPTNO     NETSAL
--------- ---------- -------------------- ---------- --------- ---------- ---------- ---------- ----------
     7499 ALLEN      SALESMAN                 7698 20-FEB-81      2140        300         30       1000
     7521 WARD       SALESMAN                 7698 22-FEB-81    1937.5        500         30       1000
     7654 MARTIN     SALESMAN                 7698 28-SEP-81    2837.5       1400         30       1000

SQL> ed
Wrote file afiedt.buf

  1  update emptest
  2  set sal=sal+sal*0.15
  3* where comm>0
SQL> /

3 rows updated.

SQL> select * from emptest where comm>0;

    EMPNO ENAME      JOB                      MGR HIREDATE       SAL       COMM     DEPTNO     NETSAL
--------- ---------- -------------------- ---------- --------- ---------- ---------- ---------- ----------
     7499 ALLEN      SALESMAN                 7698 20-FEB-81      2461        300         30       1000
     7521 WARD       SALESMAN                 7698 22-FEB-81   2228.13        500         30       1000
     7654 MARTIN     SALESMAN                 7698 28-SEP-81   3263.13       1400         30       1000

SQL>
```

38. list all employees with sal>smith's sal

```
SQL> select * from emp where sal>(select sal from emp where ename='SMITH');

    EMPNO ENAME      JOB               MGR HIREDATE       SAL       COMM     DEPTNO     NETSAL
--------- ---------- ---------- ---------- --------- ---------- ---------- ---------- ----------
     7499 ALLEN      SALESMAN         7698 20-FEB-81      1600        300         30       1000
     7521 WARD       SALESMAN         7698 22-FEB-81      1250        500         30       1000
     7566 JONES      MANAGER          7839 02-APR-81      2975                    20       1000
     7654 MARTIN     SALESMAN         7698 28-SEP-81      1250       1400         30       1000
     7698 BLAKE      MANAGER          7839 01-MAY-81      2850                    30       1000
     7782 CLARK      MANAGER          7839 09-JUN-81      2450                    10       1000
     7788 SCOTT      ANALYST          7566 09-DEC-82      3000                    20       1000
     7839 KING       PRESIDENT             17-NOV-81      5000                    10       1000
     7844 TURNER     SALESMAN         7698 08-SEP-81      1500          0         30       1000
     7876 ADAMS      CLERK            7788 12-JAN-83      1100                    20       1000
     7900 JAMES      CLERK            7698 03-DEC-81       950                    30       1000
     7902 FORD       ANALYST          7566 03-DEC-81      3000                    20       1000
     7934 MILLER     CLERK            7782 23-JAN-82      1300                    10       1000

13 rows selected.

SQL>
```

39. list all employees who are working in smith's department

```
  1  select * from emp
  2* where deptno=(select deptno from emp where ename='SMITH')
SQL> /

    EMPNO ENAME      JOB              MGR HIREDATE          SAL       COMM     DEPTNO     NETSAL
--------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7369 SMITH      CLERK           7902 17-DEC-80          800                    20       1000
     7566 JONES      MANAGER         7839 02-APR-81         2975                    20       1000
     7788 SCOTT      ANALYST         7566 09-DEC-82         3000                    20       1000
     7876 ADAMS      CLERK           7788 12-JAN-83         1100                    20       1000
     7902 FORD       ANALYST         7566 03-DEC-81         3000                    20       1000

SQL>
```

40. list all employees with sal < rajan's sal and salary > revati's sal

list all employees with sal < CLERK's sal and salary > ADAM's sal

```
SQL> ed
Wrote file afiedt.buf

  1  select * from emp
  2  where sal between
  3  (select sal from emp where ename ='ADAMS')
  4* and (select sal from emp where ename = 'CLARK')
SQL> /

    EMPNO ENAME      JOB              MGR HIREDATE          SAL       COMM     DEPTNO     NETSAL
--------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7499 ALLEN      SALESMAN        7698 20-FEB-81         1600        300         30       1000
     7521 WARD       SALESMAN        7698 22-FEB-81         1250        500         30       1000
     7654 MARTIN     SALESMAN        7698 28-SEP-81         1250       1400         30       1000
     7782 CLARK      MANAGER         7839 09-JUN-81         2450                    10       1000
     7844 TURNER     SALESMAN        7698 08-SEP-81         1500          0         30       1000
     7876 ADAMS      CLERK           7788 12-JAN-83         1100                    20       1000
     7934 MILLER     CLERK           7782 23-JAN-82         1300                    10       1000

7 rows selected.

SQL>
```

41. delete all employees working in alan's department

Delete all employees working in allen's department

```
  1  delete from emptest
  2* where deptno=(select deptno from emptest where ename='ALLEN')
SQL> /

6 rows deleted.

SQL> select * from emptest;

    EMPNO ENAME      JOB                 MGR HIREDATE       SAL       COMM     DEPTNO     NETSAL
---------- ---------- ------------------- ---------- --------- ---------- ---------- ----------
     7369 SMITH      SENIOR CLERK         7902 17-DEC-80      800                   20       1000
     7566 JONES      MANAGER              7839 02-APR-81     2975                   20       1000
     7782 CLARK      MANAGER              7839 09-JUN-81     2450                   10       1000
     7788 SCOTT      ANALYST              7566 09-DEC-82     3000                   20       1000
     7839 KING       PRESIDENT                 17-NOV-81     5000                   10       1000
     7876 ADAMS      CLERK                7788 12-JAN-83     1100                   20       1000
     7902 FORD       ANALYST              7566 03-DEC-81     3000                   20       1000
     7934 MILLER     CLERK                7782 23-JAN-82     1300                   10       1000

8 rows selected.

SQL>
```

42. change salary of Alan to the salary of Miller.

Changing salary of allen to miller

```
SQL> select * from emp where ename='ALLEN'
  2  /

    EMPNO ENAME      JOB             MGR HIREDATE       SAL       COMM     DEPTNO     NETSAL
---------- ---------- --------- ---------- --------- ---------- ---------- ----------
     7499 ALLEN      SALESMAN       7698 20-FEB-81     1600        300         30       1000

SQL> ed
Wrote file afiedt.buf

  1  update emptest
  2  set sal=(select sal from emptest where ename='MILLER')
  3* where ename='ALLEN'
SQL> /

1 row updated.

SQL> select * from emptest where ename='ALLEN';

    EMPNO ENAME      JOB             MGR HIREDATE       SAL       COMM     DEPTNO     NETSAL
---------- ---------- --------- ---------- --------- ---------- ---------- ----------
     7499 ALLEN      SALESMAN       7698 20-FEB-81     1300        300         30       1000

SQL>
```

43. change salary of all emplees who working in Wall's department to the salary of Miller.

Change salary of all emplees who working in Ward's department to the salary of Miller.

```
  1  update emptest
  2  set sal = (select sal from emp where ename='MILLER')
  3* where deptno = (select deptno from emp where ename='WARD')
SQL> /

6 rows updated.
```

```
  1  select * from emptest
  2* where deptno=(select deptno from emp where ename='WARD')
SQL> /

    EMPNO ENAME        JOB            MGR HIREDATE          SAL        COMM      DEPTNO      NETSAL
---------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7499 ALLEN        SALESMAN      7698 20-FEB-81       1300         300          30        1000
     7521 WARD         SALESMAN      7698 22-FEB-81       1300         500          30        1000
     7654 MARTIN       SALESMAN      7698 28-SEP-81       1300        1400          30        1000
     7698 BLAKE        MANAGER       7839 01-MAY-81       1300                      30        1000
     7844 TURNER       SALESMAN      7698 08-SEP-81       1300           0          30        1000
     7900 JAMES        CLERK         7698 03-DEC-81       1300                      30        1000

6 rows selected.

SQL>
```

44. list all employees with salary > either Smith's salary or alan's sal

list all employees with salary > either Smith's salary or allen's sal

```
  1  select * from emp
  2  where sal > any
  3  (select sal from emp where ename in ('SMITH','ALLEN'))
  4* order by sal
SQL> /

    EMPNO ENAME        JOB            MGR HIREDATE          SAL        COMM      DEPTNO      NETSAL
---------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7900 JAMES        CLERK         7698 03-DEC-81        950                      30        1000
     7876 ADAMS        CLERK         7788 12-JAN-83       1100                      20        1000
     7654 MARTIN       SALESMAN      7698 28-SEP-81       1250        1400          30        1000
     7521 WARD         SALESMAN      7698 22-FEB-81       1250         500          30        1000
     7934 MILLER       CLERK         7782 23-JAN-82       1300                      10        1000
     7844 TURNER       SALESMAN      7698 08-SEP-81       1500           0          30        1000
     7499 ALLEN        SALESMAN      7698 20-FEB-81       1600         300          30        1000
     7782 CLARK        MANAGER       7839 09-JUN-81       2450                      10        1000
     7698 BLAKE        MANAGER       7839 01-MAY-81       2850                      30        1000
     7566 JONES        MANAGER       7839 02-APR-81       2975                      20        1000
     7788 SCOTT        ANALYST       7566 09-DEC-82       3000                      20        1000
     7902 FORD         ANALYST       7566 03-DEC-81       3000                      20        1000
     7839 KING         PRESIDENT          17-NOV-81       5000                      10        1000

13 rows selected.
```

45. list all employees who earn more than average sal of dept 10

```
SQL> select * from emp
  2  where sal >
  3  (select avg(sal) from emp where deptno=10)
  4  /

    EMPNO ENAME        JOB            MGR HIREDATE          SAL        COMM      DEPTNO      NETSAL
---------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7566 JONES        MANAGER       7839 02-APR-81       2975                      20        1000
     7788 SCOTT        ANALYST       7566 09-DEC-82       3000                      20        1000
     7839 KING         PRESIDENT          17-NOV-81       5000                      10        1000
     7902 FORD         ANALYST       7566 03-DEC-81       3000                      20        1000

SQL>
```

46. list all employees who earn more than average sal of Alan's department

```
wrote file afiedt.buf

  1  select * from emp
  2  where sal >(select avg(sal)
  3  from emp where
  4* deptno=(select deptno from emp where ename='ALLEN'))
SQL> /

    EMPNO ENAME      JOB            MGR HIREDATE      SAL      COMM     DEPTNO    NETSAL
---------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7499 ALLEN      SALESMAN      7698 20-FEB-81     1600       300         30       1000
     7566 JONES      MANAGER       7839 02-APR-81     2975                   20       1000
     7698 BLAKE      MANAGER       7839 01-MAY-81     2850                   30       1000
     7782 CLARK      MANAGER       7839 09-JUN-81     2450                   10       1000
     7788 SCOTT      ANALYST       7566 09-DEC-82     3000                   20       1000
     7839 KING       PRESIDENT          17-NOV-81     5000                   10       1000
     7902 FORD       ANALYST       7566 03-DEC-81     3000                   20       1000
```

47. list all employees who are working in purchase department

list all employees who are working in SALES department

```
  1  select *
  2  from emp
  3* where deptno=(select deptno from dept where dname='SALES')
SQL> /

    EMPNO ENAME      JOB            MGR HIREDATE      SAL      COMM     DEPTNO    NETSAL
---------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7499 ALLEN      SALESMAN      7698 20-FEB-81     1600       300         30       1000
     7521 WARD       SALESMAN      7698 22-FEB-81     1250       500         30       1000
     7654 MARTIN     SALESMAN      7698 28-SEP-81     1250      1400         30       1000
     7698 BLAKE      MANAGER       7839 01-MAY-81     2850                   30       1000
     7844 TURNER     SALESMAN      7698 08-SEP-81     1500         0         30       1000
     7900 JAMES      CLERK         7698 03-DEC-81      950                   30       1000

6 rows selected.
```

48. list all employees who earn more than average salary of their own department

```
SQL> select * from emp e
  2  where sal>(select avg(sal) from emp m where m.deptno=e.deptno)
  3  /

    EMPNO ENAME      JOB            MGR HIREDATE      SAL      COMM     DEPTNO    NETSAL
---------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7499 ALLEN      SALESMAN      7698 20-FEB-81     1600       300         30       1000
     7566 JONES      MANAGER       7839 02-APR-81     2975                   20       1000
     7698 BLAKE      MANAGER       7839 01-MAY-81     2850                   30       1000
     7788 SCOTT      ANALYST       7566 09-DEC-82     3000                   20       1000
     7839 KING       PRESIDENT          17-NOV-81     5000                   10       1000
     7902 FORD       ANALYST       7566 03-DEC-81     3000                   20       1000

6 rows selected.

SQL>
```

49. list all employees who earn sal < than their managers salary

```
  1   select * from emp e
  2   where sal<
  3*  (select sal from emp m where m.empno=e.mgr)
SQL> /

    EMPNO ENAME      JOB              MGR HIREDATE      SAL       COMM     DEPTNO    NETSAL
---------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7369 SMITH      CLERK           7902 17-DEC-80      800                   20       1000
     7499 ALLEN      SALESMAN        7698 20-FEB-81     1600        300        30       1000
     7521 WARD       SALESMAN        7698 22-FEB-81     1250        500        30       1000
     7566 JONES      MANAGER         7839 02-APR-81     2975                   20       1000
     7654 MARTIN     SALESMAN        7698 28-SEP-81     1250       1400        30       1000
     7698 BLAKE      MANAGER         7839 01-MAY-81     2850                   30       1000
     7782 CLARK      MANAGER         7839 09-JUN-81     2450                   10       1000
     7844 TURNER     SALESMAN        7698 08-SEP-81     1500          0        30       1000
     7876 ADAMS      CLERK           7788 12-JAN-83     1100                   20       1000
     7900 JAMES      CLERK           7698 03-DEC-81      950                   30       1000
     7934 MILLER     CLERK           7782 23-JAN-82     1300                   10       1000

11 rows selected.
```

50. list all employees who are earning more than average salary of their job

```
  1   select * from emp e
  2   where sal>
  3   (select avg(sal) from emp m where m.deptno=e.deptno)
  4*  order by deptno
SQL> /

    EMPNO ENAME      JOB              MGR HIREDATE      SAL       COMM     DEPTNO    NETSAL
---------- ---------- --------- ---------- --------- ---------- ---------- ---------- ----------
     7839 KING       PRESIDENT            17-NOV-81     5000                   10       1000
     7566 JONES      MANAGER         7839 02-APR-81     2975                   20       1000
     7788 SCOTT      ANALYST         7566 09-DEC-82     3000                   20       1000
     7902 FORD       ANALYST         7566 03-DEC-81     3000                   20       1000
     7499 ALLEN      SALESMAN        7698 20-FEB-81     1600        300        30       1000
     7698 BLAKE      MANAGER         7839 01-MAY-81     2850                   30       1000

6 rows selected.
```

51. display employee name and department

display employee name and department name

```
  1  select e.empno,e.ename,e.deptno,d.deptno, d.dname
  2  from emp e inner join dept d
  3* on e.deptno=d.deptno
SQL> /

    EMPNO ENAME           DEPTNO     DEPTNO DNAME
---------- ---------- ---------- ---------- --------------
     7782 CLARK              10         10 ACCOUNTING
     7839 KING               10         10 ACCOUNTING
     7934 MILLER             10         10 ACCOUNTING
     7566 JONES              20         20 RESEARCH
     7902 FORD               20         20 RESEARCH
     7876 ADAMS              20         20 RESEARCH
     7369 SMITH              20         20 RESEARCH
     7788 SCOTT              20         20 RESEARCH
     7521 WARD               30         30 SALES
     7844 TURNER             30         30 SALES
     7499 ALLEN              30         30 SALES
     7900 JAMES              30         30 SALES
     7698 BLAKE              30         30 SALES
     7654 MARTIN             30         30 SALES

14 rows selected.

SQL>
```

52. display empno,name,department name and grade (use emp,dept and salgrade table)

```
  1   select e.empno,e.ename,e.sal,s.grade,e.deptno,d.dname
  2   from emp e,dept d, salgrade s
  3   where e.deptno=d.deptno
  4   and e.sal between s.losal and s.hisal
  5*  order by grade
SQL> /

     EMPNO ENAME              SAL      GRADE      DEPTNO DNAME
---------- ---------- ---------- ---------- ---------- --------------
      7369 SMITH              800          1          20 RESEARCH
      7900 JAMES              950          1          30 SALES
      7876 ADAMS             1100          1          20 RESEARCH
      7521 WARD              1250          2          30 SALES
      7654 MARTIN            1250          2          30 SALES
      7934 MILLER            1300          2          10 ACCOUNTING
      7844 TURNER            1500          3          30 SALES
      7499 ALLEN             1600          3          30 SALES
      7782 CLARK             2450          4          10 ACCOUNTING
      7698 BLAKE             2850          4          30 SALES
      7566 JONES             2975          4          20 RESEARCH
      7788 SCOTT             3000          4          20 RESEARCH
      7902 FORD              3000          4          20 RESEARCH
      7839 KING              5000          5          10 ACCOUNTING

14 rows selected.

SQL>
```

Another

```
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  1   select e.empno,e.ename,e.sal,s.grade,e.deptno,d.dname
  2   from emp e inner join dept d
  3   on e.deptno=d.deptno
  4   inner join salgrade s
  5   on e.sal between s.losal and s.hisal
  6*  order by grade
SQL> /

     EMPNO ENAME              SAL      GRADE      DEPTNO DNAME
---------- ---------- ---------- ---------- ---------- --------------
      7369 SMITH              800          1          20 RESEARCH
      7900 JAMES              950          1          30 SALES
      7876 ADAMS             1100          1          20 RESEARCH
      7521 WARD              1250          2          30 SALES
      7654 MARTIN            1250          2          30 SALES
      7934 MILLER            1300          2          10 ACCOUNTING
      7844 TURNER            1500          3          30 SALES
      7499 ALLEN             1600          3          30 SALES
      7782 CLARK             2450          4          10 ACCOUNTING
      7698 BLAKE             2850          4          30 SALES
      7566 JONES             2975          4          20 RESEARCH
      7788 SCOTT             3000          4          20 RESEARCH
      7902 FORD              3000          4          20 RESEARCH
      7839 KING              5000          5          10 ACCOUNTING

14 rows selected.
```

53. list all employees number,name, mgrno and manager name

```
 1   select e.empno,e.ename,e.mgr,m.empno,m.ename
 2   from emp e inner join emp m
 3*  ON e.mgr=m.empno
SQL> /

    EMPNO ENAME              MGR      EMPNO ENAME
---------- ----------  ----------  ---------- ----------
     7902 FORD             7566       7566 JONES
     7788 SCOTT            7566       7566 JONES
     7844 TURNER           7698       7698 BLAKE
     7499 ALLEN            7698       7698 BLAKE
     7521 WARD             7698       7698 BLAKE
     7900 JAMES            7698       7698 BLAKE
     7654 MARTIN           7698       7698 BLAKE
     7934 MILLER           7782       7782 CLARK
     7876 ADAMS            7788       7788 SCOTT
     7698 BLAKE            7839       7839 KING
     7566 JONES            7839       7839 KING
     7782 CLARK            7839       7839 KING
     7369 SMITH            7902       7902 FORD

13 rows selected.

SQL>
```

54. create following tables and solve following questions(primary keys are marked in yellow)

foreign keys are marked in green

product(pid,pname,price,qty,cid,sid)

```
 1   create table product(
 2   pid number primary key,
 3   pname varchar2(15),
 4   price number,
 5   qty number,
 6   cid number,
 7   sid number,
 8   constraint cid_fk foreign key(cid) references category(cid),
 9   constraint sid_fk foreign key(sid) references salesman(sid)
10* )
SQL> /

Table created.

SQL> desc product
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 PID                                       NOT NULL NUMBER
 PNAME                                              VARCHAR2(15)
 PRICE                                              NUMBER
 QTY                                                NUMBER
 CID                                                NUMBER
 SID                                                NUMBER

SQL>
```

salesman (sid,sname,address)

```
  1  create table salesman(
  2  sid number primary key,
  3  sname varchar2(15),
  4* address varchar2(20))
SQL> /

Table created.

SQL> desc salesman
 Name                                               Null?    Type
 ------------------------------------------------- ------- --------------
 -----------------
 SID                                               NOT NULL NUMBER
 SNAME                                                      VARCHAR2(15)
 ADDRESS                                                    VARCHAR2(20)

SQL>
```

category(cid,cnam,descritpion)

```
SQL> ed
Wrote file afiedt.buf

  1  create table category(
  2  cid number primary key,
  3  cnam varchar2(15),
  4  description varchar2(20)
  5* )
SQL> /

Table created.

SQL> desc category
 Name                                               Null?    Type
 ------------------------------------------------- ------- --------------
 -----------------
 CID                                               NOT NULL NUMBER
 CNAM                                                      VARCHAR2(15)
 DESCRIPTION                                               VARCHAR2(20)

SQL>
```

1. list all product name,their category name and name of a person, who sold that product

```
SQL> select p.prodid,p.pname,c.cid,c.cname,s.sid,s.sname
  2  from   product p,saleman s, category c
  3  where s.sid=p.sid and p.catid=c.cid;

    PRODID PNAME                          CID CNAME                  SID SNAME
 ---------- ---------------------- ---------- -------------------- ---------- ------------
       124 pringles                         1 chips                     14 Arnav
       134 nachos                           1 chips                     12 Kirti
       123 lays                             1 chips                     12 Kirti
       124 dairy milk                       2 chocolate                 14 Arnav
       111 pepsi                            4 cold drinks               11 Rahul

SQL>
```

2. list all product name and salesman name for all salesman who stays in pune

```
SQL> ed
Wrote file afiedt.buf

  1  select p.prodid,p.pname,s.sid,s.sname,s.city
  2  from  product p ,saleman s
  3* where s.sid=p.sid and s.city='Pune'
SQL> /

   PRODID PNAME                             SID SNAME                CITY
---------- -------------------- ---------- -------------------- ----------------
      111 pepsi                             11 Rahul               Pune

SQL>
```

3. list all product name and category name

```
  1  select p.prodid,p.pname,c.cid,c.cname
  2     from  product p, category c
  3*     where p.catid=c.cid
SQL> /

   PRODID PNAME                         CID CNAME
---------- -------------------- ---------- --------------------
      123 lays                           1 chips
      111 pepsi                          4 cold drinks
      134 nachos                         1 chips
      124 dairy milk                     2 chocolate
      124 pringles                       1 chips

SQL>
```

55. create following tables and solve following questions(primary keys are marked in yellow)

foreign keys are marked in green

faculty(fid,fname,sp.skill1,sp.skill2)

```
  1  create table faculty(
  2  fid number primary key,
  3  fname varchar2(15),
  4  spskill1 varchar2(15),
  5* spskill2 varchar2(15))
SQL> /

Table created.

SQL> desc faculty
 Name                                                 Null?    Type
 ----------------------------------------------- -------- --------------------
 -------------------
 FID                                                  NOT NULL NUMBER
 FNAME                                                         VARCHAR2(15)
 SPSKILL1                                                      VARCHAR2(15)
 SPSKILL2                                                      VARCHAR2(15)

SQL>
```

courses(cid,cname,rid,fid)

```
  1  create table courses(
  2  cid number primary key,
  3  cname varchar2(15),
  4  rid number,
  5  fid number,
  6  constraint rid_fk1 foreign key(rid) references room(roomid),
  7  constraint cid_fk1 foreign key(fid) references faculty(fid)
  8* )
SQL> /

Table created.

SQL> desc courses
 Name                                                 Null?    Type
 ----------------------------------------------- -------- --------------
 -------------------
 CID                                                  NOT NULL NUMBER
 CNAME                                                         VARCHAR2(15)
 RID                                                           NUMBER
 FID                                                           NUMBER

SQL>
```

room(roomid,rname,rloc)

```
SQL> ed
Wrote file afiedt.buf

  1  create table room(
  2  roomid number primary key,
  3  rname varchar2(15),
  4* rloc varchar2(15))
SQL> /

Table created.

SQL> desc room
 Name                                                    Null?    Type
 ------------------------------------------------------- -------- --------------------
-----------------
 ROOMID                                                  NOT NULL NUMBER
 RNAME                                                            VARCHAR2(15)
 RLOC                                                             VARCHAR2(15)

SQL>
```

faculty

fid fname spskill1 spskill2

10 kjzhcjhz a b

11 sdd x z

12 lksjk a x

13 ksdjlkj a b

```
SQL> insert into faculty values(10,'kjzhcjhz','a','b');

1 row created.

SQL> insert into faculty values(11,'sdd','x','z');

1 row created.

SQL> insert into faculty values(12,'lksjk','a','x');

1 row created.

SQL> insert into faculty values(13,'ksdjlkj','a','b');

1 row created.

SQL> select * from faculty
  2  /

       FID FNAME           SPSKILL1        SPSKILL2
---------- --------------- --------------- ---------------
        10 kjzhcjhz        a               b
        11 sdd             x               z
        12 lksjk           a               x
        13 ksdjlkj         a               b

SQL>
```

courses

cid cname rid fid

121 DBDA 100 10

131 DAC 101

141 DTISS

151 DIOT 105 12

```
SQL> insert into courses values(121,'dbda',100,10);

1 row created.

SQL> insert into courses values(131,'dac',101,'');

1 row created.

SQL> insert into courses values(141,'dtiss','','');

1 row created.

SQL> insert into courses values(151,'diot',105,12);

1 row created.

SQL> select * from courses
  2  /

       CID CNAME                     RID        FID
---------- --------------- ---------- ----------
       121 dbda                      100         10
       131 dac                       101
       141 dtiss
       151 diot                      105         12

SQL>
```

Room

roomid rname rloc

100 jasmin 1st floor

101 Rose 2nd floor

105 Lotus 1st floor

103 Mogra 1st floor

```
SQL> insert into room values(100,'jasmine','1st floor');

1 row created.

SQL> insert into room values(101,'Rose','2nd floor');

1 row created.

SQL> insert into room values(105,'Lotus','1st floor');

1 row created.

SQL> insert into room values(103,'Mogra','1st floor');

1 row created.

SQL> select * from room;

    ROOMID RNAME              RLOC
---------- --------------- ---------------
       100 jasmine         1st floor
       101 Rose            2nd floor
       105 Lotus           1st floor
       103 Mogra           1st floor

SQL>
```

1. list all courses for which no room is assigned and all rooms for which are

Available

```
SQL> ed
Wrote file afiedt.buf

  1  select c.cid,c.cname,r.roomid,r.rname
  2  from courses c full join room r
  3  on c.rid=r.roomid
  4* where c.rid is null or r.roomid is null
SQL> /

       CID CNAME                    ROOMID RNAME
---------- --------------- ---------- ---------------
                              103 Mogra
       141 dtiss

SQL>
```

2. list all faculties who are not allocated to any course and rooms which are not

allocated to any course

```
Wrote file afiedt.buf

  1   select f.fid,f.fname,c.cid,c.cname,r.roomid,r.rname
  2   from courses c full join faculty f
  3   on c.fid=f.fid
  4   full join room r
  5   on c.rid=r.roomid
  6* where c.cid is null
SQL> /

       FID FNAME                    CID CNAME              ROOMID RNAME
---------- --------------- ---------- --------------- ---------- ---------------
        11 sdd
        13 ksdjlkj
                                                            103 Mogra
```

3. list all rooms which are allocated or not allocated to any courses

```
  1   select r.roomid,r.rname,c.cid,c.cname
  2   from courses c right join room r
  3* on c.rid=r.roomid
SQL> /

    ROOMID RNAME                    CID CNAME
---------- --------------- ---------- ---------------
       100 jasmine              121 dbda
       101 Rose                 131 dac
       103 Mogra
       105 Lotus                151 diot

SQL>
```

4. list all rooms which are not allocated to any courses

```
  1   select * from room r
  2* where not exists(select * from courses c where c.rid=r.roomid)
SQL> /

    ROOMID RNAME           RLOC
---------- --------------- ---------------
       103 Mogra           1st floor
```

ANOTHER METHOD

```
SQL> ed
Wrote file afiedt.buf

  1  select r.roomid,r.rname,c.cid,c.cname
  2  from courses c right join room r
  3  on r.roomid=c.rid
  4* where c.cid is null
SQL>
SQL> /

    ROOMID RNAME                      CID CNAME
---------- --------------- ---------- ---------------
       103 Mogra

SQL>
```

5. display courses and faculty assigned to those courses whose special skill is

Database

Considering x is database

```
  1  select c.cid,c.cname,f.fid,f.fname,f.spskill1,f.spskill2
  2  from courses c inner join faculty f
  3  on f.fid=c.fid
  4* where spskill1='x' or spskill2='x'
SQL> /

       CID CNAME                  FID FNAME           SPSKILL1        SPSKILL2
---------- --------------- ---------- --------------- --------------- ---------------
       151 DIOT                    12 lksjk           a               x

SQL>
```

6. display time table --- it should contain course details , faculty and room

Details

```
  1  select r.roomid,r.rname,c.cid,c.cname,f.fid,f.fname
  2  from room r inner join courses c
  3  on r.roomid=c.rid
  4  inner join faculty f
  5* on f.fid=c.fid
SQL> /

    ROOMID RNAME                  CID CNAME               FID FNAME
---------- --------------- ---------- --------------- ---------- ---------------
       100 jasmine                121 dbda                 10 kjzhcjhz
       105 Lotus                  151 diot                 12 lksjk

SQL>
```

56. create following tables with given constraints

product---- qty >0, default 20.00,pname not null and unique

prodid pname qty price catid sid

123 lays 30 30.00 1 12

111 pepsi 40 50.00 4 11

134 nachos 50 50.00 1 12

124 dairy milk 40 60.00 2 14

124 pringles 40 60.00 1 14

```
  1   create table product(
  2   prodid number,
  3   pname varchar2(20) unique not null,
  4   qty number check(qty>0),
  5   price number default 20.00,
  6   catid number,
  7   sid number
  8*  )
SQL> /
```

```
   PRODID PNAME                        QTY       PRICE      CATID        SID
--------- ------------------- ---------- ---------- ---------- ----------
      123 lays                          30          30          1         12
      111 pepsi                         40          50          4         11
      134 nachos                        50          50          1         12
      124 dairy milk                    40          60          2         14
      124 pringles                      40          60          1         14

SQL>
```

saleman ----- sname -----not null

sid sname city

11 Rahul Pune

12 Kirti Mumbai

13 Prasad Nashik

14 Arnav Amaravati

```
SQL> create table saleman(
  2  sid number primary key,
  3  sname varchar2(20) not null,
  4  city varchar2(15));

Table created.
```

```
SQL> select * from saleman;

       SID SNAME                 CITY
---------- -------------------- ---------------
        11 Rahul                 Pune
        12 Kirti                 Mumbai
        13 Prasad                Nashik
        14 Arnav                 Amaravati

SQL>
```

category ---- cname unique and not null

cid cname description

1 chips very crunchy

2 chocolate very chocolaty

3 snacks yummy

4 cold drinks thanda thanda cool cool

```
  1  create table category(
  2  cid number primary key,
  3  cname varchar2(20) unique not null,
  4  description varchar2(30)
  5* )
SQL> /
```

```
       CID CNAME                 DESCRIPTION
---------- -------------------- ------------------------------
         1 chips                 very crunchy
         2 chocolate             very chocolaty
         3 snacks                yummy
         4 cold drinks           thanda thanda cool cool

SQL>
```

1. List all products with category chips

```
SQL> ed
Wrote file afiedt.buf

  1  select c.cid,c.cname,p.prodid,p.pname
  2  from product p inner join category c
  3  on c.cid=p.catid
  4* where c.cname='chips'
SQL> /

      CID CNAME                    PRODID PNAME
--------- ------------------ ---------- -------------------
        1 chips                       123 lays
        1 chips                       134 nachos
        1 chips                       124 pringles

SQL>
```

2. display all products sold by kirti

```
SQL> ed
Wrote file afiedt.buf

  1  select p.prodid,p.pname,p.sid,s.sid,s.sname
  2  from product p inner join saleman s
  3  on p.sid=s.sid
  4* where s.sname='Kirti'
SQL> /

   PRODID PNAME                    SID        SID SNAME
--------- ------------------ --------- ---------- -------------------
      123 lays                       12         12 Kirti
      134 nachos                     12         12 Kirti

SQL>
```

3. display all salesman who do not sold any product

```
  1  select p.prodid,p.pname,p.sid,s.sid,s.sname
  2  from product p right join saleman s
  3  on p.sid=s.sid
  4* where p.prodid is null
SQL> /

   PRODID PNAME                    SID        SID SNAME
--------- ------------------ --------- ---------- -------------------
                                               13 Prasad

SQL>
```

4. display all category for which no product is there

```
SQL> ed
Wrote file afiedt.buf

  1  select c.cid,c.cname,p.prodid,p.pname
  2  from category c left join product p
  3  on c.cid=p.catid
  4* where prodid is null
SQL> /

       CID CNAME                         PRODID PNAME
---------- -------------------- ---------- --------------------
         3 snacks

SQL>
```

5. display all products with no category assigned

```
SQL> ed
Wrote file afiedt.buf

  1  select p.prodid,p.pname,c.cid,c.cname
  2  from product p full join category c
  3  on c.cid=p.catid
  4* where c.cid is null
SQL> /

no rows selected

SQL>
```

6. list all salesman who stays in city with name starts with P or N

```
SQL> ed
Wrote file afiedt.buf

  1  select * from saleman
  2  where city='Pune'
  3* and REGEXP_LIKE(sname,'^[PN]')
SQL> /

no rows selected
```

If we take R instead of P

```
 1  select * from saleman
 2  where city='Pune'
 3* and REGEXP_LIKE(sname,'^[RN]')
SQL> /

       SID SNAME                    CITY
--------- -------------------- ---------------
        11 Rahul                   Pune

SQL> ed
Wrote file afiedt.buf
```

7. add new column in salesman table by name credit limit

```
SQL> ed
Wrote file afiedt.buf

 1  alter table saleman
 2* add   credit_limit number
SQL> /

Table altered.

SQL> select * from saleman
 2  /

       SID SNAME                    CITY            CREDIT_LIMIT
--------- -------------------- --------------- ------------
        11 Rahul                   Pune
        12 Kirti                   Mumbai
        13 Prasad                  Nashik
        14 Arnav                   Amaravati

SQL>
```