Assignment-5 (DBMS)

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Roll No : B110

Admission No : U20CS110

1) **Book library** :

Initial Data :

```
SQL> select * from books;

ISBN       BOOKTITLE            AUTHOR               PUBLICATI LANGUAGE   ISSUEDATE RETURNDAT PUBLISHERNAME      PRICE

ISBN12345  DBMS-1               Jeet Oza             01-JAN-20 English    17-JAN-20 21-JAN-20 Black Swan             720
ISBN12346  DBMS-2               Jeet Oza             31-JAN-21 English    07-FEB-21 19-FEB-21                        580
ISBN12347  DBMS-3               Vishnu Oza           05-FEB-21 Hindi      27-FEB-21 27-MAR-21 McGraw                 530
ISBN12348  MIT-2                Bipin Oza            21-FEB-20 English    15-MAR-20 25-MAR-20 Black Swan             530
ISBN12349  AFL 1                Bipin Oza            12 MAR 20 English    21 APR 20 29 APR 20                        130
ISBN12351  AFL-2                Ritam Shah           24-MAR-20 English    30-APR-20 05-MAY-20                        310
ISBN12356  C++                  Hetav Shah           29-MAR-20 English    12-APR-20 23-MAY-20 Jeet Oza               1200
ISBN13245  python-1             Jeet Oza             30-APR-21 English    05-MAR-21 25-MAR-21 Black Swan             250
ISBN123463 python-2             Bipin Oza            03-MAR-21 English    13-MAR-21 19-MAR-21 Jeet Oza               590
ISBN12J465 Java-1               Vishnu Oza           15-MAR-21 Hindi      22-MAR-21 27-MAR-21 McGraw                 1200

10 rows selected.
```

Q1) Display book title and author according to language-wise.

```
SQL> select booktitle,author,language from books order by language;

BOOKTITLE                 AUTHOR                    LANGUAGE
------------------------- ------------------------- -------------------------
DBMS-1                    Jeet Oza                  English
DBMS-2                    Jeet Oza                  English
AFL-1                     Bipin Oza                 English
python-2                  Bipin Oza                 English
MIT-2                     Bipin Oza                 English
AFL-2                     Ritam Shah                English
C++                       Hetav Shah                English
python-1                  Jeet Oza                  English
Java-1                    Vishnu Oza                Hindi
DBMS-3                    Vishnu Oza                Hindi

10 rows selected.
```

Q2) Display all columns of the books library table with a price of more than Rs. 500.

```
SQL> select * from books where price >= 500;

ISBN       BOOKTITLE                AUTHOR                   PUBLICATI LANGUAGE                ISSUEDATE RETURNDAT PUBLISHERNAME                PRICE
---------- ------------------------ ------------------------ --------- ------------------------ --------- --------- ------------------------ ----------
ISBN12345  DBMS-1                   Jeet Oza                 01-JAN-20 English                  17-JAN-20 21-JAN-20 Black Swan                720
ISBN12346  DBMS-2                   Jeet Oza                 31-JAN-21 English                  07-FEB-21 19-FEB-21                           580
ISBN12347  DBMS-3                   Vishnu Oza               05-FEB-21 Hindi                    27-FEB-21 27-MAR-21 McGraw                    530
ISBN12348  MIT-2                    Bipin Oza                21-FEB-20 English                  15-MAR-20 25-MAR-20 Black Swan                530
ISBN12356  C++                      Hetav Shah               29-MAR-20 English                  12-APR-20 23-MAY-20 Jeet Oza                 1200
ISBN123463 python-2                 Bipin Oza                03-MAR-21 English                  13-MAR-21 19-MAR-21 Jeet Oza                  590
ISBN123465 Java-1                   Vishnu Oza               15-MAR-21 Hindi                    22-MAR-21 27-MAR-21 McGraw                   1200

7 rows selected.
```

Q3) Display authors with more than 3 books publication.

```
SQL> select * from books;

ISBN       BOOKTITLE                AUTHOR                   PUBLICATI LANGUAGE                ISSUEDATE RETURNDAT PUBLISHERNAME                PRICE
---------- ------------------------ ------------------------ --------- ------------------------ --------- --------- ------------------------ ----------
ISBN12345  DBMS-1                   Jeet Oza                 01-JAN-20 English                  17-JAN-20 21-JAN-20 Black Swan                720
ISBN12346  DBMS-2                   Jeet Oza                 31-JAN-21 English                  07-FEB-21 19-FEB-21                           580
ISBN12347  DBMS-3                   Vishnu Oza               05-FEB-21 Hindi                    27-FEB-21 27-MAR-21 McGraw                    530
ISBN12348  MIT-2                    Bipin Oza                21-FEB-20 English                  15-MAR-20 25-MAR-20 Black Swan                530
ISBN12349  AFL-1                    Bipin Oza                12-MAR-20 English                  21-APR-20 29-APR-20                           130
ISBN12351  AFL-2                    Jeet Oza                 24-MAR-20 English                  30-APR-20 05-MAY-20                           310
ISBN12356  C++                      Hetav Shah               29-MAR-20 English                  12-APR-20 23-MAY-20 Jeet Oza                 1200
ISBN13245  python-1                 Jeet Oza                 30-APR-21 English                  05-MAR-21 25-MAR-21 Black Swan                250
ISBN123463 python-2                 Bipin Oza                03-MAR-21 English                  13-MAR-21 19-MAR-21 Jeet Oza                  590
ISBN123465 Java-1                   Vishnu Oza               15-MAR-21 Hindi                    22-MAR-21 27-MAR-21 McGraw                   1200

10 rows selected.

SQL> select author from (select count(author) as count,author from books group by author) where count > 3;

AUTHOR
------------------------
Jeet Oza
```

Q4) Display publisher name and book title with a price is greater than Rs. 250, author-wise.

```
8 rows selected.

SQL> select publishername,booktitle,author from books where price > 250 order by author;

PUBLISHERNAME            BOOKTITLE                AUTHOR
------------------------ ------------------------ ------------------------
Black Swan               MIT-2                    Bipin Oza
Jeet Oza                 python-2                 Bipin Oza
Jeet Oza                 C++                      Hetav Shah
                         AFL-2                    Jeet Oza
                         DBMS-2                   Jeet Oza
Black Swan               DBMS-1                   Jeet Oza
McGraw                   DBMS-3                   Vishnu Oza
McGraw                   Java-1                   Vishnu Oza

8 rows selected.
```

Q5) Display the average price of books authored by "XYZ".

```
SQL> select avg(price) from books where author='Bipin Oza';

AVG(PRICE)
----------
416.666667
```

Q6) Display all authors with the average price of his/her all books price.

```
SQL> select avg(price),author from books group by author;

AVG(PRICE) AUTHOR
---------- ------------------------
       465 Jeet Oza
       865 Vishnu Oza
      1200 Hetav Shah
416.666667 Bipin Oza
```

Q7) Display count of books according to their publisher name wise.

```
SQL> select count(publishername),publishername from books group by publishername;

COUNT(PUBLISHERNAME) PUBLISHERNAME
-------------------- ------------------------
                   2 Jeet Oza
                   3 Black Swan
                   0
                   2 McGraw
```

Q8) Display author and book title with the highest price.

```
SQL> select author,booktitle from books where price = (select max(price) from books);

AUTHOR                 BOOKTITLE
---------------------- ------------------------
Hetav Shah             C++
Vishnu Oza             Java-1
```

Q9) Display author and book title with the least price.

```
SQL> select author,booktitle from books where price = (select min(price) from books);

AUTHOR                 BOOKTITLE
---------------------- ------------------------
Bipin Oza              AFL-1
```

Q10) Display author and book title with second-highest price.

```
SQL> select * from books;

ISBN       BOOKTITLE                AUTHOR                   PUBLICATI LANGUAGE                ISSUEDATE RETURNDAT PUBLISHERNAME                PRICE
---------- ------------------------ ------------------------ --------- ------------------------ --------- --------- ------------------------ ----------
ISBN12345  DBMS-1                   Jeet Oza                 01-JAN-20 English                  17-JAN-20 21-JAN-20 Black Swan                   720
ISBN12346  DBMS-2                   Jeet Oza                 31-JAN-21 English                  07-FEB-21 19-FEB-21                              580
ISBN12347  DBMS-3                   Vishnu Oza               05-FEB-21 Hindi                    27-FEB-21 27-MAR-21 McGraw                       530
ISBN12348  MIT-2                    Bipin Oza                21-FEB-20 English                  15-MAR-20 25-MAR-20 Black Swan                   530
ISBN12349  AFL-1                    Bipin Oza                12-MAR-20 English                  21-APR-20 29-APR-20                              130
ISBN12351  AFL-2                    Jeet Oza                 24-MAR-20 English                  30-APR-20 05-MAY-20                              310
ISBN12356  C++                      Hetav Shah               29-MAR-20 English                  12-APR-20 23-MAY-20 Jeet Oza                    1100
ISBN13245  python-1                 Jeet Oza                 30-APR-21 English                  05-MAR-21 25-MAR-21 Black Swan                   250
ISBN123463 python-2                 Bipin Oza                03-MAR-21 English                  13-MAR-21 19-MAR-21 Jeet Oza                     590
ISBN123465 Java-1                   Vishnu Oza               15-MAR-21 Hindi                    22-MAR-21 27-MAR-21 McGraw                      1200

10 rows selected.

SQL> select * from books where price<(select max(price) from books) order by price desc fetch first 1 row only;

ISBN       BOOKTITLE                AUTHOR                   PUBLICATI LANGUAGE                ISSUEDATE RETURNDAT PUBLISHERNAME                PRICE
---------- ------------------------ ------------------------ --------- ------------------------ --------- --------- ------------------------ ----------
ISBN12356  C++                      Hetav Shah               29-MAR-20 English                  12-APR-20 23-MAY-20 Jeet Oza                    1100
```

Hospital management

Initial Table :

```
SQL> select * from hospital;

  DOCTORID DOCTORNAME               SPECIALIZATION            SALARY  PATIENTNO DATEADMIT DISCHARGE PATIENTNAME
---------- ------------------------ ------------------------- ---------- ---------- --------- --------- ------------------------
    100001 Dr Vishnu Oza            Cancer                    300000        101 12-JAN-21 15-JAN-21 Jeet Oza
    100002 Dr Jahnvi Oza            Dental                    250000        106 11-JAN-21 12-JAN-21 Jeet Oza
    100003 Dr Jeet Oza              Covid                     700000        103 23-MAR-21 28-MAR-21 Bipin Oza
    100004 Dr Ritam Shah            Gynechologist             200000        107 08-MAR-21 09-MAR-21 Heli Patel
    100005 Dr Jaynil Mishra         Covid                     500000        109 18-MAR-21 29-MAR-21 Bipin Oza
    100006 Dr Akshay Kumar          Covid                     350000        111 06-JUN-21 19-JUN-21 Ajay Devgun
    100007 Dr Nishit Rao            Gynechologist             200000        113 16-JUN-21 18-JUN-21 Krina Patel
    100008 Dr Rakesh Shah           Cancer                    350000        115 17-AUG-21 23-AUG-21 Sanjay Dutta
    100009 Dr Ajay Devgun           Cardiologist              200000        117 22-AUG-21 23-AUG-21 Bipin Oza
    100010 Dr Shah Rukh             Covid                     300000        119 31-AUG-21 12-SEP-21 Jeet Oza

10 rows selected.
```

Q1) Display doctor names from every specialization.

```
SQL> select doctorname,specialization from hospital order by specialization;

DOCTORNAME               SPECIALIZATION
------------------------ -------------------------
Dr Vishnu Oza            Cancer
Dr Rakesh Shah           Cancer
Dr Ajay Devgun           Cardiologist
Dr Akshay Kumar          Covid
Dr Shah Rukh             Covid
Dr Jeet Oza              Covid
Dr Jaynil Mishra         Covid
Dr Jahnvi Oza            Dental
Dr Ritam Shah            Gynechologist
Dr Nishit Rao            Gynechologist
```

Q2) Display count of doctors according to their specialization wise.

```
SQL> select count(doctorname),specialization from hospital group by specialization;

COUNT(DOCTORNAME) SPECIALIZATION
----------------- ------------------------
                1 Cardiologist
                2 Gynechologist
                4 Covid
                2 Cancer
                1 Dental

SQL>
```

Q3) Display count of patients admitted for any specific treatment.

```
SQL> select count(patientno) from hospital where specialization='Covid';

COUNT(PATIENTNO)
----------------
               4
```

For Covid

Q4) Display doctor ID and name who is/are not specialized in cancer.

```
SQL> select doctorid,doctorname from hospital where specialization!='Cancer';

  DOCTORID DOCTORNAME
---------- ------------------------
    100002 Dr Jahnvi Oza
    100003 Dr Jeet Oza
    100004 Dr Ritam Shah
    100005 Dr Jaynil Mishra
    100006 Dr Akshay Kumar
    100007 Dr Nishit Rao
    100009 Dr Ajay Devgun
    100010 Dr Shah Rukh

8 rows selected.

SQL> select a.doctorid,a.doctorname from hospital a,hospital b where a.doctorid=b.doctorid and a.specialization!='Cancer';

  DOCTORID DOCTORNAME
---------- ------------------------
    100002 Dr Jahnvi Oza
    100003 Dr Jeet Oza
    100004 Dr Ritam Shah
    100005 Dr Jaynil Mishra
    100006 Dr Akshay Kumar
    100007 Dr Nishit Rao
    100009 Dr Ajay Devgun
    100010 Dr Shah Rukh

8 rows selected.
```

By simple query and by self join

Q5) Display doctors count in each specialization whose salary is 50000.

```
SQL> select * from hospital;

  DOCTORID DOCTORNAME              SPECIALIZATION              SALARY  PATIENTNO DATEADMIT DISCHARGE PATIENTNAME
---------- ----------------------- ----------------------- ---------- ---------- --------- --------- -----------------------
    100001 Dr Vishnu Oza           Cancer                      300000        101 12-JAN-21 15-JAN-21 Jeet Oza
    100002 Dr Jahnvi Oza           Dental                      250000        106 11-JAN-21 12-JAN-21 Jeet Oza
    100003 Dr Jeet Oza             Covid                       700000        103 23-MAR-21 28-MAR-21 Bipin Oza
    100004 Dr Ritam Shah           Gynechologist               200000        107 08-MAR-21 09-MAR-21 Heli Patel
    100005 Dr Jaynil Mishra        Covid                       500000        109 18-MAR-21 29-MAR-21 Bipin Oza
    100006 Dr Akshay Kumar         Covid                        50000        111 06-JUN-21 19-JUN-21 Ajay Devgun
    100007 Dr Nishit Rao           Gynechologist                50000        113 16-JUN-21 18-JUN-21 Krina Patel
    100008 Dr Rakesh Shah          Cancer                      350000        115 17-AUG-21 23-AUG-21 Sanjay Dutta
    100009 Dr Ajay Devgun          Cardiologist                200000        117 22-AUG-21 23-AUG-21 Bipin Oza
    100010 Dr Shah Rukh            Covid                        50000        119 31-AUG-21 12-SEP-21 Jeet Oza

10 rows selected.

SQL> select count(doctorid),specialization from hospital where salary=50000 group by specialization;

COUNT(DOCTORID) SPECIALIZATION
--------------- -----------------------
              1 Gynechologist
              2 Covid
```

Q6) Display patient ID and patient name who was the first one got admitted to the hospital.

```
SQL> select patientno,patientname from hospital order by dateadmitted fetch first 1 rows only;

 PATIENTNO PATIENTNAME
---------- -------------------------
       106 Jeet Oza

SQL>
```

Q7) Display the average count of patients (in any month).

```
SQL> select count(patientno),extract(month from dateadmitted) from hospital group by extract(month from dateadmitted);

COUNT(PATIENTNO) EXTRACT(MONTHFROMDATEADMITTED)
---------------- ------------------------------
               2                              6
               2                              1
               3                              8
               3                              3
```

Q8) For every month (Jan-may) display the count of patients who got discharged in that month.

```
SQL> select count(patientno),extract(month from dischargedate) from hospital group by extract(month from dischargedate) having extract(month from dischargedate) between 1 and 5;

COUNT(PATIENTNO) EXTRACT(MONTHFROMDISCHARGEDATE)
---------------- -------------------------------
               2                               1
               3                               3
```

Q9) Display count of patients who got admitted in the last six months.

```
SQL> select count(patientno),extract(month from dateadmitted) from hospital group by extract(month from dateadmitted) having extract(month from dateadmitted) between 6 and 12;

COUNT(PATIENTNO) EXTRACT(MONTHFROMDATEADMITTED)
---------------- ------------------------------
               2                              6
               3                              8
```

Q10) Display specialization with the least number of doctors.

```
SQL> select count(doctorid),specialization from hospital group by specialization order by count(doctorid) fetch first 1 rows only;

COUNT(DOCTORID) SPECIALIZATION
--------------- ------------------------
              1 Cardiologist
```

Q11) Display the doctor's name with the highest salary.

```
SQL> select doctorname from hospital order by salary desc fetch first 1 rows only;

DOCTORNAME
-------------------------
Dr Jeet Oza
```

Q12) Display the average salary of doctors specialization-wise.

```
AVG(SALARY) SPECIALIZATION
----------- -------------------------
     200000 Cardiologist
     125000 Gynechologist
     325000 Covid
     325000 Cancer
     250000 Dental

SQL>
```

Q13) Display the minimum count of patients for each treatment.

```
SQL> select count(patientno),specialization from hospital group by specialization order by count(patientno) fetch first 1 rows only;

COUNT(PATIENTNO) SPECIALIZATION
---------------- ------------------------
               1 Cardiologist
```

Q14) Display the average count of patients for each treatment.

```
SQL> select avg(count(patientno)) from hospital group by specialization;

AVG(COUNT(PATIENTNO))
---------------------
                    2
```

Q15) Create another SUMMARY table with only two columns of "doctor id" and "count of the patient treated by that doctor id".

```
SQL> create table summary as (select doctorid,count(patientno) count from hospital group by doctorid);

Table created.

SQL> select * fr    summary;

  DOCTORID      COUNT

    100004          1
    100007          1
    100002          1
    100003          1
    100001          1
    100006          1
    100008          1
    100005          1
    100009          1
    100010          1

10 rows selected.
```