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SQL Assignment

Library System

Use the following Schema to perform the given set of assignment.

Tables-

Member – It contains information about the members

Column Name	Data Type	Description
Member_Id	Number(5)	Unique Member ID
Member_Name	Varchar2(30)	Name of the Library member
Member_address	Varchar2(50)	Address of the member
Acc_Open_Date	Date	Date of membership
Membership_type	Varchar2(20)	Type of the membership such as 'Lifetime',' Annual', 'Half Yearly',' Quarterly'
Fees_paid	Number(4)	Membership fees paid
Max_Books_Allowed	Number(2)	Total Number of books that can be issued to the member.
Penalty_Amount	Number(7,2)	Penalty amount due

Books- It contains information about the books belongs to the library

Column Name	Data Type	Description
Book_No	Number(6)	Book identification number
Book_Name	VarChar2(30)	Name of the book
Author_name	Varchar2(30)	Author of the book
Cost	Number(7,2)	Cost of the book
Category	Char(10)	Category like Science , Fiction etc.

Issue – It contains the information about issue of the books

Column Name	Data Type	Description
Lib_Issue_Id	Number(10)	Library Book Issue No
Book_No	Number(6)	Number of the book issued
Member_Id	Number(5)	Member that issued the

		book
Issue_Date	Date	Date of Issue
Return_date	Date	Return date

Day # 2 Assignments (Estimated Time: 2 Hrs)

Concept: Select Command
SQL operators and functions
Single Row functions: Date, Numeric, Character functions,
Aggregate functions.

Objective: At the end of the assignments, participants will be confident to
understand basic select query, Logical, Arithmetic operators, Date,
character, Numeric function and regular expression functions.
Aggregate functions and their use.

Task / Problems:

```
SQL> connect
Enter user-name: srs
Enter password:
Connected.
SQL> create table Member
  2  (
  3      member_id number(5) primary key,
  4      member_name varchar2(30),
  5      member_address varchar2(50),
  6      acc_open_date date,
  7      membership_type varchar2(20),
  8      fees_paid number(4),
  9      max_books_allowed number(2),
 10      penalty_amount number(7,2)
 11  );

Table created.
```

```
SQL> create table Books
  2  (
  3    book_no number(6),
  4    book_name varchar2(30),
  5    author_name varchar2(30),
  6    cost number(7,2),
  7    category char(10)
  8  );

Table created.

SQL> create table Issue
  2  (
  3    lib_issue_id number(10),
  4    book_no number(6),
  5    member_id number(5),
  6    issue_date date,
  7    return_date date
  8  );

Table created.
```

```
SQL> desc Member
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 MEMBER_ID                                 NOT NULL NUMBER(5)
 MEMBER_NAME                                        VARCHAR2(30)
 MEMBER_ADDRESS                                     VARCHAR2(50)
 ACC_OPEN_DATE                                      DATE
 MEMBERSHIP_TYPE                                    VARCHAR2(20)
 FEES_PAID                                          NUMBER(4)
 MAX_BOOKS_ALLOWED                                  NUMBER(2)
 PENALTY_AMOUNT                                     NUMBER(7,2)

SQL> desc Books
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 BOOK_NO                                            NUMBER(6)
 BOOK_NAME                                          VARCHAR2(30)
 AUTHOR_NAME                                        VARCHAR2(30)
 COST                                               NUMBER(7,2)
 CATEGORY                                           CHAR(10)

SQL> desc Issue
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 LIB_ISSUE_ID                                       NUMBER(10)
 BOOK_NO                                            NUMBER(6)
 MEMBER_ID                                          NUMBER(5)
 ISSUE_DATE                                         DATE
 RETURN_DATE                                        DATE

SQL>
```

1)   List all the books that are written by Author Loni and has price less then 600.

```
SQL> select * from Books where author_name = 'Loni' and cost < 600;

   BOOK_NO BOOK_NAME                              AUTHOR_NAME
---------- ------------------------------ ------------------------------
      COST CATEGORY
---------- ----------
       102 Oracle - Complete Ref          Loni
       550 System

       103 Mastering SQL                  Loni
       250 Database
```

2)   List the Issue details for the books that are not returned yet.

```
SQL> select * from Issue where return_date is null;

LIB_ISSUE_ID   BOOK_NO  MEMBER_ID ISSUE_DAT RETURN_DA
------------ ---------- ---------- --------- ---------
        7001        101          1 10-DEC-06
        7002        102          2 25-DEC-06
        7003        104          1 15-JAN-06
        7006        101          3 18-FEB-06

SQL> select * from Issue where return_date is not null;

LIB_ISSUE_ID   BOOK_NO  MEMBER_ID ISSUE_DAT RETURN_DA
------------ ---------- ---------- --------- ---------
        7004        101          1 04-JUL-06 19-JUL-06
        7005        104          2 15-NOV-06 30-NOV-06
```

3)   Update all the blank return_date with 31-Dec-06 excluding 7005 and 7006.

```
SQL> UPDATE ISSUE SET RETURN_DATE='31-DEC-06' WHERE LIB_ISSUE_ID=7001;

1 row updated.

SQL> UPDATE ISSUE SET RETURN_DATE='31-DEC-06' WHERE LIB_ISSUE_ID=7002;

1 row updated.

SQL> UPDATE ISSUE SET RETURN_DATE='31-DEC-06' WHERE LIB_ISSUE_ID=7003;

1 row updated.

SQL> UPDATE ISSUE SET RETURN_DATE='31-DEC-06' WHERE LIB_ISSUE_ID=7004;

1 row updated.

SQL> select * from Issue;

LIB_ISSUE_ID   BOOK_NO  MEMBER_ID ISSUE_DAT RETURN_DA
------------ ---------- ---------- --------- ---------
        7001        101          1 10-DEC-06 31-DEC-06
        7002        102          2 25-DEC-06 31-DEC-06
        7003        104          1 15-JAN-06 31-DEC-06
        7004        101          1 04-JUL-06 31-DEC-06
        7005        104          2 15-NOV-06 30-NOV-06
        7006        101          3 18-FEB-06

6 rows selected.
```

4)   List all the Issue details that have books issued for more then 30 days.

```
SQL> select * from Issue where( return_date - issue_date ) > 30;

LIB_ISSUE_ID   BOOK_NO  MEMBER_ID ISSUE_DAT RETURN_DA
------------ ---------- ---------- --------- ---------
        7003        104          1 15-JAN-06 31-DEC-06
        7004        101          1 04-JUL-06 31-DEC-06
```

5)   List all the books that have price in range of 500 to 750 and has
          category as Database.

```
SQL>
SQL> SELECT BOOK_NAME FROM BOOKs WHERE (COST BETWEEN 500 AND 750);

BOOK_NAME
------------------------------
Oracle - Complete Ref
PL SQL-Ref
```

6)   List all the books that belong to any one of the following
          categories Science, Database, Fiction, Management.

```
SQL> SELECT * FROM BOOKS WHERE category in ('Science','Database', 'Fiction','Management');

  BOOK_NO BOOK_NAME                          AUTHOR_NAME
--------- ------------------------------ ------------------------------
      COST CATEGORY
--------- ----------
      101 Let us C                           Denis Ritchie
      450 Database

      103 Mastering SQL                      Loni
      250 Database

      104 PL SQL-Ref                         Loni
      750 Database


  BOOK_NO BOOK_NAME                          AUTHOR_NAME
--------- ------------------------------ ------------------------------
      COST CATEGORY
--------- ----------
      106 National Geographic                Adis Scott
     1000 Science
```

7) List all the members in the descending order of Penalty due on them.

```
SQL> SELECT * FROM Member ORDER BY penalty_amount DESC;

 MEMBER_ID MEMBER_NAME
---------- ------------------------------
MEMBER_ADDRESS                                      ACC_OPEN_
-------------------------------------------------- ---------
MEMBERSHIP_TYPE       FEES_PAID MAX_BOOKS_ALLOWED PENALTY_AMOUNT
-------------------- ---------- ----------------- --------------
         4 Sarvesh Desai
Mumbai                                              21-OCT-22
Half yearly              5000                 5

         7 Mayur More
Pune                                                21-APR-18
Quarterly                2000                 3

 MEMBER_ID MEMBER_NAME
---------- ------------------------------
MEMBER_ADDRESS                                      ACC_OPEN_
-------------------------------------------------- ---------
MEMBERSHIP_TYPE       FEES_PAID MAX_BOOKS_ALLOWED PENALTY_AMOUNT
-------------------- ---------- ----------------- --------------

         2 Garima Sen
Pune                                                21-OCT-22
Annual                   1000                 3

         6 Aparna Salunke
Mumbai                                              06-MAR-20

 MEMBER_ID MEMBER_NAME
---------- ------------------------------
MEMBER_ADDRESS                                      ACC_OPEN_
-------------------------------------------------- ---------
MEMBERSHIP_TYPE       FEES_PAID MAX_BOOKS_ALLOWED PENALTY_AMOUNT
-------------------- ---------- ----------------- --------------
Annual                   1000                 2            900

         8 Rajesh Bhojne
Mumbai                                              06-MAY-21
Annual                   1000                10            400
```

8)   List all the books in ascending order of category and descending order of price.

```
SQL> select * from Books order by category asc,cost desc;

  BOOK_NO BOOK_NAME                      AUTHOR_NAME
--------- ---------------------------- ----------------------------
     COST CATEGORY
--------- ----------
      104 PL SQL-Ref                     Loni
      750 Database

      101 Let us C                       Denis Ritchie
      450 Database

      103 Mastering SQL                  Loni
      250 Database


  BOOK_NO BOOK_NAME                      AUTHOR_NAME
--------- ---------------------------- ----------------------------
     COST CATEGORY
--------- ----------
      106 National Geographic           Adis Scott
     1000 Science

      102 Oracle - Complete Ref         Loni
      550 System
```

9)   List all the books that contain word SQL in the name of the book.

```
SQL> select * from Books where book_name like'%SQL%';

  BOOK_NO BOOK_NAME                      AUTHOR_NAME
--------- ---------------------------- ----------------------------
     COST CATEGORY
--------- ----------
      103 Mastering SQL                  Loni
      250 Database

      104 PL SQL-Ref                     Loni
      750 Database
```

10) List all the members whose name starts with R or G and contains letter I in it.

```
SQL> SELECT * FROM MEMBER where MEMBER_NAME like'R%'OR MEMBER_NAME LIKE'G%' AND MEMBER_NAME LIKE '%I%';

 MEMBER_ID MEMBER_NAME
---------- -----------------------------
MEMBER_ADDRESS                                  ACC_OPEN_
-------------------------------------------------- ---------
MEMBERSHIP_TYPE       FEES_PAID MAX_BOOKS_ALLOWED PENALTY_AMOUNT
------------------- ---------- ----------------- -------------
         1 Richa Sharma
Pune                                            10-DEC-05
Lifetime              2500              5              50

         8 Rajesh Bhojne
Mumbai                                          06-MAY-21
Annual                1000             10             400

 MEMBER_ID MEMBER_NAME
---------- -----------------------------
MEMBER_ADDRESS                                  ACC_OPEN_
-------------------------------------------------- ---------
MEMBERSHIP_TYPE       FEES_PAID MAX_BOOKS_ALLOWED PENALTY_AMOUNT
------------------- ---------- ----------------- -------------
```

11) List the entire book name in Init cap and author in upper case in the descending order of the book name.

```
SQL> select initcap(author_name),upper(book_name) from Books order by book_name desc;

INITCAP(AUTHOR_NAME)           UPPER(BOOK_NAME)
------------------------------ ------------------------------
Loni                           PL SQL-REF
Loni                           ORACLE - COMPLETE REF
Adis Scott                     NATIONAL GEOGRAPHIC
Loni                           MASTERING SQL
Denis Ritchie                  LET US C
```

12) List the Issue Details for all the books issue by member 101 with Issue_date and Return Date in following format. **'Monday, July, 10, 2006'.**

```
SQL> SELECT TO_CHAR(ISSUE_date,'DY/MON/DD/YYYY'),TO_CHAR(RETURN_DATE,'DY/MON/DD/YYYY')FROM ISSUE WHERE LIB_ISSUE_ID=7001;

TO_CHAR(ISSUE_DATE,'DY/MON/DD/YYY TO_CHAR(RETURN_DATE,'DY/MON/DD/YY
-------------------------------- --------------------------------
SUN/DEC/10/2006                   SUN/DEC/31/2006
```

13) List the data in the book table with category data displayed as D for Database, S for Science, R for RDBMS and O for all the others.

```
SQL> select category,decode(category,'database','D','rdbms','R','science','S','others','O') as types from Books;

CATEGORY   T
---------- -
Database
System
Database
Database
Science
```

14) List all the members that became the member in the year 2006.

```
SQL> SELECT MEMBER_NAME FROM MEMBER WHERE TO_CHAR(ACC_OPEN_DATE,'YY') >= 06;

MEMBER_NAME
-----------------------------
Garima Sen
Sarvesh Desai
Omkar Tikhe
Aparna Salunke
Mayur More
Rajesh Bhojne

6 rows selected.
```

15) List the Lib_Issue_Id, Issue_Date, Return_Date and No of days Book was issued.

```
SQL> SELECT LIB_ISSUE_ID,ISSUE_DATE,RETURN_DATE,(RETURN_DATE - ISSUE_DATE) AS NUMBER_OF_DAYS FROM ISSUE;

LIB_ISSUE_ID ISSUE_DAT RETURN_DA NUMBER_OF_DAYS
------------ --------- --------- --------------
        7001 10-DEC-06 31-DEC-06            21
        7002 25-DEC-06 31-DEC-06             6
        7003 15-JAN-06 31-DEC-06           350
        7004 04-JUL-06 31-DEC-06           180
        7005 15-NOV-06 30-NOV-06            15
        7006 18-FEB-06

6 rows selected.
```

16) Find the details of the member of the Library in the order of their joining the library.

```
SQL>  select * from Issue order by issue_date ;

LIB_ISSUE_ID    BOOK_NO  MEMBER_ID ISSUE_DAT RETURN_DA
------------ ---------- ---------- --------- ---------
        7003        104          1 15-JAN-06 31-DEC-06
        7006        101          3 18-FEB-06
        7004        101          1 04-JUL-06 31-DEC-06
        7005        104          2 15-NOV-06 30-NOV-06
        7001        101          1 10-DEC-06 31-DEC-06
        7002        102          2 25-DEC-06 31-DEC-06

6 rows selected.
```

17) Display the count of total no of books issued to Member 101.

```
SQL> SELECT SUM(MAX_BOOKS_ALLOWED) FROM MEMBER WHERE MEMBER_ID=1 ;

SUM(MAX_BOOKS_ALLOWED)
----------------------
                     5
```

18)   Display the total penalty due for all the members.

```
SQL> select sum(penalty_amount) from Member ;

SUM(PENALTY_AMOUNT)
------------------
              1600
```

19)   Display the total no of members

```
SQL> SELECT COUNT(MEMBER_NAME) FROM MEMBER;

COUNT(MEMBER_NAME)
------------------
                 8
```

20)   Display the total no of books issued

```
SQL> SELECT COUNT(LIB_ISSUE_ID) FROM ISSUE;

COUNT(LIB_ISSUE_ID)
------------------
                 6
```

21)   Display the average membership fees paid by all the members

```
SQL> SELECT AVG(FEES_PAID) FROM MEMBER;

AVG(FEES_PAID)
-------------
         2125
```

22) Display no of months between issue date and return date for all issue

```
SQL> SELECT ROUND((RETURN_DATE-ISSUE_DATE)/30) FROM ISSUE;

ROUND((RETURN_DATE-ISSUE_DATE)/30)
----------------------------------
                                 1
                                 0
                                12
                                 6
                                 1

6 rows selected.
```

23) Display the length of member's name

```
SQL> SELECT LENGTH(MEMBER_NAME)AS LENGTH_OF_NAME FROM MEMBER;

LENGTH_OF_NAME
--------------
            12
            10
            14
            13
            11
            14
            10
            13

8 rows selected.
```

24) Display the first 5 characters of membership_type for all members

```
SQL> SELECT SUBSTR(MEMBERSHIP_TYPE,1,5) FROM MEMBER;

SUBSTR(MEMBERSHIP_TY
--------------------
Lifet
Annua
Quart
Half
Lifet
Annua
Quart
Annua
```

25) Display the last day of the month of issue date

```
SQL> SELECT LAST_DAY(ISSUE_DATE) FROM ISSUE;

LAST_DAY(
---------
31-DEC-06
31-DEC-06
31-JAN-06
31-JUL-06
30-NOV-06
28-FEB-06

6 rows selected.
```