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1) Database Schema for a Student Library scenario Consider that a database named Student Library is developed by an application software NMITSoft company. There are 4 tables in the database. Relationship scheme for the tables is as below: Student (Stud_no : integer,Stud_name: string) Membership (Mem_no: integer,Stud_no: integer) Book (book_no: integer, book_name:string, author: string) Iss_rec (iss_no:integer, iss_date: date, Mem_no: integer, book_no: integer) For the above schema, perform the following a) Create the tables with the appropriate integrity constraints b) Insert around 10 records in each of the tables c) List all the student names with their membership numbers d) List all the issues for the current date with student and Book names e) Give a count of how many books have been bought by each student f) Give a list of books taken by student with stud_no as 5.

-- Create the Library database

CREATE DATABASE Library_database;

-- Use the Library database

USE Library_database;

-- Create the Student table

CREATE TABLE Student (

    S_no INT PRIMARY KEY,

    S_name VARCHAR(30)

);

-- Insert data into the Student table

INSERT INTO Student VALUES

    (1, 'Ajay'),

    (2, 'Vijay'),

    (3, 'Sujay'),

    (4, 'Asha'),

    (5, 'Priya');

```sql
-- Select all records from the Student table
SELECT * FROM Student;


-- Create the Membership table
CREATE TABLE Membership (
    mem_no INT PRIMARY KEY,
    S_no INT,
    FOREIGN KEY (S_no) REFERENCES Student(S_no)
);


-- Insert data into the Membership table
INSERT INTO Membership VALUES
    (11, 1),
    (12, 2),
    (13, 3),
    (14, 4),
    (15, 5);


-- Select all records from the Membership table
SELECT * FROM Membership;


-- Create the Book table
CREATE TABLE Book (
    book_no INT PRIMARY KEY,
    b_name VARCHAR(50),
    author VARCHAR(50)
);


-- Insert data into the Book table
INSERT INTO Book (book_no, b_name, author) VALUES
```

```sql
    (101, 'Book1', 'Author1'),

    (102, 'Book2', 'Author2'),

    (103, 'Book3', 'Author3'),

    (104, 'Book4', 'Author4'),

    (105, 'Book5', 'Author5');


-- Select all records from the Book table
SELECT * FROM Book;


-- Create the ISS_Rec table
CREATE TABLE ISS_Rec (

    ISS_no INT PRIMARY KEY,

    ISS_date DATE,

    mem_no INT,

    book_no INT,

    FOREIGN KEY (mem_no) REFERENCES Membership(mem_no),

    FOREIGN KEY (book_no) REFERENCES Book(book_no)

);


-- Insert data into the ISS_Rec table
INSERT INTO ISS_Rec (ISS_no, ISS_date, mem_no, book_no) VALUES

    (1001, '2024-04-23', 11, 101),

    (1002, '2017-09-24', 12, 102),

    (1003, '2014-04-05', 13, 103),

    (1004, '2024-04-26', 14, 104),

    (1005, '2004-12-27', 15, 105);
```

show tables;

```
mysql> show tables;
+---------------------------+
| Tables_in_library_database |
+---------------------------+
| book                      |
| iss_rec                   |
| membership                |
| student                   |
+---------------------------+
4 rows in set (0.00 sec)
```

-- 1) List all the student names with their membership numbers

SELECT S.S_name, M.mem_no

FROM Student S, Membership M

WHERE S.S_no = M.S_no;

```
mysql> SELECT S.S_name, M.mem_no
    -> FROM Student S, Membership M
    -> WHERE S.S_no = M.S_no;
+--------+--------+
| S_name | mem_no |
+--------+--------+
| Ajay   |     11 |
| Vijay  |     12 |
| Sujay  |     13 |
| Asha   |     14 |
| Priya  |     15 |
+--------+--------+
5 rows in set (0.00 sec)
```

-- 2)List all the issues for the current date with student and Book names

select iss.ISS_no, S.s_name, B.b_name

from Student S, Book B, ISS_Rec iss, Membership M

where iss.ISS_date = '2004-12-27' -- curdate()

and iss.book_no = B.book_no

and iss.mem_no = M.mem_no

and M.s_no = S.s_no;

```
mysql> select iss.ISS_no, S.s_name, B.b_name
    -> from Student S, Book B, ISS_Rec iss, Membership M
    -> where iss.ISS_date = '2004-12-27' -- curdate()
    -> and iss.book_no = B.book_no
    -> and iss.mem_no = M.mem_no
    -> and M.s_no = S.s_no;
+--------+--------+--------+
| ISS_no | s_name | b_name |
+--------+--------+--------+
|   1005 | Priya  | Book5  |
+--------+--------+--------+
1 row in set (0.02 sec)
```

-- 3)Give a count of how many books have been bought by each student

select mem_no as S_no,count(ISS_no) as Total_Books_Bought

from ISS_Rec

group by mem_no;

```
mysql> select mem_no as S_no,count(ISS_no) as Total_Books_Bought
    -> from ISS_Rec
    -> group by mem_no;
+------+--------------------+
| S_no | Total_Books_Bought |
+------+--------------------+
|   11 |                  1 |
|   12 |                  1 |
|   13 |                  1 |
|   14 |                  1 |
|   15 |                  1 |
+------+--------------------+
5 rows in set (0.00 sec)
```

-- 4)Give a list of books taken by student with stud_no as 5

select B.b_name, B.book_no, B.author

from ISS_Rec iss, Book B, Student S, Membership M

where iss.book_no = B.book_no

and iss.mem_no = M.mem_no

and M.s_no = S.s_no

and S.s_no = 5;

```
mysql> select B.b_name, B.book_no, B.author
    -> from ISS_Rec iss, Book B, Student S, Membership M
    -> where iss.book_no = B.book_no
    -> and iss.mem_no = M.mem_no
    -> and M.s_no = S.s_no
    -> and S.s_no = 5;
+--------+---------+---------+
| b_name | book_no | author  |
+--------+---------+---------+
| Book5  |     105 | Author5 |
+--------+---------+---------+
1 row in set (0.00 sec)
```