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DDL Assignment 2

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

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

Column Name	Data Type	Description
Book_No	Integer	Book identification number
Book_Name	VarChar(30)	Name of the book
Author_name	Varchar(30)	Author of the book
Cost	Decimal(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	Integer	Library Book Issue No
Book_No	Integer	Number of the book issued
Member_Id	Integer	Member that issued the book
Issue_Date	Date	Date of Issue
Return_date	Date	Return date

Task / Problems:

1) Create the table Member, Books and Issue without any constraints as mentioned in the schema description above.

```
mysql> create table member(
   -> member_id int,
   -> member_name varchar(30),
   -> member_address varchar(50),
   -> acc_open_date date,
   -> membership_type varchar(20),
   -> fees_paid int,
   -> max_books_allowed int,
   -> penalty_amount decimal(7,2)
   -> );
Query OK, 0 rows affected (0.09 sec)

mysql> create table books(
   -> book_no int,
   -> book_name varchar(30),
   -> author_name varchar(30),
   -> cost decimal(7,2),
   -> category char(10)
   -> );
Query OK, 0 rows affected (0.07 sec)

mysql> create table issue(
   -> lib_issue_id int,
   -> book_no int,
   -> member_id int,
   -> issue_date date,
   -> return_date date
   -> );
Query OK, 0 rows affected (0.08 sec)
```

2) View the structure of the tables.

```
mysql> DESCRIBE member;
```

3) Drop the Member table

```
mysql> drop table member;
```

4) Create the table Member again as per the schema description with the following constraints.

a. Member_Id – Primary Key
b. Membership_type - 'Lifetime',' Annual', 'Half Yearly',' Quarterly'

```
mysql> alter table member
   -> add primary key(member_id);
```

5) Modify the table Member increase the width of the member name to 30 characters.

```
mysql> alter table member
   -> modify column member_name varchar(30);
```

6) Add a column named as Reference of Char(30) to Issue table.

```
mysql> alter table issue
 -> add reference char(30);
```

7) Delete/Drop the column Reference from Issue.

```
mysql> alter table issue
  -> drop column reference;
```

8) Rename the table Issue to Lib_Issue.

```
mysql> alter table issue
  -> rename to Lib_Issue;
```

9) Insert following data in table Member

Member ID	Member Name	Member Address	Acc_Open_Date	Membership_type	Fees_Paid	Max_Books _Allowed	Penalty_ Amount
1	Richa Sharma	Pune	10-12-05	Lifetime	25000	5	50
2	Garima Sen	Pune	current date	Annual	1000	3	Null

```
mysql> insert into member values
 -> (1,"Richa","Pune","10-12-05","Lifetime",25000,5,50),
 -> (2,"garima","Pune",curdate(),"Annual",1000,3,null);
```

10) Insert at least 5 records with suitable data.

```
insert into member
   -> values
   -> (3,'amit patil','mumbai','2018-06-15','annual',1200,3,null),
   -> (4,'neha kulkarni','nashik','2019-01-
20','quarterly',500,2,20),
   -> (5,'rohit deshmukh','nagpur','2017-09-05','half
yearly',800,4,0),
```

-> (6,'pooja joshi','thane','2020-03-10','lifetime',30000,6,null),
-> (7,'sachin more','pune','2021-11-25','annual',1000,3,10);

11) Modify the column **Member_name**. Decrease the width of the member name to 20 characters. (If it does not allow state the reason for that)
➔ Does not allow since it contains data.

12) Try to insert a record with Max_Books_Allowed = 110, Observe the error that comes.

13) Generate another table named **Member101** using a Create command along with a simple SQL query on member table.

```
mysql> create table member101
 -> as
 -> select * from member;
```

14) Add the constraints on columns max_books_allowed and penalty_amt as follows
    a. max_books_allowed < 100
    b. penalty_amt maximum 1000

Also give names to the constraints.

```
mysql> alter table member
 -> modify column max_books_allowed int
check(max_books_allowed<100) default NULL;
```

15) Drop the table books.

```
Drop table books;
```

16) Create table Books again as per the schema description with the following constraints.
    a. Book_No – Primary Key
    b. Book_Name – Not Null
    c. Category – System, Fiction, Database, RDBMS, Others.

```
mysql> create table books(
 -> book_no int primary key,
 -> book_name varchar(30) not null,
 -> author varchar(30),
 -> cost decimal(7,2),
 -> category varchar(10),
 -> constraint chk_category
 -> check (category in ('system','fiction','database','rdbms','others'))
 -> );
```

17) Insert data in Book table as follows:

Book_No	Book Name	Author	Cost	Category
101	Let us C	Denis Ritchie	450	System
102	Oracle – Complete Ref	Loni	550	Database
103	Mastering SQL	Loni	250	Database
104	PL SQL-Ref	Scott Urman	750	Database

```
insert into books
   -> values
   -> (101,'let us c','denis ritchie',450,'system'),
   -> (102,'oracle complete ref','loni',550,'database'),
   -> (103,'mastering sql','loni',250,'database'),
   -> (104,'pl sql-ref','scott urman',750,'database');
```

18) Insert more records in Book table.

```
mysql> insert into books
   -> values
   -> (105,'dbms concepts','korth',600,'rdbms'),
   -> (106,'c programming','balagurusamy',400,'system'),
   -> (107,'harry potter','rowling',500,'fiction');
```

19) View the data in the tables using simple SQL query.

20) Insert into Book following data.

105, National Geographic, Adis Scott, 1000, Science

21) Rename the table Lib_Issue to Issue.

```
mysql> alter table Lib_Issue
   -> rename to Issue;
```

22) Drop table Issue.

```
Drop table issue;
```

23) As per the given structure Create table Issue again with following constraints.

- Lib_Issue_Id-Primary key
- Book_No- foreign key
- Member_id - foreign key

- Issue_date
- Return_date

```
mysql> create table issue(
   -> lib_issue_id int primary key,
   -> book_no int,
   -> member_id int,
   -> issue_date date,
   -> return_date date,
   -> foreign key(member_id) references member(member_id),
   -> foreign key(book_no) references books(book_no)
   -> );
```

24) Insert following data into Issue table.

Lib_Issue_Id	Book No	Member ID	Issue Date
7001	101	1	10-Dec-06
7002	102	2	25-Dec-06
7003	104	1	15-Jan-06
7004	101	1	04-Jul-06
7005	104	2	15-Nov-06
7006	101	3	18-Feb-06

```
mysql> insert into issue
   -> values
   -> (7001,101,1,'2006-12-10',null),
   -> (7002,102,2,'2006-12-25',null),
   -> (7003,104,1,'2006-01-15',null),
   -> (7004,101,1,'2006-07-04',null),
   -> (7005,104,2,'2006-11-15',null),
   -> (7006,101,3,'2006-02-18',null);
```

25) Remove the constraints on Issue table

```
mysql> alter table issue
   -> drop constraint issue_ibfk_1;

mysql> alter table issue
   -> drop constraint issue_ibfk_2;
mysql> alter table issue
   -> drop primary key;
```

26) Insert a record in Issue table. The member_id should not exist in member table.

```
mysql> insert into issue
   -> values(7010,101,999,'2006-12-20',null);
```

27) Now enable the constraints of Issue table. Observe the error

mysql> delete from issue
-> where member_id = 999;

28) Delete the record inserted at Q-27) and enable the constraints.

29) Try to delete the record of member id 1 from member table and observe the error .

30) View the data and structure of all the three tables Member, Issue, Book.

31) Modify the Return_Date of 7004,7005 to 15 days after the Issue_date.

mysql> update issue
-> set return_date = date_add(issue_date,interval 15 day)
-> where lib_issue_id in (7004,7005);

32) Remove all the records from Issue table where member_ID is 1 and Issue date in before 10-Dec-06.

mysql> delete from issue
-> where member_id = 1 and issue_date = "2006-12-10";

33) Remove all the records from Book table with category other than RDBMS and Database.

mysql> delete from books
-> where category not in ("rdbms","database");

34) Remove the table Member.

mysql> drop table member;

35) Remove the table Book.

mysql> drop table books;