

DEPARTMENT OF INFORMATION TECHNOLOGY
IT252 - DATABASES SYSTEMS LAB-1

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Table create :

PUBLISHER TABLE:create table PUBLISHER (Name varchar(255) PRIMARY KEY,Phone int,Address varchar(255));

BOOK TABLE :create table BOOK (Book_id int PRIMARY KEY,Title varchar(255),Publisher_Name varchar(255) REFERENCES PUBLISHER(Name) ON DELETE CASCADE,Pub_Year varchar(255));

BOOK_AUTHORS TABLE:create table BOOK_AUTHORS(Author_Name varchar(255),Book_id int REFERENCES BOOK(Book_id)ON DELETE CASCADE,PRIMARY KEY (Book_id,Author_Name));

LIBRARY_PROGRAMME TABLE:create table LIBRARY_PROGRAMME(Programme_id int PRIMARY KEY,Programme_Name varchar(255),Address varchar(255));

BOOK_COPIES TABLE: create table BOOK_COPIES (Book_id int REFERENCES BOOK(Book_id) ON DELETE CASCADE,Programme_id int REFERENCES LIBRARY_PROGRAMME(Programme_id) ON DELETE CASCADE,No_of_copies int, PRIMARY KEY(Book_id,Programme_id));

CARD TABLE: create table CARD(Card_No int PRIMARY KEY);

BOOK_LENDING TABLE: create table BOOK_LENDING(Book_id int REFERENCES BOOK(Book_id) ON DELETE CASCADE,Programme_id int REFERENCES LIBRARY_PROGRAMME(Programme_id) ON DELETE CASCADE,Card_no int REFERENCES CARD(Card_No) ON DELETE CASCADE,Date_Out date,Due_Date date);

DESC OF TABLES:

PUBLISHER TABLE:

```
mysql> DESC PUBLISHER;
```

Field	Type	Null	Key	Default	Extra
Name	varchar(255)	NO	PRI	NULL	
Phone	int	YES		NULL	
Address	varchar(255)	YES		NULL	

3 rows in set (0.00 sec)

BOOK TABLE:

```
mysql> DESC BOOK;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Book_id        | int           | NO   | PRI | NULL    |       |
| Title          | varchar(255)  | YES  |     | NULL    |       |
| Publisher_Name | varchar(255)  | YES  |     | NULL    |       |
| Pub_Year       | varchar(255)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

BOOK_AUTHORS TABLE:

```
mysql> DESC BOOK_AUTHORS;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Author_Name    | varchar(255)  | NO   | PRI | NULL    |       |
| Book_id        | int           | NO   | PRI | NULL    |       |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

LIBRARY_PROGRAMME TABLE:

```
mysql> DESC LIBRARY_PROGRAMME;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Programme_id   | int           | NO   | PRI | NULL    |       |
| Programme_Name | varchar(255)  | YES  |     | NULL    |       |
| Address        | varchar(255)  | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

BOOK_COPIES TABLE:

```
mysql> DESC BOOK_COPIES;
+-----+-----+-----+-----+-----+-----+
| Field          | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Book_id        | int   | NO   | PRI | NULL    |       |
| Programme_id   | int   | NO   | PRI | NULL    |       |
| No_of_copies   | int   | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

CARD TABLE:

```
mysql> DESC CARD;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Card_No | int | NO | PRI | NULL | |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

BOOK_LENDING TABLE:

```
mysql> DESC BOOK_LENDING;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| Book_id | int | YES | | NULL | |
| Programme_id | int | YES | | NULL | |
| Card_no | int | YES | | NULL | |
| Date_Out | date | YES | | NULL | |
| Due_Date | date | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

INSERTION IN TABLES:

PUBLISHER TABLE:

insert into PUBLISHER values("vasant",9876543210,"jaipur");

insert into PUBLISHER values("knight",98712,"USA");

insert into PUBLISHER values("NCERT",98222,"rajasthan");

insert into PUBLISHER values("RBSE",98121,"Bikaner");

insert into PUBLISHER values("mandal",98133,"delhi");

BOOK TABLE:

insert into BOOK values(1,"sundram","vasant","May-2010");

insert into BOOK values(2,"moon and knight","knight","June-2000");

insert into BOOK values(3,"hero","mandal","April-2007");

insert into BOOK values(4,"Akshy","NCERT","FEB-2021");

insert into BOOK values(5,"mask","RBSE","august-2012");

BOOK_AUTHORS:

insert into BOOK_AUTHORS value("jaheer",1);

insert into BOOK_AUTHORS value("john",2);

insert into BOOK_AUTHORS value("monalica",3);

insert into BOOK_AUTHORS value("raj shukla",4);

insert into BOOK_AUTHORS value("manish",5);

LIBRARY_PROGRAMME:

insert into LIBRARY_PROGRAMME value(1001,"jp adda","jaipur");

insert into LIBRARY_PROGRAMME value(1002,"raj nagar","delhi");

insert into LIBRARY_PROGRAMME value(1003,"rajpur","karnataka");

insert into LIBRARY_PROGRAMME value(1004,"NITK","Manglore");

insert into LIBRARY_PROGRAMME value(1005,"NITC","calicut");

BOOK_COPIES TABLE:

insert into BOOK_COPIES value(1,1001,10);

insert into BOOK_COPIES value(2,1002,100);

insert into BOOK_COPIES value(3,1003,5);

insert into BOOK_COPIES value(4,1004,13);

insert into BOOK_COPIES value(5,1005,20);

CARD TABLE :

insert into CARD value (101);

insert into CARD value (102);

insert into CARD value (103);

insert into CARD value (104);

insert into CARD value (105);

BOOK_LENDING TABLE:

insert into BOOK_LENDING value(1,1001,102,"2017-02-01","2017-06-01");

insert into BOOK_LENDING value(2,1002,102,"2017-03-01","2017-05-01");

insert into BOOK_LENDING value(3,1003,102,"2017-01-21","2017-04-01");

insert into BOOK_LENDING value(4,1004,102,"2017-03-21","2017-04-21");

insert into BOOK_LENDING value(5,1005,103,"2017-04-01","2017-04-21");

Queries:

1. Retrieve details of all books in the library – id, title, name of publisher, authors, number of copies in each Programme, etc.

Answer:

```
SELECT BOOK.Book_id, BOOK.Title, BOOK.Publisher_Name, BOOK.Pub_Year,  
BOOK_AUTHORS.Author_Name, PUBLISHER.Address, PUBLISHER.Phone,  
BOOK_COPIES.Programme_id, BOOK_COPIES.No_of_copies FROM BOOK JOIN  
BOOK_AUTHORS ON BOOK.Book_id = BOOK_AUTHORS.Book_id JOIN PUBLISHER ON  
BOOK.Publisher_Name = PUBLISHER.Name JOIN BOOK_COPIES ON BOOK.Book_id =  
BOOK_COPIES.Book_id;
```

2. Get the particulars of borrowers who have borrowed more than 3 books, but from Jan 2017 to Jun 2017.

Answer:

```
select Card_no FROM BOOK_LENDING where Date_Out between "2017-01-01" AND  
"2017-07-01" group by Card_no HAVING COUNT(*)>3;
```

3. Delete a book in BOOK table. Update the contents of other tables to reflect this data manipulation operation.

Answer:

```
DELETE FROM BOOK WHERE Book_id = 4;
```

4. Partition the BOOK table based on year of publication. Demonstrate its working with a simple query.

Answer:

```
create view kunl as SELECT Pub_Year FROM BOOK;
```

5. Create a view of all books and its number of copies that are currently available in the Library.

Answer:

```
CREATE VIEW jahee AS
```

```
SELECT BOOK.Book_id, BOOK.Title,BOOK_COPIES.No_of_copies
```

```
FROM BOOK
```

```
JOIN BOOK_COPIES ON BOOK.Book_id = BOOK_COPIES.Book_id;
```