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CSE-4A

Program 7 : Book Database

BOOK (Book_id, Title, Publisher_Name, Pub_Year)
BOOK_AUTHORS (Book_id, Author_Name)
PUBLISHER (Name, Address, Phone)
BOOK_COPIES (Book_id, Branch_id, No-of_Copies)
BOOK_LENDING (Book_id, Branch_id, Card_No,
Date_Out,Due_Date)
LIBRARY_BRANCH (Branch_id, Branch_Name, Address)

Write SQL queries to

1. Retrieve details of all books in the library – id, title, name ofpublisher, authors, number of copies in each branch, etc.
2. Get the particulars of borrowers who have borrowed more than 3books, but from Jan 2017 to Jun 2017
3. Delete a book in BOOK table. Update the contents of other tablesto reflect this data manipulation operation.
4. Partition the BOOK table based on year of publication.Demonstrate its working with a simple query.
5. Create a view of all books and its number of copies that arecurrently available in the Library.

```
create database book;
use book;
create table publisher(
name varchar(20),
phone_no varchar(15),
address varchar(20),
primary key(name)
);

create table book(
book_id int,
title varchar(20),
pub_year varchar(20),
publisher_name varchar(20),
primary key(book_id),
foreign key(publisher_name) references publisher(name) on delete
cascade
);
```

```
create table book_authors(
author_name varchar(20),
book_id int,
primary key(book_id,author_name),
foreign key(book_id) references book(book_id) on delete cascade
);

create table library_branch(
branch_id int,
branch_name varchar(50),
address varchar(50),
primary key(branch_id)
);

create table book_copies(
no_of_copies int,
book_id int,
branch_id int,
primary key(book_id,branch_id),
foreign key(book_id) references book(book_id) on delete cascade,
foreign key(branch_id) references library_branch(branch_id) on delete
cascade
);

create table card(
card_no int,
primary key(card_no)
);

create table book_lending(
date_out date,
due_date date,
book_id int,
branch_id int,
card_no int,
primary key(book_id,branch_id,card_no),
foreign key(book_id) references book(book_id) on delete cascade,
foreign key(branch_id) references library_branch(branch_id) on delete
cascade,
foreign key(card_no) references card(card_no) on delete cascade
);

insert into publisher
```

```
values("Mcgraw_Hill",9989076587,"Bangalore"),
("Pearson",9889076565,"New_Delhi"),
("Random_house",7455679345,"Hydrabad"),
("Hachette_Liver",8970862340,"Chennai"),
("Grupo_Planeta",7756120238,"Bangalore");

INSERT INTO book VALUES (1,"DBMS","JAN-2017",
"Mcgraw_Hill");
INSERT INTO book VALUES (2,"ADBMS","JUN-2016",
"Mcgraw_Hill");
INSERT INTO book VALUES (3,"CN","SEP-2016", "Pearson");
INSERT INTO book VALUES
(4,"CG","SEP-2015","Grupo_Planeta");
INSERT INTO book VALUES (5,"OS","MAY-2016", "Pearson");

INSERT INTO book_authors VALUES ("NAVATHE", 1);
INSERT INTO book_authors VALUES ("NAVATHE", 2);
INSERT INTO book_authors VALUES ("TANENBAUM", 3);
INSERT INTO book_authors VALUES ("EDWARD ANGE", 4);
INSERT INTO book_authors VALUES ("GALVIN", 5);

INSERT INTO library_branch VALUES (10,"RR
NAGAR","Bangalore");
INSERT INTO library_branch VALUES (11,"RNSIT","Bangalore");
INSERT INTO library_branch VALUES (12,"RAJAJI NAGAR",
"Bangalore");
INSERT INTO library_branch VALUES (13,"NITTE","Mangalore");
INSERT INTO library_branch VALUES (14,"MANIPAL","Upupi");

INSERT INTO book_copies VALUES (10, 1, 10),
(5, 1, 11),
(2, 2, 12),
(5, 2, 13),
(7, 3, 14),
 (1, 5, 10),
(3, 4, 11);
truncate table book_copies;

INSERT INTO card VALUES (100);
INSERT INTO card VALUES (101);
INSERT INTO card VALUES (102);
INSERT INTO card VALUES (103);
INSERT INTO card VALUES (104);
```

```
INSERT INTO book_lending VALUES ("2017-01-01","2017-06-01",
1, 10, 101);
INSERT INTO book_lending VALUES ("2017-01-11","2017-03-11",
3, 14, 101);
INSERT INTO book_lending VALUES ("2017-02-21","2017-04-21",
2, 13, 101);
INSERT INTO book_lending VALUES ("2017-03-15","2017-07-15",
4, 11, 101);
INSERT INTO book_lending VALUES ("2017-04-12","2017-05-12",
1, 11, 104);

select * from book;
select * from book_authors;
select * from book_copies;
select * from book_lending;
select * from card;
select * from library_branch;
select * from publisher
```

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

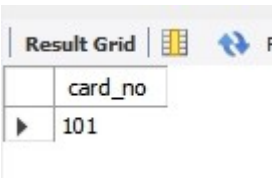
```
select
b.book_id,b.title,b.publisher_name,a.author_name,l.branch_id,c.no_of
_copies
from book b,book_authors a,book_copies c,library_branch
where b.book_id=a.book_id and b.book_id=c.book_id and
l.branch_id=c.branch_id;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

book_id	title	publisher_name	author_name	no_of_copies	branch_id
1	DBMS	MCGRAW-HILL	NAVATHE	10	10
1	DBMS	MCGRAW-HILL	NAVATHE	5	11
2	ADBMS	MCGRAW-HILL	NAVATHE	2	12
2	ADBMS	MCGRAW-HILL	NAVATHE	5	13
3	CN	PEARSON	TANENBAUM	7	14
4	CG	GRUPO PLANETA	EDWARD ANGEL	3	11
5	OS	PEARSON	GALVIN	1	10

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

```
select card_no
from book_lending b
where  date_out between "2017-01-01" and "2017-07-01"
group by card_no
having count(*)>3;
```



Result Grid

card_no
101

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

```
DELETE FROM
BOOKWHERE
BOOK_ID=3;

select * from book;
```

	BOOK_ID	TITLE	PUB_YEAR	PUBLISHER_NAME
▶	1	DBMS	JAN-2017	MCGRAW-HILL
	2	ADBMS	JUN-2016	MCGRAW-HILL
	4	CG	SEP-2015	GRUPO PLANETA
	5	OS	MAY-2016	PEARSON
*	NULL	NULL	NULL	NULL

select * from book_authors;

	AUTHOR_NAME	BOOK_ID
▶	NAVATHE	1
	NAVATHE	2
	EDWARD ANGEL	4
	GALVIN	5
*	NULL	NULL

select * from book_lending;

	DATE_OUT	DUE_DATE	BOOK_ID	BRANCH_ID	CARD_NO
▶	2017-01-01	2017-06-01	1	10	101
	2017-04-12	2017-05-12	1	11	104
	2017-02-21	2017-04-21	2	13	101
	2017-01-17	2017-03-17	3	14	101
	2017-03-15	2017-07-15	4	11	101
*	NULL	NULL	NULL	NULL	NULL

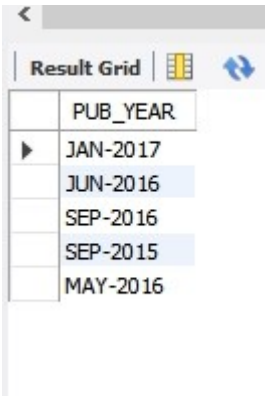
BOOK_LENDING 9 ×

select * from book_copies;

	NO_OF_COPIES	BOOK_ID	BRANCH_ID
▶	10	1	10
	5	1	11
	2	2	12
	5	2	13
	3	4	11
	1	5	10
*	NULL	NULL	NULL

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

```
create view publication as
select pub_year
from book;
select * from publication;
```

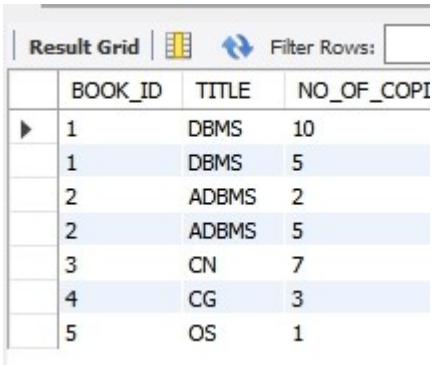


Result Grid

	PUB_YEAR
▶	JAN-2017
	JUN-2016
	SEP-2016
	SEP-2015
	MAY-2016

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

```
create view v_book as
select b.book_id,b.title,c.no_of_copies
from book b,book_authors a,book_copies c,library_branch l
where b.book_id=a.book_id and b.book_id=c.book_id and
l.branch_id=c.branch_id;
select * from v_book;
```



Result Grid | Filter Rows:

	BOOK_ID	TITLE	NO_OF_COPI
▶	1	DBMS	10
	1	DBMS	5
	2	ADBMS	2
	2	ADBMS	5
	3	CN	7
	4	CG	3
	5	OS	1