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1BM20CS401
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 of publisher, authors, number of copies in each branch, etc.
2. Get the particulars of borrowers who have borrowed more than 3 books, but from Jan 2017 to Jun 2017
3. Delete a book in BOOK table. Update the contents of other tables to 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 are currently available in the Library.

```
create database bookdb;use bookdb;

 create table publisher( name
 varchar(30) not null,address
 varchar(20) , phone varchar(10),
 primary key(name)
 );
```

```
create table book( book_id
int not null,title varchar(20),
publisher_name varchar(20),pub_year
varchar(20), primary key(book_id),
foreign key(publisher_name) references publisher(name)
);


create table book_authors(book_id int
not null,
author_name varchar(30) not null, primary
key(book_id,author_name),
foreign key(book_id) references book(book_id)
);


create table library_branch(branch_id int
not null, address varchar(20),
branch_name varchar(20), primary
key(branch_id)
);


create table book_copies(book_id int
not null, branch_id int not null,
no_of_copies int,
primary key(book_id,branch_id),
foreign key(book_id) references book(book_id),foreign
key(branch_id) references library_branch(branch_id)
);


create table Card( card_no int(10)
not null,primary key(card_no)
);
```

```
create table book_lending

(date_out date,
due_date date, book_id int not
null,branch_id int not null,
card_no int not null,
primary key(book_id,branch_id,card_no), foreign key(book_id)
references book(book_id),foreign key(branch_id) references
library_branch(branch_id),
foreign key(card_no) references Card(card_no)
);


insert into publisher
values('MCGRAW-HILL','BANGALORE',9989076587),('PEARSON',
'NEWDELHI', 9889076565),
('RANDOM HOUSE', 'HYDRABAD', 7455679345),('HACHETTE
LIVRE', 'CHENAI', 8970862340), ('GRUPO PLANETA',
'BANGALORE', 7756120238);


insert into book
values(1,'DBMS', 'MCGRAW-HILL','JAN-2017'),
(2,'ADBMS', 'MCGRAW-HILL','JUN-2016'),
(3,'CN', 'PEARSON','SEP-2016'),
(4,'CG', 'GRUPO PLANETA','SEP-2015'),
(5,'OS', 'PEARSON','MAY-2016');


insert into book_authors
values(1,'NAVATHE'),
(2,'NAVATHE'),
(3,'TANENBAUM'),
(4,'EDWARD ANGEL'),
(5,'GALVIN');


insert into library_branch values(10,'RR
NAGAR','BANGALORE'),
```

```
  (11,'RNSIT','BANGALORE'), (12,'RAJAJI
  NAGAR', 'BANGALORE'),
  (13,'NITTE','MANGALORE'),
  (14,'MANIPAL','UDUPI');


  insert into book_copiesvalues( 1,
  10,10),
  ( 1, 11,5),
  ( 2, 12,2),
  ( 2, 13,5),
  ( 3, 14,7),
  ( 5, 10,1),
( 4, 11,3);


insert into Card
values(100), (101),
(102),
(103),
(104);

insert into book_lending
values('2017-01-01','2017-06-01', 1, 10, 101),
('2017-01-01','2017-03-11', 3, 14, 101),
('2017-02-21','2017-04-21', 2, 13, 101),
  ('2017-03-15','2017-07-15', 4, 11, 101),
  ('2017-04-12','2017-05-12', 1, 11, 104);
```

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

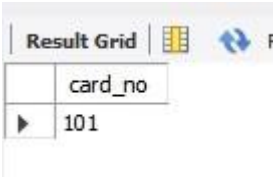
```
select
b.book_id,b.title,b.publisher_name,a.author_name,c.no_of_copies,l.branc
h_id
from book b,book_authors a,book_copies c,library_branch l
where b.book_id=a.book_id and b.book_id=c.book_id and
l.branch_id=c.branch_id;
```

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

------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
where date_out between '2017-01-01' and '2017-07-01'
group by card_no
having count(*)>3;
```



Result Grid

card_no
101

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

```
DELETE FROM BOOK
WHERE 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 ×

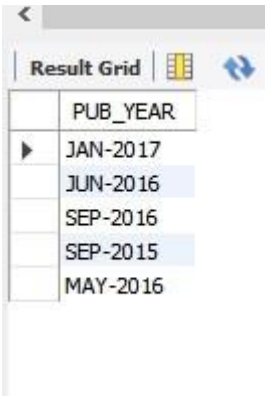
select * from book_copies;

	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

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

CREATE VIEW YEAR_OF_PUBLICATION AS SELECT PUB_YEAR FROM BOOK;

SELECT * FROM YEAR_OF_PUBLICATION;

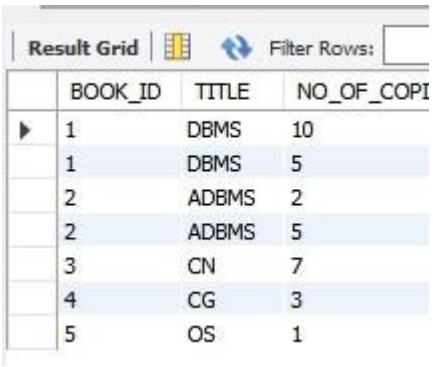


PUB_YEAR
JAN-2017
JUN-2016
SEP-2016
SEP-2015
MAY-2016

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

```
CREATE VIEW BOOKS_AVAILABLE_IN_LIBRARY
  AS SELECT B.BOOK_ID, B.TITLE, C.NO_OF_COPIES FROM
  BOOK B, BOOK_COPIES C, LIBRARY_BRANCH L
  WHERE B.BOOK_ID=C.BOOK_ID AND
  C.BRANCH_ID=L.BRANCH_ID;

  SELECT * FROM BOOKS_AVAILABLE_IN_LIBRARY;
```



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