

## Program 7 : Book Database

BOOK (Book\_id, Title, Publisher\_Name, Pub\_Year)

BOOK\_AUTHORS (Book\_id, Author\_Name)

PUBLISHER (Name, Address, Phone)

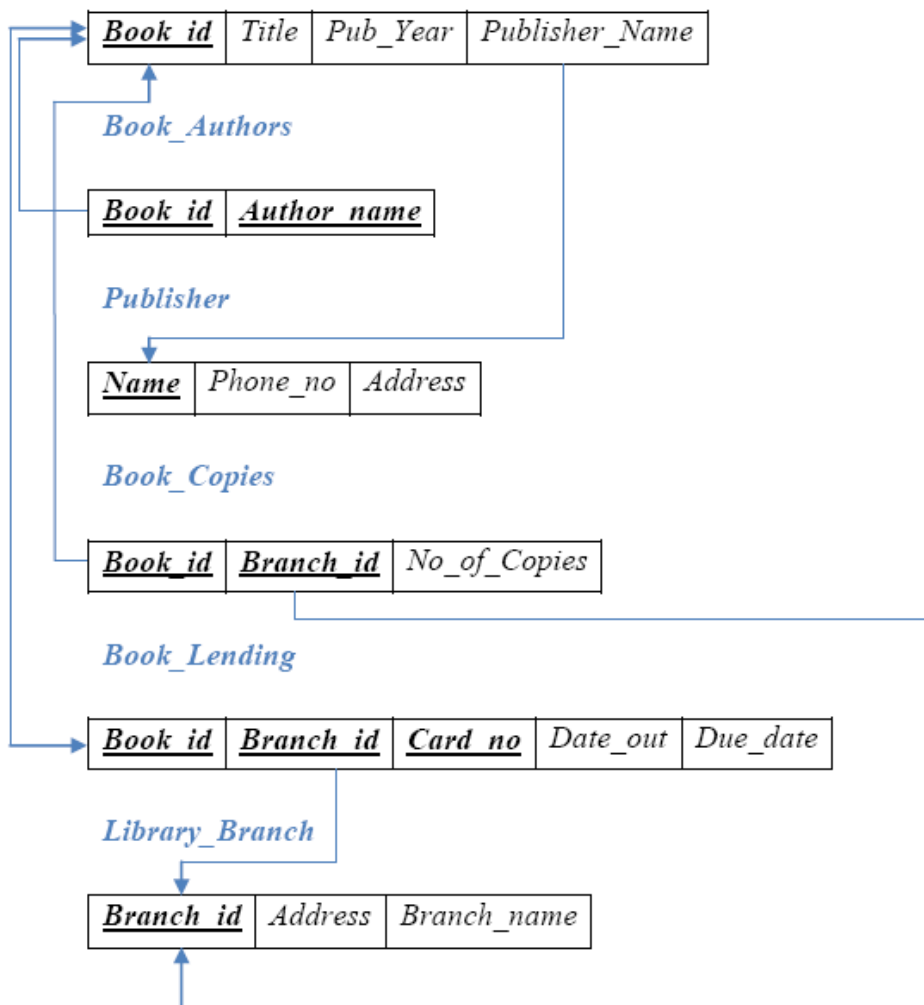
BOOK\_COPIES (Book\_id, Branch\_id, No-of\_Copies)

BOOK\_LENDING (Book\_id, Branch\_id, Card\_No, Date\_Out, Due\_Date)

LIBRARY\_BRANCH (Branch\_id, Branch\_Name, Address)

### Schema Diagram

#### *Book*



### 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.

```
SQL> select * from publisher;
```

NAME	PHONE	ADDRESS
-----	-----	-----
MCGRAW-HILL	9989076587	BANGALORE
PEARSON	9889076565	NEWDELHI
RANDOM HOUSE	7455679345	HYDRABAD
HACHETTE LIVRE	8970862340	CHENAI
GRUPO PLANETA	7756120238	BANGALORE

```
SQL> SELECT * FROM BOOK;
```

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

```
SQL> SELECT * FROM BOOK_AUTHORS;
```

AUTHOR_NAME	BOOK_ID
-----	-----
NAVATHE	1
NAVATHE	2
TANENBAUM	3
EDWARD ANGEL	4
GALVIN	5

```
SQL> SELECT * FROM LIBRARY_BRANCH;
```

BRANCH_ID	BRANCH_NAME	ADDRESS
-----	-----	-----
10	RR NAGAR	BANGALORE
11	RNSIT	BANGALORE
12	RAJAJI NAGAR	BANGALORE
13	NITTE	MANGALORE
14	MANIPAL	UDUPI

```
SQL> SELECT * FROM BOOK_COPIES;
```

NO_OF_COPIES	BOOK_ID	BRANCH_ID
10	1	10
5	1	11
2	2	12
5	2	13
7	3	14
1	5	10
3	4	11

```
SQL> select * from book_lending;
```

DATE_OUT	DUE_DATE	BOOK_ID	BRANCH_ID	CARD_NO
01-JAN-17	01-JUN-17	1	10	101
11-JAN-17	11-MAR-17	3	14	101
21-FEB-17	21-APR-17	2	13	101
15-MAR-17	15-JUL-17	4	11	101
12-APR-17	12-MAY-17	1	11	104

```
SQL> SELECT * FROM CARD;
```

CARD_NO
100
101
102
103
104

PROGRAM:-

```
create database book2;
```

```
use book2;
```

```
CREATE TABLE PUBLISHER
```

```
(NAME VARCHAR(20),
```

```
PHONE VARCHAR(11),
```

```
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);

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);

INSERT INTO PUBLISHER VALUES ('MCGRAW-HILL', '9989076587', 'BANGALORE'), ('PEARSON',
'9889076565', 'NEWDELHI'),

('RANDOM HOUSE', '7455679345', 'HYDRABAD'), ('HACHETTE LIVRE', '8970862340', 'CHENAI'), ('GRUPO
PLANETA', '7756120238', 'BANGALORE');

INSERT INTO BOOK VALUES (1,'DBMS','JAN-2017', 'MCGRAW-HILL'),(2,'ADBMS','JUN-2016', 'MCGRAW-
HILL'),(3,'CN','SEP-2016', 'PEARSON'),

(4,'CG','SEP-2015', 'GRUPO PLANETA'),(5,'OS','MAY-2016', 'PEARSON');

INSERT INTO BOOK_AUTHORS VALUES ('NAVATHE', 1),('NAVATHE', 2),('TANENBAUM', 3),('EDWARD
ANGEL', 4),('GALVIN', 5);

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_COPIES VALUES (10, 1, 10),(5, 1, 11),(2, 2, 12),(5, 2, 13),(7, 3, 14),(1, 5, 10),(3, 4, 11);

INSERT INTO CARD VALUES (100),(101),

(102),(103),(104);

INSERT INTO BOOK_LENDING VALUES ('2017-01-01','2017-06-01', 1, 10, 101),('2017-01-11','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);

SELECT * FROM PUBLISHER;

```

	NAME	PHONE	ADDRESS
▶	GRUPO PLANETA	7756120238	BANGALORE
	HACHETTE LIVRE	8970862340	CHENAI
	MCGRAW-HILL	9989076587	BANGALORE
	PEARSON	9889076565	NEWDELHI
	RANDOM HOUSE	7455679345	HYDRABAD
•	NULL	NULL	NULL

SELECT \* FROM BOOK;

	BOOK_ID	TITLE	PUB_YEAR	PUBLISHER_NAME
▶	1	DBMS	JAN-2017	MCGRAW-HILL
	2	ADBMS	JUN-2016	MCGRAW-HILL
	3	CN	SEP-2016	PEARSON
	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
	TANENBAUM	3
	EDWARD ANGEL	4
	GALVIN	5
•	NULL	NULL

SELECT \* FROM BOOK\_COPIES;

	NO_OF_COPIES	BOOK_ID	BRANCH_ID
▶	10	1	10
	5	1	11
	2	2	12
	5	2	13
	7	3	14
	3	4	11
	1	5	10
•	NULL	NULL	NULL

SELECT \* FROM CARD;

	CARD_NO
▶	100
	101
	102
	103
	104
•	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
	2017-01-11	2017-03-11	3	14	101
	2017-03-15	2017-07-15	4	11	101
•	NULL	NULL	NULL	NULL	NULL

SELECT B.BOOK\_ID, B.TITLE, B.PUBLISHER\_NAME, A.AUTHOR\_NAME,  
C.NO\_OF\_COPIES, L.BRANCH\_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;

	BOOK_ID	TITLE	PUBLISHER_NAME	AUTHOR_NAME	NO_OF_COPIES	BRANCH_ID
▶	1	DBMS	MCGRRAW-HILL	NAVATHE	10	10
	1	DBMS	MCGRRAW-HILL	NAVATHE	5	11
	2	ADBMS	MCGRRAW-HILL	NAVATHE	2	12
	2	ADBMS	MCGRRAW-HILL	NAVATHE	5	13
	3	CN	PEARSON	TANENBAUM	7	14
	4	CG	GRUPO PLANETA	EDWARD ANGEL	3	11
	5	OS	PEARSON	GALVIN	1	10

SELECT CARD\_NO

FROM BOOK\_LENDING

WHERE DATE\_OUT BETWEEN '2017-01-01' AND '2017-07-01'

GROUP BY CARD\_NO HAVING COUNT(\*)>3;

	CARD_NO
▶	101

DELETE FROM BOOK

WHERE BOOK\_ID=3;

CREATE VIEW V\_PUBLICATION AS

SELECT PUB\_YEAR

FROM BOOK;

SELECT \* FROM V\_PUBLICATION;



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

```
CREATE VIEW V_BOOKS 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 V_BOOKS;
```

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