Consider the following schema for a Library Database:

PUBLISHER (Name, Address, Phone)

BOOK (Book_id, Title, Publisher_Name, Pub_Year)

BOOK_AUTHORS (Book_id, Author_Name)

LIBRARY_BRANCH (Branch_id, Branch_Name, Address)

BOOK_COPIES (Book_id, Branch_id, No-of_Copies)

BOOK_LENDING (Book_id, Branch_id, Card_No, Date_Out, Due_Date)

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 the above tables by properly specifying the primary keys and the foreign keys using alter table option.

```
CREATE TABLE PUBLISHER
(NAME VARCHAR (20) PRIMARY KEY,
PHONE DOUBLE ,
ADDRESS VARCHAR (20));

CREATE TABLE BOOK
(BOOK_ID INTEGER (10) PRIMARY KEY,
TITLE VARCHAR (20),
PUB_YEAR VARCHAR (20),
PUBLISHER_NAME VARCHAR (20) REFERENCES PUBLISHER (NAME));

CREATE TABLE BOOK_AUTHORS
(AUTHOR_NAME VARCHAR (20),
BOOK_ID INTEGER (10) REFERENCES BOOK (BOOK_ID) ON DELETE CASCADE ,
PRIMARY KEY (BOOK_ID, AUTHOR_NAME));

CREATE TABLE LIBRARY_BRANCH
(BRANCH_ID INTEGER (10) PRIMARY KEY,
BRANCH_NAME VARCHAR (50),
ADDRESS VARCHAR (50));
```

```
CREATE TABLE BOOK_COPIES
(NO_OF_COPIES INTEGER (10),
BOOK_ID INTEGER (10) REFERENCES BOOK (BOOK_ID) ON DELETE CASCADE ,
BRANCH_ID INTEGER (10) REFERENCES LIBRARY_BRANCH (BRANCH_ID),
PRIMARY KEY (BOOK_ID, BRANCH_ID));

CREATE TABLE CARD
(CARD_NO INTEGER (10) PRIMARY KEY);

CREATE TABLE BOOK_LENDING
(DATE_OUT DATE,
DUE_DATE DATE,
BOOK_ID INTEGER (10) REFERENCES BOOK (BOOK_ID) ON DELETE CASCADE,
BRANCH_ID INTEGER (10) REFERENCES LIBRARY_BRANCH (BRANCH_ID) ,
CARD_NO INTEGER (10) REFERENCES CARD (CARD_NO),
PRIMARY KEY (BOOK_ID, BRANCH_ID, CARD_NO));
```

1. **BOOK Table:**

```
INSERT INTO BOOK VALUES (1,'DBMS','JAN-2017', 'MCGRAW-HILL');
INSERT INTO BOOK VALUES (2,'USP','JUN-2016', 'MCGRAW-HILL');
INSERT INTO BOOK VALUES (3,'CN','SEP-2016', 'PEARSON');
INSERT INTO BOOK VALUES (4,'DS','SEP-2015', 'GRUPO PLANETA');
INSERT INTO BOOK VALUES (5,'OS','MAY-2016', 'PEARSON');
```

2. **PUBLISHER Table:**

```
INSERT INTO PUBLISHER VALUES (‘MCGRAW-HILL’, 9989076587, ‘BANGALORE’);
INSERT INTO PUBLISHER VALUES (‘PEARSON’, 9889076565, ‘NEWDELHI’);
INSERT INTO PUBLISHER VALUES (‘RANDOM HOUSE’, 7455679345, ‘HYDRABAD’);
INSERT INTO PUBLISHER VALUES (‘HACHETTE LIVRE’, 8970862340, ‘CHENAI’);
INSERT INTO PUBLISHER VALUES (‘GRUPO PLANETA’, 7756120238, ‘BANGALORE’);
```

3. **BOOK _AUTHORS Table:**

```
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 ANGEL', 4);
INSERT INTO BOOK_AUTHORS VALUES ('GALVIN', 5);
```

4. **LIBRARY_BRANCH Table:**

```
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','UDUPI');
```

5. **BOOK_COPIES Table:**

```
INSERT INTO BOOK_COPIES VALUES (10, 1, 10);
INSERT INTO BOOK_COPIES VALUES (5, 1, 11);
```

```
INSERT INTO BOOK_COPIES VALUES (2, 2, 12);
INSERT INTO BOOK_COPIES VALUES (5, 2, 13);
INSERT INTO BOOK_COPIES VALUES (7, 3, 14);
INSERT INTO BOOK_COPIES VALUES (1, 5, 10);
INSERT INTO BOOK_COPIES VALUES (3, 4, 11);
```

6. CARD Table:

```
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);
```

7. BOOK_LENDING Table:

```
INSERT INTO BOOK_LENDING VALUES (20170101,20170701, 1, 10, 101);
INSERT INTO BOOK_LENDING VALUES (20170111,20170311, 3, 14, 101);
INSERT INTO BOOK_LENDING VALUES (20170221,20170421, 2, 13, 101);
INSERT INTO BOOK_LENDING VALUES (0170315,20170615, 4, 11, 101);
INSERT INTO BOOK_LENDING VALUES (20170412,20170517, 1, 11, 104);
```

QUERIES:

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,
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	MCGRAW-HILL	NAVATHE	10	10
1	DBMS	MCGRAW-HILL	NAVATHE	5	11
2	USP	MCGRAW-HILL	NAVATHE	2	12
2	USP	MCGRAW-HILL	NAVATHE	5	13
3	CN	PEARSON	TANENBAUM	7	14
4	DS	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
WHERE DATE_OUT BETWEEN 20170101 AND 20170701
GROUP BY CARD_NO
HAVING COUNT(*)>3;
```

CARD_NO
101

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

```
SELECT * FROM BOOK;
SELECT * FROM BOOK_AUTHORS;
SELECT * FROM BOOK_COPIES;
SELECT * FROM BOOK_LENDING;
```

```
DELETE FROM BOOK
WHERE BOOK_ID=3;
```

```
SELECT * FROM BOOK;
```

```
SELECT * FROM BOOK_AUTHORS;
SELECT * FROM BOOK_COPIES;
SELECT * FROM BOOK_LENDING;
```

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

```
CREATE VIEW V_PUBLICATION AS
SELECT  * FROM BOOK ;
```

```
SELECT * FROM V_PUBLICATION;
```

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

```
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;
```

6. **Update the publisher address from BANGLORE TO MYSORE whose Name is MCGRAW-HILL**

```
SELECT * FROM PUBLISHER;
```

```
UPDATE PUBLISHER
SET ADDRESS='MYSORE'
WHERE NAME='MCGRAW-HILL';
```

```
SELECT * FROM PUBLISHER;
```