IT252 – DATABASE SYSTEMS

ASSIGNMENT 1

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Table Creations:

```
mysql> CREATE TABLE PUBLISHER
    -> (NAME VARCHAR(20) PRIMARY KEY,
    -> PHONE INTEGER,
    -> ADDRESS VARCHAR(20));
Query OK, 0 rows affected (0.10 sec)
```

```
mysql> CREATE TABLE BOOK
    -> (BOOK_ID INTEGER PRIMARY KEY,
    -> TITLE VARCHAR(20),
    -> PUB_YEAR VARCHAR(20),
    -> PUBLISHER_NAME VARCHAR(20) REFERENCES PUBLISHER(NAME) ON DELETE CASCADE);
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> CREATE TABLE BOOK_AUTHORS
    -> (AUTHOR_NAME VARCHAR(20),
    -> BOOK_ID INTEGER REFERENCES BOOK(BOOK_ID) ON DELETE CASCADE,
    -> PRIMARY KEY(BOOK_ID, AUTHOR_NAME));
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> CREATE TABLE LIBRARY_BRANCH
    -> (BRANCHID INTEGER PRIMARY KEY,
    -> BNAME VARCHAR(50),
    -> ADDRESS VARCHAR(50));
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> CREATE TABLE BOOK_COPIES
    -> (NOOFCOPIES INTEGER,
    -> BOOK_ID INTEGER REFERENCES BOOK(BOOK_ID) ON DELETE CASCADE,
    -> BRANCHID INTEGER REFERENCES LIBRARY_BRANCH(BRANCHID) ON DELETE CASCADE,
    -> PRIMARY KEY (BOOK_ID,BRANCHID));
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE TABLE CARD
    -> (CARDNO INTEGER PRIMARY KEY);
Query OK, 0 rows affected (0.01 sec)
```

```
mysql> CREATE TABLE BOOKLENDING
    -> (DATE_OUT DATE,
    -> DUE_DATE DATE,
    -> BOOK_ID INTEGER REFERENCES BOOK(BOOK_ID) ON DELETE CASCADE,
    -> BRANCHID INTEGER REFERENCES LIBRARY_BRANCH(BRANCHID) ON DELETE CASCADE,
    -> CARDNO INTEGER REFERENCES CARD(CARDNO) ON DELETE CASCADE,
    -> PRIMARY KEY (BOOK_ID,BRANCHID,CARDNO));
Query OK, 0 rows affected (0.01 sec)
```

Value Insertions:

```
mysql> INSERT INTO PUBLISHER VALUES('MCGRAW-HILL',100,'JAIPUR');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO PUBLISHER VALUES('PEARSON',101,'KOLKATA');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO PUBLISHER VALUES('RANDOM HOUSE',102,'KOVAI');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO PUBLISHER VALUES('LIVRE',103,'MUMBAI');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO PUBLISHER VALUES('PLANETA',104,'BANGALORE');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM PUBLISHER
    -> ;
+--------------+-------+-----------+
| NAME         | PHONE | ADDRESS   |
+--------------+-------+-----------+
| LIVRE        |   103 | MUMBAI    |
| MCGRAW-HILL  |   100 | JAIPUR    |
| PEARSON      |   101 | KOLKATA   |
| PLANETA      |   104 | BANGALORE |
| RANDOM HOUSE |   102 | KOVAI     |
+--------------+-------+-----------+
5 rows in set (0.00 sec)
```

```
mysql> INSERT INTO BOOK VALUES(1,'ACD','JAN-2017','MCGRAW-HILL');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOK VALUES(2,'DSA','JUN-2016','MCGRAW-HILL');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOK VALUES(3,'DBMS','SEP-2016','PEARSON');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOK VALUES(4,'OS','NOV-2015','PLANETA');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOK VALUES(5,'WEB','MAY-2016','PEARSON');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM BOOK;
+---------+-------+----------+----------------+
| BOOK_ID | TITLE | PUB_YEAR | PUBLISHER_NAME |
+---------+-------+----------+----------------+
|       1 | ACD   | JAN-2017 | MCGRAW-HILL    |
|       2 | DSA   | JUN-2016 | MCGRAW-HILL    |
|       3 | DBMS  | SEP-2016 | PEARSON        |
|       4 | OS    | NOV-2015 | PLANETA        |
|       5 | WEB   | MAY-2016 | PEARSON        |
+---------+-------+----------+----------------+
5 rows in set (0.00 sec)
```

```
mysql> INSERT INTO BOOK_AUTHORS VALUES('ELAINE',1);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOK_AUTHORS VALUES('HARIDAS',2);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOK_AUTHORS VALUES('NAVATHE',3);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOK_AUTHORS VALUES('TANENBAUM',4);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOK_AUTHORS VALUES('SHRIRAM',5);
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM BOOK_AUTHORS;
+-------------+---------+
| AUTHOR_NAME | BOOK_ID |
+-------------+---------+
| ELAINE      |       1 |
| HARIDAS     |       2 |
| NAVATHE     |       3 |
| TANENBAUM   |       4 |
| SHRIRAM     |       5 |
+-------------+---------+
5 rows in set (0.00 sec)
```

```
mysql> INSERT INTO LIBRARY_BRANCH VALUES(10,'HSR','BANGALORE');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO LIBRARY_BRANCH VALUES(11,'RING ROAD','BANGALORE');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO LIBRARY_BRANCH VALUES(12,'VIDYARANAPURA','BANGALORE');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO LIBRARY_BRANCH VALUES(13,'LALBAGH','MANGALORE');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO LIBRARY_BRANCH VALUES(14,'MANIPAL','UDUPI');
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM LIBRARY_BRANCH;
+----------+---------------+-----------+
| BRANCHID | BNAME         | ADDRESS   |
+----------+---------------+-----------+
|       10 | HSR           | BANGALORE |
|       11 | RING ROAD     | BANGALORE |
|       12 | VIDYARANAPURA | BANGALORE |
|       13 | LALBAGH       | MANGALORE |
|       14 | MANIPAL       | UDUPI     |
+----------+---------------+-----------+
5 rows in set (0.00 sec)
```

```
mysql> INSERT INTO BOOK_COPIES VALUES(2,2,12);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOK_COPIES VALUES(5,2,13);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOK_COPIES VALUES(7,3,14);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOK_COPIES VALUES(1,5,10);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOK_COPIES VALUES(3,4,11);
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM BOOK_COPIES;
+-------------+----------+----------+
| NOOFCOPIES  | BOOK_ID  | BRANCHID |
+-------------+----------+----------+
|         10  |       1  |       10 |
|          5  |       1  |       11 |
|          2  |       2  |       12 |
|          5  |       2  |       13 |
|          7  |       3  |       14 |
|          3  |       4  |       11 |
|          1  |       5  |       10 |
+-------------+----------+----------+
7 rows in set (0.00 sec)
```

```
mysql> INSERT INTO BOOKLENDING VALUES('2017-01-01','2017-06-01',1,10,101);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOKLENDING VALUES('2017-01-11','2017-03-11',3,14,101);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOKLENDING VALUES('2017-02-21','2017-04-21',2,13,101);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOKLENDING VALUES('2017-03-15','2017-07-15',4,11,101);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO BOOKLENDING VALUES('2017-04-12','2017-05-12',1,11,104);
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM BOOKLENDING;
+------------+------------+---------+----------+--------+
| DATE_OUT   | DUE_DATE   | BOOK_ID | BRANCHID | CARDNO |
+------------+------------+---------+----------+--------+
| 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 |
+------------+------------+---------+----------+--------+
5 rows in set (0.00 sec)
```

Queries:

1)

```
mysql> SELECT BOOK.BOOK_ID, BOOK.TITLE, BOOK.PUBLISHER_NAME, BOOK_AUTHORS.AUTHOR_NAME,BOOK_COPIES.NOOFCOPIES, LIBRARY_BRANCH.BRANCHID

    -> FROM BOOK, BOOK_AUTHORS, BOOK_COPIES, LIBRARY_BRANCH
    -> WHERE BOOK.BOOK_ID= BOOK_AUTHORS.BOOK_ID
    -> AND BOOK.BOOK_ID= BOOK_COPIES.BOOK_ID
    -> AND LIBRARY_BRANCH.BRANCHID= BOOK_COPIES.BRANCHID;
+---------+-------+----------------+-------------+------------+----------+
| BOOK_ID | TITLE | PUBLISHER_NAME | AUTHOR_NAME | NOOFCOPIES | BRANCHID |
+---------+-------+----------------+-------------+------------+----------+
|       1 | ACD   | MCGRAW-HILL    | ELAINE      |         10 |       10 |
|       1 | ACD   | MCGRAW-HILL    | ELAINE      |          5 |       11 |
|       2 | DSA   | MCGRAW-HILL    | HARIDAS     |          2 |       12 |
|       2 | DSA   | MCGRAW-HILL    | HARIDAS     |          5 |       13 |
|       3 | DBMS  | PEARSON        | NAVATHE     |          7 |       14 |
|       4 | OS    | PLANETA        | TANENBAUM   |          3 |       11 |
|       5 | WEB   | PEARSON        | SHRIRAM     |          1 |       10 |
+---------+-------+----------------+-------------+------------+----------+
7 rows in set (0.00 sec)
```

2)

```
mysql> SELECT CARDNO
    -> FROM BOOKLENDING
    -> WHERE DATE_OUT BETWEEN '2017-01-01' AND '2017-06-01'
    -> GROUP BY CARDNO
    -> HAVING COUNT(*)>3;
+--------+
| CARDNO |
+--------+
|    101 |
+--------+
1 row in set (0.01 sec)
```

3)

```
mysql> DELETE FROM BOOK
    -> WHERE BOOK_ID = 3;
Query OK, 1 row affected (0.01 sec)

mysql> SELECT * FROM BOOK;
+---------+-------+----------+----------------+
| BOOK_ID | TITLE | PUB_YEAR | PUBLISHER_NAME |
+---------+-------+----------+----------------+
|       1 | ACD   | JAN-2017 | MCGRAW-HILL    |
|       2 | DSA   | JUN-2016 | MCGRAW-HILL    |
|       4 | OS    | NOV-2015 | PLANETA        |
|       5 | WEB   | MAY-2016 | PEARSON        |
+---------+-------+----------+----------------+
4 rows in set (0.00 sec)
```

4)

```
mysql> CREATE VIEW SAMPLEVIEW AS
    -> SELECT PUB_YEAR
    -> FROM BOOK;
Query OK, 0 rows affected (0.01 sec)

mysql> SELECT * FROM SAMPLEVIEW;
+----------+
| PUB_YEAR |
+----------+
| JAN-2017 |
| JUN-2016 |
| SEP-2016 |
| NOV-2015 |
| MAY-2016 |
+----------+
5 rows in set (0.00 sec)
```

5)

```
mysql> CREATE VIEW SAMPLEVIEW2 AS
    -> SELECT B.BOOK_ID, TITLE, NOOFCOPIES
    -> FROM BOOK B, BOOK_COPIES C, LIBRARY_BRANCH L
    -> WHERE B.BOOK_ID=C.BOOK_ID AND C.BRANCHID=L.BRANCHID;
Query OK, 0 rows affected (0.00 sec)

mysql> SELECT * FROM SAMPLEVIEW2;
+---------+-------+------------+
| BOOK_ID | TITLE | NOOFCOPIES |
+---------+-------+------------+
|       1 | ACD   |         10 |
|       1 | ACD   |          5 |
|       2 | DSA   |          2 |
|       2 | DSA   |          5 |
|       3 | DBMS  |          7 |
|       4 | OS    |          3 |
|       5 | WEB   |          1 |
+---------+-------+------------+
7 rows in set (0.00 sec)
```

****