LAB-7 : BOOK DATABASE

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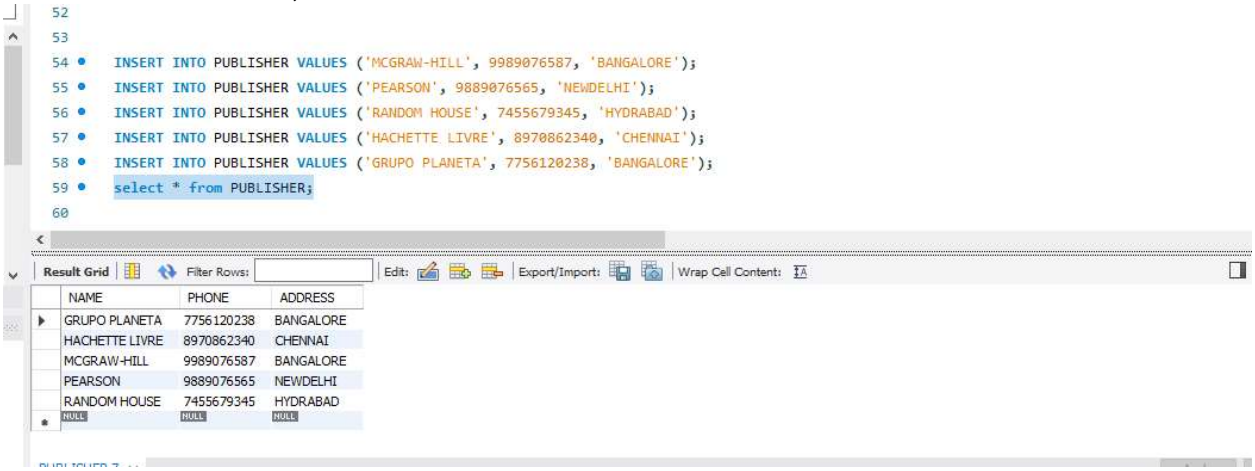
```
create database book_dealer;
use book_dealer;

CREATE TABLE PUBLISHER
(NAME VARCHAR(20) PRIMARY KEY,
PHONE bigint,
ADDRESS VARCHAR(20));
-- alter table publisher modify PHONE bigint;

CREATE TABLE BOOK
(BOOK_ID INTEGER PRIMARY KEY,
TITLE VARCHAR(20),
PUB_YEAR VARCHAR(20),
PUBLISHER_NAME  VARCHAR(20),
 foreign key(PUBLISHER_NAME) references PUBLISHER(NAME) ON DELETE CASCADE);


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

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


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


CREATE TABLE CARD
(CARD_NO INTEGER PRIMARY KEY);

CREATE TABLE BOOK_LENDING
(DATE_OUT DATE,
DUE_DATE DATE,
BOOK_ID INTEGER,
BRANCH_ID INTEGER,
CARD_NO INTEGER,
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,
PRIMARY KEY (BOOK_ID, BRANCH_ID, CARD_NO));

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, 'CHENNAI');
INSERT INTO PUBLISHER VALUES ('GRUPO PLANETA', 7756120238, 'BANGALORE');
select * from PUBLISHER;



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');
select * from book;

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);
select * from BOOK_AUTHORS;

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');
select * from LIBRARY_BRANCH;

```
74
75 •  INSERT INTO LIBRARY_BRANCH VALUES (10,'RR NAGAR','BANGALORE');
76 •  INSERT INTO LIBRARY_BRANCH VALUES (11,'RNSIT','BANGALORE');
77 •  INSERT INTO LIBRARY_BRANCH VALUES (12,'RAJAJI NAGAR', 'BANGALORE');
78 •  INSERT INTO LIBRARY_BRANCH VALUES (13,'NITTE','MANGALORE');
79 •  INSERT INTO LIBRARY_BRANCH VALUES (14,'MANIPAL','UDUPI');
80 •  select * from LIBRARY_BRANCH;
81
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

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

LIBRARY_BRANCH 10 ×

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);
select * from BOOK_COPIES;

```
81
82 •  INSERT INTO BOOK_COPIES VALUES (10, 1, 10);
83 •  INSERT INTO BOOK_COPIES VALUES (5, 1, 11);
84 •  INSERT INTO BOOK_COPIES VALUES (2, 2, 12);
85 •  INSERT INTO BOOK_COPIES VALUES (5, 2, 13);
86 •  INSERT INTO BOOK_COPIES VALUES (7, 3, 14);
87 •  INSERT INTO BOOK_COPIES VALUES (1, 5, 10);
88 •  INSERT INTO BOOK_COPIES VALUES (3, 4, 11);
89 •  select * from BOOK_COPIES;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

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

BOOK_COPIES 11 ×

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);
select * from CARD;

```
90
91 •  INSERT INTO CARD VALUES (100);
92 •  INSERT INTO CARD VALUES (101);
93 •  INSERT INTO CARD VALUES (102);
94 •  INSERT INTO CARD VALUES (103);
95 •  INSERT INTO CARD VALUES (104);
96 •  select * from CARD;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

CARD_NO
100
101
102
103
104
NULL

INSERT INTO BOOK_LENDING VALUES ('2017-01-01','2017-06-01', 1, 10, 101);
INSERT INTO BOOK_LENDING VALUES ('17-01-11','17-03-11', 3, 14, 101);
INSERT INTO BOOK_LENDING VALUES ('17-02-21','17-04-21', 2, 13, 101);
INSERT INTO BOOK_LENDING VALUES ('17-03-15','17-07-15', 4, 11, 101);
INSERT INTO BOOK_LENDING VALUES ('17-04-12','17-05-12', 1, 11, 104);
select * from BOOK_LENDING;

-- 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;

```
100  -- Retrieve details of all books in the library - id, title, name of publisher, authors, number of copies in each branch, etc
101
102 •  SELECT B.BOOK_ID, B.TITLE, B.PUBLISHER_NAME, A.AUTHOR_NAME, C.NO_OF_COPIES, L.BRANCH_ID
103    FROM BOOK B, BOOK_AUTHORS A, BOOK_COPIES C, LIBRARY_BRANCH L
104    WHERE B.BOOK_ID=A.BOOK_ID
105    AND B.BOOK_ID=C.BOOK_ID
106    AND L.BRANCH_ID=C.BRANCH_ID;
107
108
```

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

Result 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 '17-01-01' AND '17-07-01'
GROUP BY CARD_NO
HAVING COUNT(*)>3;
```

```
110
111     -- Get the particulars of borrowers who have borrowed more than 3 books, but from Jan 2017 to Jun 2017.
112     SELECT CARD_NO
113     FROM BOOK_LENDING
114     WHERE DATE_OUT BETWEEN '17-01-01' AND '17-07-01'
115     GROUP BY CARD_NO
116     HAVING COUNT(*)>3;
117
118
```

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

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;
```

```
120
121     -- Delete a book in BOOK table. Update the contents of other tables to reflect this data manipulation operation.
122     DELETE FROM BOOK
123     WHERE BOOK_ID=3;
124     select * from book;
125
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

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

book 4

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

```
CREATE VIEW V_PUBLICATION AS
SELECT PUB_YEAR
FROM BOOK;
select * from V_PUBLICATION;
```

```
128     -- Partition the BOOK table based on year of publication. Demonstrate its working with a simple query.
129 •  CREATE VIEW V_PUBLICATION AS
130     SELECT PUB_YEAR
131     FROM BOOK;
132 •  select * from V_PUBLICATION;
```

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

PUB_YEAR
JAN-2017
JUN-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_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;
```

```
136     -- Create a view of all books and its number of copies that are currently available in the Library.
137 •  CREATE VIEW V_BOOKS AS
138     SELECT B.BOOK_ID, B.TITLE, C.NO_OF_COPIES
139     FROM BOOK B, BOOK_COPIES C, LIBRARY_BRANCH L
140     WHERE B.BOOK_ID=C.BOOK_ID
141     AND C.BRANCH_ID=L.BRANCH_ID;
```

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

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