



# **LAB 2**

## **DATABASE MANAGEMENT SYSTEM**

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### **MySQL Workbench (Cont.)**



# The Lab Report

## 1. The MySQL Code:

```
1  -----
2  -- implementation of the Library schema using DDL statements.
3  -----
4
5  • create schema Library;
6  • use Library;
7  • Create Table Publisher (
8      publisher_name Varchar(50) not null,
9      address Varchar (100),
10     phone int(13),
11     Primary Key (publisher_name)
12 );
13 • create table Book(
14     book_id varchar(5) primary key not null,
15     title varchar(100) not null,
16     publisher_name varchar(50),
17     constraint fk foreign key(publisher_name) references Publisher(publisher_name) ON DELETE CASCADE ON UPDATE CASCADE
18 );
19
20 • Create Table BookAuthors (
21     book_id varchar(5) not null,
22     auther_name Varchar(50) not null,
23     Primary Key(book_id, auther_name),
24     Constraint BookAuthorsFK Foreign Key (book_id) references Book (book_id) ON DELETE CASCADE ON UPDATE CASCADE
25 );
26
27 • Create Table LibraryBranch(
28     branch_name Varchar (50) not null,
29     branch_id varchar(5) Primary Key not null ,
30     address varchar (100) not null
31 );
32
33 • Create Table BookCopies (
34     book_id varchar(5) not null,
35     branch_id varchar(5) not null,
36     no_of_copies int(6) default 0,
37     Primary Key (book_id, branch_id),
38     Constraint bookFK Foreign key card_no (book_id) references Book (book_id) ON DELETE CASCADE ON UPDATE RESTRICT,
39     Constraint branchFK Foreign Key (branch_id) references LibraryBranch (branch_id)ON DELETE CASCADE ON UPDATE CASCADE
40 );
41
42 • Create Table Borrower (
43     borrower_name varchar(50) not null,
44     address varchar(100),
45     phone varchar(12),
46     card_no varchar(5) primary key not null
47 );
48
```

```

48
49 • Create Table BookLoans (
50     book_id varchar(5) not null,
51     branch_id varchar(5) not null,
52     card_no varchar(5) not null,
53     date_out date not null,
54     due_date date not null,
55     primary key (book_id, branch_id, card_no),
56     Constraint LoansBookFK Foreign Key (book_id) references Book(book_id) ON DELETE CASCADE ON UPDATE RESTRICT,
57     Constraint LoansBranchFK Foreign Key (branch_id) references LibraryBranch(branch_id) ON DELETE CASCADE ON UPDATE RESTRICT,
58     Constraint cardFK Foreign Key (card_no) references Borrower(card_no) ON DELETE RESTRICT ON UPDATE RESTRICT
59 );
60
61
62 -----
63 -- a try of the INSERT, UPDATE and DELETE statements on the Publisher table.
64 -----
65 -- -----insert-----:
66 • insert into Publisher values
67 ('ASMAA GAMAL', '21 the sea Street-Agami', '01124542122');
68
69 • insert into Publisher values
70 ('ABO OBIEDA', '23 Sea Street Palastine', '01015010473');
71
72 • insert into Publisher values
73 ('Occupaid Palastine', 'South West of Palastine', '01000000000');
74
75 -- -----update-----:
76 • UPDATE Publisher
77 SET publisher_name = 'ASMAA GAMAL NAGY'
78 WHERE publisher_name = 'ASMAA GAMAL';
79 -- -----delete-----:
80 • DELETE FROM Publisher
81 WHERE publisher_name = 'Occupaid Palastine';
82
83 -----
84 -- Insert a row in the Book table that references a row in the Publisher table.
85 -----
86 -- -----insert-----:
87 • insert into Book values('1A111', 'History of palastine', 'ABO OBIEDA');
88 -- -----update-----:
89 • UPDATE Publisher
90 SET publisher_name = 'ABO OBIEDA##'
91 WHERE publisher_name = 'ABO OBIEDA';
92 -- -----delete-----:
93 • DELETE FROM Publisher
94 WHERE publisher_name = 'ABO OBIEDA##';

```

```
96  -----
97  -- Inserting some random data into the library DB
98  -----
99  • insert into Borrower values
100  ('Asmaa','12 St. Saad Zaghloul','01047332254','12345'),
101  ('Gamal','26 St.Zaki Ragab Rogdi','01001701988','12346'),
102  ('Abdel-Halem','33 St. Mohamed Ali','0113377521','12347'),
103  ('Nagy','50 St. Salah EL-Din','01001234671','12348');
104
105  • insert into LibraryBranch values
106  ('Sharpstown','15342', '11 Downing Street'),
107  ('Central','91234', '45 Hude Park, NYC');
108
109  • insert into Publisher values
110  ('Pearson', 'Palastine', 35778912);
111
112  • insert into Book values
113  ('10921', 'The Lost Tribe', 'Pearson'),
114  ('36243', 'Tail of Two Cities', 'Pearson'),
115  ('34444', 'Oliver Twist', 'Pearson');
116
117  • insert into BookAuthors values
118  ('10921', 'Naguib Mahfouz'),
119  ('10921', 'Stephen King'),
120  ('36243', 'Taha Hussein'),
121  ('34444', 'Stephen King'),
122  ('34444', 'Charles Dickens');
123
124  • insert into BookCopies values
125  ('10921', '15342', 6),
126  ('10921', '91234', 10),
127  ('36243', '15342', 5),
128  ('34444', '91234', 12);
129
130  • insert into BookLoans values
131  ('10921','15342','12345',date'2023-01-01',date'2023-01-08'),
132  ('36243','15342', '12348',date'2023-11-20',date'2023-11-28'),
133  ('34444','91234','12347',date'2023-10-01',date'2023-10-13'),
134  ('34444','15342','12347', date'2023-10-01',date'2023-10-17'),
135  ('10921','91234','12347',date'2023-10-02',date'2023-10-16'),
136  ('36243','15342','12347',date'2023-10-03',date'2023-10-15'),
137  ('36243','91234','12347',date'2023-10-04', date'2023-10-14'),
138  ('10921','15342','12347',date'2023-10-05',date'2023-10-13');
139
140
```

```
141  -- -----
142  -- ----answering the question after creating the dummy database----
143  -- -----
144  -- a):
145  • SELECT no_of_copies
146    FROM (Book NATURAL JOIN BookCopies) NATURAL JOIN LibraryBranch
147    WHERE title = 'The Lost Tribe' AND branch_name = 'Sharpstown';
148
149  -- b):
150  • SELECT branch_name, no_of_copies
151    FROM (Book NATURAL JOIN BookCopies) NATURAL JOIN LibraryBranch
152    WHERE title = 'The Lost Tribe';
153
154  -- c):
155  • SELECT borrower_name
156    FROM Borrower AS Bname
157    WHERE NOT EXISTS (SELECT *
158                      FROM BookLoans AS Loans
159                      WHERE Bname.card_no = Loans.card_no);
160
161  -- d):
162  • SELECT title, borrower_name, Borrower.address
163    FROM ((Book NATURAL JOIN BookLoans) NATURAL JOIN LibraryBranch)
164    JOIN Borrower ON BookLoans.Card_no = Borrower.Card_no
165    WHERE Branch_name = 'Sharpstown' AND Due_date = '2023-11-28';
166
167  -- e):
168  • Select branch_name, branch_id, count(*) as total_loaned_books
169    from LibraryBranch natural join BookLoans
170    group by branch_id;
171
172  -- f):
173  • select borrower_name, address, count(*) as total_Checked_out_books
174    from Borrower natural join BookLoans
175    group by Card_no
176    having count(*) > 5;
177
178
179  -- g):
180  • select title, no_of_copies
181    from Book natural join BookCopies
182    where exists ( select *
183                  from BookAuthors
184                  where Book.book_id = book_id and auther_name = 'Stephen King')
185    and exists (select *
186                from LibraryBranch
187                where BookCopies.branch_id = branch_id and branch_name =
188                  'Central');
```

## 2. Screenshots of the output:

- Implementation of the given schema on MySQL using suitable DDL statements:

The screenshot shows the MySQL Workbench interface with the 'asmasLab2Connection' window. The 'Navigator' pane on the left shows the 'library' database selected. The 'SQL Editor' pane displays the following DDL statements:

```
1 create schema library;
2 use library;
3 create table Publisher (
4     publisher_name varchar(50) not null,
5     address varchar(100),
6     phone int(13),
7     primary key (publisher_name)
8 );
9 create table Book(
10     book_id varchar(5) primary key not null,
11     title varchar(100) not null,
12     publisher_name varchar(50)
13 );
```

The 'Output' pane shows the execution results of these statements:

#	Time	Action	Message	Duration / Fetch
1	20:26:00	create schema library	1 row(s) affected	0.015 sec
2	20:26:00	use library	0 row(s) affected	0.000 sec
3	20:26:00	Create Table Publisher (publisher_name Varchar(50) not null, address Varchar(100), phone i...	0 row(s) affected	0.016 sec
4	20:26:00	create table Book(book_id varchar(5) primary key not null, title varchar(100) not null, publishe...	0 row(s) affected	0.015 sec
5	20:26:00	Create Table BookAuthors (book_id varchar(5) not null, author_name Varchar(50) not null, Pr...	0 row(s) affected	0.032 sec
6	20:26:00	Create Table LibraryBranch (branch_name Varchar(50) not null, branch_id varchar(5) Primary...	0 row(s) affected	0.015 sec
7	20:26:00	Create Table BookCopies (book_id varchar(5) not null, branch_id varchar(5) not null, no_of...	0 row(s) affected	0.015 sec
8	20:26:00	Create Table Borrower (borrower_name varchar(50) not null, address varchar(100), phone va...	0 row(s) affected	0.047 sec
9	20:26:00	Create Table BookLoans (book_id varchar(5) not null, branch_id varchar(5) not null, card_no...	0 row(s) affected	0.032 sec

- Trying the INSERT, UPDATE and DELETE statements on the Publisher table:

After insertion:

The screenshot shows the 'Result Grid' pane with the following data:

publisher_name	address	phone
ABO OBIEDA	23 Sea Street Palestine	1015010473
ASMAA GAMAL	21 the sea Street - Agami	1124542122
Occupied Palestine	South West of Palestine	1000000000
NULL	NULL	NULL

The 'Action Output' pane shows the following results:

#	Time	Action	Message
1	20:51:37	insert into Publisher values('ASMAA GAMAL', '21 the sea Street - Agami', '01124542122')	1 row(s) affected
2	21:04:20	insert into Publisher values('ABO OBIEDA', '23 Sea Street Palestine', '01015010473')	1 row(s) affected
3	21:04:25	insert into Publisher values('Occupied Palestine', 'South West of Palestine', '01000000000')	1 row(s) affected
4	21:09:11	SELECT * FROM library.publisher LIMIT 0, 1000	3 row(s) returned

After update and delete:

The screenshot shows the 'Result Grid' pane with the following data:

publisher_name	address	phone
ABO OBIEDA	23 Sea Street Palestine	1015010473
ASMAA GAMAL NAGY	21 the sea Street - Agami	1124542122
NULL	NULL	NULL

The 'Action Output' pane shows the following results:

#	Time	Action	Message
1	20:51:37	insert into Publisher values('ASMAA GAMAL', '21 the sea Street - Agami', '01124542122')	1 row(s) affected
2	21:04:20	insert into Publisher values('ABO OBIEDA', '23 Sea Street Palestine', '01015010473')	1 row(s) affected
3	21:04:25	insert into Publisher values('Occupied Palestine', 'South West of Palestine', '01000000000')	1 row(s) affected
4	21:09:11	SELECT * FROM library.publisher LIMIT 0, 1000	3 row(s) returned
5	21:10:44	UPDATE Publisher SET publisher_name = 'ASMAA GAMAL NAGY' WHERE publisher_name = 'ASMAA GAMAL'	1 row(s) affected
6	21:10:49	DELETE FROM Publisher WHERE publisher_name = 'Occupied Palestine'	1 row(s) affected
7	21:11:03	SELECT * FROM library.publisher LIMIT 0, 1000	2 row(s) returned

- Insert a row in the Book table that references a row in the Publisher table. Then try to update and delete the referenced row. Comment on the DBMS response regarding the referential integrity constraints specified in the DDL script.

After insertion:

MySQL Workbench interface showing the 'book' table in the 'library' schema. The table contains one row with book\_id '1A111', title 'History of palestine', and publisher\_name 'ABO OBIEDA'. The Action Output pane displays the following sequence of operations:

#	Time	Action	Message	Duration / Fetch
3	21:04:25	insert into Publisher values('Occupied Palestin...	1 row(s) affected	0.000 sec
4	21:09:11	SELECT * FROM library.publisher LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec
5	21:10:44	UPDATE Publisher SET publisher_name = 'AS...	1 row(s) affected Rows matched: 1 Changed: ...	0.016 sec
6	21:10:49	DELETE FROM Publisher WHERE publisher_n...	1 row(s) affected	0.016 sec
7	21:11:03	SELECT * FROM library.publisher LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec
8	21:19:57	DELETE FROM Publisher WHERE publisher_n...	0 row(s) affected	0.000 sec
9	21:20:05	SELECT * FROM library.publisher LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec
10	21:20:12	SELECT * FROM library.book LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
11	21:20:25	SELECT * FROM library.book LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
12	21:20:54	insert into Book values('1A111', 'History of pala...	1 row(s) affected	0.000 sec
13	21:21:08	SELECT * FROM library.book LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

After update:

MySQL Workbench interface showing the 'book' table in the 'library' schema. The table contains one row with book\_id '1A111', title 'History of palestine', and publisher\_name 'ABO OBIEDA##'. The Action Output pane displays the following sequence of operations:

#	Time	Action	Message	Duration / Fetch
10	21:20:12	SELECT * FROM library.book LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
11	21:20:25	SELECT * FROM library.book LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
12	21:20:54	insert into Book values('1A111', 'History of pala...	1 row(s) affected	0.000 sec
13	21:21:08	SELECT * FROM library.book LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
14	21:22:35	UPDATE Publisher SET publisher_name = 'AB...	1 row(s) affected Rows matched: 1 Changed: ...	0.015 sec
15	21:22:46	SELECT * FROM library.book LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

## after delete publisher reference row:

The screenshot shows the MySQL Workbench interface with the 'publisher' table selected. The SQL editor contains the query `SELECT * FROM library.publisher;`. The result grid shows one row with the following data:

publisher_name	address	phone
ASMAA GAMAL NAGY	21 the sea Street ...	1124542122

The Action Output pane shows the following log entries:

#	Time	Action	Message	Duration / Fetch
13	21:21:08	SELECT * FROM library.book LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
14	21:22:35	UPDATE Publisher SET publisher_name = 'AB...	1 row(s) affected Rows matched: 1 Changed: ...	0.015 sec
15	21:22:46	SELECT * FROM library.book LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
16	21:23:20	DELETE FROM Publisher WHERE publisher_n...	1 row(s) affected	0.000 sec
17	21:23:30	SELECT * FROM library.book LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
18	21:23:35	SELECT * FROM library.publisher LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

## after cascaded deleting the book too with its publisher:

The screenshot shows the MySQL Workbench interface with the 'book' table selected. The SQL editor contains the query `SELECT * FROM library.book;`. The result grid shows one row with the following data:

book_id	title	publisher_name
NULL	NULL	NULL

The Action Output pane shows the following log entries:

#	Time	Action	Message	Duration / Fetch
13	21:21:08	SELECT * FROM library.book LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
14	21:22:35	UPDATE Publisher SET publisher_name = 'AB...	1 row(s) affected Rows matched: 1 Changed: ...	0.015 sec
15	21:22:46	SELECT * FROM library.book LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
16	21:23:20	DELETE FROM Publisher WHERE publisher_n...	1 row(s) affected	0.000 sec
17	21:23:30	SELECT * FROM library.book LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
18	21:23:35	SELECT * FROM library.publisher LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

**SELECT \* FROM library.book;**  
**SELECT \* FROM library.publisher;**



### 3. Inserting dummy data and the current Database state created for query retrieval :

The screenshot shows the SQL Server Enterprise Manager interface. The 'Navigator' pane on the left displays the 'library' schema with tables like book, bookauthors, bookcopies, bookloans, borrower, librarybranch, and publisher. The central query editor contains the following SQL statement:

```
insert into BookLoans values
('10921','15342','12345',date'2023-01-01',date'2023-01-08'),
('10921','15342','12348',date'2023-11-20',date'2023-11-28'),
('36243','15342','12347',date'2023-10-01',date'2023-10-13'),
('34444','15342','12347',date'2023-10-01',date'2023-10-13'),
('10921','91234','12347',date'2023-10-02',date'2023-10-16'),
('36243','15342','12347',date'2023-10-03',date'2023-10-15'),
('36243','91234','12347',date'2023-10-04',date'2023-10-14'),
('10921','15342','12347',date'2023-10-05',date'2023-10-13')
```

The 'Output' pane at the bottom shows the execution results of the INSERT statement. It lists 8 rows of data inserted into the BookLoans table, with columns for #, Time, Action, Message, and Duration / Fetch.

#	Time	Action	Message	Duration / Fetch
1	21:52:41	insert into Borrower values ('Amaa','12 St. Saad Zaghloul','01047332254','12345'), (Gamal,'...	4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0	0.000 sec
2	21:52:45	insert into LibraryBranch values ('Sharpstown','15342', '11 Downing Street'), ('Central','91234...	2 row(s) affected Records: 2 Duplicates: 0 Warnings: 0	0.015 sec
3	21:52:53	insert into Publisher values ('Pearson', 'Palastine', 35778912)	1 row(s) affected	0.016 sec
4	21:52:57	insert into Book values ('10921', 'The Lost Tribe', 'Pearson'), ('36243', 'Tail of Two Cities', 'Pe...	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0	0.015 sec
5	21:53:29	insert into BookAuthors values ('10921', 'Naguib Mahfouz'), ('10921', 'Stephen King'), ('36243...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
6	21:53:54	insert into BookCopies values ('10921','15342', 6), ('10921','91234', 10), ('36243','15342', 5...	4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0	0.000 sec
8	21:58:02	insert into BookLoans values ('10921','15342','12345',date'2023-01-01',date'2023-01-08'), (3...	8 row(s) affected Records: 8 Duplicates: 0 Warnings: 0	0.015 sec

### 4. Querying the DB:

A. How many copies of the book titled The Lost Tribe are owned by the library branch whose name is 'Sharpstown'?

**ans: 6**

The screenshot shows the SQL Server Enterprise Manager interface. The central query editor contains the following SQL statement:

```
SELECT no_of_copies
FROM (Book NATURAL JOIN BookCopies) NATURAL JOIN LibraryBranch
```

The 'Result Grid' pane at the bottom shows the execution results of the SELECT statement. It displays a single column 'no\_of\_copies' with a value of 6.

no_of_copies
6

B. How many copies of the book titled The Lost Tribe are owned by each library branch?

**Ans:**

asmaa lab2\*

```

151 -- b):
152 • SELECT branch_name, no_of_copies
153 FROM (Book NATURAL JOIN BookCopies) NATURAL JOIN LibraryBranch
154 WHERE title = 'The Lost Tribe';
155
156

```

Result Grid

branch_name	no_of_copies
Sharpstown	6
Central	10

Result 5 x

Output

Action Output

#	Time	Action	Message
1	22:17:39	SELECT branch_name, no_of_copies FROM (Book NATURAL JOIN BookCopies) NATURAL JOIN LibraryBranch WHERE title = 'The Lost Tribe';	2 row(s) returned

C. Retrieve the names of all borrowers who do not have any books checked out.

**Ans:** Gamal.

asmaa lab2\*

```

157 • SELECT borrower_name
158 FROM Borrower AS Bname
159 WHERE NOT EXISTS (SELECT *
160 FROM BookLoans AS Loans
161 WHERE Bname.card_no = Loans.card_no);
162

```

SQLAdditions

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid

borrower_name
Gamal

Borrower 6 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	22:17:39	SELECT branch_name, no_of_copies FROM (Book NATURAL JOIN BookCopies) NATURAL JOIN LibraryBranch WHERE title = 'The Lost Tribe';	2 row(s) returned	0.000 sec / 0.000 sec
2	22:26:08	SELECT borrower_name FROM Borrower AS Bname WHERE NOT EXISTS (SELECT * FROM BookLoans AS Loans WHERE Bname.card_no = Loans.card_no);	1 row(s) returned	0.000 sec / 0.000 sec

D. For each book that is loaned out from the Sharpstown branch and whose Due date is today, retrieve the book title, the borrower's name, and the borrower's address.

**Ans:**

The screenshot shows a SQL query in a text editor window titled 'asmaa lab2\*'. The query is as follows:

```
164 • SELECT title, borrower_name, Borrower.address
165 FROM ((Book NATURAL JOIN BookLoans) NATURAL JOIN LibraryBranch)
166 JOIN Borrower ON BookLoans.Card_no = Borrower.Card_no
167 WHERE Branch_name = 'Sharpstown' AND Due_date = '2023-11-28'
168
```

Below the query editor, the 'Result Grid' is displayed with the following data:

title	borrower_name	address
Tail of Two Cities	Nagy	50 St. Salah EL-Din

The 'Output' pane shows 'Action Output' with a single entry:

#	Time	Action	Message
1	22:41:24	SELECT title, borrower_name, Borrower.address ...	1 row(s) returned

E. For each library branch, retrieve the branch name and the total number of books loaned out from that branch.

**Ans:**

The screenshot shows a SQL query in a text editor window titled 'asmaa lab2\*'. The query is as follows:

```
168
169 -- e):
170 • Select branch_name, branch_id, count(*) as total_loaned_books
171 from LibraryBranch natural join BookLoans
172 group by branch_id;
```

Below the query editor, the 'Result Grid' is displayed with the following data:

branch_name	branch_id	total_loaned_books
Sharpstown	15342	5
Central	91234	3

The 'Output' pane shows 'Action Output' with two entries:

#	Time	Action	Message
1	22:43:49	SELECT title, borrower_name, Borrower.address ...	1 row(s) returned
2	22:49:36	Select branch_name, branch_id, count(*) as total...	2 row(s) returned

F. Retrieve the names, addresses, and number of books checked out for all borrowers who have more than five books checked out.



**ANS:**

The screenshot shows a database query editor with a SQL query and its results. The query is as follows:

```
-- f):
select borrower_name, address, count(*) as total_Checked_out
from Borrower natural join BookLoans
group by Card_no
having count(*) > 5;
```

The results are displayed in a table with the following columns: borrower\_name, address, total\_Checked\_out\_books. The results are:

borrower_name	address	total_Checked_out_books
Abdel-Halem	33 St. Mohamed Ali	6

The output section shows the following messages:

#	Time	Action	Message
1	22:43:49	SELECT title, borrower_name, Borrower.address ...	1 row(s) returned
2	22:49:36	Select branch_name, branch_id, count(*) as total...	2 row(s) returned
3	23:00:33	select borrower_name, address, count(*) as total...	1 row(s) returned

G. For each book authored (or coauthored) by Stephen King, retrieve the title and the number of copies owned by the library branch whose name is Central.

**Ans:**

The screenshot shows a database query editor with a SQL query and its results. The query is as follows:

```
having count(*) > 5;
-- g):
select title, no_of_copies
from Book natural join BookCopies
where exists ( select *
from BookAuthors
where Book.book_id = book_id and auther_name = 'Stephen King
and exists (select *
from LibraryBranch
where BookCopies.branch_id = branch_id and branch_name =
'Central');
```

The results are displayed in a table with the following columns: title, no\_of\_copies. The results are:

title	no_of_copies
The Lost Tribe	10
Oliver Twist	12

The output section shows the following message:

#	Time	Action	Message
1	23:17:56	select title, no_of_copies from Book: natural join ...	2 row(s) returned