

Library Management System

Topic : Library Management System You are going to build a project based on Library Management System. It keeps track of all information about books in the library, their cost, status and total number of books available in the library. Create a database named library and following TABLES in the database:

1. Branch
 2. Employee
 3. Books
 4. Customer
 5. IssueStatus
 6. ReturnStatus
- Attributes for the tables:
1. Branch Branch_no - Set as PRIMARY KEY Manager_Id Branch_address Contact_no

The screenshot displays the MySQL Workbench interface. The 'Schemas' pane on the left shows a list of databases, including 'mysql01', 'product', 'queries_data', 'sales', 'school', 'school_and_perform', 'shorting_and_grouping', 'store', 'sys', and 'testdb'. The 'Information' pane at the bottom left shows the structure of the 'branch' table:

Columns:	
branch_no	int PK
manager_id	int
branch_address	varchar(30)
contact_no	varchar(15)

The 'Result Grid' in the center shows the data for the 'branch' table:

branch_no	manager_id	branch_address	contact_no
1	101	123 Elm St, City A	123-456-7890
2	102	456 Oak St, City B	234-567-8901
3	103	789 Pine St, City C	345-678-9012
4	104	101 Maple St, City D	456-789-0123
5	105	753 Cedar St, City E	567-890-1234
6	106	852 Birch St, City F	678-901-2345
7	107	369 Walnut St, City G	789-012-3456
8	108	147 Cherry St, City H	890-123-4567
9	109	258 Spruce St, City I	901-234-5678
10	110	369 Ash St, City J	012-345-6789

The 'Output' pane at the bottom shows the results of a query execution:

#	Time	Action	Message	Duration / Fetch
17	16:00:53	INSERT INTO issuestatus (issue_id, issued_cust, issued_book_name, issue_date, isbn_book) VALUES (1, 1, 1, 1, 1)	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.000 sec
18	16:04:05	INSERT INTO Returnstatus (Return_id, Return_cust, return_book_name, Return_date, isbn_book2) VALUE...	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.000 sec
19	16:05:58	select * from customer LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
20	16:06:50	select * from issuestatus LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
21	16:07:30	select * from returnstatus LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec

2. Employee Emp_Id – Set as PRIMARY KEY Emp_name Position Salary Branch_no - Set as FOREIGN KEY and it refer Branch_no in Branch table

The screenshot shows the MySQL Workbench interface. In the 'Schemas' pane on the left, the 'library_management_system' database is selected. The 'employee' table is being created with the following SQL code:

```

17 position varchar(50),
18 SALARY decimal(10,2),
19 Branch_no int,
20 foreign key (branch_no) references branch(branch_no));
21
22 select * from employee;

```

The 'Result Grid' displays the data for the 'employee' table:

Emp_id	Emp_name	position	SALARY	Branch_no
1	Alice Smith	Manager	60000.00	1
2	Bob Johnson	Assistant	40000.00	2
3	Charlie Brown	Clerk	35000.00	3
4	David Wilson	Librarian	45000.00	4
5	Eva Adams	Technician	30000.00	5
6	Frank Moore	Manager	62000.00	6
7	Grace Lee	Assistant	38000.00	7
8	Henry Taylor	Clerk	36000.00	8
9	Isabel Clark	Librarian	47000.00	9
10	Jack Martinez	Technician	31000.00	10

The 'Output' pane shows the execution of the SQL statements, including the creation of the table and the selection of all data from the 'employee' table.

3. Books ISBN - Set as PRIMARY KEY Book_title Category Rental_Price Status [Give yes if book available and no if book not available] Author Publisher

The screenshot shows the MySQL Workbench interface. In the 'Schemas' pane on the left, the 'library_management_system' database is selected. The 'books' table is being created with the following SQL code:

```

28 Status ENUM('YES','NO'),
29 Author Varchar(100),
30 publisher varchar(100)
31 ))
32
33 select * from books;

```

The 'Result Grid' displays the data for the 'books' table:

ISBN	Book_title	category	Rental_price	Status	Author	publisher
978-3-16-148410-0	Book A	Fiction	5.00	YES	Author A	Publisher A
978-3-16-148411-7	Book B	Non-Fiction	6.00	YES	Author B	Publisher B
978-3-16-148412-4	Book C	Fiction	7.00	NO	Author C	Publisher C
978-3-16-148413-1	Book D	Science	8.00	YES	Author D	Publisher D
978-3-16-148414-8	Book E	History	9.00	NO	Author E	Publisher E
978-3-16-148415-5	Book F	Biography	10.00	YES	Author F	Publisher F
978-3-16-148416-2	Book G	Children	4.00	YES	Author G	Publisher G
978-3-16-148417-9	Book H	Fiction	5.50	NO	Author H	Publisher H
978-3-16-148418-6	Book I	Mystery	6.50	YES	Author I	Publisher I
978-3-16-148419-3	Book J	Horror	7.50	NO	Author J	Publisher J

The 'Output' pane shows the execution of the SQL statements, including the creation of the table and the selection of all data from the 'books' table. An error message is visible at the bottom: 'Error Code: 1050. Table 'employee' already exists'.

4. Customer Customer_Id - Set as PRIMARY KEY Customer_name Customer_address Reg_date

The screenshot shows the MySQL Workbench interface. In the left sidebar, the 'SCHEMAS' panel is open, showing a list of databases including 'mysql', 'product', 'queries_data', 'sales', 'sales', 'school', 'school_and_perform', 'shorting_and_grouping', 'store', 'sys', and 'testdb'. The 'queries_data' database is selected. In the main editor, a SQL query is entered to create a table named 'Customer' with the following schema:

```
create table Customer (customer_id int primary key,
customer_name varchar(100),
customer_address varchar(255),
reg_date date);
```

Below the query, a 'select * from customer;' query is executed, resulting in a table with 10 rows of data:

customer_id	customer_name	customer_address	reg_date
1	John Doe	101 Main St, City A	2023-01-01
2	Jane Smith	102 Main St, City B	2023-01-02
3	Alice Johnson	103 Main St, City C	2023-01-03
4	Bob Brown	104 Main St, City D	2023-01-04
5	Charlie Black	105 Main St, City E	2023-01-05
6	Diana Green	106 Main St, City F	2023-01-06
7	Eva White	107 Main St, City G	2023-01-07
8	Frank Blue	108 Main St, City H	2023-01-08
9	Grace Violet	109 Main St, City I	2023-01-09
10	Henry Grey	110 Main St, City J	2023-01-10

The 'Output' panel at the bottom shows the execution log, including messages like '10 row(s) returned' and 'Error Code: 1050. Table 'employee' already exists'.

5. IssueStatus Issue_Id - Set as PRIMARY KEY Issued_cust – Set as FOREIGN KEY and it refer customer_id in CUSTOMER table Issued_book_name Issue_date Isbn_book – Set as FOREIGN KEY and it should refer isbn in BOOKS table

The screenshot shows the MySQL Workbench interface. In the left sidebar, the 'SCHEMAS' panel is open, showing a list of databases including 'mysql', 'product', 'queries_data', 'sales', 'sales', 'school', 'school_and_perform', 'shorting_and_grouping', 'store', 'sys', and 'testdb'. The 'queries_data' database is selected. In the main editor, a SQL query is entered to create a table named 'IssueStatus' with the following schema:

```
create table IssueStatus (
issue_id int primary key,
issued_cust int foreign key references customer(customer_id),
issued_book_name varchar(20) foreign key references books(isbn),
issue_date date,
isbn_book int foreign key references books(isbn));
```

Below the query, a 'select * from issuestatus;' query is executed, resulting in a table with 10 rows of data:

issue_id	issued_cust	issued_book_name	issue_date	isbn_book
1	1	Book A	2023-01-02	978-3-16-149410-0
2	2	Book B	2023-01-03	978-3-16-149411-7
3	3	Book C	2023-01-04	978-3-16-149412-4
4	4	Book D	2023-01-05	978-3-16-149413-1
5	5	Book E	2023-01-06	978-3-16-149414-8
6	6	Book F	2023-01-07	978-3-16-149415-5
7	7	Book G	2023-01-08	978-3-16-149416-2
8	8	Book H	2023-01-09	978-3-16-149417-9
9	9	Book I	2023-01-10	978-3-16-149418-6
10	10	Book J	2023-01-11	978-3-16-149419-3

The 'Output' panel at the bottom shows the execution log, including messages like '10 row(s) returned' and 'Error Code: 1050. Table 'employee' already exists'.

6. ReturnStatus Return_Id - Set as PRIMARY KEY Return_cust Return_book_name Return_date
 Isbn_book2 - Set as FOREIGN KEY and it should refer isbn in BOOKS table Display all the tables
 and Write the queries for the following :

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with a list of tables including 'books', 'branch', 'customer', 'employee', 'issuestatus', 'returnstatus', 'school', 'school_and_perform', 'shorting_and_grouping', 'store', 'sys', and 'testdb'. The main editor window shows the SQL script for creating the 'returnstatus' table:

```

57 Return_date Date,
58 isbn_book2 varchar(20),
59 foreign key(return_cust) references customer(customer_id),
60 foreign key(isbn_book2) references Books(isbn));
61
62 select * from returnstatus;
  
```

The 'Result Grid' shows the data for the 'returnstatus' table:

Return_id	Return_cust	return_book_name	Return_date	isbn_book2
1	1	Book A	2023-01-10	978-3-16-148410-0
2	2	Book B	2023-01-11	978-3-16-148411-7
3	3	Book C	2023-01-12	978-3-16-148412-4
4	4	Book D	2023-01-13	978-3-16-148413-1
5	5	Book E	2023-01-14	978-3-16-148414-8
6	6	Book F	2023-01-15	978-3-16-148415-5
7	7	Book G	2023-01-16	978-3-16-148416-2
8	8	Book H	2023-01-17	978-3-16-148417-9
9	9	Book I	2023-01-18	978-3-16-148418-6
10	10	Book J	2023-01-19	978-3-16-148419-3

The 'Output' pane shows the execution log for the queries:

#	Time	Action	Message	Duration / Fetch
23	16:08:10	select * from employee LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
24	16:08:38	create table Employee (Emp_id int primary key, Emp_name varchar(30), position varchar(50), SALARY decimal(10,2));	Error Code: 1050. Table 'employee' already exists	0.015 sec
25	16:08:45	select * from books LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
26	16:08:55	select * from customer LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
27	16:09:29	select * from issuestatus LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec

1. Retrieve the book title, category, and rental price of all available books.

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree. The main editor window shows the SQL query:

```

133 (7, 7, 'Book G', '2023-01-16', '978-3-16-148416-2'),
134 (8, 8, 'Book H', '2023-01-17', '978-3-16-148417-9'),
135 (9, 9, 'Book I', '2023-01-18', '978-3-16-148418-6'),
136 (10, 10, 'Book J', '2023-01-19', '978-3-16-148419-3');
137
138 SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes';
  
```

The 'Result Grid' shows the data for the 'Books' table:

Book_title	Category	Rental_Price
Book A	Fiction	5.00
Book B	Non-Fiction	6.00
Book D	Science	8.00
Book F	Biography	10.00
Book G	Children	4.00
Book I	Mystery	6.50

The 'Output' pane shows the execution log for the queries:

#	Time	Action	Message	Duration / Fetch
26	16:08:55	select * from customer LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
27	16:09:29	select * from issuestatus LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
28	16:09:59	select * from returnstatus LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
29	17:12:06	SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LIMIT 0, 1000	Error Code: 1054. Unknown column 'Book_title' in 'field list'	0.000 sec
30	17:12:26	SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LIMIT 0, 1000	Error Code: 1054. Unknown column 'Book_title' in 'field list'	0.000 sec

2. List the employee names and their respective salaries in descending order of salary.

The screenshot shows the MySQL Workbench interface. The 'Schemas' pane on the left lists various databases, including 'mysql', 'product', 'queries_data', 'sales', 'school', 'school_and_perform', 'shorting_and_grouping', 'store', 'sys', and 'testdb'. The 'Database' pane shows the 'library_management_system' database. The 'Query' editor contains the following SQL query:

```
SELECT EMP_NAME, SALARY FROM EMPLOYEE order by SALARY desc
```

The 'Result Grid' shows the following data:

EMP_NAME	SALARY
Frank Moore	62000.00
Alice Smith	60000.00
Isabel Clark	47000.00
David Wilson	45000.00
Bob Johnson	40000.00
Grace Lee	36000.00
Henry Taylor	36000.00
Charlie Brown	35000.00
Jack Martinez	31000.00
Eva Adams	30000.00

The 'Output' pane shows the execution log with the following messages:

```
select * from returnstatus LIMIT 0, 1000
select * from returnstatus LIMIT 0, 1000
SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LIMIT 0, 1000
SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LIMIT 0, 1000
SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LIMIT 0, 1000
```

3. Retrieve the book titles and the corresponding customers who have issued those books.

The screenshot shows the MySQL Workbench interface. The 'Schemas' pane on the left lists various databases, including 'mysql', 'product', 'queries_data', 'sales', 'school', 'school_and_perform', 'shorting_and_grouping', 'store', 'sys', and 'testdb'. The 'Database' pane shows the 'library_management_system' database. The 'Query' editor contains the following SQL query:

```
select B.BOOK_TITLE , C.CUSTOMER_name
from books B
join ISSUESTATUS I on B.isbn=I.isbn_book
join customer C on I.issued_cust = C.customer_id
```

The 'Result Grid' shows the following data:

BOOK_TITLE	CUSTOMER_name
Book A	John Doe
Book B	Jane Smith
Book C	Alice Johnson
Book D	Bob Brown
Book E	Charlie Black
Book F	Diana Green
Book G	Eva White
Book H	Frank Blue
Book I	Grace Violet
Book J	Henry Grey

The 'Output' pane shows the execution log with the following messages:

```
select * from returnstatus LIMIT 0, 1000
SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LIMIT 0, 1000
SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LIMIT 0, 1000
SELECT EMP_NAME, SALARY FROM EMPLOYEE order by SALARY desc LIMIT 0, 1000
```

4. Display the total count of books in each category.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```
143 from books B
144 join ISSUESTATUS I on b.isbn=i.isbn_book
145 join customer c on I.issued_cust = c.customer_id;
146
147 • select category , count(*) as total_books
148 from books group by category;
```

The Result Grid shows the following data:

category	total_books
Fiction	3
Non-Fiction	1
Science	1
History	1
Biography	1
Children	1
Mystery	1
Horror	1

The Action Output pane shows the following log:

#	Time	Action	Message	Duration / Fetch
41	17:31:30	DROP DATABASE 'shoring_and_grouping'	2 row(s) affected	0.032 sec
42	17:31:37	DROP DATABASE 'store'	1 row(s) affected	0.015 sec
43	17:31:43	DROP DATABASE 'sys'	101 row(s) affected	0.328 sec
44	17:31:55	DROP DATABASE 'testdb'	1 row(s) affected	0.032 sec
45	17:32:03	DROP DATABASE 'going'	0 row(s) affected	0.031 sec

5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```
145 join customer c on I.issued_cust = c.customer_id;
146
147 • select category , count(*) as total_books
148 from books group by category;
149
150 • select emp_name , position from employee where salary > 50000;
```

The Result Grid shows the following data:

emp_name	position
Alice Smith	Manager
Frank Moore	Manager

The Action Output pane shows the following log:

#	Time	Action	Message	Duration / Fetch
42	17:31:37	DROP DATABASE 'store'	1 row(s) affected	0.015 sec
43	17:31:43	DROP DATABASE 'sys'	101 row(s) affected	0.328 sec
44	17:31:55	DROP DATABASE 'testdb'	1 row(s) affected	0.032 sec
45	17:32:03	DROP DATABASE 'going'	0 row(s) affected	0.031 sec
46	17:46:12	select category , count(*) as total_books from books group by category LIMIT 0, 1000	8 row(s) returned	0.016 sec / 0.000 sec

6. List the customer names who registered before 2022-01-01 and have not issued any books yet.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```

148 from books group by category;
149
150 • select emp_name , position from employee where salary > 50000;
151
152 • select customer_name from customer where reg_date < '2022-01-01'
153 and customer_id not in (select distinct issued_cust from issuestatus);

```

The Result Grid shows the output of the query, displaying the customer_name column.

The Action Output pane shows the execution details of the query, including the time taken and the number of rows returned. The output is as follows:

#	Time	Action	Message	Duration / Fetch
45	17:32:03	DROP DATABASE 'going'	0 row(s) affected	0.031 sec
46	17:46:12	select category , count(*) as total_books from books group by category LIMIT 0, 1000	8 row(s) returned	0.016 sec / 0.000 sec
47	17:50:18	select emp_name , position from employee where salary > 50000 LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec
48	18:00:48	select customer_name from customer where reg_date < '2022-01-01' and customer_id not in (select distinct issued_cust from issuestatus)	Error Code: 1146: Table 'library.issued_status' doesn't exist	0.000 sec
49	18:02:07	select customer_name from customer where reg_date < '2022-01-01' and customer_id not in (select distinct issued_cust from issuestatus)	Error Code: 1054: Unknown column 'district' in 'field list'	0.016 sec

7. Display the branch numbers and the total count of employees in each branch.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```

152 • select customer_name from customer where reg_date < '2022-01-01'
153 and customer_id not in (select distinct issued_cust from issuestatus);
154
155 • select branch_no , count(*) AS TOTAL_EMPLOYEES
156 FROM EMPLOYEE
157 GROUP BY BRANCH_NO;

```

The Result Grid shows the output of the query, displaying the branch_no and TOTAL_EMPLOYEES columns.

The Action Output pane shows the execution details of the query, including the time taken and the number of rows returned. The output is as follows:

#	Time	Action	Message	Duration / Fetch
73	18:08:11	SELECT EMP_NAME,SALARY FROM EMPLOYEE order by SALARY desc LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
74	18:08:11	select B.BOOK_TITLE , C.CUSTOMER_name from books B join ISSUESTATUS I on b.isbn=i.isbn_book join...	10 row(s) returned	0.000 sec / 0.000 sec
75	18:08:11	select category , count(*) as total_books from books group by category LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
76	18:08:11	select emp_name , position from employee where salary > 50000 LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec
77	18:08:11	select customer_name from customer where reg_date < '2022-01-01' and customer_id not in (select distinct issued_cust from issuestatus)	0 row(s) returned	0.000 sec / 0.000 sec

8. Display the names of customers who have issued books in the month of June 2023.

MySQL Workbench

project x

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Navigator

SCHEMAS

Filter objects

library

Tables

books

branch

customer

employee

issuestatus

returnstatus

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Information

No object selected

library management system

Limit to 1000 rows

```
157 GROUP BY BRANCH_NO;
158
159 select distinct c.customer_name
160 from customer c join issuestatus i on c.customer_id = issued_cust
161 where month(i.issue_date)=6 and year(i.issue_date)=2023;
162
```

Result Grid

customer_name

Result 1

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	18:31:37	use library	0 row(s) affected	0.000 sec
2	18:38:23	select distinct c.customer_name from customer c join issuestatus i on c.customer_id = i.issued_cust where month(i.issue_date)=6 and year(i.issue_date)=2023	Error Code: 1054. Unknown column 'i.issue_date' in 'where clause'	0.000 sec
3	18:38:56	select distinct c.customer_name from customer c join issuestatus i on c.customer_id = i.issued_cust where month(i.issue_date)=6 and year(i.issue_date)=2023	Error Code: 1054. Unknown column 'i.issued_cust' in 'on clause'	0.000 sec
4	18:39:21	select distinct c.customer_name from customer c join issuestatus i on c.customer_id = i.issued_cust where month(i.issue_date)=6 and year(i.issue_date)=2023	Error Code: 1054. Unknown column 'i.issued_cust' in 'on clause'	0.000 sec
5	18:40:04	select distinct c.customer_name from customer c join issuestatus i on c.customer_id = issued_cust where month(i.issue_date)=6 and year(i.issue_date)=2023	0 row(s) returned	0.000 sec / 0.000 sec

MySQL Workbench

project x

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Navigator

SCHEMAS

Filter objects

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Information

No object selected

library management system

Limit to 1000 rows

```
156 FROM EMPLOYEE
157 GROUP BY BRANCH_NO;
158
159 select distinct customer_name
160 from customer join issuestatus on customer_id = ISSUED_CUST
161 where month(issue_date)=6 and year(issue_date)=2023;
162
```

Result Grid

customer_name

John Doe

Jane Smith

Alice Johnson

Bob Brown

Charlie Black

Diana Green

Eva White

Frank Blue

Grace Violet

Henry Grey

Result 72

Output

Action Output

#	Time	Action	Message	Duration / Fetch
118	19:28:03	select distinct customer_name from customer join issuestatus on customer_id = ISSUEDDATE where month(issue_date)=6 and year(issue_date)=2023	Error Code: 1054. Unknown column 'ISSUEDDATE' in 'on clause'	0.000 sec
119	19:28:47	select distinct customer_name from customer join issuestatus on customer_id = ISSUED_CUST where month(issue_date)=6 and year(issue_date)=2023	Error Code: 1054. Unknown column 'ISSUE_CUST' in 'on clause'	0.000 sec
120	19:29:05	select distinct customer_name from customer join issuestatus on customer_id = ISSUED_CUST where month(issue_date)=6 and year(issue_date)=2023	10 row(s) returned	0.000 sec / 0.000 sec
121	19:29:13	select distinct customer_name from customer join issuestatus on customer_id = ISSUED_CUST where month(issue_date)=6 and year(issue_date)=2023	0 row(s) returned	0.000 sec / 0.000 sec
122	19:29:16	select distinct customer_name from customer join issuestatus on customer_id = ISSUED_CUST where month(issue_date)=6 and year(issue_date)=2023	0 row(s) returned	0.000 sec / 0.000 sec

9. Retrieve book_title from book table containing history.

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'library management system' database schema, including tables like 'books', 'branch', 'customer', 'employee', 'issuestatus', and 'returnstatus'. The main editor window contains the following SQL query:

```
select book_title FROM Books WHERE category = 'history';
```

The 'Result Grid' shows one row of data:

book_title
Book E

The 'Output' pane at the bottom shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
46	19:12:25	create table Employee (Emp_id int primary key, Emp_name varchar(30), position varchar(50), SALARY decimal...	Error Code: 1050. Table 'employee' already exists	0.000 sec
47	19:12:34	create table Branch (branch_no int primary key, manager_id int, branch_address varchar(30), contact_no varc...	Error Code: 1050. Table 'branch' already exists	0.000 sec
48	19:12:38	select * from branch LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
49	19:12:50	select book_title FROM Books WHERE Book_title = 'history' LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
50	19:13:11	select emp_name, position from employee where salary > 50000 LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec

10. Retrieve the branch numbers along with the count of employees for branches having more than 5 employees

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'library management system' database schema. The main editor window contains the following SQL query:

```
SELECT BRANCH_no, COUNT(*) AS EMPLOYEE_COUNT  
FROM EMPLOYEE GROUP BY branch_no  
having count(*) > 5;
```

The 'Result Grid' shows one row of data:

BRANCH_no	EMPLOYEE_COUNT
1	10

The 'Output' pane at the bottom shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
127	19:40:40	SELECT BRANCH_no, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEE GROUP BY emp_id having c...	0 row(s) returned	0.000 sec / 0.000 sec
128	19:41:25	SELECT BRANCH_no, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEE GROUP BY branch_no havi...	0 row(s) returned	0.000 sec / 0.000 sec
129	19:41:38	SELECT BRANCH_no, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEE GROUP BY branch_no havi...	0 row(s) returned	0.000 sec / 0.000 sec
130	19:41:50	SELECT BRANCH_no, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEE GROUP BY branch_no havi...	0 row(s) returned	0.000 sec / 0.000 sec
131	19:45:58	SELECT BRANCH_no, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEE GROUP BY branch_no havi...	10 row(s) returned	0.000 sec / 0.000 sec

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```

171 FROM EMPLOYEE GROUP BY branch_no
172 having count(*) > 5;
173
174
175 • SELECT BRANCH_NO, COUNT(*) AS EMPLOYEE_COUNT
176 FROM EMPLOYEE GROUP BY branch_no
177 having count(*) > 5;

```

The Result Grid shows the following data:

BRANCH_NO	EMPLOYEE_COUNT
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1

The Output tab shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
128	19:41:25	SELECT BRANCH_NO, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEE GROUP BY branch_no havi...	0 row(s) returned	0.000 sec / 0.000 sec
129	19:41:38	SELECT BRANCH_NO, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEE GROUP BY branch_no havi...	0 row(s) returned	0.000 sec / 0.000 sec
130	19:41:50	SELECT BRANCH_NO, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEE GROUP BY branch_no havi...	0 row(s) returned	0.000 sec / 0.000 sec
131	19:45:58	SELECT BRANCH_NO, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEE GROUP BY branch_no havi...	10 row(s) returned	0.000 sec / 0.000 sec
132	19:46:08	SELECT BRANCH_NO, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEE GROUP BY branch_no havi...	0 row(s) returned	0.000 sec / 0.000 sec

11. Retrieve the names of employees who manage branches and their respective branch addresses.

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```

176 FROM EMPLOYEE GROUP BY branch_no
177 having count(*) > 5;
178
179 • select e.emp_name as MANAGER_NAME, b.branch_ADDRESS
180 from employee e
181 join branch b on e.BRANCH_NO = b.BRANCH_NO
182 where e.position='manager';

```

The Result Grid shows the following data:

MANAGER_NAME	branch_ADDRESS
Alice Smith	123 Elm St, City A
Frank Moore	852 Birch St, City F

The Output tab shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
220	20:17:49	select book_title FROM Books WHERE category = 'History' LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
221	20:17:49	SELECT BRANCH_NO, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEE GROUP BY branch_no havi...	0 row(s) returned	0.000 sec / 0.000 sec
222	20:17:49	SELECT BRANCH_NO, COUNT(*) AS EMPLOYEE_COUNT FROM EMPLOYEE GROUP BY branch_no havi...	10 row(s) returned	0.000 sec / 0.000 sec
223	20:17:50	select e.emp_name AS MANAGER_NAME, b.branch_ADDRESS from employee e join branch b on e.BRANC...	2 row(s) returned	0.000 sec / 0.000 sec
224	20:17:50	SELECT e.emp_name AS Manager_Name, b.branch_address AS Branch_Address FROM Employee...	2 row(s) returned	0.000 sec / 0.000 sec

12. Display the names of customers who have issued books with a rental price higher than Rs. 25.

MySQL Workbench

project x

File Edit View Query Database Server Tools Scripting Help

Navigator

library management system

Limit to 1000 rows

206

207 ## 12 Display the names of customers who have issued books with a rental price higher than Rs. 25.

208

209 • SELECT customer_name from customer

210 join issuestatus on customer_id =issued_cust

211 join books on isbn_book =isbn

212 where rental_price >25;

Result Grid

Filter Rows: Export: Wrap Cell Content: 15

customer_name

No object selected

Result 135 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
238	20:31:59	SELECT c.customer_name as customer_name from customer c join issuestatus i on c.customer_id =issued_c...	1 row(s) returned	0.000 sec / 0.000 sec
239	20:32:56	SELECT customer_name from customer join issuestatus on customer_id =issued_cust join books on isbn_bo...	1 row(s) returned	0.000 sec / 0.000 sec
240	20:33:19	SELECT customer_name from customer join issuestatus on customer_id =issued_cust join books on isbn_bo...	0 row(s) returned	0.000 sec / 0.000 sec
241	20:33:46	SELECT customer_name from customer join issuestatus on customer_id =issued_cust join books on isbn_bo...	8 row(s) returned	0.000 sec / 0.000 sec
242	20:33:57	SELECT customer_name from customer join issuestatus on customer_id =issued_cust join books on isbn_bo...	4 row(s) returned	0.000 sec / 0.000 sec

MySQL Workbench

project x

File Edit View Query Database Server Tools Scripting Help

Navigator

library management system

Limit to 1000 rows

212 where rental_price >25;

213

214 • SELECT customer_name from customer

215 join issuestatus on customer_id =issued_cust

216 join books on isbn_book =isbn

217 where rental_price >75;

Result Grid

Filter Rows: Export: Wrap Cell Content: 15

customer_name

Bob Brown

Charlie Black

Diana Green

Henry Grey

No object selected

Result 136 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
239	20:32:56	SELECT customer_name from customer join issuestatus on customer_id =issued_cust join books on isbn_bo...	1 row(s) returned	0.000 sec / 0.000 sec
240	20:33:19	SELECT customer_name from customer join issuestatus on customer_id =issued_cust join books on isbn_bo...	0 row(s) returned	0.000 sec / 0.000 sec
241	20:33:46	SELECT customer_name from customer join issuestatus on customer_id =issued_cust join books on isbn_bo...	8 row(s) returned	0.000 sec / 0.000 sec
242	20:33:57	SELECT customer_name from customer join issuestatus on customer_id =issued_cust join books on isbn_bo...	4 row(s) returned	0.000 sec / 0.000 sec
243	21:22:35	SELECT customer_name from customer join issuestatus on customer_id =issued_cust join books on isbn_bo...	0 row(s) returned	0.000 sec / 0.000 sec