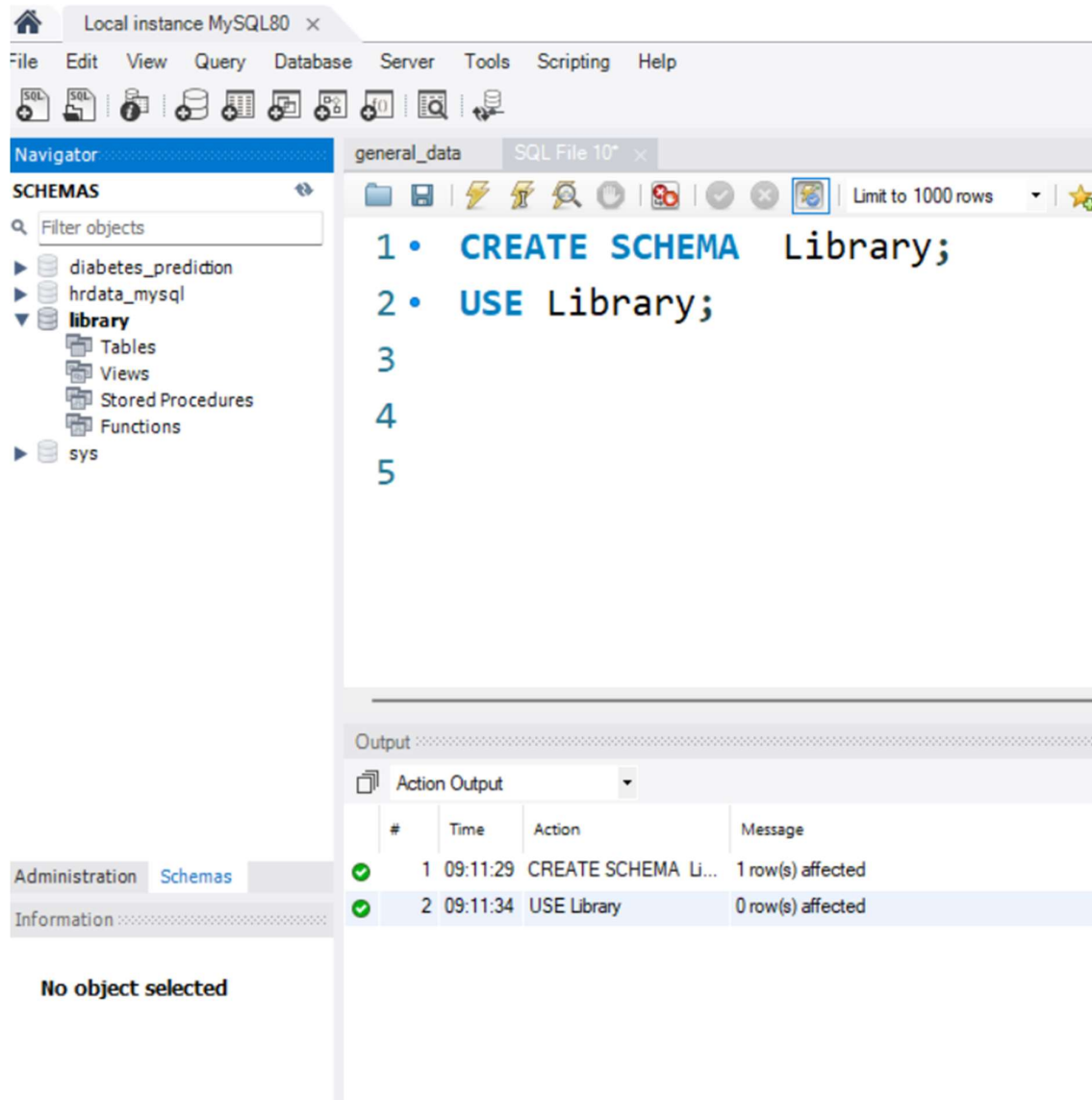


Assignment – 1

Ch.Lakshmipriya-G8-Ds

1.Create Schema Library

Created schema using command -**create schema library;**



2. Create tables

Books: BookID - Pk,BookName,AuthorName,Genre,pages

Customers : CustomerId - PK, CustomerName, address

BooksBorrowed: SIno,BookID - FK,CustomerID - FK,DaysBookRetained

Cost: MaxPages, Cost/day

A)Creating Books table:

Code: CREATE TABLE Books (

BookID INT PRIMARY KEY,

BookName VARCHAR(250),

AuthorName VARCHAR(250),

Genre VARCHAR(250),

Pages INT);

The screenshot shows the MySQL Workbench interface. The 'SCHEMAS' pane on the left shows the 'library' database selected. The main editor window displays the SQL code for creating the 'Books' table. The 'Output' pane at the bottom shows the execution results.

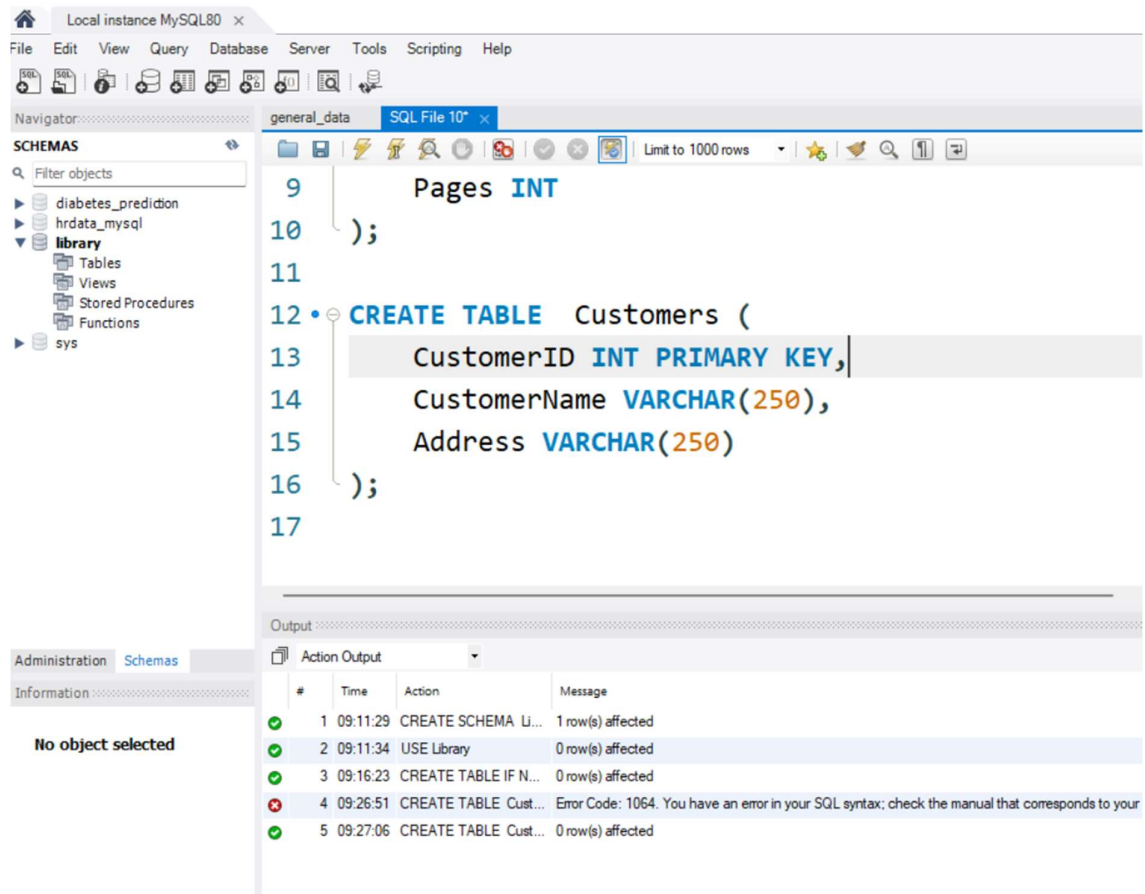
```
4 • CREATE TABLE Books (  
5     BookID INT PRIMARY KEY,  
6     BookName VARCHAR(250),  
7     AuthorName VARCHAR(250),  
8     Genre VARCHAR(250),  
9     Pages INT  
10 );  
11  
12
```

Output:

#	Time	Action	Message
✓ 1	09:11:29	CREATE SCHEMA Li...	1 row(s) affected
✓ 2	09:11:34	USE Library	0 row(s) affected
✓ 3	09:16:23	CREATE TABLE IF N...	0 row(s) affected

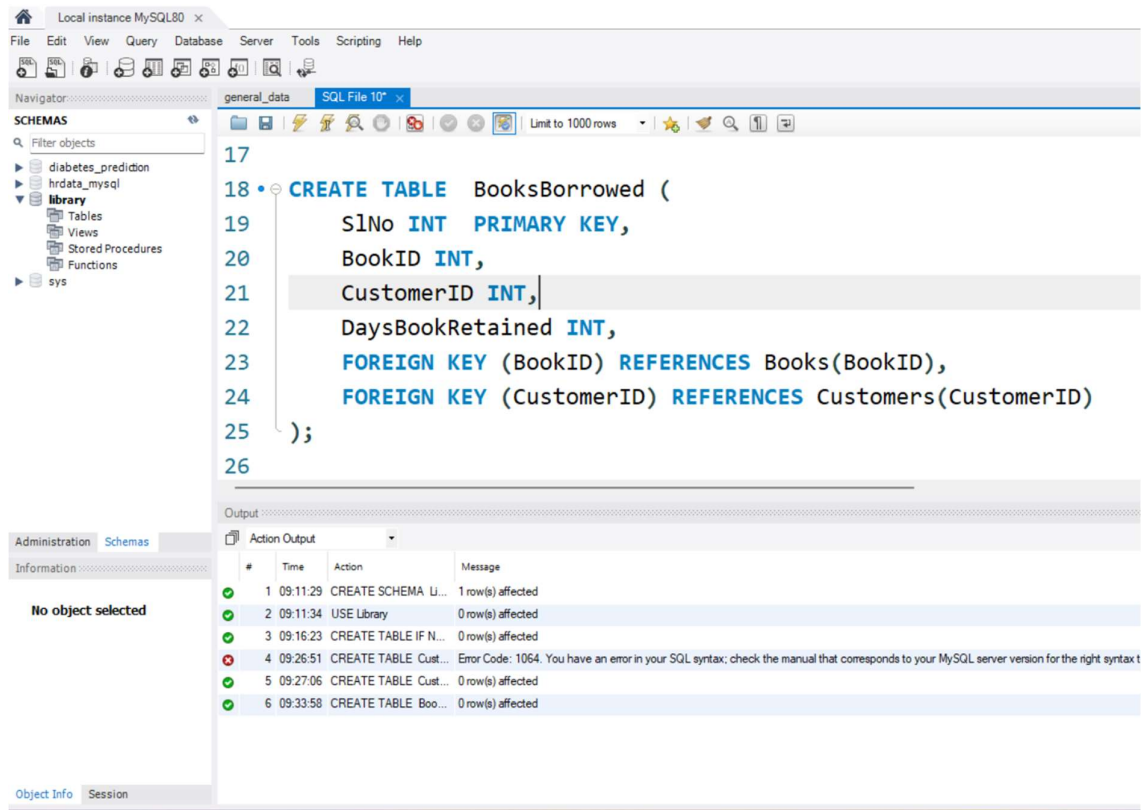
B) Creating Customers table:

Code: CREATE TABLE Customers (
CustomerID INT PRIMARY KEY,
CustomerName VARCHAR(250),
Address VARCHAR(250));



C) Creating Books Borrowed Table:

Code: CREATE TABLE BooksBorrowed (SINo INT PRIMARY KEY, BookID INT, CustomerID INT,
DaysBookRetained INT, FOREIGN KEY (BookID) REFERENCES Books(BookID),
FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID));



D) Creating Cost table:

Code: CREATE TABLE Cost (

MaxPages INT PRIMARY KEY,

CostperDay INT

);

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

general_data SQL File 10* x

Limit to 1000 rows

SCHEMAS

Filter objects

- diabetes_prediction
- hrdata_mysql
- library**
 - Tables
 - Views
 - Stored Procedures
 - Functions
- sys

```
25 );  
26  
27 • CREATE TABLE Cost (  
28     MaxPages INT PRIMARY KEY,  
29     CostperDay INT  
30 );  
31  
32  
33  
34
```

Output

Action Output

#	Time	Action	Message
✓ 1	09:11:29	CREATE SCHEMA Li...	1 row(s) affected
✓ 2	09:11:34	USE Library	0 row(s) affected
✓ 3	09:16:23	CREATE TABLE IF N...	0 row(s) affected
✗ 4	09:26:51	CREATE TABLE Cust...	Error Code: 1064. You have an error in your SQL syntax; cl
✓ 5	09:27:06	CREATE TABLE Cust...	0 row(s) affected
✓ 6	09:33:58	CREATE TABLE Boo...	0 row(s) affected
✓ 7	09:39:42	CREATE TABLE Cost ...	0 row(s) affected

No object selected

3) 3.Google Search for books along with authors, genre and pages. Insert atleast 5 authors and 5 different genres into Books Table. Make sure you have atleast 30 records.

A) Insering values into books table :

Code: INSERT INTO books (BookID, BookName, AuthorName, Genre, Pages)

VALUES (1, 'The Guide', 'R.K. Narayan', 'Fiction', 300);

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with a filter 'Filter objects'. The main editor window shows an SQL query file named 'SQL File 10*' containing an INSERT statement. The query is as follows:

```
30 );
31
32 • INSERT INTO books (BookID, BookName, AuthorName, Genre, Pages)
33 VALUES
34 (1, 'The Guide', 'R.K. Narayan', 'Fiction', 300),
35 (2, 'The God of Small Things', 'Arundhati Roy', 'Fiction', 350),
36 (3, 'My Experiments with Truth', 'Mahatma Gandhi', 'Autobiography', 450),
37 (4, 'Discovery of India', 'Jawaharlal Nehru', 'History', 600),
38 (5, 'The White Tiger', 'Aravind Adiga', 'Fiction', 320),
39 (6, 'Wings of Fire', 'A.P.J. Abdul Kalam', 'Biography', 400),
40 (7, 'Interpreter of Maladies', 'Jhumpa Lahiri', 'Short Stories', 280),
41 (8, 'A Suitable Boy', 'Vikram Seth', 'Fiction', 1500),
42 (9, 'The Namesake', 'Jhumpa Lahiri', 'Fiction', 320),
43 (10, 'Inheritance of Loss', 'Kiran Desai', 'Fiction', 450),
44 (11, 'Half Girlfriend', 'Chetan Bhagat', 'Romance', 280),
45 (12, 'Five Point Someone', 'Chetan Bhagat', 'Humor', 270),
```

The bottom panel shows the 'Output' tab with 'Action Output' selected. It displays a log of database actions and their results:

#	Time	Action	Message
✓ 1	09:11:29	CREATE SCHEMA Li...	1 row(s) affected
✓ 2	09:11:34	USE Library	0 row(s) affected
✓ 3	09:16:23	CREATE TABLE IF N...	0 row(s) affected
✗ 4	09:26:51	CREATE TABLE Cust...	Error Code: 1064. You have an error in your SQL syntax; check the manual that corre
✓ 5	09:27:06	CREATE TABLE Cust...	0 row(s) affected
✓ 6	09:33:58	CREATE TABLE Boo...	0 row(s) affected
✓ 7	09:39:42	CREATE TABLE Cost ...	0 row(s) affected
✓ 8	10:15:56	INSERT INTO books (...)	50 row(s) affected Records: 50 Duplicates: 0 Warnings: 0

4) Insert 15 customers into customer table by providing appropriate details.

Code: INSERT INTO customers (CustomerID, CustomerName, Address) VALUES

(1, 'Rajesh Reddy', 'Vijayawada'),

The screenshot displays the MySQL Workbench interface for a local instance of MySQL 8.0. The left sidebar shows the 'SCHEMAS' tree with a search filter. The main editor window contains a SQL query to insert 15 records into the 'customers' table. The bottom panel shows the 'Output' tab with an 'Action Output' table.

SCHEMAS

Filter objects

- diabetes_prediction
- hrdata_mysql
- library
 - Tables
 - Views
 - Stored Procedures
 - Functions
- sys

SQL File 10*

```
85 • INSERT INTO customers (CustomerID, CustomerName, Address)
86 VALUES
87 (1, 'Rajesh Reddy', 'Vijayawada'),
88 (2, 'Priya Naidu', 'Telangana'),
89 (3, 'Suresh Kumar', 'Kurnool'),
90 (4, 'Deepika ', 'Warangal'),
91 (5, 'Ravi ', 'Guntur'),
92 (6, 'Shalini ', 'Nizamabad'),
93 (7, 'Akhil', 'Tirupati'),
94 (8, 'Anusha', 'Karimnagar'),
95 (9, 'Prakash', 'Vizag'),
96 (10, 'Madhuri', 'Adilabad'),
97 (11, 'Harish', 'Ongole'),
98 (12, 'Deepti Reddy', 'Kurnool'),
99 (13, 'Rajesh Reddy', 'Vijayawada'),
100 (14, 'Priya Naidu', 'Telangana'),
101 (15, 'Suresh Kumar', 'Kurnool');
```

Output

Action Output

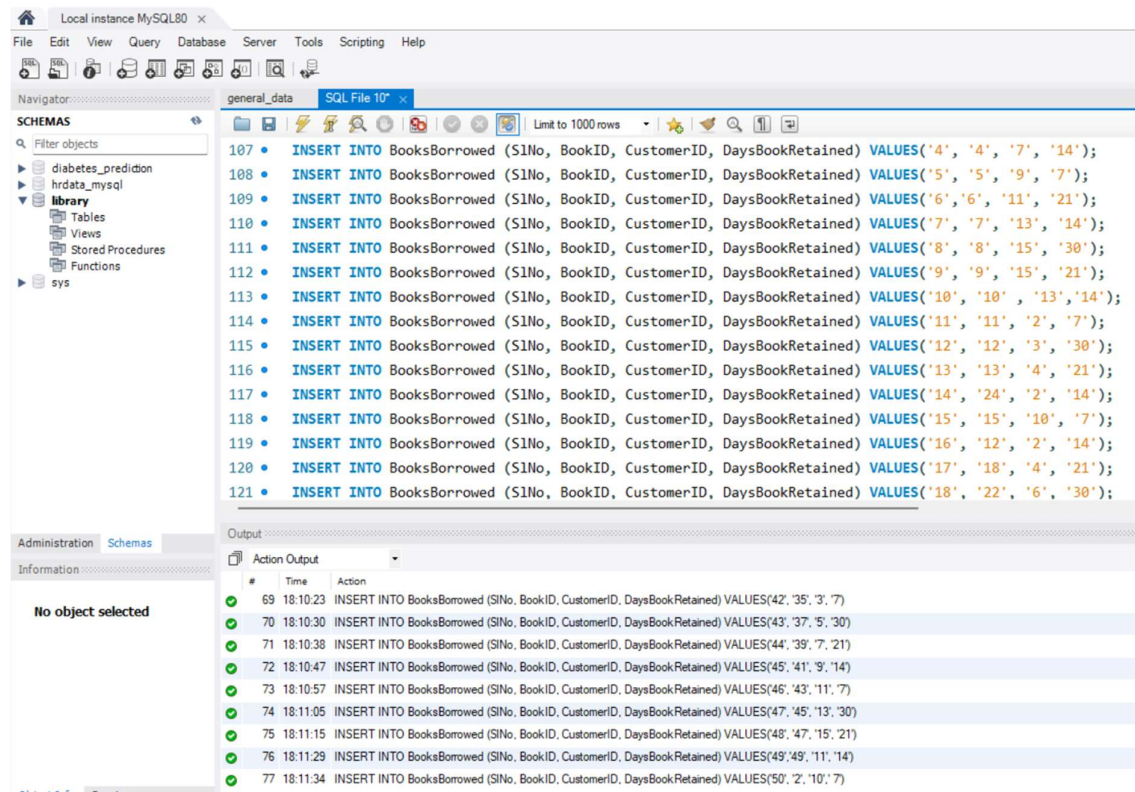
#	Time	Action	Message
✓ 1	09:11:29	CREATE SCHEMA ...	1 row(s) affected
✓ 2	09:11:34	USE Library	0 row(s) affected
✓ 3	09:16:23	CREATE TABLE IF ...	0 row(s) affected
✗ 4	09:26:51	CREATE TABLE Cu...	Error Code: 1064. You have an error in your SQL syntax; check the manual tha
✓ 5	09:27:06	CREATE TABLE Cu...	0 row(s) affected
✓ 6	09:33:58	CREATE TABLE Bo...	0 row(s) affected
✓ 7	09:39:42	CREATE TABLE Cos...	0 row(s) affected
✓ 8	10:15:56	INSERT INTO books...	50 row(s) affected Records: 50 Duplicates: 0 Warnings: 0
✓ 9	10:39:05	INSERT INTO custo...	15 row(s) affected Records: 15 Duplicates: 0 Warnings: 0

Object Info Session

No object selected

5. Using BookID in Books Table and CustomerID in Customer Table insert data into BooksBorrowed table to have atleast 50 records.

Code: INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES ('1', '1', '1', '14');



6. Retrieve the total number of books in each genre.

Code: SELECT Genre, COUNT(*) as BooksbyGenre

FROM Books

GROUP BY Genre;

The screenshot shows the MySQL Workbench interface. The 'SQL File 10*' editor contains the following query:

```
155 • SELECT Genre, COUNT(*) as BooksbyGenre
156 FROM Books
157 GROUP BY Genre;
158
```

The 'Result Grid' displays the query results:

Genre	BooksbyGenre
Fiction	16
Autobiography	1
History	4
Biography	2
Short Stories	1
Romance	5
Humor	4
Mythology	5
Historical Fiction	3
Philosophy	2
Economics	1
Drama	1
Science	1
Thriller	1
Satire	2
Travel	1

The 'Action Output' pane shows the execution log:

#	Time	Action
75	18:11:15	INSERT INTO BooksBorrowed (SiNo, BookID, CustomerID, DaysBookRetained) VALUES(48, '47', '15', '21')
76	18:11:29	INSERT INTO BooksBorrowed (SiNo, BookID, CustomerID, DaysBookRetained) VALUES(49, '49', '11', '14')
77	18:11:34	INSERT INTO BooksBorrowed (SiNo, BookID, CustomerID, DaysBookRetained) VALUES(50, '2', '10', '7')
78	18:17:47	SELECT Genre, COUNT(*) as BooksbyGenre FROM Books GROUP BY Genre LIMIT 0, 1000

7. Retrieve total number of books borrowed.

Code: SELECT COUNT(*) as TotalBooksBorrowed
FROM BooksBorrowed;

The screenshot displays the MySQL Workbench interface for a local instance of MySQL 8.0. The left sidebar shows the 'SCHEMAS' panel with a tree view containing 'diabetes_prediction', 'hrdata_mysql', 'library' (expanded), 'Tables', 'Views', 'Stored Procedures', 'Functions', and 'sys'. The main editor window shows a SQL script with three queries:

```
153 • INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES(45, '41', '9', '14')
154
155 • SELECT Genre, COUNT(*) as BooksbyGenre
156 FROM Books
157 GROUP BY Genre;
158
159 • SELECT COUNT(*) as TotalBooksBorrowed
160 FROM BooksBorrowed;
161
```

Below the editor, the 'Result Grid' shows the results of the third query:

TotalBooksBorrowed
49

The bottom section of the interface shows the 'Administration' tab with 'Schemas' selected. The 'Information' panel displays 'No object selected'. The 'Output' panel shows the 'Action Output' for the executed queries:

#	Time	Action
72	18:10:47	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES(45, '41', '9', '14')
73	18:10:57	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES(46, '43', '11', '7')
74	18:11:05	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES(47, '45', '13', '30')
75	18:11:15	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES(48, '47', '15', '21')
76	18:11:29	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES(49, '49', '11', '14')
77	18:11:34	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES(50, '2', '10', '7')
78	18:17:47	SELECT Genre, COUNT(*) as BooksbyGenre FROM Books GROUP BY Genre LIMIT 0, 1000
79	18:37:28	SELECT COUNT(*) as TotalBooksBorrowed FROM BooksBorrowed LIMIT 0, 1000

8. retrieve names of books borrowed without repetition:

Code: SELECT books.bookid, books.bookname, COUNT(booksborrowed.bookid) AS borrow_count FROM books

JOIN booksborrowed ON books.bookid = booksborrowed.bookid

GROUP BY books.bookid, books.bookname

HAVING COUNT(booksborrowed.bookid) = 1;

The screenshot shows the MySQL Workbench interface. On the left, the 'SCHEMAS' pane displays a tree view of the database structure, including tables like 'books', 'booksborrowed', 'cost', 'customers', 'Views', 'Stored Procedures', and 'Functions'. The main editor window displays the following SQL query:

```
160 FROM BooksBorrowed;
161
162 • SELECT books.bookid, books.bookname, COUNT(booksborrowed.bookid) AS borrow_count
163 FROM books
164 JOIN booksborrowed ON books.bookid = booksborrowed.bookid
165 GROUP BY books.bookid, books.bookname
166 HAVING COUNT(booksborrowed.bookid) = 1;
167
```

Below the query editor, the 'Result Grid' shows the results of the query. The results are displayed in a table with three columns: 'bookid', 'bookname', and 'borrow_count'.

bookid	bookname	borrow_count
1	The Guide	1
3	My Experiments with Truth	1
4	Discovery of India	1
5	The White Tiger	1
6	Wings of Fire	1
7	Interpreter of Maladies	1
8	A Suitable Boy	1
9	The Namesake	1
10	Inheritance of Loss	1

At the bottom, the 'Output' pane shows the execution details of the query, including the time taken (10:39:04) and the message: 'SELECT books.bookid, books.bookname, COUNT(booksborrowed.bookid) AS borrow_count FROM books JOI... 37 row(s) returned'.

9. Retrieve the customerName, BookName for books borrowed.

Code: SELECT Customers.CustomerName, Books.BookName

FROM BooksBorrowed

JOIN Customers ON BooksBorrowed.CustomerID = Customers.CustomerID

JOIN Books ON BooksBorrowed.BookID = Books.BookID;

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

```
165
166 • SELECT CustomerName,BookName
167 FROM BooksBorrowed
168 JOIN Customers ON BooksBorrowed.CustomerID = Customers.CustomerID
169 JOIN Books ON BooksBorrowed.BookID = Books.BookID;
170
```

The Results window displays the following data:

CustomerName	BookName
Rajesh Reddy	The Guide
Rajesh Reddy	The Inheritance of Loss
Rajesh Reddy	Serious Men
Priya Naidu	Half Girlfriend
Priya Naidu	Shiva Trilogy: The Secret of the Nagas
Priya Naidu	Five Point Someone
Priya Naidu	The Glass Palace
Priya Naidu	The Three Mistakes of My Life
Suresh Kumar	The God of Small Things
Suresh Kumar	The Glass Palace
Suresh Kumar	The Great Indian Novel
Deepika	The Palace of Illusions
Deepika	2 States
Deepika	The Elephant Paradigm
Ravi	My Experiments with Truth
Ravi	Wings of Fire
Ravi	Sita: Warrior of Mithila
Ravi	Five Point Someone

The Action Output window shows the following log entries:

#	Time	Action
80	18:50:11	SELECT DISTINCT BookName FROM BooksBorrowed JOIN Books ON BooksBorrowed.BookID = Books.BookID LIMIT 0, 1000
81	18:55:26	SELECT CustomerName,BookName FROM BooksBorrowed JOIN Customers ON BooksBorrowed.CustomerID = Customers.CustomerID JOIN Books ON BooksBorrowed.BookID = Books.BookID LIMIT 0, 1000

10. Insert below data into Cost table 100pages -10 rs, 200pages -15rs, 300 pages - 30rs, 1000 pages -50Rs.

Code: INSERT INTO Cost (MaxPages, CostPerDay)

VALUES (100, 10),(200, 15),(300, 30), (1000, 50);

The screenshot shows the MySQL Workbench interface for a local instance of MySQL 8.0. The left sidebar displays the 'SCHEMAS' tree with a filter on 'library'. The main editor window shows a SQL script with the following content:

```
166 • SELECT CustomerName, BookName
167 FROM BooksBorrowed
168 JOIN Customers ON BooksBorrowed.CustomerID = Customers.CustomerID
169 JOIN Books ON BooksBorrowed.BookID = Books.BookID;
170
171 • INSERT INTO Cost (MaxPages, CostPerDay)
172 VALUES
173     (100, 10),
174     (200, 15),
175     (300, 30),
176     (1000, 50);
```

The 'Output' tab at the bottom shows the 'Action Output' of the executed queries. The results are as follows:

#	Time	Action
69	18:10:23	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES('42', '35', '3', '7')
70	18:10:30	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES('43', '37', '5', '30')
71	18:10:38	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES('44', '39', '7', '21')
72	18:10:47	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES('45', '41', '9', '14')
73	18:10:57	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES('46', '43', '11', '7')
74	18:11:05	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES('47', '45', '13', '30')
75	18:11:15	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES('48', '47', '15', '21')
76	18:11:29	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES('49', '49', '11', '14')
77	18:11:34	INSERT INTO BooksBorrowed (SINo, BookID, CustomerID, DaysBookRetained) VALUES('50', '2', '10', '7')
78	18:17:47	SELECT Genre, COUNT(*) as BooksbyGenre FROM Books GROUP BY Genre LIMIT 0, 1000
79	18:37:28	SELECT COUNT(*) as TotalBooksBorrowed FROM BooksBorrowed LIMIT 0, 1000
80	18:50:11	SELECT DISTINCT BookName FROM BooksBorrowed JOIN Books ON BooksBorrowed.BookID = Books.BookID
81	18:55:26	SELECT CustomerName, BookName FROM BooksBorrowed JOIN Customers ON BooksBorrowed.CustomerID = Cu
82	18:58:06	INSERT INTO Cost (MaxPages, CostPerDay) VALUES (100, 10), (200, 15), (300, 30), (1000, 50)

11. total Earnings by Library.

Code: SELECT SUM(CostPerDay * DaysBookRetained) as TotalEarnings

FROM BooksBorrowed

JOIN Cost ON BooksBorrowed.DaysBookRetained <= Cost.MaxPages;

The screenshot shows the MySQL Workbench interface for a local instance of MySQL 8.0. The 'SQL File 10*' tab is active, displaying the following SQL query:

```
174      (200, 15),
175      (300, 30),
176      (1000, 50);
177
178
179 • SELECT SUM(CostPerDay * DaysBookRetained) as TotalEarnings
180 FROM BooksBorrowed
181 JOIN Cost ON BooksBorrowed.DaysBookRetained <= Cost.MaxPages;
182
183
```

The 'Result Grid' shows the query results:

TotalEarnings
94605

The 'Output' tab is also visible, showing the execution log:

#	Time	Action	Message
81	18:55:26	SELECT...	49 row(s) returned
82	18:58:06	INSERT...	4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0
83	19:02:36	SELECT...	Error Code: 1054. Unknown column 'BooksBorrowed.Pages' in 'on clause'
84	19:24:55	SELECT...	1 row(s) returned
85	19:25:29	SELECT...	1 row(s) returned
86	19:27:41	SELECT...	1 row(s) returned
87	19:27:54	SELECT...	1 row(s) returned

12. Amount paid by each customer. Rank the customers based in amount paid.

Code: SELECT Customers.CustomerName, SUM(CostPerDay * DaysBookRetained) as AmountPaid
FROM BooksBorrowed

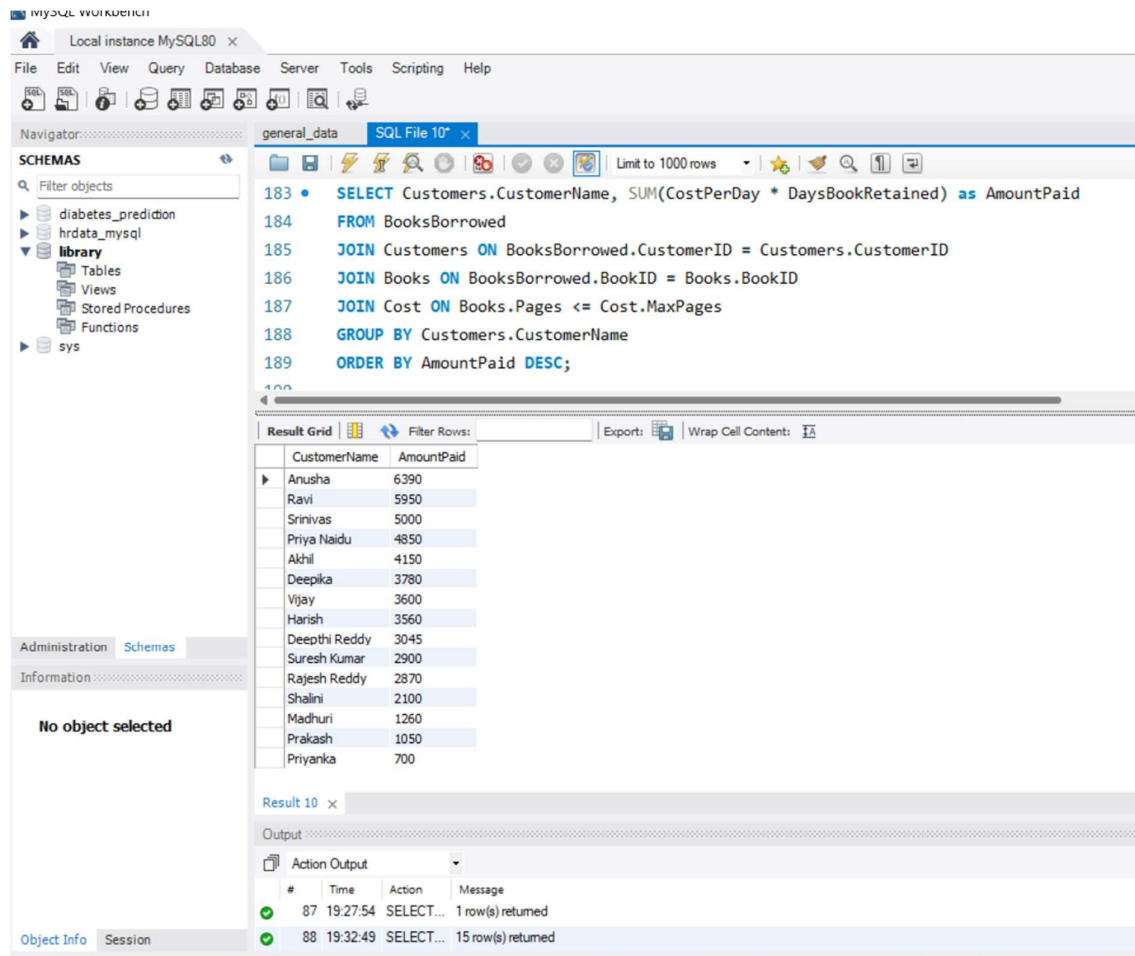
JOIN Customers ON BooksBorrowed.CustomerID = Customers.CustomerID

JOIN Books ON BooksBorrowed.BookID = Books.BookID

JOIN Cost ON Books.Pages <= Cost.MaxPages

GROUP BY Customers.CustomerName

ORDER BY AmountPaid DESC;



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

```
183 • SELECT Customers.CustomerName, SUM(CostPerDay * DaysBookRetained) as AmountPaid
184 FROM BooksBorrowed
185 JOIN Customers ON BooksBorrowed.CustomerID = Customers.CustomerID
186 JOIN Books ON BooksBorrowed.BookID = Books.BookID
187 JOIN Cost ON Books.Pages <= Cost.MaxPages
188 GROUP BY Customers.CustomerName
189 ORDER BY AmountPaid DESC;
```

The Results window displays the output of the query in a table format:

CustomerName	AmountPaid
Anusha	6390
Ravi	5950
Srinivas	5000
Priya Naidu	4850
Akhil	4150
Deepika	3780
Vijay	3600
Harish	3560
Deepthi Reddy	3045
Suresh Kumar	2900
Rajesh Reddy	2870
Shalini	2100
Madhuri	1260
Prakash	1050
Priyanka	700

The bottom of the interface shows the Action Output window with the following entries:

#	Time	Action	Message
87	19:27:54	SELECT...	1 row(s) returned
88	19:32:49	SELECT...	15 row(s) returned