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

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

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

4. Customer

• Customer_Id

- Set as PRIMARY KEY
  • Customer_name
  • Customer_address
  • Reg_date

5. IssueStatus

• Issue_Id

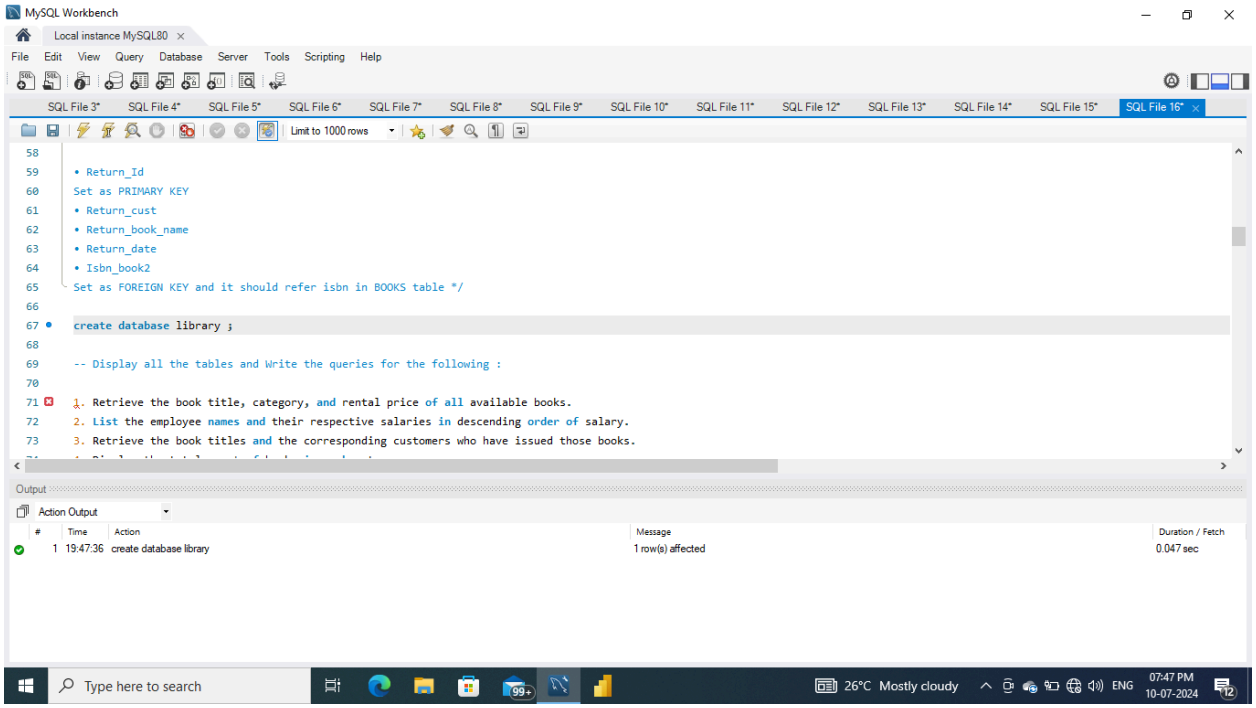
- Set as PRIMARY KEY – Set as FOREIGN KEY and it refer customer_id in CUSTOMER table
  • Issued_cust

. Issued_book_name
• Issue_date
• Isbn_book – Set as FOREIGN KEY and it should refer isbn in BOOKS table

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


MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 14* SQL File 15* SQL File 16*
Limit to 1000 rows
58
59 • Return_Id
60 Set as PRIMARY KEY
61 • Return_cust
62 • Return_book_name
63 • Return_date
64 • Isbn_book2
65 Set as FOREIGN KEY and it should refer isbn in BOOKS table */
66
67 create database library ;
68
69 -- Display all the tables and Write the queries for the following :
70
71 1. Retrieve the book title, category, and rental price of all available books.
72 2. List the employee names and their respective salaries in descending order of salary.
73 3. Retrieve the book titles and the corresponding customers who have issued those books.
Output
Action Output
Time Action Message Duration / Fetch
1 19:47:36 create database library 1 row(s) affected 0.047 sec
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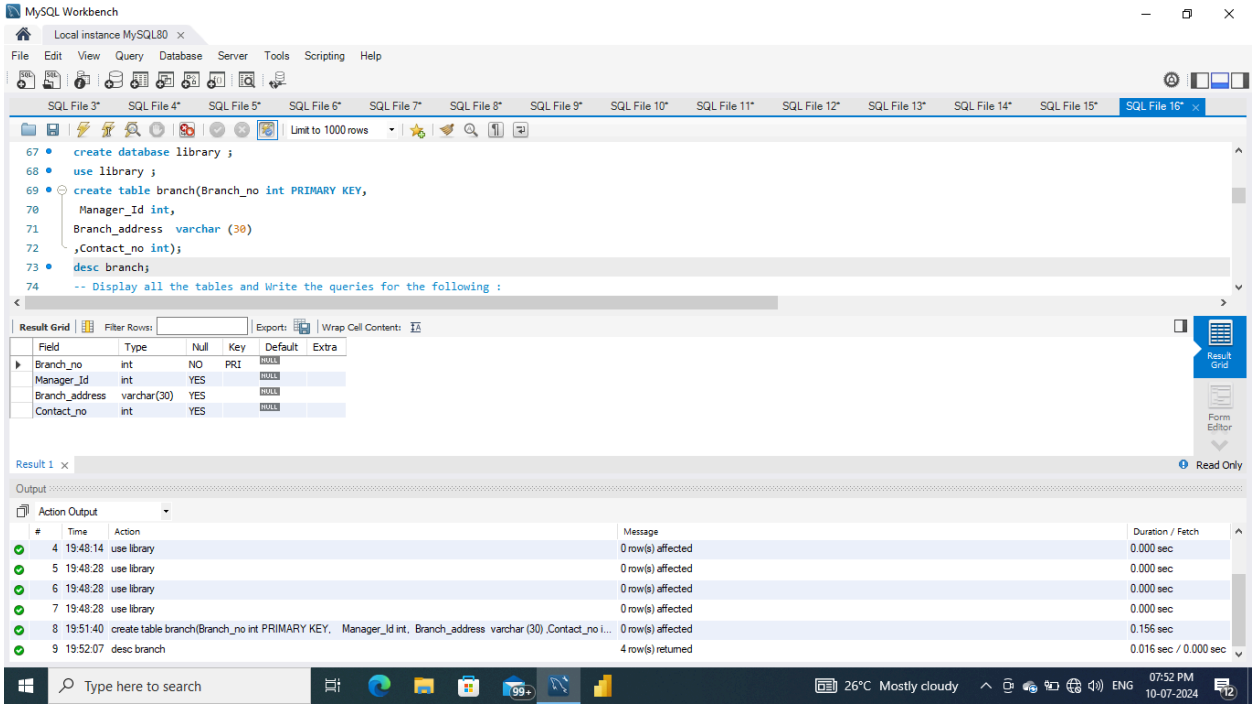
26°C Mostly cloudy
ENG
07:47 PM
10-07-2024


MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 14* SQL File 15* SQL File 16*
Limit to 1000 rows
67 create database library ;
68 use library ;
69 create table branch(Branch_no int PRIMARY KEY,
70 Manager_Id int,
71 Branch_address varchar (30)
72 ,Contact_no int);
73 desc branch;
74 -- Display all the tables and Write the queries for the following :
Result Grid Filter Rows: Export: Wrap Cell Content:
Field Type Null Key Default Extra
Branch_no int NO PRI NULL
Manager_Id int YES NULL
Branch_address varchar(30) YES NULL
Contact_no int YES NULL
Result Grid
Form Editor
Result 1
Read Only
Output
Action Output
Time Action Message Duration / Fetch
4 19:48:14 use library 0 row(s) affected 0.000 sec
5 19:48:28 use library 0 row(s) affected 0.000 sec
6 19:48:28 use library 0 row(s) affected 0.000 sec
7 19:48:28 use library 0 row(s) affected 0.000 sec
8 19:51:40 create table branch(Branch_no int PRIMARY KEY, Manager_Id int, Branch_address varchar (30) ,Contact_no i... 0 row(s) affected 0.156 sec
9 19:52:07 desc branch 4 row(s) returned 0.016 sec / 0.000 sec
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ENG
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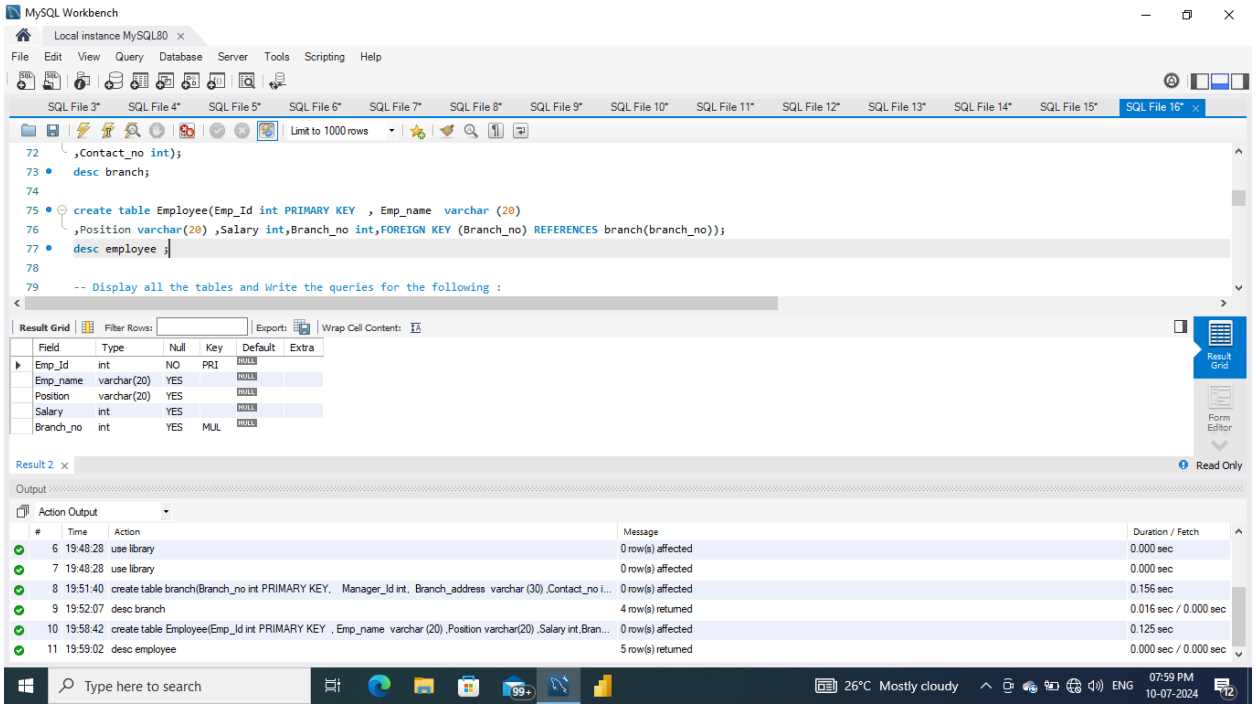
10-07-2024


MySQL Workbench
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File Edit View Query Database Server Tools Scripting Help
SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 14* SQL File 15* SQL File 16*
Limit to 1000 rows
,Contact_no int);
desc branch;
create table Employee(Emp_Id int PRIMARY KEY , Emp_name varchar (20)
,Position varchar(20) ,Salary int,Branch_no int,FOREIGN KEY (Branch_no) REFERENCES branch(branch_no));
desc employee ;
-- Display all the tables and Write the queries for the following :
Result Grid Filter Rows: Export: Wrap Cell Content:
Field Type Null Key Default Extra
Emp_Id int NO PRI NULL
Emp_name varchar(20) YES NULL
Position varchar(20) YES NULL
Salary int YES NULL
Branch_no int YES MUL NULL
Result Grid
Form Editor
Result 2
Read Only
Output
Action Output
Time Action Message Duration / Fetch
6 19:48:28 use library 0 row(s) affected 0.000 sec
7 19:48:28 use library 0 row(s) affected 0.000 sec
8 19:51:40 create table branch(Branch_no int PRIMARY KEY, Manager_Id int, Branch_address varchar (30) ,Contact_no i... 0 row(s) affected 0.156 sec
9 19:52:07 desc branch 4 row(s) returned 0.016 sec / 0.000 sec
10 19:58:42 create table Employee(Emp_Id int PRIMARY KEY , Emp_name varchar (20) ,Position varchar(20) ,Salary int,Bran... 0 row(s) affected 0.125 sec
11 19:59:02 desc employee 5 row(s) returned 0.000 sec / 0.000 sec
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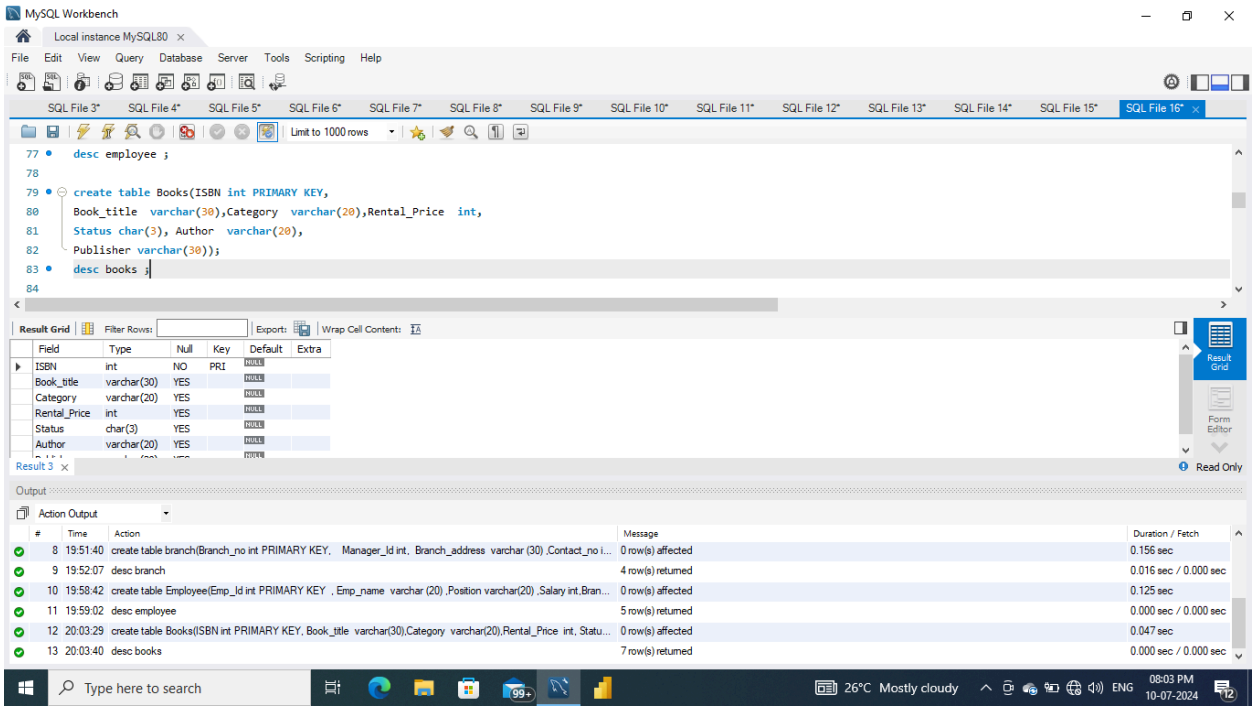
10-07-2024


MySQL Workbench
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File Edit View Query Database Server Tools Scripting Help
SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 14* SQL File 15* SQL File 16*
Limit to 1000 rows
desc employee ;
create table Books(ISBN int PRIMARY KEY,
Book_title varchar(30),Category varchar(20),Rental_Price int,
Status char(3), Author varchar(20),
Publisher varchar(30));
desc books ;
Result Grid Filter Rows: Export: Wrap Cell Content:
Field Type Null Key Default Extra
ISBN int NO PRI NULL
Book_title varchar(30) YES NULL
Category varchar(20) YES NULL
Rental_Price int YES NULL
Status char(3) YES NULL
Author varchar(20) YES NULL
Result Grid
Form Editor
Result 3
Read Only
Output
Action Output
Time Action Message Duration / Fetch
8 19:51:40 create table branch(Branch_no int PRIMARY KEY, Manager_Id int, Branch_address varchar (30) ,Contact_no i... 0 row(s) affected 0.156 sec
9 19:52:07 desc branch 4 row(s) returned 0.016 sec / 0.000 sec
10 19:58:42 create table Employee(Emp_Id int PRIMARY KEY , Emp_name varchar (20) ,Position varchar(20) ,Salary int,Bran... 0 row(s) affected 0.125 sec
11 19:59:02 desc employee 5 row(s) returned 0.000 sec / 0.000 sec
12 20:03:29 create table Books(ISBN int PRIMARY KEY, Book_title varchar(30),Category varchar(20),Rental_Price int, Statu... 0 row(s) affected 0.047 sec
13 20:03:40 desc books 7 row(s) returned 0.000 sec / 0.000 sec
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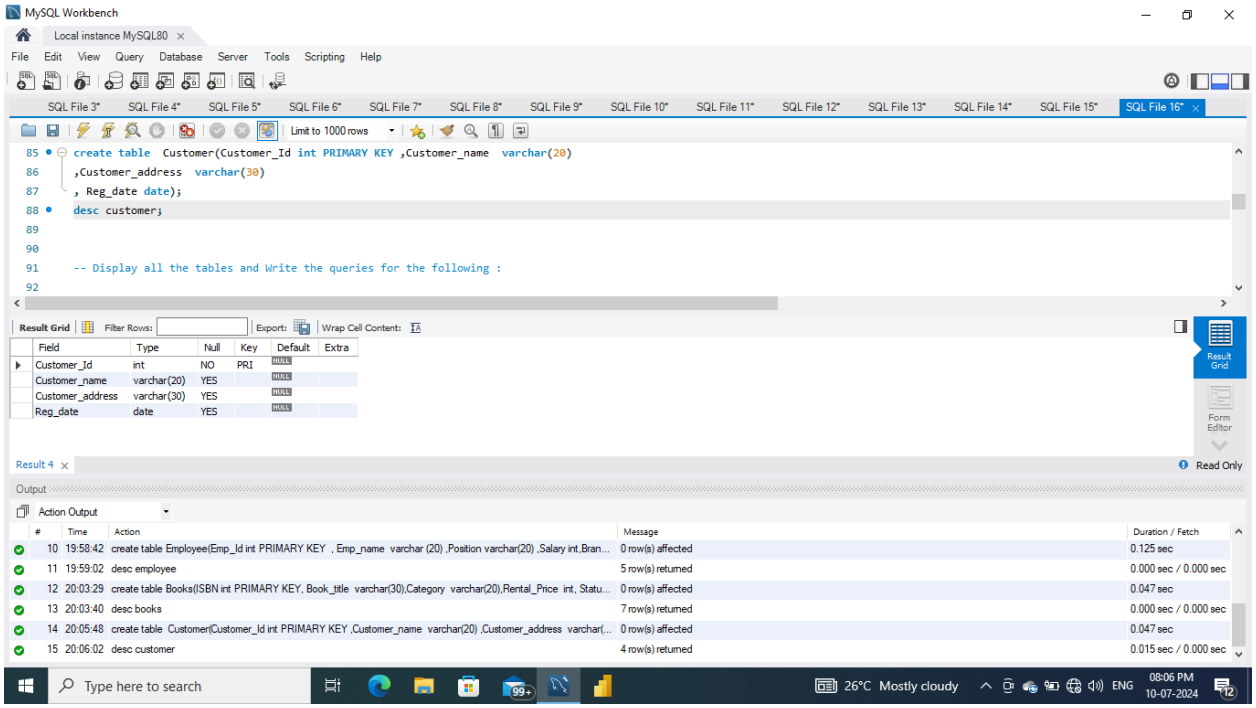
ENG
08:03 PM
10-07-2024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File Edit View Query Database Server Tools Scripting Help
SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 14* SQL File 15* SQL File 16*
Limit to 1000 rows
85 create table Customer(Customer_Id int PRIMARY KEY ,Customer_name varchar(20)
86 ,Customer_address varchar(30)
87 , Reg_date date);
88 desc customer;
89
90
91 -- Display all the tables and Write the queries for the following :
92
Result Grid Filter Rows: Export: Wrap Cell Content:
Field Type Null Key Default Extra
Customer_Id int NO PRI NULL
Customer_name varchar(20) YES NULL
Customer_address varchar(30) YES NULL
Reg_date date YES NULL
Result 4
Read Only
Output
Action Output
Time Action Message Duration / Fetch
10 19:58:42 create table Employee(Emp_Id int PRIMARY KEY , Emp_name varchar (20) ,Position varchar(20) ,Salary int,Bran... 0 row(s) affected 0.125 sec
11 19:59:02 desc employee 5 row(s) returned 0.000 sec / 0.000 sec
12 20:03:29 create table Books(ISBN int PRIMARY KEY, Book_title varchar(30),Category varchar(20),Rental_Price int, Statu... 0 row(s) affected 0.047 sec
13 20:03:40 desc books 7 row(s) returned 0.000 sec / 0.000 sec
14 20:05:48 create table Customer(Customer_Id int PRIMARY KEY ,Customer_name varchar(20) ,Customer_address varchar(... 0 row(s) affected 0.047 sec
15 20:06:02 desc customer 4 row(s) returned 0.015 sec / 0.000 sec
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ENG
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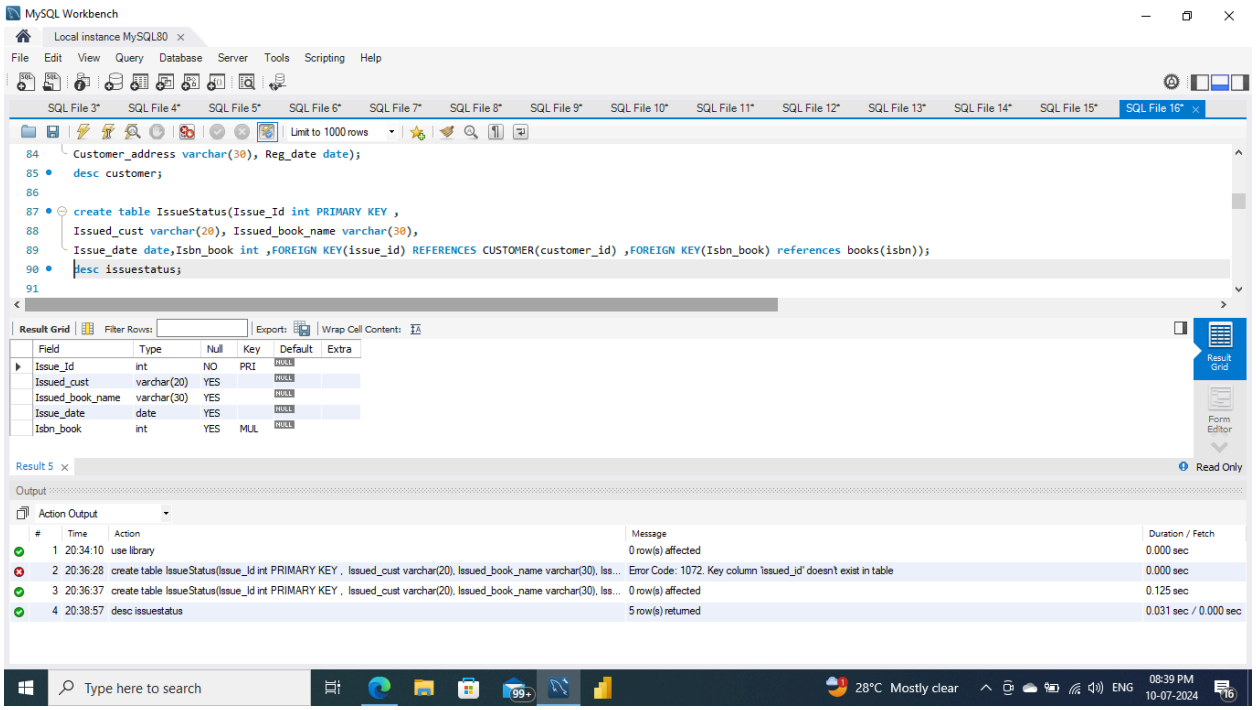
10-07-2024


MySQL Workbench
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File Edit View Query Database Server Tools Scripting Help
SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 14* SQL File 15* SQL File 16*
Limit to 1000 rows
84 Customer_address varchar(30), Reg_date date);
85 desc customer;
86
87 create table IssueStatus(Issue_Id int PRIMARY KEY ,
88 Issued_cust varchar(20), Issued_book_name varchar(30),
89 Issue_date date,Isbn_book int ,FOREIGN KEY(issue_id) REFERENCES CUSTOMER(customer_id) ,FOREIGN KEY(Isbn_book) references books(isbn));
90 desc issuestatus;
91
Result Grid Filter Rows: Export: Wrap Cell Content:
Field Type Null Key Default Extra
Issue_Id int NO PRI NULL
Issued_cust varchar(20) YES NULL
Issued_book_name varchar(30) YES NULL
Issue_date date YES NULL
Isbn_book int YES MUL NULL
Result 5
Read Only
Output
Action Output
Time Action Message Duration / Fetch
1 20:34:10 use library 0 row(s) affected 0.000 sec
2 20:36:28 create table IssueStatus(Issue_Id int PRIMARY KEY , Issued_cust varchar(20), Issued_book_name varchar(30), Iss... Error Code: 1072. Key column 'issued_id' doesn't exist in table 0.000 sec
3 20:36:37 create table IssueStatus(Issue_Id int PRIMARY KEY , Issued_cust varchar(20), Issued_book_name varchar(30), Iss... 0 row(s) affected 0.125 sec
4 20:38:57 desc issuestatus 5 row(s) returned 0.031 sec / 0.000 sec
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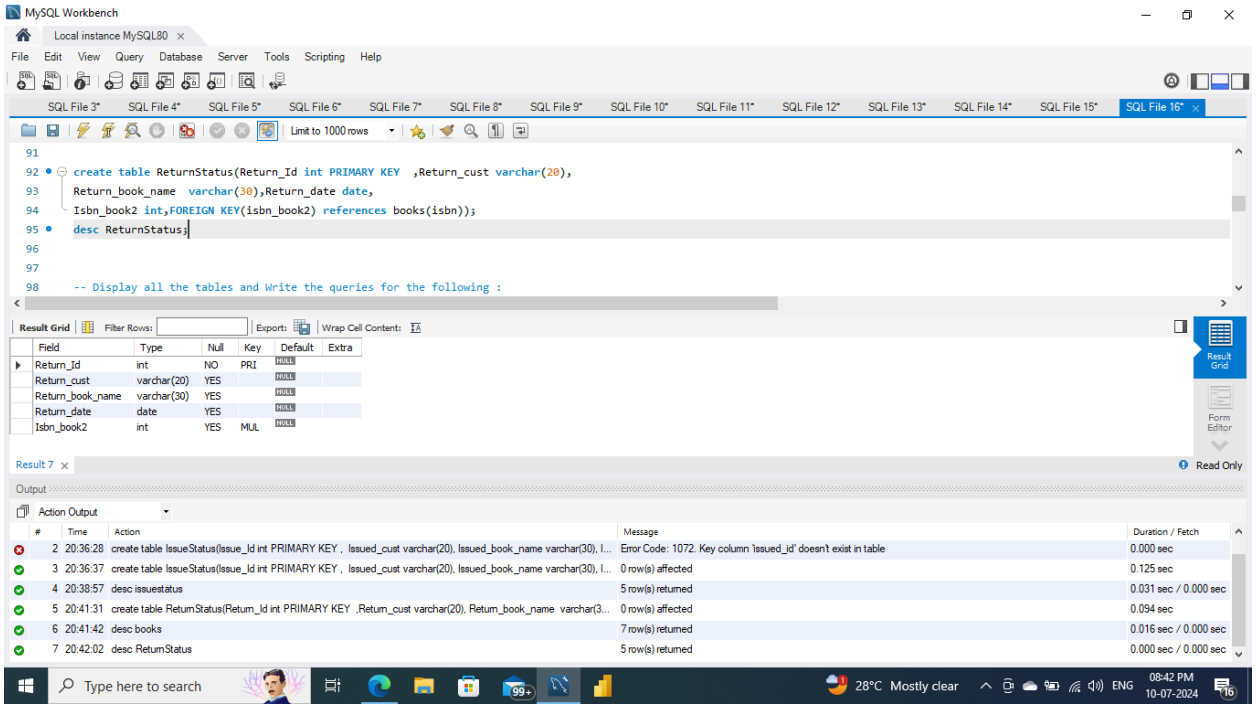
MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 14* SQL File 15* SQL File 16*
Limit to 1000 rows
91
92 create table ReturnStatus(Return_Id int PRIMARY KEY ,Return_cust varchar(20),
93 Return_book_name varchar(30),Return_date date,
94 Isbn_book2 int,FOREIGN KEY(isbn_book2) references books(isbn));
95 desc ReturnStatus;
96
97
98 -- Display all the tables and Write the queries for the following :
Result Grid Filter Rows: Export: Wrap Cell Content:
Field Type Null Key Default Extra
Return_Id int NO PRI NULL
Return_cust varchar(20) YES NULL
Return_book_name varchar(30) YES NULL
Return_date date YES NULL
Isbn_book2 int YES MUL NULL
Result Grid
Form Editor
Result 7
Read Only
Output
Action Output
Time Action Message Duration / Fetch
2 20:36:28 create table IssueStatus(Issue_Id int PRIMARY KEY , Issued_cust varchar(20), Issued_book_name varchar(30), I... Error Code: 1072. Key column 'issued_id' doesn't exist in table 0.000 sec
3 20:36:37 create table IssueStatus(Issue_Id int PRIMARY KEY , Issued_cust varchar(20), Issued_book_name varchar(30), I... 0 row(s) affected 0.125 sec
4 20:38:57 desc issuestatus 5 row(s) returned 0.031 sec / 0.000 sec
5 20:41:31 create table ReturnStatus(Return_Id int PRIMARY KEY ,Return_cust varchar(20), Return_book_name varchar(3... 0 row(s) affected 0.094 sec
6 20:41:42 desc books 7 row(s) returned 0.016 sec / 0.000 sec
7 20:42:02 desc ReturnStatus 5 row(s) returned 0.000 sec / 0.000 sec
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ENG
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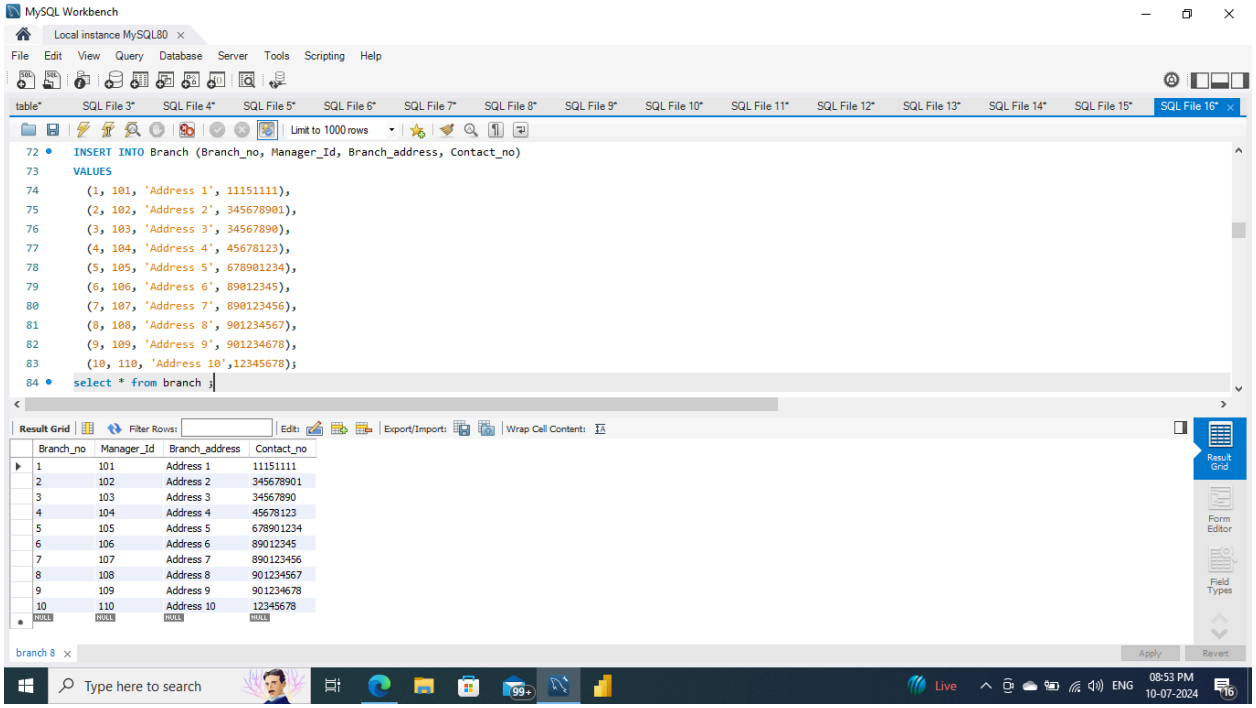
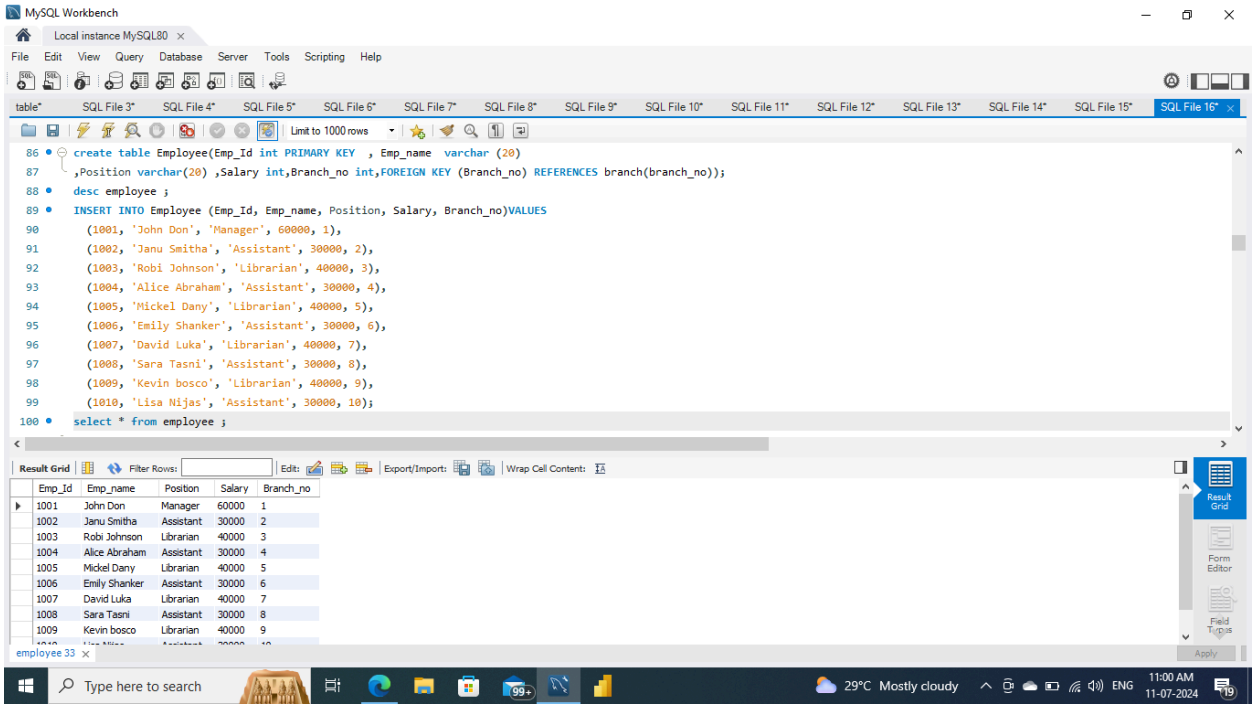

MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
table* SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 14* SQL File 15* SQL File 16*
Limit to 1000 rows
72 INSERT INTO Branch (Branch_no, Manager_Id, Branch_address, Contact_no)
73 VALUES
74 (1, 101, 'Address 1', 11151111),
75 (2, 102, 'Address 2', 345678901),
76 (3, 103, 'Address 3', 34567890),
77 (4, 104, 'Address 4', 45678123),
78 (5, 105, 'Address 5', 678901234),
79 (6, 106, 'Address 6', 89012345),
80 (7, 107, 'Address 7', 890123456),
81 (8, 108, 'Address 8', 901234567),
82 (9, 109, 'Address 9', 901234678),
83 (10, 110, 'Address 10',12345678);
84 select * from branch ;
Result Grid Filter Rows: Edit: Export/Import: Wrap Cell Content:
Branch_no Manager_Id Branch_address Contact_no
1 101 Address 1 11151111
2 102 Address 2 345678901
3 103 Address 3 34567890
4 104 Address 4 45678123
5 105 Address 5 678901234
6 106 Address 6 89012345
7 107 Address 7 890123456
8 108 Address 8 901234567
9 109 Address 9 901234678
10 110 Address 10 12345678
Result Grid
Form Editor
Field Types
branch 8
Apply
Revert
Type here to search
Live
ENG
08:53 PM
10-07-2024


MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
table" SQL File 3" SQL File 4" SQL File 5" SQL File 6" SQL File 7" SQL File 8" SQL File 9" SQL File 10" SQL File 11" SQL File 12" SQL File 13" SQL File 14" SQL File 15" SQL File 16"
Limit to 1000 rows
86 create table Employee(Emp_Id int PRIMARY KEY , Emp_name varchar (20)
87 ,Position varchar(20) ,Salary int,Branch_no int,FOREIGN KEY (Branch_no) REFERENCES branch(branch_no));
88 desc employee ;
89 INSERT INTO Employee (Emp_Id, Emp_name, Position, Salary, Branch_no)VALUES
90 (1001, 'John Don', 'Manager', 60000, 1),
91 (1002, 'Janu Smitha', 'Assistant', 30000, 2),
92 (1003, 'Robi Johnson', 'Librarian', 40000, 3),
93 (1004, 'Alice Abraham', 'Assistant', 30000, 4),
94 (1005, 'Mickel Dany', 'Librarian', 40000, 5),
95 (1006, 'Emily Shanker', 'Assistant', 30000, 6),
96 (1007, 'David Luka', 'Librarian', 40000, 7),
97 (1008, 'Sara Tasni', 'Assistant', 30000, 8),
98 (1009, 'Kevin bosco', 'Librarian', 40000, 9),
99 (1010, 'Lisa Nijas', 'Assistant', 30000, 10);
100 select * from employee ;
Result Grid Filter Rows: Edit: Export/Import: Wrap Cell Content:
Emp_Id Emp_name Position Salary Branch_no
1001 John Don Manager 60000 1
1002 Janu Smitha Assistant 30000 2
1003 Robi Johnson Librarian 40000 3
1004 Alice Abraham Assistant 30000 4
1005 Mickel Dany Librarian 40000 5
1006 Emily Shanker Assistant 30000 6
1007 David Luka Librarian 40000 7
1008 Sara Tasni Assistant 30000 8
1009 Kevin bosco Librarian 40000 9
employee 33
Result Grid
Form Editor
Field Types
Apply
Type here to search
29°C Mostly cloudy
ENG
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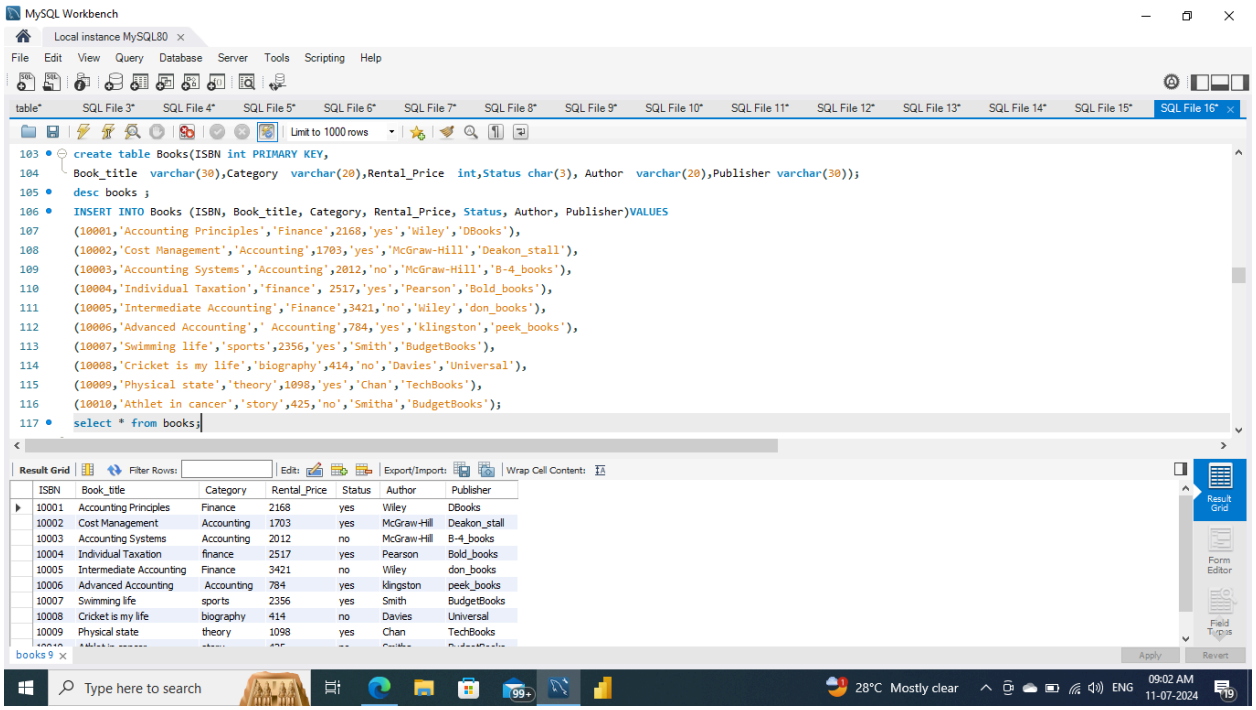
11-07-2024


MySQL Workbench
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File Edit View Query Database Server Tools Scripting Help
table" SQL File 3" SQL File 4" SQL File 5" SQL File 6" SQL File 7" SQL File 8" SQL File 9" SQL File 10" SQL File 11" SQL File 12" SQL File 13" SQL File 14" SQL File 15" SQL File 16"
Limit to 1000 rows
103 create table Books(ISBN int PRIMARY KEY,
104 Book_title varchar(30),Category varchar(20),Rental_Price int,Status char(3), Author varchar(20),Publisher varchar(30));
105 desc books ;
106 INSERT INTO Books (ISBN, Book_title, Category, Rental_Price, Status, Author, Publisher)VALUES
107 (10001,'Accounting Principles','Finance',2168,'yes','Wiley','DBooks'),
108 (10002,'Cost Management','Accounting',1703,'yes','McGraw-Hill','Deakon_stall'),
109 (10003,'Accounting Systems','Accounting',2012,'no','McGraw-Hill','B-4_books'),
110 (10004,'Individual Taxation','finance', 2517,'yes','Pearson','Bold_books'),
111 (10005,'Intermediate Accounting','Finance',3421,'no','Wiley','don_books'),
112 (10006,'Advanced Accounting',' Accounting',784,'yes','klingston','peek_books'),
113 (10007,'Swimming life','sports',2356,'yes','Smith','BudgetBooks'),
114 (10008,'Cricket is my life','biography',414,'no','Davies','Universal'),
115 (10009,'Physical state','theory',1098,'yes','Chan','TechBooks'),
116 (10010,'Athlet in cancer','story',425,'no','Smitha','BudgetBooks');
117 select * from books;
Result Grid Filter Rows: Edit: Export/Import: Wrap Cell Content:
ISBN Book_title Category Rental_Price Status Author Publisher
10001 Accounting Principles Finance 2168 yes Wiley DBooks
10002 Cost Management Accounting 1703 yes McGraw-Hill Deakon_stall
10003 Accounting Systems Accounting 2012 no McGraw-Hill B-4_books
10004 Individual Taxation finance 2517 yes Pearson Bold_books
10005 Intermediate Accounting Finance 3421 no Wiley don_books
10006 Advanced Accounting Accounting 784 yes klingston peek_books
10007 Swimming life sports 2356 yes Smith BudgetBooks
10008 Cricket is my life biography 414 no Davies Universal
10009 Physical state theory 1098 yes Chan TechBooks
books 9
Result Grid
Form Editor
Field Types
Apply
Revert
Type here to search
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ENG
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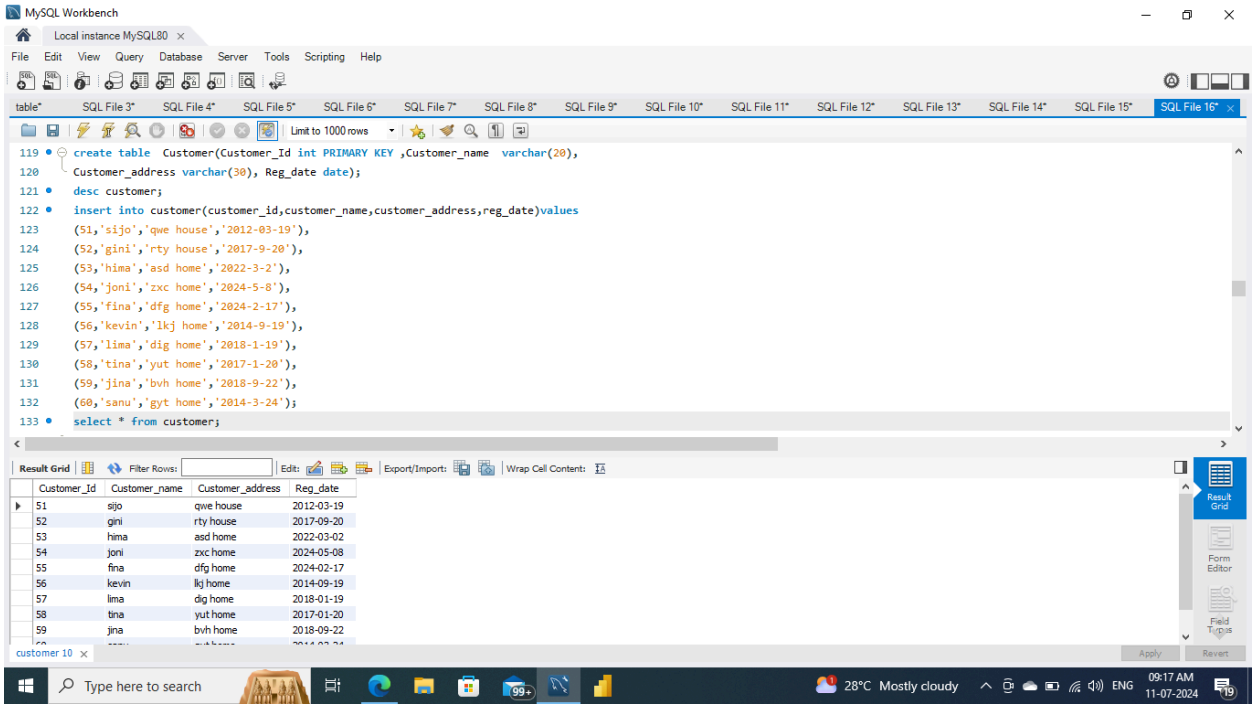
11-07-2024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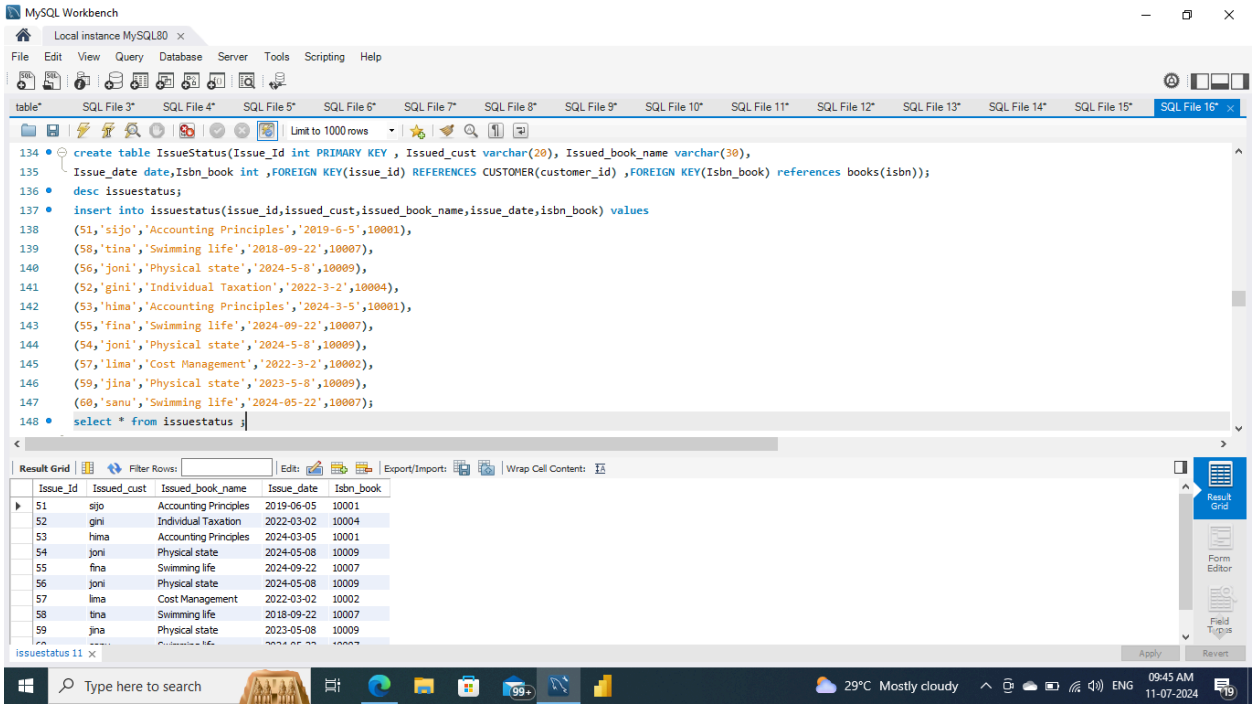
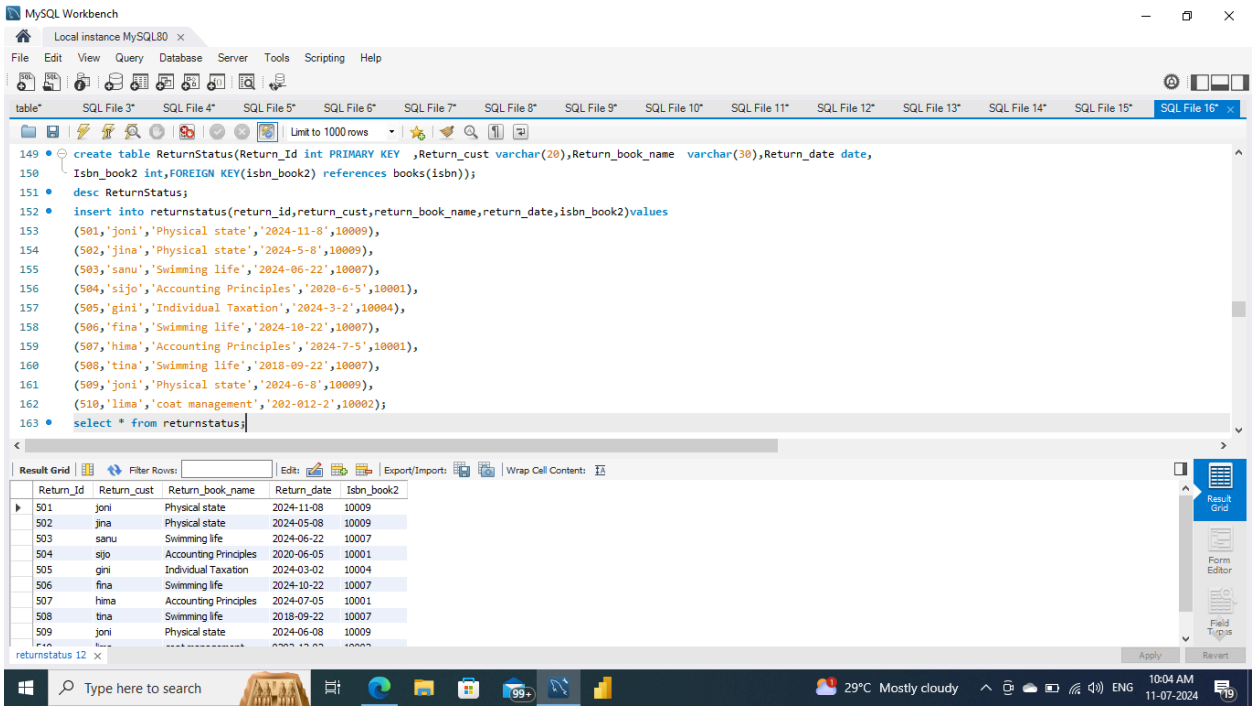
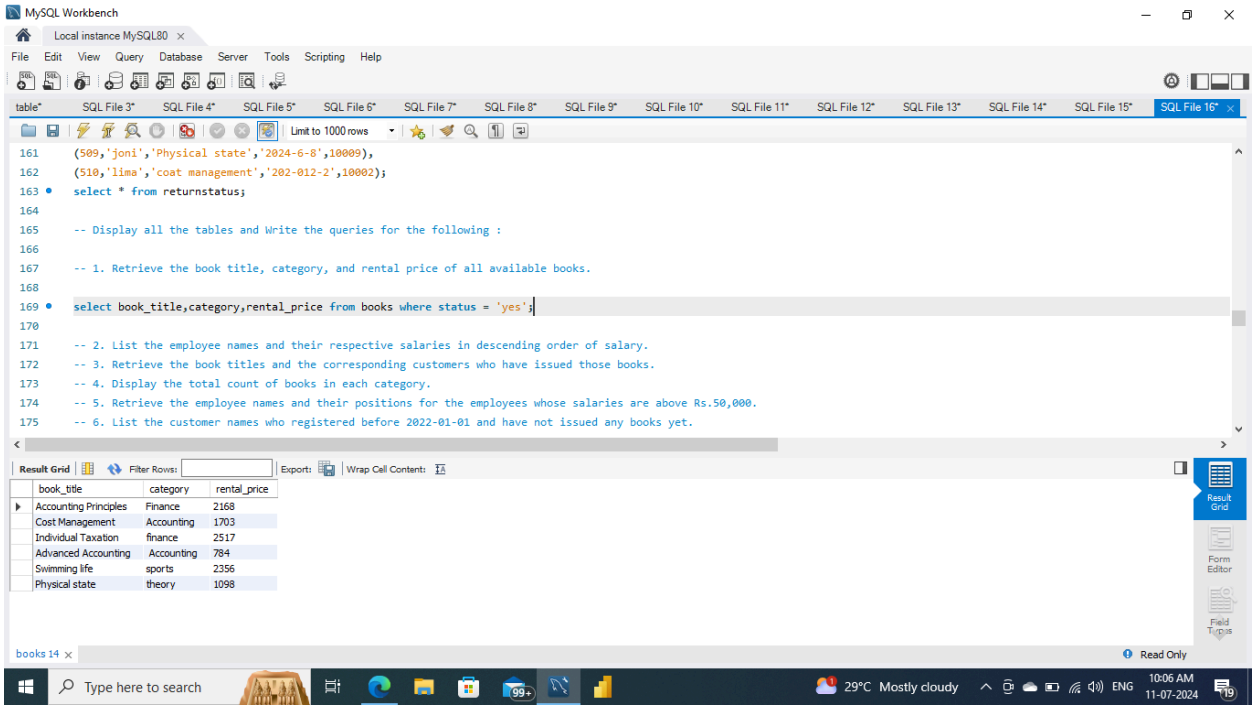
File Edit View Query Database Server Tools Scripting Help
table" SQL File 3" SQL File 4" SQL File 5" SQL File 6" SQL File 7" SQL File 8" SQL File 9" SQL File 10" SQL File 11" SQL File 12" SQL File 13" SQL File 14" SQL File 15" SQL File 16"
Limit to 1000 rows
119 create table Customer(Customer_Id int PRIMARY KEY ,Customer_name varchar(20),
120 Customer_address varchar(30), Reg_date date);
121 desc customer;
122 insert into customer(customer_id,customer_name,customer_address,reg_date)values
123 (51,'sijo','qwe house','2012-03-19'),
124 (52,'gini','rty house','2017-9-20'),
125 (53,'hima','asd home','2022-3-2'),
126 (54,'joni','zxc home','2024-5-8'),
127 (55,'fina','dfg home','2024-2-17'),
128 (56,'kevin','lkj home','2014-9-19'),
129 (57,'lima','dig home','2018-1-19'),
130 (58,'tina','yut home','2017-1-20'),
131 (59,'jina','bvh home','2018-9-22'),
132 (60,'sanu','gyt home','2014-3-24');
133 select * from customer;
Result Grid Filter Rows: Edit: Export/Import: Wrap Cell Content:
Customer_Id Customer_name Customer_address Reg_date
51 sijo qwe house 2012-03-19
52 gini rty house 2017-09-20
53 hima asd home 2022-03-02
54 joni zxc home 2024-05-08
55 fina dfg home 2024-02-17
56 kevin lkj home 2014-09-19
57 lima dig home 2018-01-19
58 tina yut home 2017-01-20
59 jina bvh home 2018-09-22
Result Grid
Form Editor
Field Types
customer 10
Apply
Revert
Type here to search
28°C Mostly cloudy
ENG
09:17 AM
11-07-2024



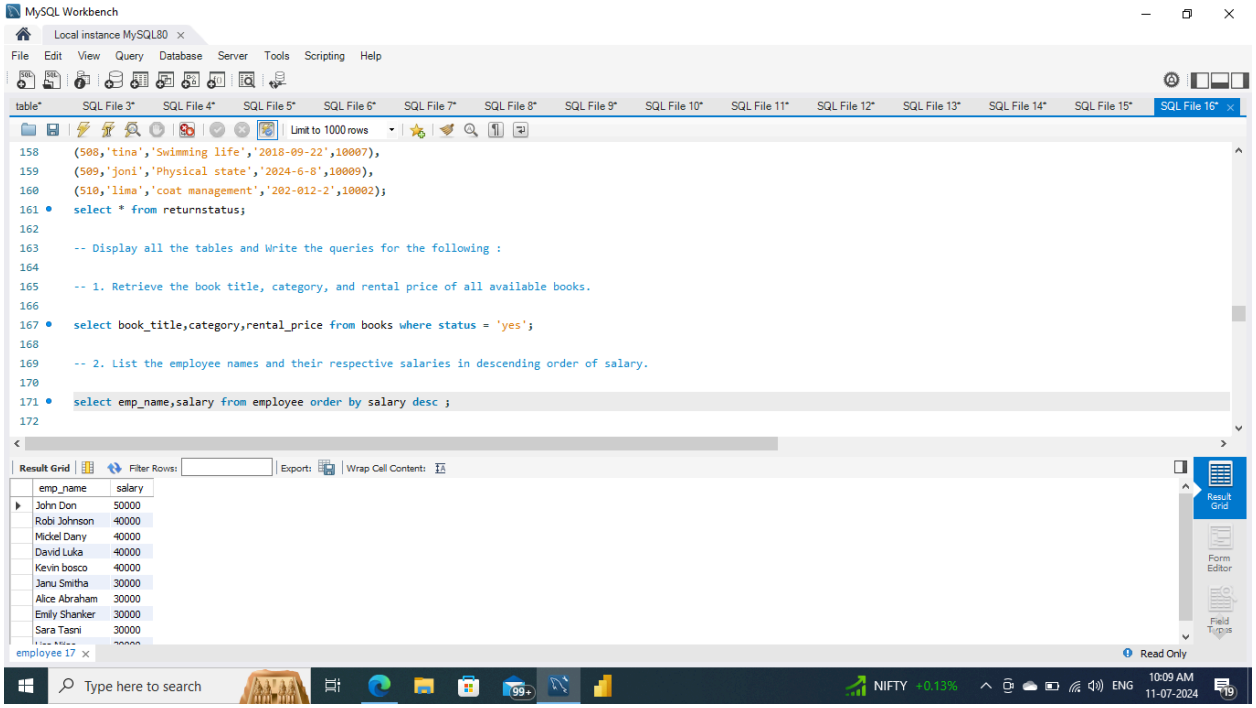


Display all the tables and Write the queries for the following :

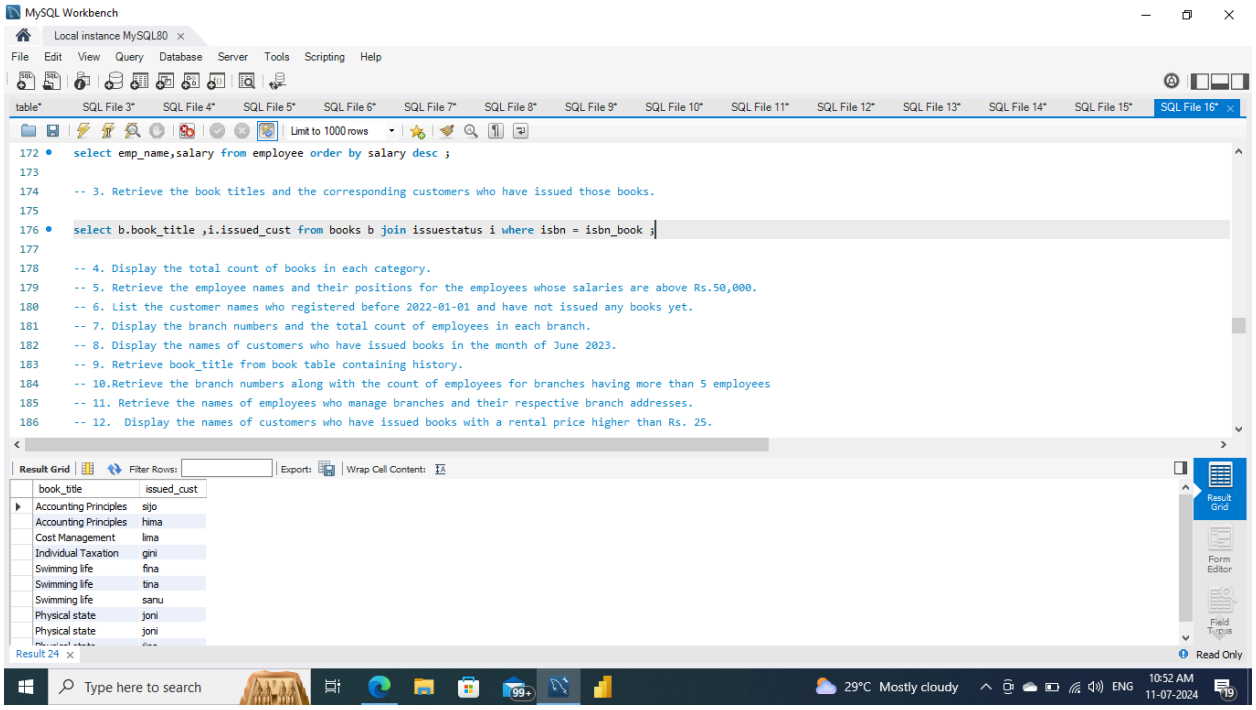
1. Retrieve the book title, category, and rental price of all available books.



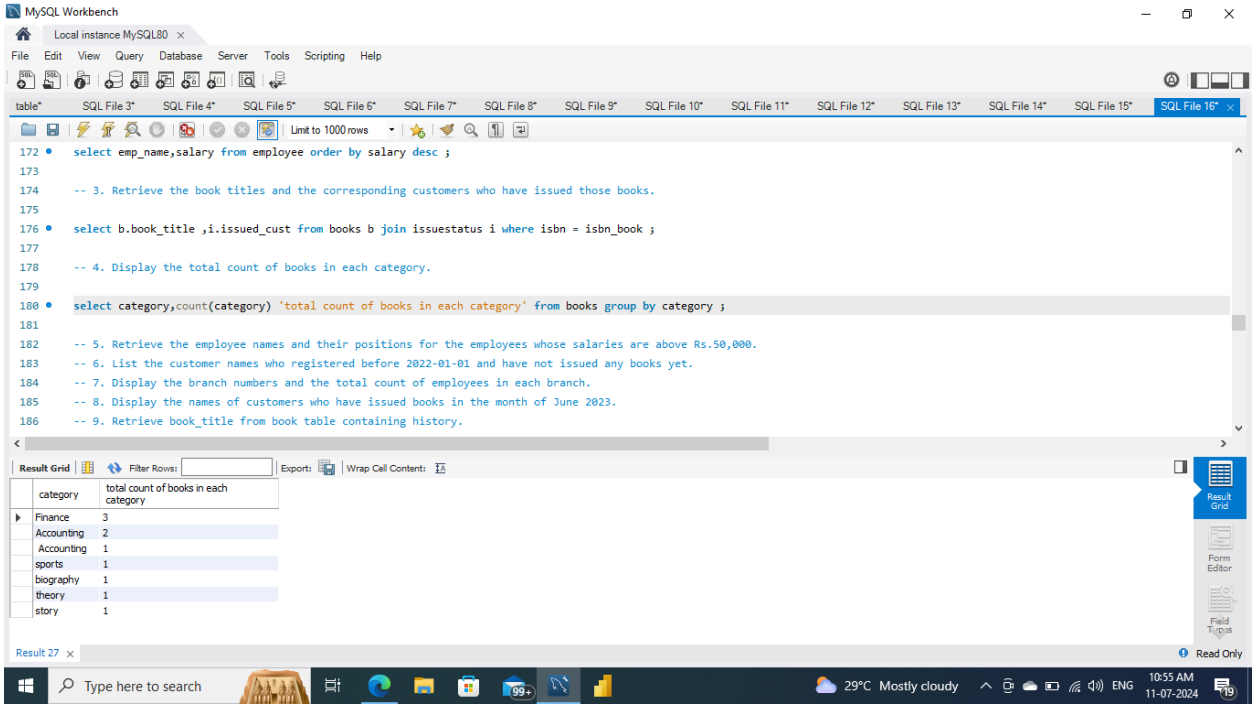
2. List the employee names and their respective salaries in descending order of salary.



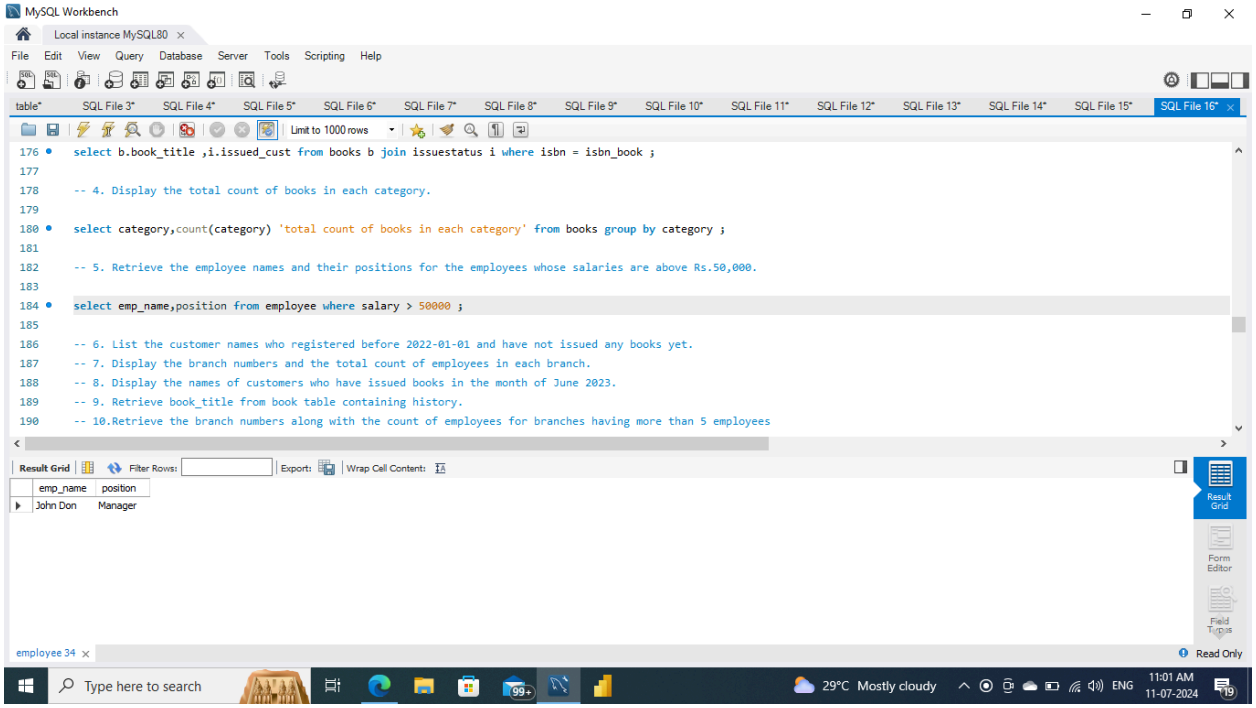
3. Retrieve the book titles and the corresponding customers who have issued those books.



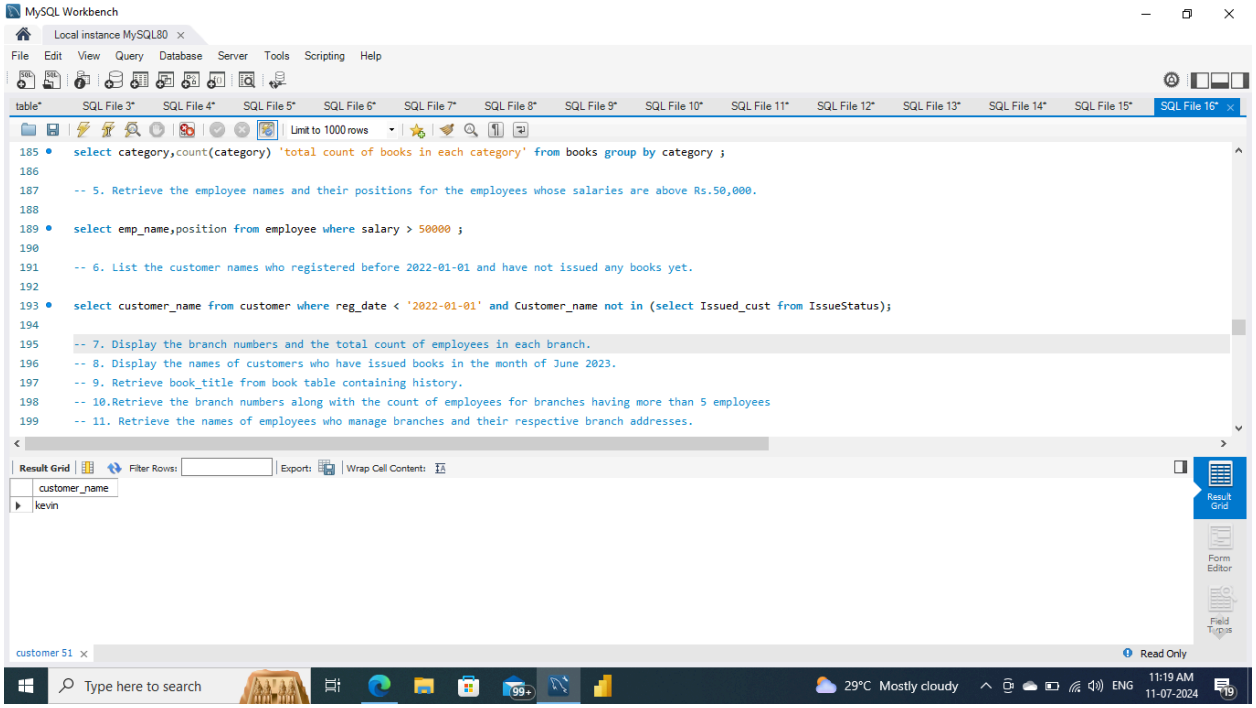
4. Display the total count of books in each category.



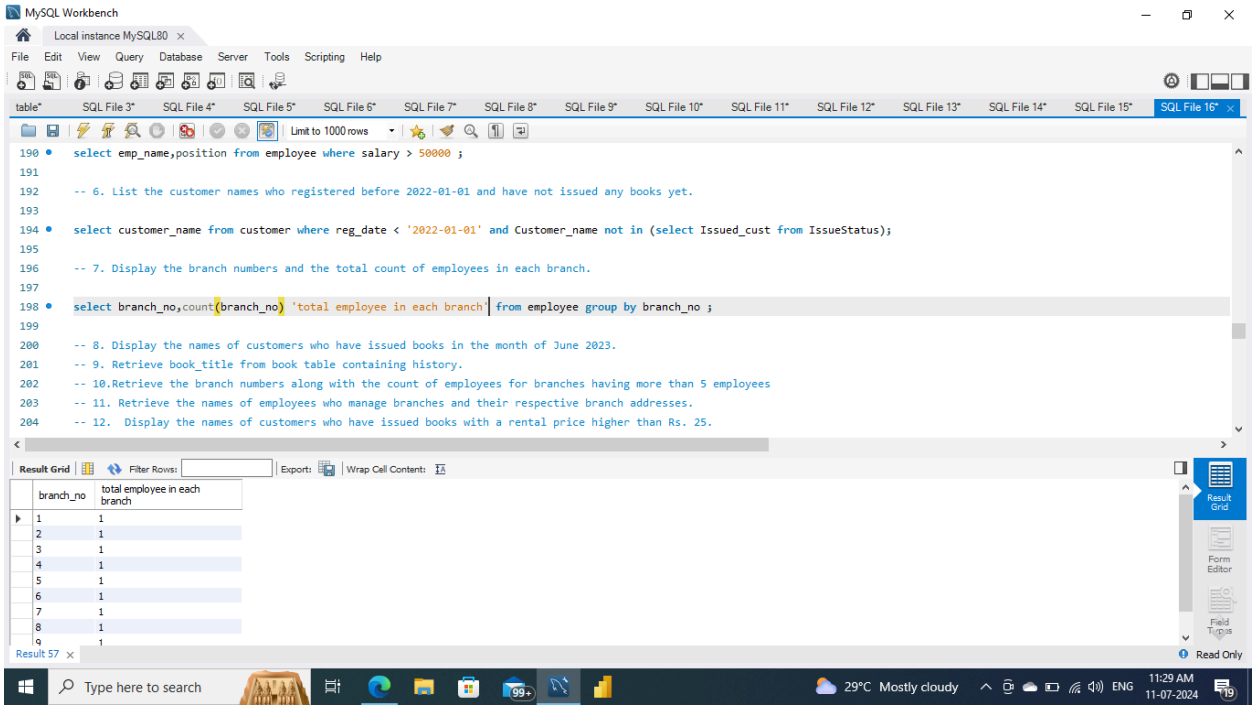
5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.



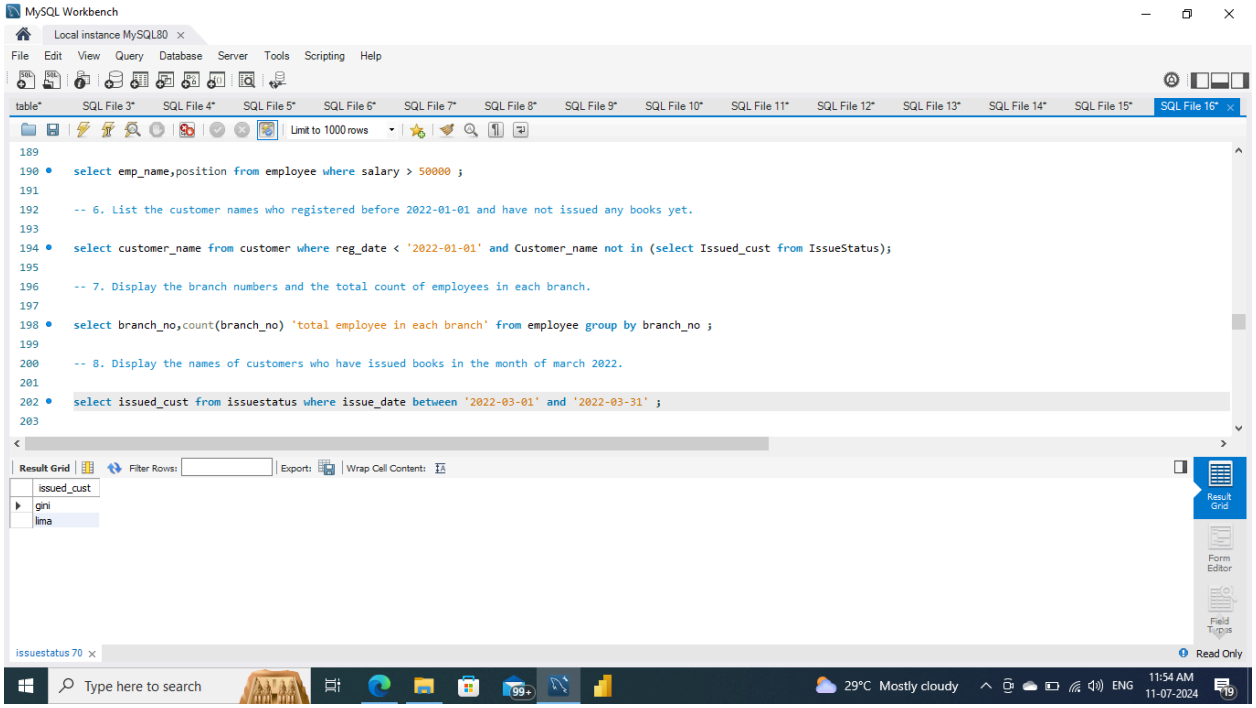
6. List the customer names who registered before 2022-01-01 and have not issued any books yet.



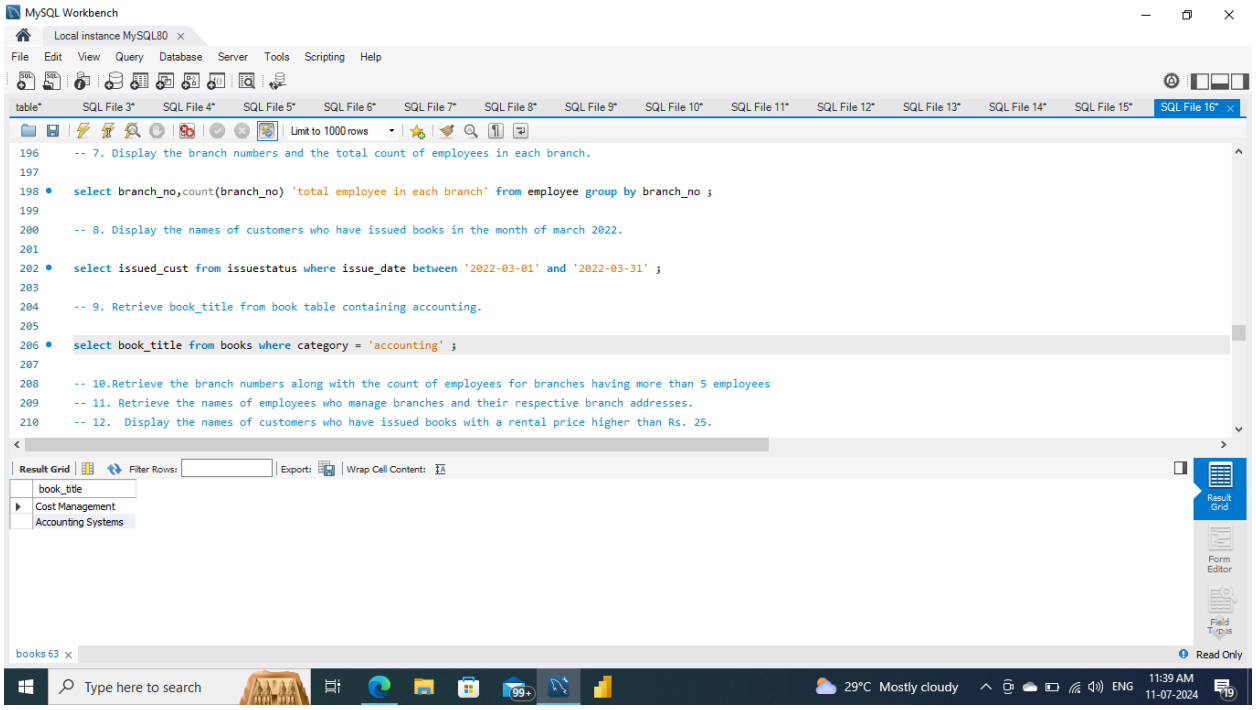
7. Display the branch numbers and the total count of employees in each branch.



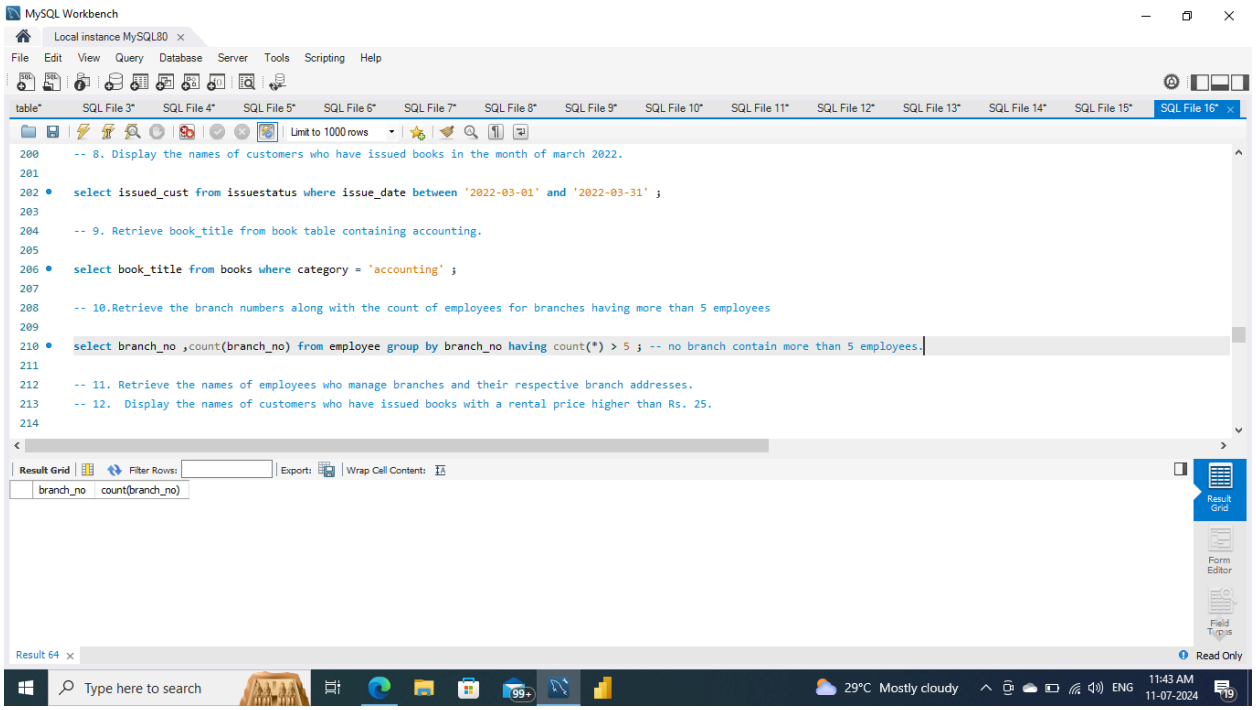
8. Display the names of customers who have issued books in the month of march 2022.



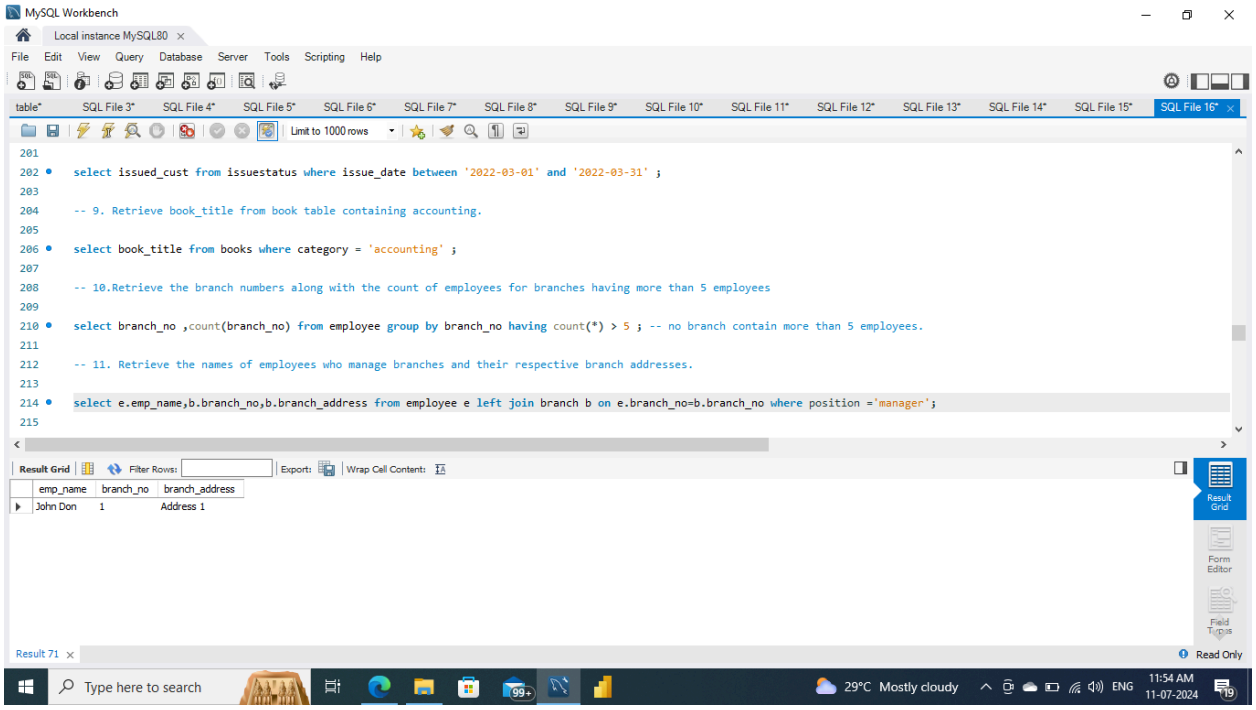
9. Retrieve book_title from book table containing accounting.



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



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



12. Display the names of customers who have issued books with a rental price higher than Rs. 2000.