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

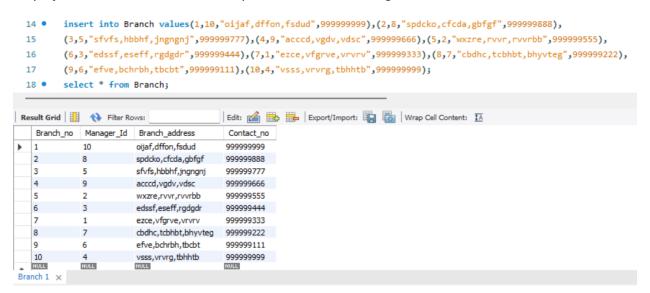
5. IssueStatus

- Issue_Id Set as PRIMARY KEY
- 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

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:



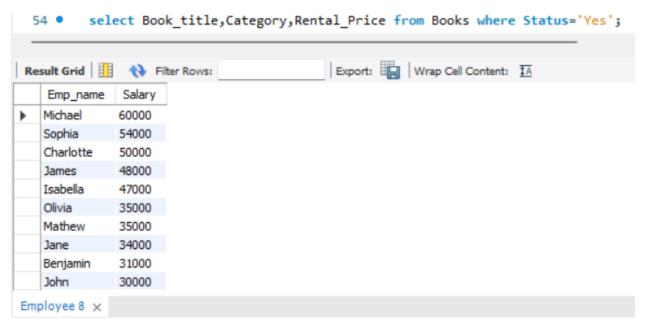
```
19 •
         insert into Employee values(1,'John','Junior Manager', 30000,7),(2,'Michael','Senior Manager', 60000,2),
 20
         (3, 'Olivia', 'Manager', 35000,6),(4, 'Sophia', 'Senior Manager', 54000,3),(5, 'Jane', 'Manager', 34000,1),
         (6, 'Benjamin', 'Junior Manager', 31000,5),(7, 'Charlotte', 'Manager',50000,4),(8, 'James', 'Senior Manager', 48000,9),
 21
         (9, 'Mathew', 'Sweeper', 35000,10),(10, 'Isabella', 'Senior Manager', 47000,8);
 22
 23 •
         select * from Employee;
                                         Edit: 🚄 🖶 🖶 Export/Import: 识 🖔 | Wrap Cell Content: 🟗
Emp_Id Emp_name Position
                                   Salary Branch_no
  1
           John
                     Junior Manager
                                  30000
  2
          Michael
                     Senior Manager
                                  60000
                                         2
   3
           Olivia
                     Manager
                                   35000
          Sophia
                     Senior Manager
                                  54000 3
           Jane
                     Manager
                                  34000
  6
                                  31000
                                         5
          Benjamin
                     Junior Manager
  7
           Charlotte
                     Manager
                                   50000
  8
          James
                     Senior Manager
                                  48000 9
           Mathew
                     Sweeper
                                  35000 10
   10
          Isabella
                     Senior Manager
                                  47000 8
          NULL
Employee 2
 24 •
          insert into Books values
          (915, 'LOTR', 'Fiction', 50, 'Yes', 'RR Tolkein', 'Allen and Unwin'),
 25
 26
          (918, 'JJK', 'Manga', 25, 'No', 'Gege Akutami', 'Viz Media'),
          (916, 'Naruto', 'Manga', 20, 'No', 'Kishimoto', 'Viz Media'),
 28
          (920, 'Dune', 'Science Fiction', 50, 'Yes', 'Frank Herbert', 'Chilton Books'),
          (921, 'Moneyball', 'History', 50, 'Yes', 'Michael Lewis', 'W. W. Norton & Company'),
 29
          (924, 'Wings Of Fire', 'Autobiography', 50, 'No', 'APJ Abdul Kalam and Arun Tiwari', 'Universities Press'),
 30
 31
          (919, 'Waiting for a Visa', 'Autobiography', 50, 'No', 'BR Ambedkar', 'Lector House'),
          (917, 'Gandhi Before India (M K Gandhi)', 'Biography', 40, 'Yes', 'Ramachandra Guha', 'Penguin Books'),
 32
          (922, 'To Kill a Mockingbird', 'Novel', 50, 'Yes', 'Harper Lee', 'Bibliomania'),
 33
          (923, 'The Black Swan', 'Novel', 50, 'No', 'Nassim Nicholas Taleb', 'Penguin Books');
 34
          select * from books;
 35 •
Edit: 🔏 🖶 Export/Import: 📳 👸 Wrap Cell Content: 🔣
    ISBN Book_title
                                       Category
                                                                  Status
                                                                          Author
  915
         LOTR
                                       Fiction
                                                     50
                                                                          RR Tolkein
                                                                                                      Allen and Unwin
                                                                  Yes
   916 Naruto
                                       Manga
                                                     20
                                                                          Kishimoto
                                                                                                      Viz Media
                                                                 No
   917
          Gandhi Before India (M K Gandhi)
                                       Biography
                                                                  Yes
                                                                          Ramachandra Guha
                                                                                                      Penguin Books
   918 JJK
                                                                          Gege Akutami
                                                                                                      Viz Media
                                       Manga
                                                     25
                                                                 No
   919
         Waiting for a Visa
                                       Autobiography
                                                     50
                                                                          BR Ambedkar
                                                                                                      Lector House
                                                                 No
   920 Dune
                                       Science Fiction
                                                     50
                                                                 Yes
                                                                          Frank Herbert
                                                                                                      Chilton Books
   921
         Moneyball
                                       History
                                                     50
                                                                  Yes
                                                                          Michael Lewis
                                                                                                      W. W. Norton & Company
   922 To Kill a Mockingbird
                                                     50
                                                                                                      Bibliomania
                                                                 Yes
                                                                          Harper Lee
                                       Novel
   923
         The Black Swan
                                       Novel
                                                     50
                                                                 No
                                                                          Nassim Nicholas Taleb
                                                                                                      Penguin Books
   924
         Wings Of Fire
                                       Autobiography
                                                     50
                                                                 No
                                                                          APJ Abdul Kalam and Arun Tiwari
                                                                                                      Universities Press
books 3 ×
```

```
36 •
       insert into Customer values
 37
         (1,'Adam','cau cwjokw kmevk', '2000-07-20'),(2,'Anil','wrge rhhyr hreh', '1998-11-12'),
         (3, 'Aswathy', 'ijda adpiac sfvso', '2020-01-01'), (4, 'Athira', 'adiph vsuhsv svougsdv', '2020-01-01'),
 38
         (5, 'Askar', 'dwcw vwvw rwvw', '2005-03-12'), (6, 'Anil', 'wrge rhhyr hreh', '1990-02-25'),
 39
         (7, 'Abdullah', 'rgbf dbdf bgdbdg', '2022-12-23'), (8, 'Asur', 'adiph vsuhsv svougsdv', '2023-03-01'),
         (9,'Akhil','accv dvsvad advdv', '1995-10-11'),(10,'Azeez','ereth yjryr theeht', '1999-06-29');
 41
         select * from Customer;
 42 •
| Edit: 🚄 🖶 | Export/Import: 🏣 🐻 | Wrap Cell Content: 🖽
   Customer_Id Customer_name Customer_address
                                                   Reg date
                                                  2000-07-20
  1
               Adam
                              cau cwiokw kmevk
   2
               Anil
                              wrge rhhyr hreh
                                                  1998-11-12
   3
               Aswathy
                              ijda adpiac sfvso
                                                  2020-01-01
   4
               Athira
                              adiph vsuhsv svougsdv 2020-01-01
   5
               Askar
                                                  2005-03-12
                              dwcw vwvw rwvw
  6
               Anil
                              wrge rhhyr hreh
                                                  1990-02-25
   7
               Abdullah
                              rgbf dbdf bgdbdg
                                                  2022-12-23
  8
               Asur
                              adiph vsuhsv svougsdv 2023-03-01
               Akhil
                              accv dvsvad advdv
                                                  1995-10-11
   10
                                                  1999-06-29
               Azeez
                              ereth yjryr theeht
  NULL
Customer
 43 •
          insert into IssueStatus values
          (1,3,'2023-06-19',924),(2,10,'2024-01-30',922),(3,4,'2024-02-22',919),(4,8,'2024-02-22',916),
 44
          (5,2,'2024-02-24',917),(6,5,'2024-02-26',924),(7,3,'2024-03-25',920),(8,3,'2024-03-15',923),
 45
 46
          (9,7,'2024-03-19',915),(10,8,'2024-03-19',918);
 47 • select * from IssueStatus;
                                              | Edit: 🔏 🖶 | Export/Import: 📳 🐻 | Wrap Cell Content: 🏗
Result Grid Filter Rows:
    Issue_Id Issued_cust Issue_date
                                     Isbn_book
   1
                         2023-06-19
                                     924
   2
             10
                         2024-01-30
                                     922
             4
                         2024-02-22
   3
                                     919
   4
             8
                         2024-02-22
                                     916
   5
             2
                         2024-02-24
                                     917
                         2024-02-26 924
   6
             5
   7
             3
                         2024-03-25 920
   8
             3
                         2024-03-15 923
   9
                         2024-03-19
                                     915
   10
                         2024-03-19
                                     918
  NULL
            NULL
                         NULL
                                     NULL
IssueStatus 5 x
 48 • insert into ReturnStatus values
        (1,1,'Moneyball','2024-01-15',921),(2,3,'Wings Of Fire','2024-02-25',924),
 50
        (3,2,'Gandhi Before India (M K Gandhi)','2024-02-28',917),(4,9,'LOTR','2024-03-02',915),
        (5,7,'LOTR','2024-02-25',915),(6,3,'Dune','2024-03-29',920),(7,3,'The Black Swan','2024-03-30',923),
 51
        (8,7,'Wings Of Fire','2024-03-30',924),(9,10,'To Kill a Mockingbird','2024-04-01',922),(10,8,'JJK','2024-04-15',918);
 53 •
       select * from ReturnStatus;
Edit: 🕍 🐯 🖶 | Export/Import: 🏭 📸 | Wrap Cell Content: 🖽
  Return_Id Return_cust Return_book_name
                                             Return_date Isbn_book2
                     Moneyball
                                             2024-01-15
                     Wings Of Fire
                                             2024-02-25
                     Gandhi Before India (M K Gandhi) 2024-02-28
                     LOTR
                                             2024-03-02
                     LOTR
                                             2024-02-25
                                                       915
  6
                     Dune
                                             2024-03-29
                                                       920
                     The Black Swan
                                             2024-03-30
                                                       923
  8
                     Wings Of Fire
                                             2024-03-30
                                                       924
           10
                     To Kill a Mockingbird
                                             2024-04-01
                                                       922
  10
                                             2024-04-15
                                                       918
```

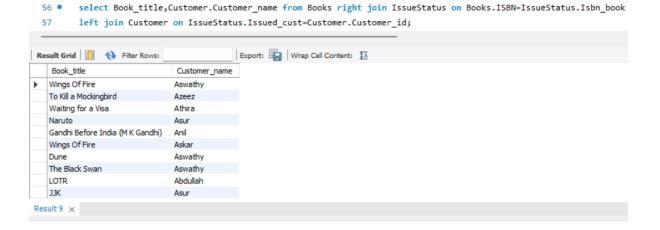
1. Retrieve the book title, category, and rental price of all available books.



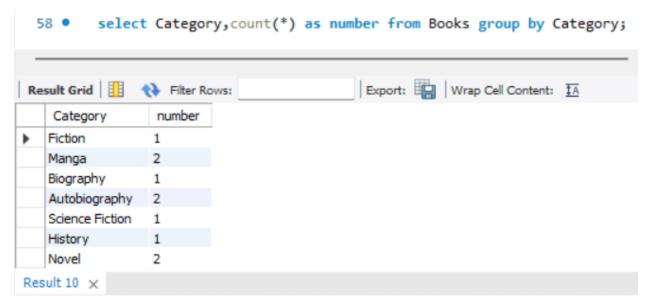
2. List the employee names and their respective salaries in descending order of salary.



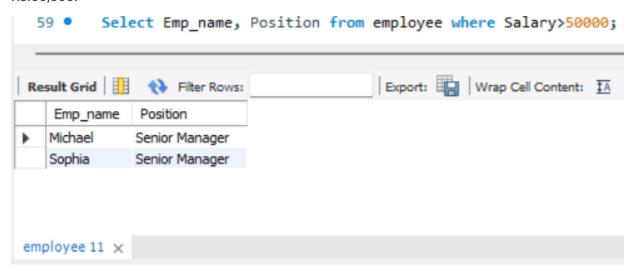
3. Retrieve the book titles and the corresponding customers who have issued those books.



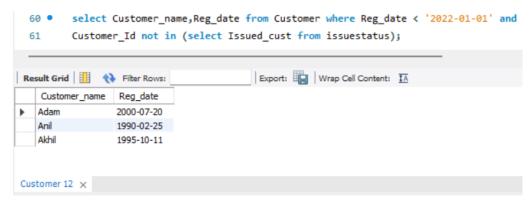
4. Display the total count of books in each category.



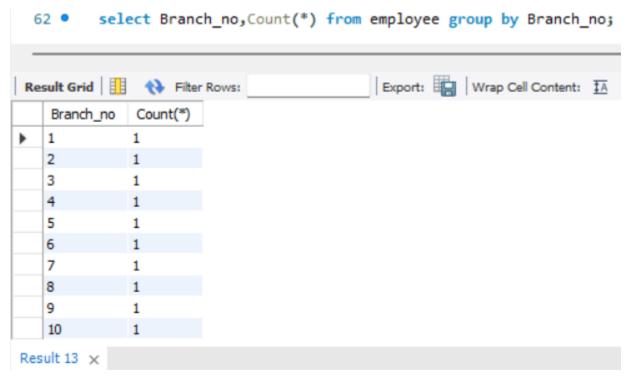
5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.



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

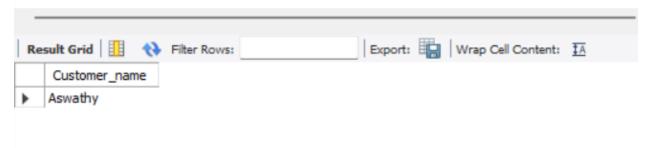


7. Display the branch numbers and the total count of employees in each branch.



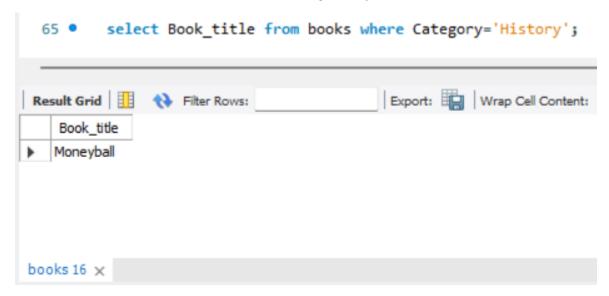
8. Display the names of customers who have issued books in the month of June 2023.

```
63 • select Customer_name from customer where Customer_id in
64 (Select Issued_cust from issuestatus where MONTH(Issue_date)=6);
```

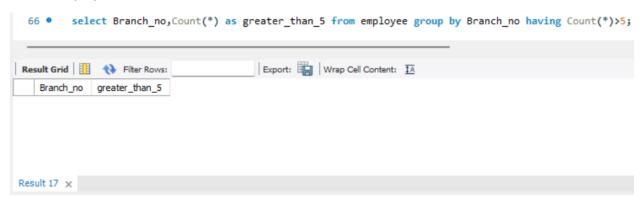


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customer 15 ×
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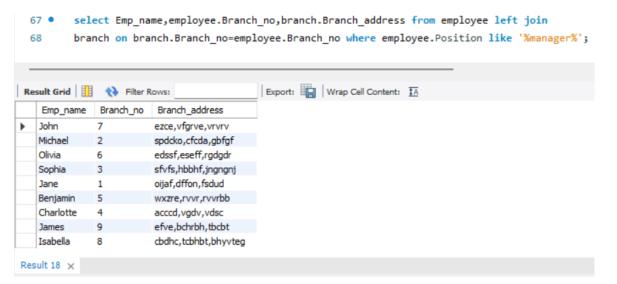
9. Retrieve book_title from book table containing history.



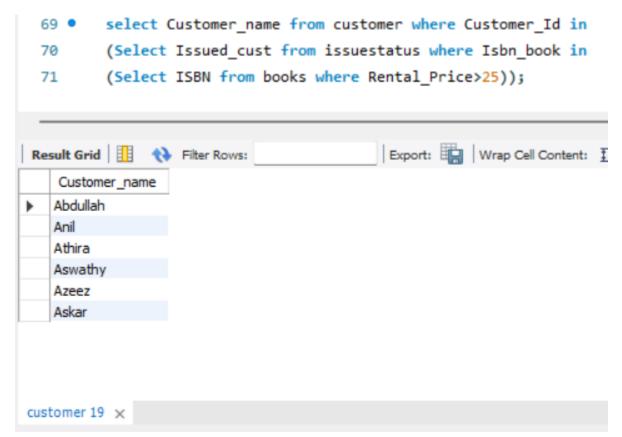
10.Retrieve the branch numbers along with the count of employees for branches having more than 5 employees



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. 25.



COMPLETE QUERY:

```
create database library;
use library;
create table Branch (Branch no int PRIMARY KEY, Manager Id int, Branch address varchar(100), Contact no
bigint);
create table Employee(Emp Id int PRIMARY KEY, Emp name varchar(25), Position varchar(25),
Salary int, Branch no int, foreign key(Branch no) references Branch(Branch no));
create table Books(ISBN int primary key, Book title varchar(50), Category varchar(50), Rental Price int, Status
Author varchar(50), Publisher varchar(50));
create table Customer (Customer Id int PRIMARY KEY, Customer name varchar(50), Customer address
varchar(100), Reg date date);
create table IssueStatus(Issue Id int PRIMARY KEY,Issued cust int, FOREIGN KEY(Issued cust) references
Customer (Customer id),
Issue date date, Isbn book int, FOREIGN KEY(Isbn book) references Books(ISBN));
create table ReturnStatus(Return Id int PRIMARY KEY, Return cust varchar(50), Return book name varchar(50),
Return date date,
Isbn book2 int, FOREIGN KEY(Isbn book2) references Books(ISBN));
insert into Branch values(1,10,"oijaf,dffon,fsdud",999999999),(2,8,"spdcko,cfcda,gbfgf",999999888),
(3,5,"sfvfs,hbbhf,jngngnj",999999777),(4,9,"acccd,vgdv,vdsc",999999666),(5,2,"wxzre,rvvr,rvvrbb",999999555),
(6,3,"edssf,eseff,rgdgdr",999999444),(7,1,"ezce,vfgrve,vrvrv",999999333),(8,7,"cbdhc,tcbhbt,bhyvteg",999999222),
(9,6,"efve,bchrbh,tbcbt",999999111),(10,4,"vsss,vrvrg,tbhhtb",999999999);
select * from Branch;
insert into Employee values(1, 'John', 'Junior Manager', 30000,7),(2, 'Michael', 'Senior Manager', 60000,2),
(3, 'Olivia', 'Manager', 35000,6), (4, 'Sophia', 'Senior Manager', 54000,3), (5, 'Jane', 'Manager', 34000,1),
(6, 'Benjamin', 'Junior Manager', 31000,5), (7, 'Charlotte', 'Manager', 50000,4), (8, 'James', 'Senior Manager', 48000,9),
(9,'Mathew','Sweeper', 35000,10),(10,'Isabella','Senior Manager', 47000,8);
select * from Employee;
insert into Books values
(915,'LOTR','Fiction',50,'Yes','RR Tolkein','Allen and Unwin'),
(918,'JJK','Manga',25,'No','Gege Akutami','Viz Media'),
(916, 'Naruto', 'Manga', 20, 'No', 'Kishimoto', 'Viz Media'),
(920, 'Dune', 'Science Fiction', 50, 'Yes', 'Frank Herbert', 'Chilton Books'),
(921, 'Moneyball', 'History', 50, 'Yes', 'Michael Lewis', 'W. W. Norton & Company'),
(924, 'Wings Of Fire', 'Autobiography', 50, 'No', 'APJ Abdul Kalam and Arun Tiwari', 'Universities Press'),
(919, 'Waiting for a Visa', 'Autobiography', 50, 'No', 'BR Ambedkar', 'Lector House'),
(917, 'Gandhi Before India (M K Gandhi)', 'Biography', 40, 'Yes', 'Ramachandra Guha', 'Penguin Books'),
(922, 'To Kill a Mockingbird', 'Novel', 50, 'Yes', 'Harper Lee', 'Bibliomania'),
(923,'The Black Swan','Novel',50,'No','Nassim Nicholas Taleb','Penguin Books');
select * from books:
insert into Customer values
(1,'Adam','cau ewjokw kmevk', '2000-07-20'),(2,'Anil','wrge rhhyr hreh', '1998-11-12'),
(3, 'Aswathy', 'ijda adpiac sfvso', '2020-01-01'), (4, 'Athira', 'adiph vsuhsv svougsdv', '2020-01-01'),
(5,'Askar','dwcw vwvw rwvw', '2005-03-12'),(6,'Anil','wrge rhhyr hreh', '1990-02-25'),
(7,'Abdullah','rgbf dbdf bgdbdg', '2022-12-23'),(8,'Asur','adiph vsuhsv svougsdv', '2023-03-01'),
(9,'Akhil','accv dvsvad advdv', '1995-10-11'),(10,'Azeez','ereth yjryr theeht', '1999-06-29');
select * from Customer;
insert into IssueStatus values
(1,3,2023-06-19,924),(2,10,2024-01-30,922),(3,4,2024-02-22,919),(4,8,2024-02-22,916),
(5,2,2024-02-24',917),(6,5,2024-02-26',924),(7,3,2024-03-25',920),(8,3,2024-03-15',923),
```

```
(9,7,'2024-03-19',915),(10,8,'2024-03-19',918);
select * from IssueStatus;
insert into ReturnStatus values
(1,1,'Moneyball','2024-01-15',921),(2,3,'Wings Of Fire','2024-02-25',924),
(3,2,'Gandhi Before India (M K Gandhi)','2024-02-28',917),(4,9,'LOTR','2024-03-02',915),
(5,7,'LOTR','2024-02-25',915),(6,3,'Dune','2024-03-29',920),(7,3,'The Black Swan','2024-03-30',923),
(8,7,'Wings Of Fire','2024-03-30',924),(9,10,'To Kill a Mockingbird','2024-04-01',922),(10,8,'JJK','2024-04-15',918);
select * from ReturnStatus;
select Book title, Category, Rental Price from Books where Status='Yes';
select Emp name, Salary from Employee order by Salary desc;
select Book title, Customer. Customer name from Books right join IssueStatus on
Books.ISBN=IssueStatus.Isbn book
left join Customer on IssueStatus.Issued cust=Customer.Customer id;
select Category,count(*) as number from Books group by Category;
Select Emp name, Position from employee where Salary>50000;
select Customer name, Reg date from Customer where Reg date < '2022-01-01' and
Customer Id not in (select Issued cust from issuestatus);
select Branch no, Count(*) from employee group by Branch no;
select Customer name from customer where Customer id in
(Select Issued cust from issuestatus where MONTH(Issue date)=6);
select Book title from books where Category='History';
select Branch no, Count(*) as greater than 5 from employee group by Branch no having Count(*)>5;
select Emp name, employee. Branch no, branch. Branch address from employee left join
branch on branch.Branch no=employee.Branch no where employee.Position like '9/manager9/6';
select Customer name from customer where Customer Id in
(Select Issued cust from issuestatus where Isbn book in
```

(Select ISBN from books where Rental Price>25));