MYSQL COMPREHENSIVE ASSESMENT QUERY

#Create a database named library and following TABLES in the database:

#1. Branch

#2. Employee

#3. Books

#4. Customer

#5. IssueStatus

#6. ReturnStatus

```
CREATE DATABASE library;

use  library;

-- Create Branch Table
CREATE TABLE Branch (
   Branch_no INT PRIMARY KEY,
   Manager_Id INT,
   Branch_address VARCHAR(255),
   Contact_no VARCHAR(15)  -- Assuming phone numbers with area codes
);

-- Create Employee Table
CREATE TABLE Employee (
   Emp_Id INT PRIMARY KEY,
   Emp_name VARCHAR(100),
   Position VARCHAR(50),
   Salary DECIMAL(10, 2),
```

```
    Branch_no INT,
    FOREIGN KEY (Branch_no) REFERENCES Branch(Branch_no)
);

-- Create Books Table
CREATE TABLE Books (
    ISBN VARCHAR(20) PRIMARY KEY,  -- Use VARCHAR to accommodate the ISBN format
    Book_title VARCHAR(255),
    Category VARCHAR(100),
    Rental_Price DECIMAL(10, 2),
    Status ENUM('yes', 'no'), -- More appropriate for yes/no values
    Author VARCHAR(100),
    Publisher VARCHAR(100)
);

-- Create Customer Table
CREATE TABLE Customer (
    Customer_Id INT PRIMARY KEY,
    Customer_name VARCHAR(100),
    Customer_address VARCHAR(255),
    Reg_date DATE
);

-- Create IssueStatus Table
CREATE TABLE IssueStatus (
    Issue_Id INT PRIMARY KEY,
    Issued_cust INT,
    Issued_book_name VARCHAR(255),
    Issue_date DATE,
```

MYSQL COMPREHENSIVE ASSESMENT QUERY

```
    Isbn_book VARCHAR(20),  -- Match the ISBN type in Books
    FOREIGN KEY (Issued_cust) REFERENCES Customer(Customer_Id),
    FOREIGN KEY (Isbn_book) REFERENCES Books(ISBN)
);

-- Create ReturnStatus Table
CREATE TABLE ReturnStatus (
    Return_Id INT PRIMARY KEY,
    Return_cust INT,
    Return_book_name VARCHAR(255),
    Return_date DATE,
    Isbn_book2 VARCHAR(20),  -- Match the ISBN type in Books
    FOREIGN KEY (Isbn_book2) REFERENCES Books(ISBN)
);



INSERT INTO Branch (Branch_no, Manager_Id, Branch_address, Contact_no) VALUES
(1, 101, '123 Library St, City A', '123-456-7890'),
(2, 102, '456 Book Rd, City B', '234-567-8901'),
(3, 103, '789 Reading Ave, City C', '345-678-9012'),
(4, 104, '321 Knowledge Blvd, City D', '456-789-0123'),
(5, 105, '654 Literature Ln, City E', '567-890-1234'),
(6, 106, '987 Novel Way, City F', '678-901-2345'),
(7, 107, '159 Story Blvd, City G', '789-012-3456'),
(8, 108, '753 Textbook St, City H', '890-123-4567'),
(9, 109, '951 Author Ct, City I', '901-234-5678'),
(10, 110, '852 Fiction Dr, City J', '012-345-6789');
INSERT INTO Branch (Branch_no, Manager_Id, Branch_address, Contact_no) VALUES
(20, 111, '123 Main St, City A', '123-456-7890'),
```

MYSQL COMPREHENSIVE ASSESMENT QUERY

```
(22, 112, '456 High St, City B', '098-765-4321'),
(23, 113, '789 Oak St, City C', '555-555-5555'),
(24, 114, '321 Maple St, City D', '666-666-6666');
```

```
INSERT INTO Employee (Emp_Id, Emp_name, Position, Salary, Branch_no) VALUES
(1, 'Alice Johnson', 'Manager', 50000.00, 1),
(2, 'Bob Smith', 'Librarian', 40000.00, 1),
(3, 'Charlie Brown', 'Assistant', 30000.00, 2),
(4, 'Diana Prince', 'Manager', 55000.00, 2),
(5, 'Ethan Hunt', 'Librarian', 42000.00, 3),
(6, 'Fiona Green', 'Assistant', 32000.00, 4),
(7, 'George Martin', 'Librarian', 41000.00, 5),
(8, 'Hannah Baker', 'Manager', 60000.00, 5),
(9, 'Ian Somerhalder', 'Assistant', 31000.00, 6),
(10, 'Julia Roberts', 'Librarian', 43000.00, 7);
```

```
INSERT INTO Employee (Emp_Id, Emp_name, Position, Salary, Branch_no) VALUES
(21, 'Alice Johnson', 'Manager', 60000, 1),
(22, 'Bob Smith', 'Librarian', 50000, 1),
(23, 'Charlie Brown', 'Assistant', 30000, 1),
(24, 'David Wilson', 'Clerk', 30000, 1),
(25, 'Eve Adams', 'Clerk', 30000, 1),
(26, 'Frank Knight', 'Clerk', 30000, 1),  -- This makes Branch 1 have 6 employees
(27, 'Grace Lee', 'Manager', 70000, 2),
(28, 'Henry Ford', 'Assistant', 40000, 2),
(29, 'Ivy Green', 'Clerk', 35000, 3),
(20, 'Jack White', 'Librarian', 50000, 3);
```

MYSQL COMPREHENSIVE ASSESMENT QUERY

```
INSERT INTO Books (ISBN, Book_title, Category, Rental_Price, Status, Author, Publisher) VALUES
('978-3-16-148410-0', 'The Great Gatsby', 'Fiction', 2.99, 'yes', 'F. Scott Fitzgerald', 'Scribner'),
('978-1-56619-909-4', 'To Kill a Mockingbird', 'Fiction', 3.99, 'yes', 'Harper Lee', 'J.B. Lippincott & Co.'),
('978-0-7432-7356-5', '1984', 'Dystopian', 4.99, 'yes', 'George Orwell', 'Secker and Warburg'),
('978-0-452-28423-4', 'Pride and Prejudice', 'Classic', 2.50, 'yes', 'Jane Austen', 'T. Egerton'),
('978-1-84767-280-0', 'Brave New World', 'Dystopian', 3.50, 'no', 'Aldous Huxley', 'Chatto & Windus'),
('978-0-06-112008-4', 'The Catcher in the Rye', 'Fiction', 4.00, 'yes', 'J.D. Salinger', 'Little, Brown and Company'),
('978-0-7432-7357-2', 'The Alchemist', 'Fiction', 5.00, 'yes', 'Paulo Coelho', 'HarperCollins'),
('978-0-14-303943-3', 'The Book Thief', 'Historical Fiction', 6.00, 'no', 'Markus Zusak', 'Knopf'),
('978-0-7475-3271-1', 'Harry Potter and the Philosopher\'s Stone', 'Fantasy', 5.99, 'yes', 'J.K. Rowling', 'Bloomsbury'),
('978-1-250-04426-4', 'The Fault in Our Stars', 'Young Adult', 4.50, 'yes', 'John Green', 'Dutton Books');
INSERT INTO Books (ISBN, Book_title, Category, Rental_Price, Status, Author, Publisher)
VALUES
    ('978-0-12345-678-9', 'A Brief History of Time', 'Science', 5.99, 'yes', 'Stephen Hawking', 'Bantam Books');

INSERT INTO Books (ISBN, Book_title, Category, Rental_Price, Status, Author, Publisher)
VALUES
    ('978-1-23456-789-0', 'The History of Ancient Civilizations', 'History', 6.99, 'yes', 'John Smith', 'Historical Press');

INSERT INTO Books (ISBN, Book_title, Category, Rental_Price, Status, Author, Publisher) VALUES
(101, 'The Great Gatsby', 'Fiction', 30, 'yes', 'F. Scott Fitzgerald', 'Scribner'),
(102, '1984', 'Dystopian', 22, 'yes', 'George Orwell', 'Secker & Warburg'),
(103, 'Moby Dick', 'Classic', 35, 'yes', 'Herman Melville', 'Harper & Brothers'),
(104, 'To Kill a Mockingbird', 'Fiction', 27, 'yes', 'Harper Lee', 'J.B. Lippincott & Co.'),
```

```
(105, 'War and Peace', 'Historical', 40, 'yes', 'Leo Tolstoy', 'The Russian Messenger');
```

```
INSERT INTO Customer (Customer_Id, Customer_name, Customer_address, Reg_date) VALUES
(1, 'Michael Scott', '22 Scranton St, PA', '2023-01-15'),
(2, 'Pam Beesly', '24 Scranton St, PA', '2023-02-10'),
(3, 'Jim Halpert', '25 Scranton St, PA', '2023-03-05'),
(4, 'Dwight Schrute', '20 Scranton St, PA', '2023-04-12'),
(5, 'Angela Martin', '21 Scranton St, PA', '2023-05-20'),
(6, 'Kevin Malone', '23 Scranton St, PA', '2023-06-15'),
(7, 'Toby Flenderson', '26 Scranton St, PA', '2023-07-22'),
(8, 'Kelly Kapoor', '27 Scranton St, PA', '2023-08-30'),
(9, 'Stanley Hudson', '28 Scranton St, PA', '2023-09-14'),
(10, 'Phyllis Vance', '29 Scranton St, PA', '2023-10-05');
```

```
INSERT INTO Customer (Customer_Id, Customer_name, Customer_address, Reg_date) VALUES
(11, 'Alice Johnson', '123 Elm St', '2021-06-15'),
(12, 'Bob Smith', '456 Pine St', '2020-01-10'),
(13, 'Charlie Brown', '789 Maple St', '2019-03-22'),
(14, 'David Wilson', '321 Oak St', '2023-02-01'),
(15, 'Eve Adams', '654 Cedar St', '2021-11-30');
```

```
INSERT INTO IssueStatus (Issue_Id, Issued_cust, Issued_book_name, Issue_date, Isbn_book) VALUES
(1, 1, 'The Great Gatsby', '2023-01-20', '978-3-16-148410-0'),
(2, 2, 'To Kill a Mockingbird', '2023-02-15', '978-1-56619-909-4'),
(3, 3, '1984', '2023-03-10', '978-0-7432-7356-5'),
```

MYSQL COMPREHENSIVE ASSESMENT QUERY

(4, 4, 'Pride and Prejudice', '2023-04-20', '978-0-452-28423-4'),

(5, 5, 'Brave New World', '2023-05-25', '978-1-84767-280-0'),

(6, 6, 'The Catcher in the Rye', '2023-06-30', '978-0-06-112008-4'),

(7, 7, 'The Alchemist', '2023-07-15', '978-0-7432-7357-2'),

(8, 8, 'The Book Thief', '2023-08-20', '978-0-7475-3271-1'),

(9, 9, 'Harry Potter and the Philosopher\'s Stone', '2023-09-25', '978-1-250-04426-4'),

(10, 10, 'The Fault in Our Stars', '2023-10-10', '978-1-250-04426-4');

INSERT INTO IssueStatus (Issue_Id, Issued_cust, Issued_book_name, Issue_date, Isbn_book) VALUES

(21, 1, 'The Great Gatsby', '2023-05-01', 101), -- Rental Price: 30

(22, 2, 'Moby Dick', '2023-06-01', 103), -- Rental Price: 35

(23, 3, 'To Kill a Mockingbird', '2023-07-15', 104), -- Rental Price: 27

(24, 4, 'War and Peace', '2023-08-01', 105), -- Rental Price: 40

(25, 5, '1984', '2023-09-01', 102); -- Rental Price: 22 (excluded in final result)

INSERT INTO ReturnStatus (Return_Id, Return_cust, Return_book_name, Return_date, Isbn_book2) VALUES

(1, 1, 'The Great Gatsby', '2023-01-30', '978-3-16-148410-0'),

(2, 2, 'To Kill a Mockingbird', '2023-02-28', '978-1-56619-909-4'),

(3, 3, '1984', '2023-03-20', '978-0-7432-7356-5'),

(4, 4, 'Pride and Prejudice', '2023-04-25', '978-0-452-28423-4'),

(5, 5, 'Brave New World', '2023-05-30', '978-1-84767-280-0'),

(6, 6, 'The Catcher in the Rye', '2023-06-25', '978-0-06-112008-4'),

(7, 7, 'The Alchemist', '2023-07-30', '978-0-7432-7357-2'),

(8, 8, 'The Book Thief', '2023-08-25', '978-0-7475-3271-1'),

(9, 9, 'Harry Potter and the Philosopher\'s Stone', '2023-09-30', '978-1-250-04426-4'),

(10, 10, 'The Fault in Our Stars', '2023-10-15', '978-1-250-04426-4');

MYSQL COMPREHENSIVE ASSESMENT QUERY

```
INSERT INTO Branch (Branch_no, Manager_Id, Branch_address, Contact_no)
VALUES
   (11, 3, '789 Pine St', '123-555-7890');

INSERT INTO Employee (Emp_Id, Emp_name, Position, Salary, Branch_no)
VALUES
   (11, 'Charlie', 'Manager', 70000, 3);
```

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

```
select  Book_title,Category,Rental_Price
from books
where status="yes";
```

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

```
select Emp_name,Salary
from Employee
order by Salary DESC;
```

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

MYSQL COMPREHENSIVE ASSESMENT QUERY

```
   SELECT
   B.Book_title,
   C.Customer_name
FROM
   IssueStatus I
JOIN
   Books B ON I.Isbn_book = B.ISBN
JOIN
   Customer C ON I.Issued_cust = C.Customer_Id;
```

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

```
SELECT
   Category,
   COUNT(*) AS Total_Books
FROM
   Books
GROUP BY
   Category;
```

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

```
select Emp_name,Position,Salary
from Employee
where salary>50000;
```

MYSQL COMPREHENSIVE ASSESMENT QUERY

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

```
SELECT
   C.Customer_name
FROM
   Customer C
LEFT JOIN
   IssueStatus I ON C.Customer_Id = I.Issued_cust
WHERE
   C.Reg_date < '2022-01-01'
   AND I.Issued_cust IS NULL;
```

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

```
SELECT
   B.Branch_no,
   COUNT(E.Emp_Id) AS Total_Employees
FROM
   Branch B
LEFT JOIN
   Employee E ON B.Branch_no = E.Branch_no
GROUP BY
   B.Branch_no;
```

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

```
SELECT
   C.Customer_name
FROM
   Customer C
JOIN
   IssueStatus I ON C.Customer_Id = I.Issued_cust
```

MYSQL COMPREHENSIVE ASSESMENT QUERY

```
WHERE
   I.Issue_date >= '2023-06-01'
   AND I.Issue_date < '2023-07-01';

# 9. Retrieve book_title from book table containing history
SELECT
   book_title
FROM
   books
WHERE
   book_title LIKE '%History%';

# 10.Retrieve the branch numbers along with the count of employees for branches having more than 5 employee
SELECT
   B.Branch_no,
   COUNT(E.Emp_Id) AS Total_Employees
FROM
   Branch B
JOIN
   Employee E ON B.Branch_no = E.Branch_no
GROUP BY
   B.Branch_no
HAVING
   COUNT(E.Emp_Id) > 5;

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

 SELECT
```

```
    e.Emp_name AS Employee_Name,
    b.Branch_address AS Branch_Address
FROM
    Employee e
JOIN
    Branch b ON e.Emp_Id = b.Manager_Id;
```

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

```
SELECT DISTINCT
    C.Customer_name
FROM
    Customer C
JOIN
    IssueStatus I ON C.Customer_Id = I.Issued_cust
JOIN
    Books B ON I.Isbn_book = B.ISBN
WHERE
    B.Rental_Price > 25;
```