**Library Management System**

**Objective:**

Q.1 Design and query a database for a library system to manage books, authors, and borrowers.

Tasks:

1. Create Tables:
   * Books:

| Column Name | Data Type | Constraints |
| --- | --- | --- |
| BookID | INT | PRIMARY KEY |
| Title | VARCHAR(100) | NOT NULL |
| AuthorID | INT | FOREIGN KEY (Authors) |
| PublishedYear | INT |  |
| Genre | VARCHAR(50) |  |

* + Authors:

| Column Name | Data Type | Constraints |
| --- | --- | --- |
| AuthorID | INT | PRIMARY KEY |
| Name | VARCHAR(100) | NOT NULL |
| Country | VARCHAR(50) |  |

* + Borrowers:

| Column Name | Data Type | Constraints |
| --- | --- | --- |
| BorrowerID | INT | PRIMARY KEY |
| Name | VARCHAR(100) | NOT NULL |
| Contact | VARCHAR(15) |  |

* + BorrowedBooks:

| Column Name | Data Type | Constraints |
| --- | --- | --- |
| BorrowID | INT | PRIMARY KEY |
| BorrowerID | INT | FOREIGN KEY (Borrowers) |
| BookID | INT | FOREIGN KEY (Books) |
| BorrowDate | DATE |  |
| ReturnDate | DATE |  |

1. Insert Data:
   * Add at least 5 authors, 10 books, and 5 borrowers.
   * Insert borrowed book records for at least 3 borrowers.
2. Write Queries:
   * Retrieve all books published after 2015.
   * List all borrowers who have borrowed books in the "Fiction" genre.
   * Find the most borrowed book.
   * Display the names of authors whose books are currently borrowed.
   * Count the total number of books in each genre.

Submission:

* Provide the SQL script for table creation, data insertion, and queries.
* Put query results.

Q.2 Write a query to display all the customers whose ID is 2001 below the salesperson ID of Mc Lyon.

**Tables:**

Salesman

|  |  |  |  |
| --- | --- | --- | --- |
| salesman\_id | name | city | commission |
| 5001 | James Hoog | New York | 0.15 |
| 5002 | Nail Knite | Paris | 0.13 |
| 5005 | Pit Alex | London | 0.11 |
| 5006 | Mc Lyon | Paris | 0.14 |
| 5003 | Lauson Hen | San Jose | 0.12 |
| 5007 | Paul Adam | Rome | 0.13 |

Customer

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| customer\_id | cust\_name | city | grade | salesman\_id |
| 3002 | Nick Rimando | New York | 100 | 5001 |
| 3005 | Graham Zusi | California | 200 | 5002 |
| 3001 | Brad Guzan | London | 100 | 5005 |
| 3004 | Fabian Johns | Paris | 300 | 5006 |
| 3007 | Brad Davis | New York | 200 | 5001 |
| 3009 | Geoff Camero | Berlin | 100 | 5003 |
| 3008 | Julian Green | London | 300 | 5002 |
| 3003 | Jozy Altidor | Moscow | 200 | 5007 |

Q. 3 **Task:**

Write a SQL query to locate those salespeople who do not live in the same city where their customers live and have received a commission of more than 12% from the company. Return Customer Name, customer city, Salesman, salesman city, and commission.

**Tables:**

Customer

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| customer\_id | cust\_name | city | grade | salesman\_id |
| 3002 | Nick Rimando | New York | 100 | 5001 |
| 3007 | Brad Davis | New York | 200 | 5001 |
| 3005 | Graham Zusi | California | 200 | 5002 |
| 3008 | Julian Green | London | 300 | 5002 |
| 3004 | Fabian Johnson | Paris | 300 | 5006 |
| 3009 | Geoff Cameron | Berlin | 100 | 5003 |
| 3003 | Jozy Altidor | Moscow | 200 | 5007 |
| 3001 | Brad Guzan | London |  | 5005 |

Salesman

|  |  |  |  |
| --- | --- | --- | --- |
| salesman\_id | name | city | commission |
| 5001 | James Hoog | New York | 0.15 |
| 5002 | Nail Knite | Paris | 0.13 |
| 5005 | Pit Alex | London | 0.11 |
| 5006 | Mc Lyon | Paris | 0.14 |
| 5007 | Paul Adam | Rome | 0.13 |
| 5003 | Lauson Hen | San Jose | 0.12 |

**Q4. Customer Order Placement Report**

Task:  
Write a SQL query to generate a report that lists the customer name, city, order number, order date, and purchase amount.  
  
Conditions:  
- Include customers who are present in the customer table and have placed one or more orders.  
- Also include any orders placed by customers not found in the customer table.

**Sample Tables:**

customer

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| customer\_id | cust\_name | city | grade | salesman\_id |
| 3002 | Nick Rimando | New York | 100 | 5001 |
| 3007 | Brad Davis | New York | 200 | 5001 |
| 3005 | Graham Zusi | California | 200 | 5002 |
| 3008 | Julian Green | London | 300 | 5002 |
| 3004 | Fabian Johnson | Paris | 300 | 5006 |
| 3009 | Geoff Cameron | Berlin | 100 | 5003 |
| 3003 | Jozy Altidor | Moscow | 200 | 5007 |
| 3001 | Brad Guzan | London |  | 5005 |

orders

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ord\_no | purch\_amt | ord\_date | customer\_id | salesman\_id |
| 70001 | 150.50 | 2012-10-05 | 3005 | 5002 |
| 70009 | 270.65 | 2012-09-10 | 3001 | 5005 |
| 70002 | 65.26 | 2012-10-05 | 3002 | 5001 |
| 70004 | 110.50 | 2012-08-17 | 3009 | 5003 |
| 70007 | 948.50 | 2012-09-10 | 3005 | 5002 |
| 70005 | 2400.60 | 2012-07-27 | 3007 | 5001 |
| 70008 | 5760.00 | 2012-09-10 | 3002 | 5001 |
| 70010 | 1983.43 | 2012-10-10 | 3004 | 5006 |