Normalize the following tables up to 3rd Normal Form.

# 1. Table User\_Personal

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***UserID*** | **U\_email** | **Fname** | **Lname** | **City** | **State** | **Zip** |
| *MA12* | Mani@ymail.com | MANISH | JAIN | BILASPUR | CHATISGARH | 458991 |
| *PO45* | Pooja.g@gmail.co | POOJA | MAGG | KACCH | GUJRAT | 832212 |
| *LA33* | Lavle98@jj.com | LAVLEEN | DHALLA | RAIPUR | CHATISGARH | 853578 |
| *CH99* | Cheki9j@ih.com | CHIMAL | BEDI | TRICHY | TAMIL NADU | 632011 |
| *DA74* | Danu58@g.com | DANY | JAMES | TRICHY | TAMIL NADU | 645018 |

Users

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| UserID | U\_email | Fname | Lname | Zip |
| MA12 | Mani@ymail.com | MANISH | JAIN | 458991 |
| PO45 | Pooja.g@gmail.com | POOJA | MAGG | 832212 |
| LA33 | Lavle98@jj.com | LAVLEEN | DHALLA | 853578 |
| CH99 | Cheki9j@ih.com | CHIMAL | BEDI | 632011 |
| DA74 | Danu58@g.com | DANY | JAMES | 645018 |

Location

|  |  |  |
| --- | --- | --- |
| Zip | City | State |
| 458991 | BILASPUR | CHATISGARH |
| 832212 | KACCH | GUJRAT |
| 853578 | RAIPUR | CHATISGARH |
| 632011 | TRICHY | TAMIL NADU |
| 645018 | TRICHY | TAMIL NADU |

# 2. Table Customer\_Orders

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| OrderNumber | CustomerName | CustomerEmail | Product | Category | Price | OrderDate |
| 101 | John | john@email.com | Laptop | Electronics | 800 | 2023-01-15 |
| 102 | Jane | jane@email.com | Smartphone | Electronics | 500 | 2023-01-18 |
| 103 | Alice | alice@email.com | Desk | Furniture | 300 | 2023-01-20 |

Customers

|  |  |  |
| --- | --- | --- |
| CustomerID | CustomerName | CustomerEmail |
| 01 | John | john@email.com |
| 02 | Jane | jane@email.com |
| 03 | Alice | alice@email.com |

Orders

|  |  |  |  |
| --- | --- | --- | --- |
| OrderNumber | CustomerID | ProductID | OrderDate |
| 101 | 01 | 1001 | 2023-01-15 |
| 102 | 02 | 1002 | 2023-01-18 |
| 103 | 03 | 1003 | 2023-01-20 |

Products

|  |  |  |
| --- | --- | --- |
| ProductID | CategoryID | ProductName |
| 1001 | C01 | Laptop |
| 1002 | C01 | Smartphone |
| 1003 | C02 | Desk |

Categories

|  |  |
| --- | --- |
| CategoryID | CategoryName |
| C01 | Electronics |
| C02 | Furniture |

# 3. Table Employee\_Departments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| EmployeeName | EmployeeEmail | Department | Manager | Location |
| John | john@email.com | HR | Bob | NY |
| Jane | jane@email.com | Sales | Brown | LA |
| Alice | alice@email.com | HR | Carol | NY |

Employees

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| EmployeeID | EmployeeName | EmployeeEmail | ManagerID | DepartmentID | LocationID |
| 01 | Bob | bob@email.com | NULL | D01 | L01 |
| 02 | Brown | brown@email.com | NULL | D02 | L02 |
| 03 | Carol | carol@email.com | NULL | D01 | L01 |
| 04 | John | john@email.com | 01 | D01 | L01 |
| 05 | Jane | jane@email.com | 02 | D02 | L02 |
| 06 | Alice | alice@email.com | 03 | D01 | L01 |

Departments

|  |  |
| --- | --- |
| DepartmentID | DepartmentName |
| D01 | HR |
| D02 | Sales |

Locations

|  |  |
| --- | --- |
| LocationID | LocationName |
| L01 | NY |
| L02 | LA |

# 4. Table Online\_Bookstore\_Inventory

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| BookID | Title | Author | Genre | ISBN | Price | Stock |
| 1 | Book A | X | Fiction | 1234567890 | 15.99 | 20 |
| 2 | Book B | Y | Non-fiction | 2345678901 | 24.99 | 15 |

Books

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| BookID | Title | AuthorID | GenreID | ISBN | Price | Stock |
| 1 | Book A | A01 | G01 | 1234567890 | 15.99 | 20 |
| 2 | Book B | A02 | G02 | 2345678901 | 24.99 | 15 |

Authors

|  |  |
| --- | --- |
| AuthorID | AuthorName |
| A01 | X |
| A02 | Y |

Genres

|  |  |
| --- | --- |
| GenreID | Genre |
| G01 | Fiction |
| G02 | Non-Fiction |

# 5. Table Library\_Transactions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| MemberName | MemberEmail | Book | Author | DueDate | ReturnDate |
| John | john@email.com | Book1 | Author1 | 2023-01-15 | 2023-01-20 |
| Jane | jane@email.com | Book2 | Author2 | 2023-01-18 | 2023-01-22 |

Members

|  |  |  |
| --- | --- | --- |
| MemberID | MemberName | MemberEmail |
| 01 | John | john@email.com |
| 02 | Jane | jane@email.com |

Books

|  |  |  |
| --- | --- | --- |
| BookID | AuthorID | BookTitle |
| B01 | A01 | Book1 |
| B02 | A02 | Book2 |

Authors

|  |  |
| --- | --- |
| AuthorID | AuthorName |
| A01 | Author1 |
| A02 | Author2 |

Transactions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| TransactionID | MemberID | BookID | DueDate | ReturnDate |
| 1001 | 01 | B01 | 2023-01-25 | 2023-01-20 |
| 1002 | 02 | B02 | 2023-01-18 | 2023-01-22 |