TASK-1

CONCEPTUAL DATA MODEL OF LIBRARY MANAGEMENT SYSTEM

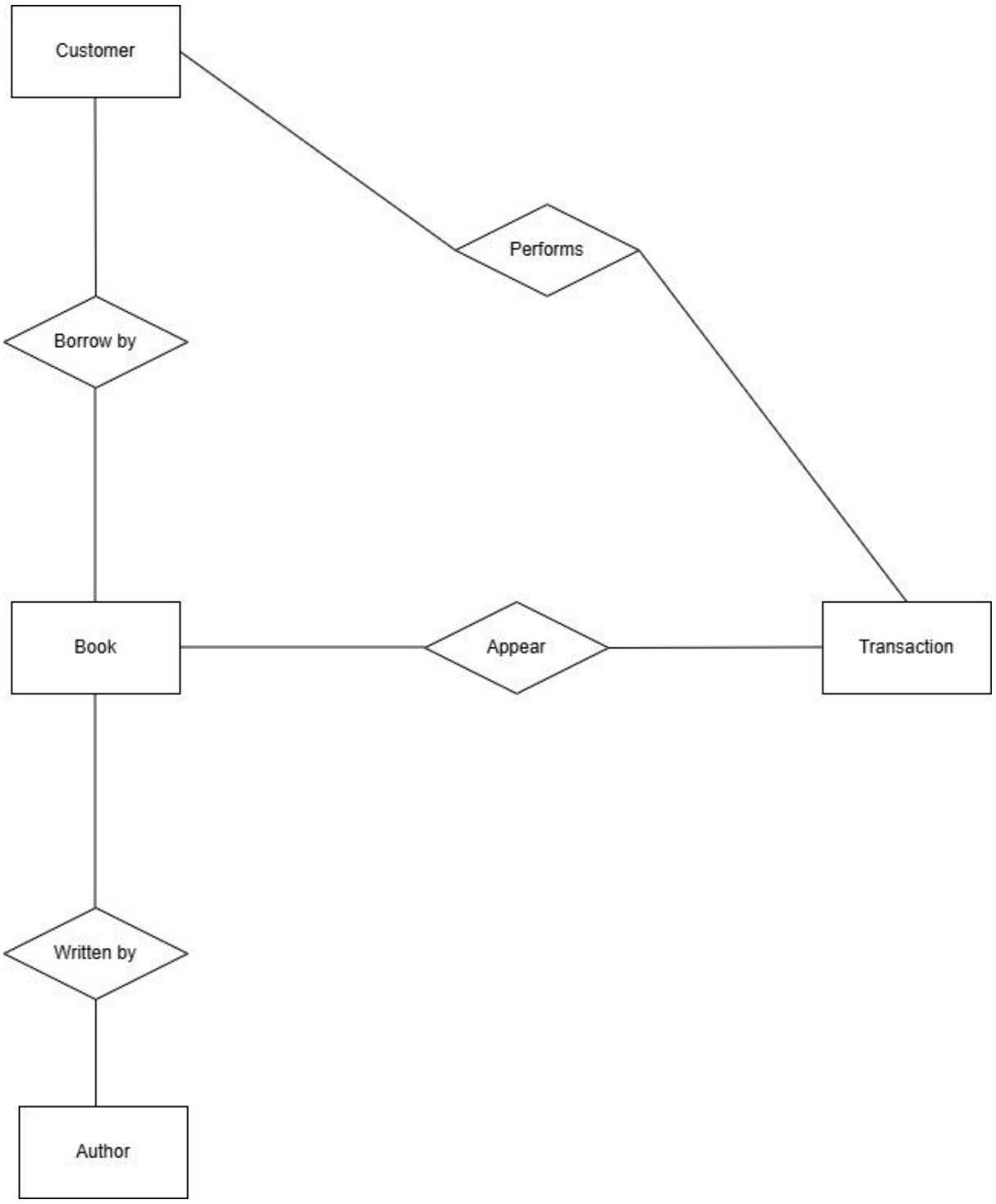
A conceptual data model for a library management system provides a high level overview of the system's data requirement without getting into the details of how the data will be stored. It focuses on the entities, their attributes, and the relationships between them. TASK-1.docx?web=1

ENTITIES

1. Customer
2. Book
3. Author
4. Transaction

RELATIONSHIPS

1. Customer-Transaction
2. Book-Transaction
3. Book-Customer
4. Book-Author


Customer
Performs
Borrow by
Book
Appear
Transaction
Written by
Author

LOGICAL DATA MODEL OF LIBRARY MANAGEMENT SYSTEM

Logical data model provides a detailed structure for how the entities organized and how they relate to each other. It include primary keys, foreign keys and handle the relationship between them.

ENTITIES AND THEIR ATTRIBUTES

1.Book

ATTRIUTES-

Book_id(PK)

Author_id(FK)

Title

Price

Available

Publisher

Publisher_date

2.Customer

ATTRIBUTES-

Customer_id(PK)

Name

Date_of_birth

Age

Email

Phone_no

Address

3.Author

ATTRIBUTES-

Author_id(PK)

Name

Date_of_birth

4.Transaction

ATTRIBUTES-

Transaction_id(PK)

Transaction_date

Transaction_type

Due_date

Return_date

Customer_id(FK)

Book_id(FK)

Fine_amount

RELATIONSHIPS

1.Customer-Transaction: ONE-TO-MANY

Each transaction is linked to one transaction but a customer can have multiple transaction

2.Book-Transaction: ONE-TO-MANY

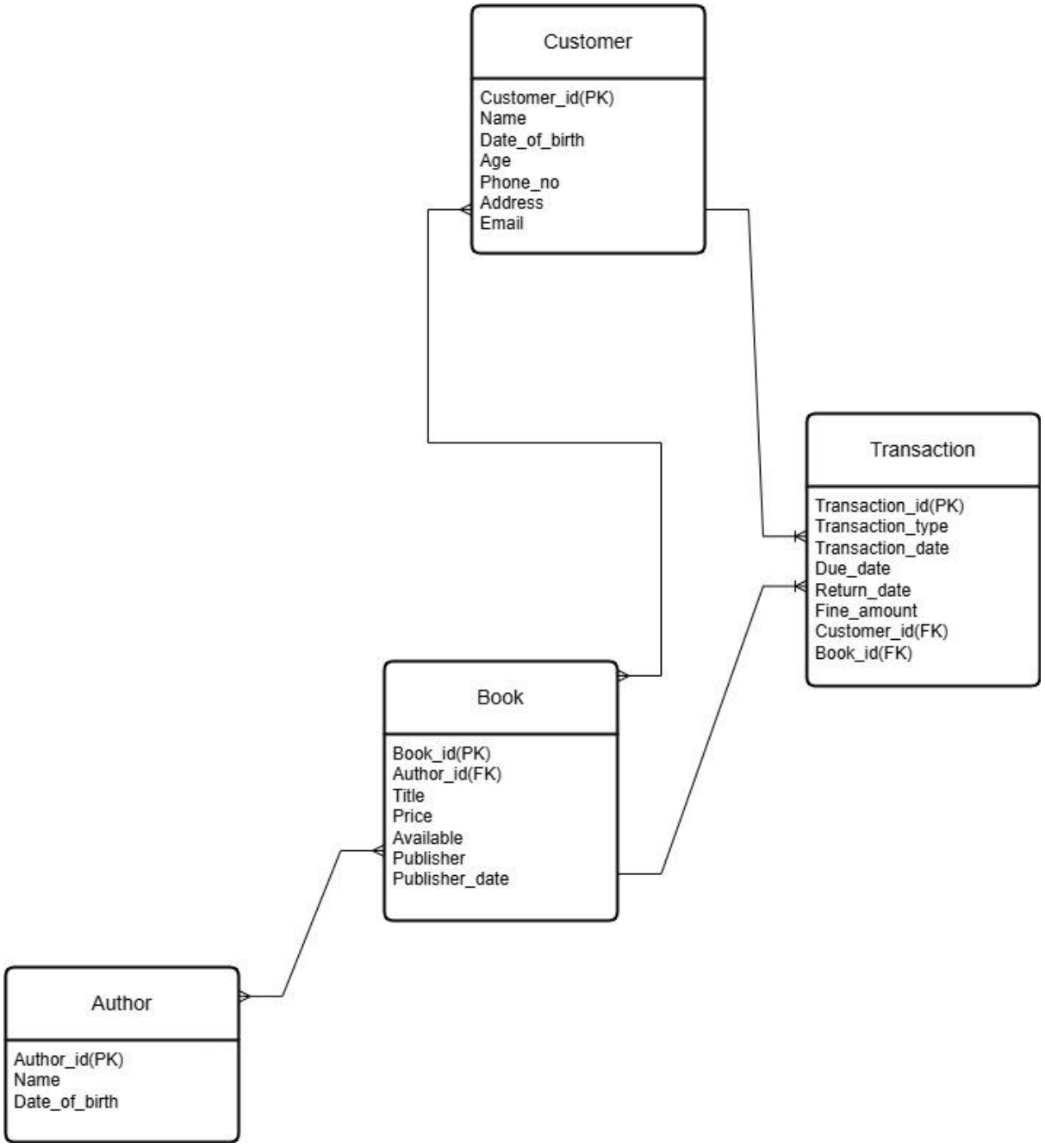
Each transaction is linked to one book but a book can involved in multiple transaction

3.Book-Customer: MANY-TO-MANY

A customer can borrow many books and a book can be borrowed by many customers

4.Book-Author: MANY-TO-MANY

A book can have many authors and an author can write many books



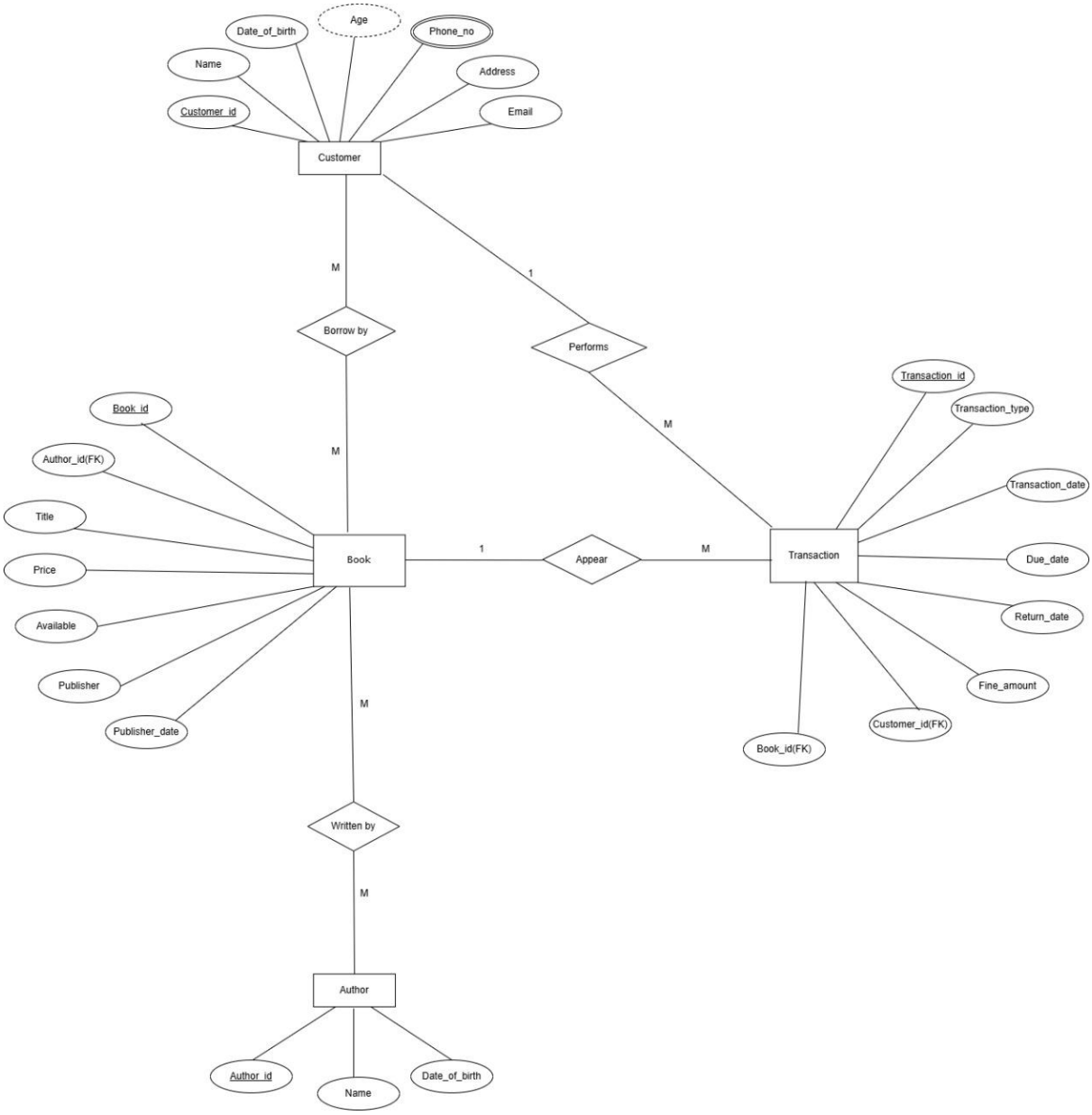
ER MODEL OF LIBRARY MANAGEMENT SYSTEM

A/Q to the question that we have to make ER model of library management system, so we have taken 4 entities in it customer, book, author and transaction. We represent entities with rectangle shape And the behaviour that describes the entities will be represented by the shape of an ellipse.

1.Customer has 7 attributes in which Customer_id is key attribute, Phone_no is multi-valued attribute, Age is derived attribute or rest of the Address, Name, Date_of_birth, Email all these are simple attributes.

2. Transaction entity has 8 attributes, of which Transaction _id is the key attribute And the rest are (Transaction_type, Transaction_date, Due_date, Return_date, Fine_amount, Book_id, Customer_id) simple attributes.

3. Author Entity has 3 attributes namely Author_id is key attribute or rest of them are (Name, Date_of_birth) simple attributes.



4. 4. Book entity has 7 attributes of which Book_id is the key attribute and the rest are (Author_id, Title, Price, Available, Publisher, Publisher_date) simple attributes

5. Relationship is used to describe the relation between entities . Diamond and rhombus is used to represent the relationship