

Database for Online Bookstore

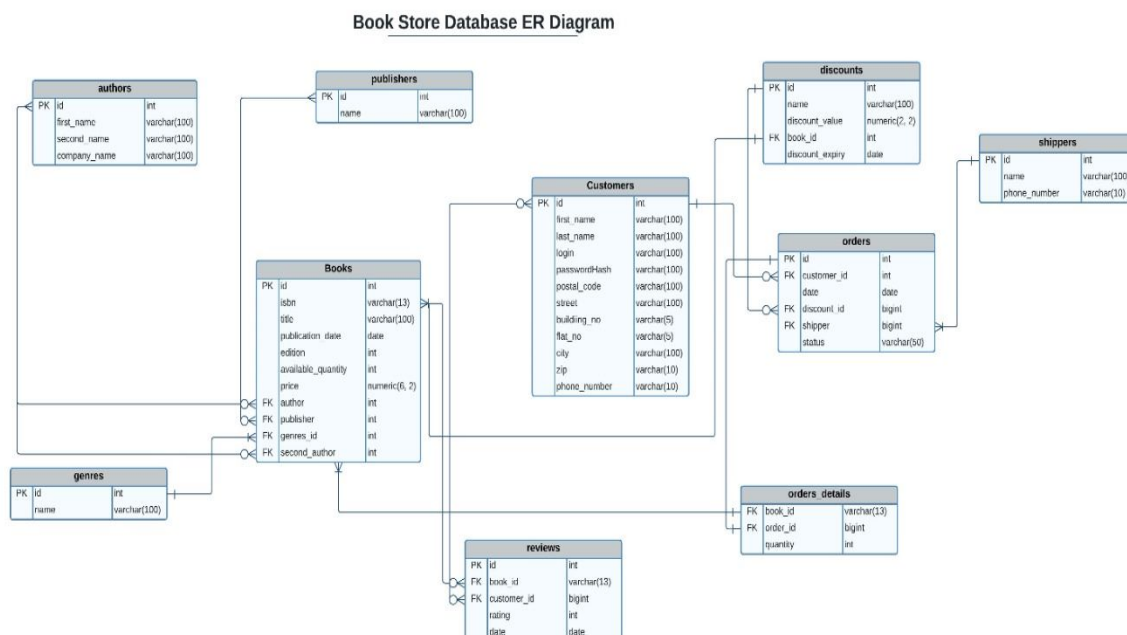
Team 5

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Business Rules:

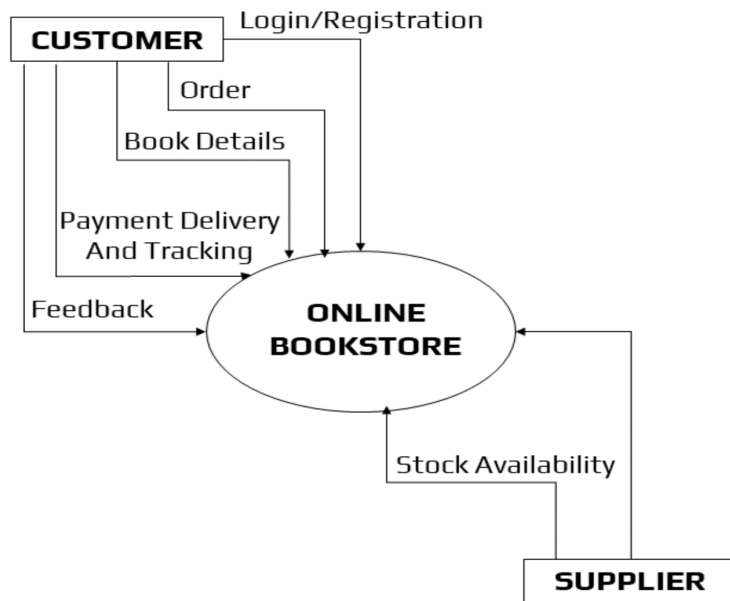
1. Customers must create an account to make a purchase.
2. Only registered customers who brought the product can give the ratings for the book.
3. Discounts are applied for an order based on the book discounts.
4. The system will automatically generate an order confirmation email for each successful order.
5. The system will not allow customers to order out-of-stock items.
6. Books can only be added or edited by authorized user employees.
7. The system will automatically apply a discount code to the order based on the books in the order.
8. The system will accept the payments from all types of credit cards.

Revised ERD (Final)

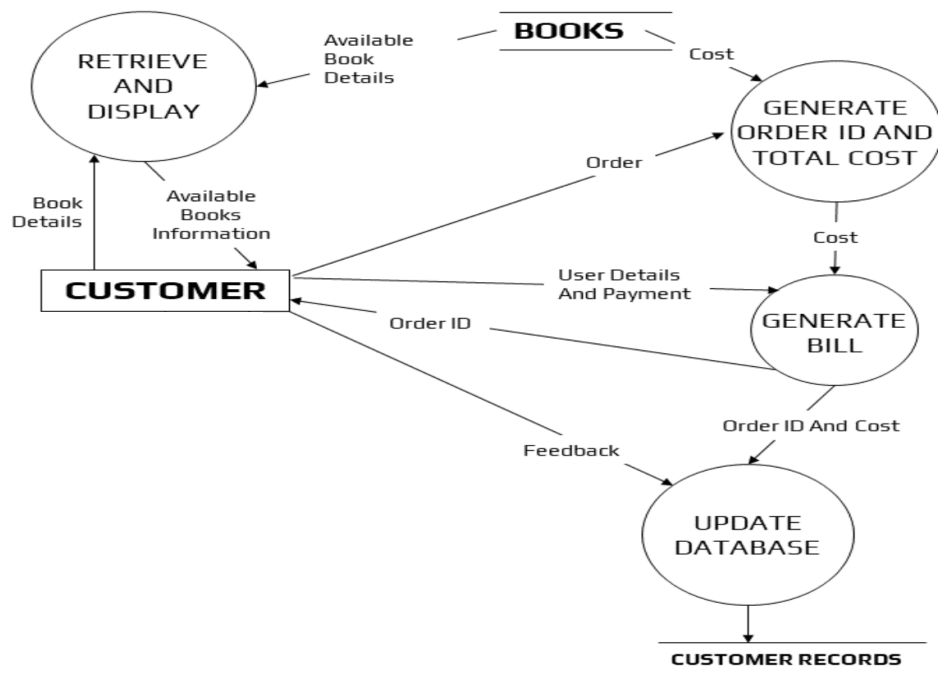


Data Flow Diagram

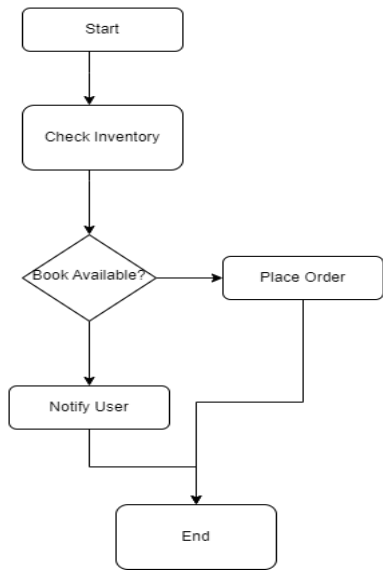
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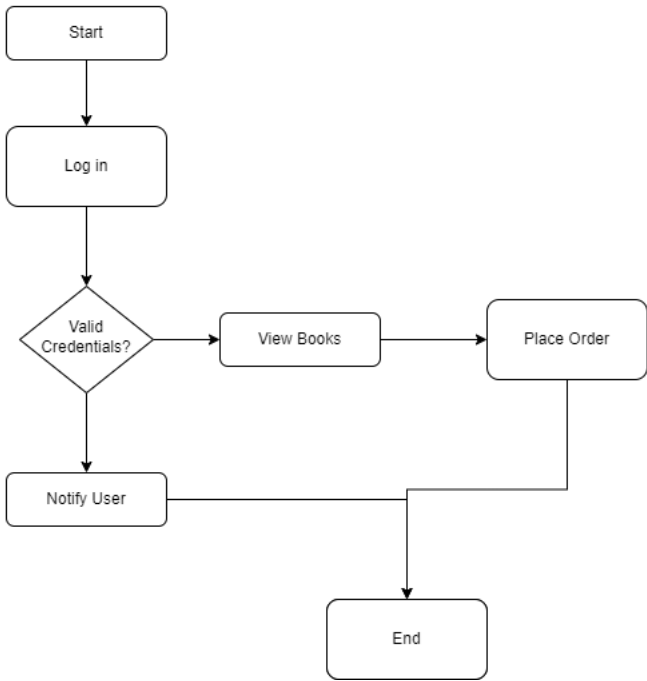
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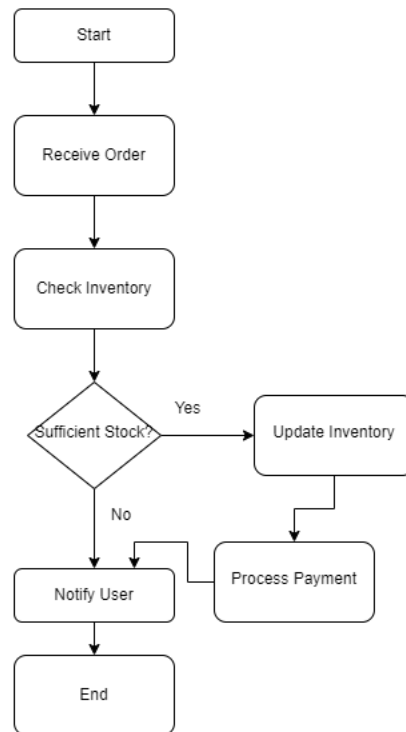
Book Inventory Management



User Account Management



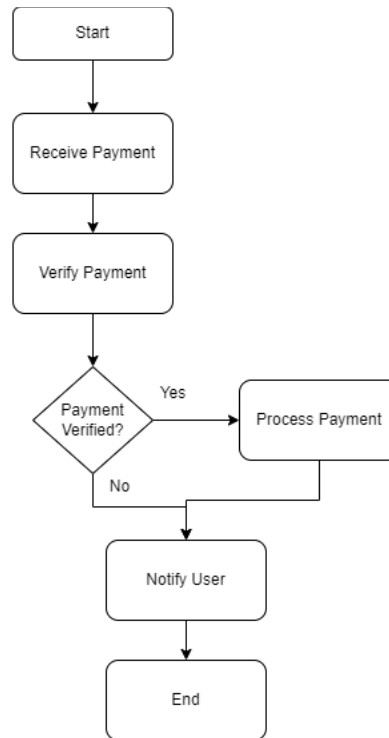
Order Processing



Book Management



Payment Processing



Access and Permission:

Admin

Admins have full access to all tables and functions in the database. They can add, modify, and delete data. Admins can also create new users and assign roles. Here are the specific permissions of the admin role.

- SELECT, INSERT, UPDATE, DELETE data in tables (Books, Customers, Publisher, Authors, Genre).
- View data in orders and order details.
- Create new users and assign roles.
- Modify roles and permissions of other users.

| Table | SELECT | INSERT | UPDATE | DELETE |
|-----------|--------|--------|--------|--------|
| Customers | ✓ | ✓ | ✓ | ✓ |
| Books | ✓ | ✓ | ✓ | ✓ |

| | | | | |
|-----------|---|---|---|---|
| Authors | ✓ | ✓ | ✓ | ✓ |
| Publisher | ✓ | ✓ | ✓ | ✓ |
| Genre | ✓ | ✓ | ✓ | ✓ |
| Orders | ✓ | ✓ | ✓ | ✓ |
| Discounts | ✓ | ✓ | ✓ | ✓ |
| Shippers | ✓ | ✓ | ✓ | ✓ |

Manager:

Manager will have the access of tables to add the data in the Books, Authors, Genre, and Publishers

- Manager can SELECT customers table, Books, Authors, Publishers, Genre
- Manager do not have permission to create the new user and modify the permissions of the existing users
- Manager can SELECT and view the discounts but don't have the access of the INSERT, UPDATE and DELETE for the Discounts table

| Table | SELECT | INSERT | UPDATE | DELETE |
|-----------|--------|--------|--------|--------|
| Customers | ✓ | X | X | X |
| Books | ✓ | ✓ | ✓ | ✓ |
| Authors | ✓ | ✓ | ✓ | ✓ |
| Publisher | ✓ | ✓ | ✓ | ✓ |
| Genre | ✓ | ✓ | ✓ | ✓ |
| Orders | ✓ | ✓ | ✓ | ✓ |
| Discounts | ✓ | X | X | X |
| Shippers | ✓ | ✓ | ✓ | ✓ |

Sales Executive:

Sales executive will have the access of tables containing the orders and discounts to view the sales report and apply the discounts based on sales.

| Table | SELECT | INSERT | UPDATE | DELETE |
|-----------|--------|--------|--------|--------|
| Customers | X | X | X | X |
| Books | X | X | X | X |

| | | | | |
|-----------|---|---|---|---|
| Authors | X | X | X | X |
| Publisher | X | X | X | X |
| Genre | X | X | X | X |
| Orders | ✓ | X | ✓ | X |
| Discounts | ✓ | ✓ | ✓ | ✓ |
| Shippers | X | X | X | X |

Customer:

Customer will have very limited access of the database; Customers can only view the data and update their information only.

| Table | SELECT | INSERT | UPDATE | DELETE |
|-----------|--------|--------|--------|--------|
| Customers | ✓ | ✓ | ✓ | ✓ |
| Books | ✓ | X | X | X |
| Authors | ✓ | X | X | X |
| Publisher | ✓ | X | X | X |
| Genre | ✓ | X | X | X |
| Orders | ✓ | X | X | X |
| Discounts | X | X | X | X |
| Shippers | X | X | X | X |

Views

A view is a virtual table based on the results of a SQL statement. The fields in view are fields from one or more real tables in the database

View 1: NUMBER_OF_BOOKS_IN_GENRE:

- This will display the number of books in each genre
- Admin, Manager have read permissions over this

View 2: NUMBER_OF_BOOKS_BY_AUTHOR:

- This will display the number of books by each author
- Admin, Manager have read permission for this

View 3: LIST_OF_BOOKS_ORDER_BY_RATING:

- This will display the list of the books ordered by the rating in descending order
- Admin, Manager have read permission for this

View 4: MOST_NUMBER_OF_BOOKS_PUBLISHED_BY_PUBLISHER:

- This will display the list of publishers with the highest number of books published in a year
- Admin, Manager have read permission for this

View 5: MOST_SOLD_GENRE_IN_A_LOCATION:

- This will display the list of most sold genres based on customers location
- Admin, Manager have read permission for this

View 6: AUTHOR_WITH_MOST_BOOKS_SOLD:

- This will display the list of authors with the most sold books in a single year.
- Admin, Manager have read permission for this.