NORTHERN UNIVERSITY
Knowledge for Innovation and Change

Software Development 2

Project Report

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Introduction :

- Objective: To design a database structure for an Online Book Store Management System.
- Focus on this report :
- Tables and Connections
- System Diagram
- Design Highlights

System Overview :

- Key Features

  - ❖ User Roles : Admin and Customers
  - ❖ Book management (add,remove)
  - ❖ Querying,Searching
  - ❖ Ordering
  - ❖ Notification and Announcement
  - ❖ Discount and Cupon

Database Structure:

- Table overview

  - ❖ Users: Admin, Customers (Name, email, contact number, role)
  - ❖ Books: (Title, Author name, Publications name, Price, Total Page, Category, Language, Availability, Short Description, ID)
  - ❖ Cart : (Book’s Id,Book Details, Total amount , Discount coupon, Number of Ordered books)

User Table

- **Columns**:
  - `User_id` (Primary Key)
  - `Name`
  - `Email`
  - `Password`
  - `Role` (Admin, Customer)
  - **Subcollections**:
    - **Bookmarks**: (List of Book IDs saved by the user)
    - **Cart**: (Cart Items: Book ID, Quantity, Total Amount, Coupon ID)
- **Relationship**:
  - One-to-Many: Links to **Cart Table**
  - One-to-Many: Links to **Orders Table**
  - One-to-Many: Links to **Comments Table**

Book Table

- **Columns**:
  - `Book_id` (Primary Key)
  - `Title`
  - `Author`
  - `Publication`
  - `Language`
  - `Availability`
  - `Price`
  - `Total Pages`
  - `Category`
  - `Short Description`
- **Relationship**:
  - One-to-Many: Links to **Cart Table**
  - One-to-Many: Links to **Comments Table**

Cart Table

- **Columns**:
  - `Cart_id` (Primary Key)
  - `User_id` (Foreign Key)
  - `Book_id` (Foreign Key)
  - `Coupon_id`
  - `Total Price`
  - `Total Books`
- **Relationship**:
  - Many-to-One: Links to **Users Table**
  - Many-to-One: Links to **Books Table**

Orders Table

- **Columns**:
  - `Order_id` (Primary Key)
  - `User_id` (Foreign Key)
  - `Books_Ordered` (Array of Book IDs)
  - `Total_Price`
  - `Date`
  - `Status` (Pending, Shipped, Delivered)
  - `Shipping_Address`

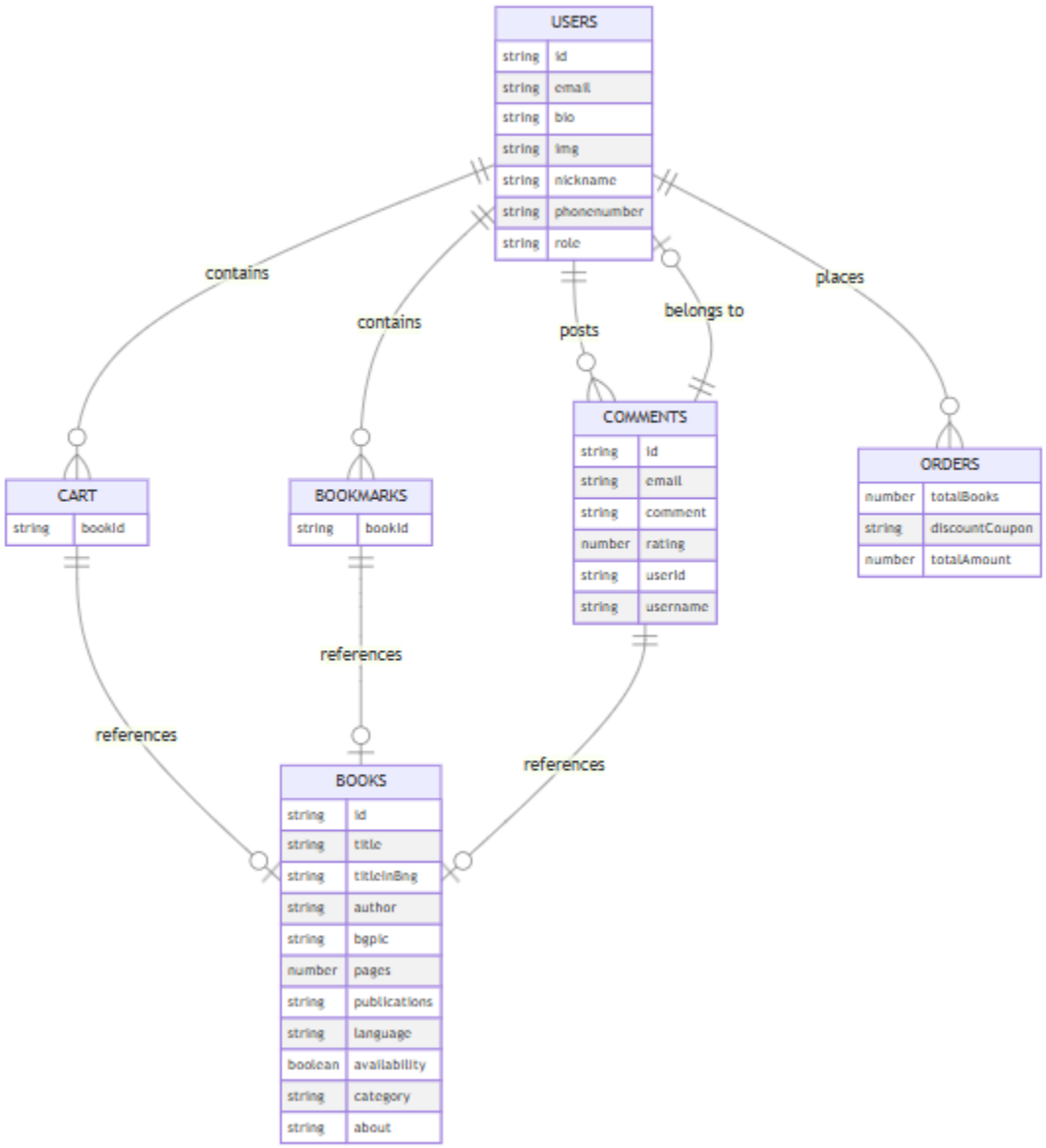
Comments Table

- **Columns**:
  - `Comment_id` (Primary Key)
  - `User_id` (Foreign Key)
  - `Book_id` (Foreign Key)
  - `Comment_Text`
  - `Date`

Key Relationships:

- **Users Table**:
  One-to-Many: Users → Cart
  One-to-Many: Users → Orders
  One-to-Many: Users → Comments
- **Books Table**:
  One-to-Many: Books → Cart
  One-to-Many: Books → Comments
- **Cart Table**:
  Serves as the link for the many-to-many relationship between Users and Books
- **Orders Table**:
  Many-to-One: Orders → Users
  Many-to-Many: Orders → Books (via the `Books_Ordered` array)
- **Comments Table**:
  Many-to-One: Comments → Users
  Many-to-One: Comments → Books

UML Diagram :


USERS
string id
string email
string bio
string img
string nickname
string phonenumber
string role
contains
contains
posts
belongs to
places
CART
string bookId
BOOKMARKS
string bookId
COMMENTS
string id
string email
string comment
number rating
string userId
string username
ORDERS
number totalBooks
string discountCoupon
number totalAmount
references
references
references
references
BOOKS
string id
string title
string titleInBng
string author
string bgpic
number pages
string publications
string language
boolean availability
string category
string about

Implementation Details:

Database Setup with Firebase

Backend Implementation (JavaScript)

Frontend Implementation

Feature Highlights

Conclusion: Developed an Online Book Store with Firebase, JavaScript, and Tailwind CSS.

Key features: User authentication, cart, and discounts**.**

Next Steps: Add payment gateways, real-time notifications, AI recommendations, and analytics**.**