**MindBooks Store**

**Project Proposal**

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**Business Project**

MindBooks is a small business store that sell affordable books to consumers. We have online market as well as physical store at Virginia. We have an owner, one sales representative, one librarian, one technician and one customer service hotline helper. Each of their role are assigned and are working full time. The system is designed to order books from our stores. The users are often students, although we have seen a variety of clients from a wide range of backgrounds and locations.

The idea of the project started when I was collecting required books for my next semester classes. After brainstorming, cutting off and adding various ideas, this project was the final decision. I also used online templets of various bookstores. Many had purchases, branches and warehouses but since this is a small business, I figured we don’t require advanced database at the moment.

**Entity Relationship**

I have come up with 6 different entities for the database of MindBooks. First being the Customer table which is used to create records of the customer information. Example, customerID will be number that is representing the customer. Legal name, email and home address are in record to keep contact. Second entity is the orders which used to keep track of list of orders. Again, orderID will represent individual order i.e. shipping. Third entity is the books which is a list of books, therefore the book name and cost with its ISBN representing each book. To keep it all together, the entity orderItems will have composite primary keys with each orderID that shows the books ordered in it. Lastly to make it easier to customers and us, I have created book author table that references the ISBN in books table and their respective authorID. Lastly, author table giving us the details of author information.

* Customer- Orders: A One Mandatory to Many Optional relationship. A customer can have many orders.
* Orders- OrderItems: A One Mandatory to Many mandatory relationship. An order can have one to many items.
* Books – OrderItems: A One Mandatory to Many Optional relationship. Many orderitems can have same book.
* Book- BookAuthor: A One to Many mandatory relationship. A book can have one to many BookAuthors
* AuthorInfo- BookAuthor: A One to Many relationship. An author may have written many books.

**Entity Relationship Diagram**

Diagram

Description automatically generated

**Relational Schema**

Diagram

Description automatically generated

**Creating tables and Inserting data**

The SQL script of creating the tentative tables is attached to the report. The list of data that are to be added to the database is also attached to the report in SQL form.

**SQL Sample Queries**

* 1. The first query with one built-in function:

I have chosen the built-in function count. The following query shown below counts the total number of authors of the book having ISBN ‘5432’

A screenshot of a computer

Description automatically generated with medium confidence

* 1. Using WHERE to filter result:

Bellow you can see the Where clause being used to find customers who lives in Virginia. To keep track of customers geographically.

A screenshot of a computer

Description automatically generated with medium confidence

* 1. Multiple tables using INNER JOIN:

The following query joins 3 tables i.e., Book, OrderItems and Orders using inner join syntax. Therefore, we can see the book title and ISBN where the condition asks for books that was sold in higher shipping cost more than 7.

Graphical user interface, text

Description automatically generated

1. Outer Join:

Below attached screenshot shows all the customers on the database and their order ID. We can see that one of the customers has a null value for the orderID. It means that the customer has not placed an order yet from the store, therefore giving perfect example of an outer join.

A screenshot of a computer

Description automatically generated

* By creating a database using MySQL, I was able to populate the tables/ entities with data.
* Since the relational database holds data across numerous tables, utilizing MySQL is best to store data. It is simple to use and is simple to set up. MySQL offers data encryption, data protection features, and support for SSH and SSL.
* Using SQL queries and statements that we learned from class.
* In SQL, it is easier to access data with various conditions.

**Conclusion**

The main purpose of the project was to record identifying customer information. To record books that are sold. To increase access order history and costs. To make it easier for the store to keep track of most popular items. To efficiently use SQL database.

**Reference**

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