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Project Phase 1 Report

Based off of the requirements provided, the database application for Book Fetch Inc. will require a number of features. The requirements have detailed data required in the system, as well as how that data will be used and who is able to interact with it.

At a high level, the workflow for this application will be as follows:

1. Build relation schemas using the information provided. Schemas are required for the following entities: student users, customer support users, administrators, books, universities, departments, instructors, courses, trouble tickets, carts, and orders Schemas which model people (students, customer support, etc.) have a number of elements in common and can be normalized to minimize any redundancy.

   Several schemas can take advantage of user-generated types to represent information more clearly. Examples of this include ticket status, book type, and credit card type. These could be enumerated using integers, but custom types will provide constraint and eliminate confusion and ambiguity.

   Recommendations do not require a schema. They are obtained by running operations on other data.

2. Construct the tables to hold the data. There will be several relationships between entities in the database. For example, tickets will be linked to the administrator they are assigned to via a foreign key.

3. With the database created, an interface for users will need to be created. Access to information must be restricted by user type. As shown in the functional requirements, students must be allowed to create an entry for themselves, create a cart, add items, convert a cart into an order, post reviews, etc.. These must all be strictly limited to student users.

   Customer service users need to respond to trouble tickets and handle order cancellations. As such, particular data, like trouble tickets, must be accessible by them alone, but only when they are new. Once they are assigned, the relevant administrator must be able to access that data.

   Administrators must be able to update inventory, add books and handle assigned trouble tickets. There must additionally be a single super-administrator.