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CSCI 440 Database Systems

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Project Proposal

The problem that we intend to solve is the digital data management needs of a fictional online grocery store. These data management needs will include long-term storage requirements, user transaction, inventory, user tracking, and distributor management. By the end of the project we will have implemented a database solution and corresponding software interface to address the data needs of an online company.

We plan to solve our project by describing and building the conceptual schema first. Once we finalize which entities we need for our online store, we will determine which attributes should go with each entity. We will build either an ER or an EER diagram to see a diagram of how all the components of our design are working together. After we finish with our diagram, we plan to construct a relational schema to model the constraints and relationships between the entities more clearly. We will then start the coding process and defining the entities and attributes. Once we have everything constructed, we will start defining constraints and programming how each entity is related to the other entities.

We intend to use realistic data generated by a random information generator to create the data that will be stored within the database. Because of this, we do not expect to do much scrubbing/cleaning of the information used by this project. However, if there are some random records that don’t seem to fit well within our entity domains or their corresponding attributes, we may modify or delete certain records, attributes, or elements to improve the quality of information stored by the system.

Some of the queries users of our system would be able to make would include adding/deleting operations to change the content of a users virtual shopping cart. Additionally query examples could include a user querying how many items are in their shopping cart, browse for items, ask for item price/feedback, enter their shipping address and payment method, post reviews and rate items, request a payment method, and ask questions of the suppliers.

We will be using Node.js/JavaScript as our software interface with the MySQL database management system in combination with HTML, CSS, and JavaScript. We will use these technologies to create a web-based interface to allow for our users and administrators to manipulate, analyze, and update database information pertaining to their role in the system.

**Figure 1: ER Diagram for project**