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**Game Rental Database**

CS 461, Database Systems Final Project

Professor Sutton

This project was designed to help students learn how to create a database management system from scratch. Given a project PDF, we set out to create an in-depth database setup to demonstrate our skills in database management systems (DBMS).

Our goal with this project was to provide a system that manages the inventory and rental of video games in a rental store network of franchises. In this franchise system, there are many stores, each in a different region carrying different stock and having different employees and customers.

One of the main technical problems we faced when designing this database system was regarding the staff. To differentiate managers from cashiers, we needed to make specific logins for managers that have administrative permissions, but only for the managers.

Some of the main requirements of this database were: buyers register with their name and interests, buyers can view game information, buyers can search for games at either their region’s store or different store, cashiers and managers can check out buyers, buyer can see cashiers name but not other information, everyone can see if game is rented out currently, cashiers and managers can view all store information, buyer can only view store region and game count, managers can edit inventory manually, and cashiers can but all game information but not edit the game information.

In order to mitigate redundancies, we decided to break up all the items as we built the schema. We did this by choosing not to make a single entry for each game and have a bunch of attributes, making everything self-contained instead. This eliminates overlap and redundancies between the tables which leaves less room for errors and unexpected outputs.

When designing the GUI,