

## CMP 320 Database Systems

### Spring 2024 Project Section #2

Title: Game Rental Management System

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## **Project Title:** Game Rental Management System

### **Project Description**

This project aims to create a system in which a customer can rent a copy of a game available at a certain store branch. Each branch may contain a number of copies for multiple games, and each game available in a branch is made by 1 or more developers and published by a single publisher.

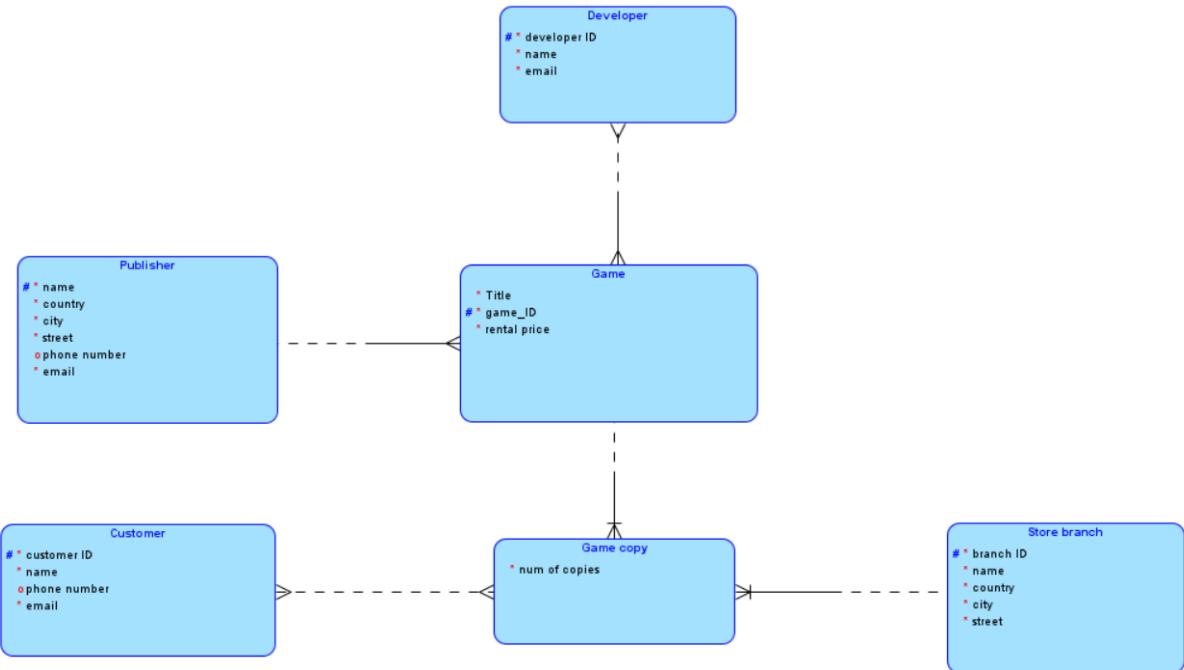
The software allows the user to add, update, and delete branches, publishers, developers, games, and customers. Additionally, the program allows the user to update the number of copies available in each branch. The software will allow customers to rent copies of games for a fixed duration, a single week, and then return them back to the branch. SQL Data Manipulation Language (DML) statements such as INSERT, DELETE, and UPDATE will be used to achieve the aforementioned functionalities.

In our Entity-Relationship Diagram, we have 5 separate relationships which include a many-to-many relationship between Developer and Game, a one-to-many relationship between Publisher and Game, and a many-to-many relationship between Customer and Game copy where Game copy is a weak entity identified by the Game and Store Branch entities through one-to-many relationships.

The application enforces user access control with two roles: Administrator and Customer user. Administrators can manage users and have all Customer user privileges. Customer users can rent games, return games, search for games, and view the different available games. The user passwords are secure by using a modified version of Caesar encryption.

## Diagrams

### ER Diagram



### Database Schema

