**5707 DATA MODELING FOR INFORMATION PROFESSIONAL**

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**Movie Theatre Management System**

(Final Project Report)

**Abstract**

The movie theatre management system is an advanced database project that aims to streamline the operations of a cinema theatre. This system provides a comprehensive platform that helps theatre managers and users to manage movie screenings, ticket sales, seat reservations, snack orders, and other related tasks, and search for theatres and movies respectively. The database design follows a normalized approach to ensure data consistency, minimize redundancy, and provide efficient data retrieval. This SQL database project manages a movie theatre system with tables for users, movies, theatres, screens, showtimes, tickets, reviews, discounts, snacks, and orders. Each table has its attributes for storing relevant information. The system can track user information, movie showtimes, ticket sales, reviews, snack orders, and available discounts.

This movie theatre management system is highly beneficial for theatre managers and users. It provides theatre managers with an efficient way to manage theatre operations and make informed decisions. Overall, this database provides a comprehensive management system for a movie theatre, allowing for easy tracking of users, movies, theatres, screens, showtimes, tickets, reviews, discounts, snacks, and orders.

**Objectives:**

* Efficient management of user data, movie data, theatre data, screen data, showtime data, ticket data, review data, discount data, snack data, and order data.
* Easy booking of movie tickets and snacks by users.
* Accurate tracking of available seats and snacks.
* Real-time updates of available seats, showtimes, and snack availability.
* Simple and efficient management of user reviews and ratings.
* Efficient management of discount codes and their usage.
* Efficient management of user orders and their fulffulfillment
* Secure and efficient management of user data and financial transactions.
* Comprehensive reporting and analysis of data to aid in decision-making and improve the system's efficiency.
* Scalability and flexibility of the system to accommodate future changes and updates.

**User Requirements:**

The system will be able to address the following user requirements:

* Business User:
  + Retrieve the movie title and showtime details.
  + Retrieve all theatres and their respective screens, even if the theatre doesn't have screen numbers.
  + Retrieve all showtimes and their respective screens, even if there are no showtimes scheduled for a particular screen.
  + Retrieve the movie title, rating, and review details.
  + Get all the showtimes for a specific movie.
  + Get all the movies showing in a specific theatre.
  + Get all the showtimes for a specific movie in a specific theatre.
  + Get all the users who have purchased tickets for a specific movie.

**Business Rules:**

* Each user must have a unique User ID.
* Each user can have multiple orders.
* Each User can have multiple tickets.
* Each movie must have a unique Movie ID.
* Each movie can have multiple show times.
* Each movie can have multiple tickets.
* Each theatre must have a unique Theatre ID.
* Each theatre can have multiple screens.
* Each screen must have a unique Screen ID.
* A screen must belong to a theatre that exists on the Theatres table.
* Each showtime must have a unique Showtime ID.
* Showtime must belong to a movie that exists in the Movies table.
* A showtime must be shown on a screen that exists in the Screens table.
* Each ticket must have a unique Ticket ID.
* A ticket must be for showtime that exists in the Showtimes table.
* A ticket must be purchased by a user that exists in the Users table.
* Each review must have a unique Review ID.
* A review must be written by a user that exists in the Users table.
* A review must be for a movie that exists in the Movies table.
* Each discount must have a unique Discount ID.
* Each snack must have a unique Snack ID.
* Each order must have a unique Order ID.
* An order must be made by a user that exists in the Users table.
* Order must be for a snack that exists on the Snacks table.

**ER Diagram:**

Diagram, schematic

Description automatically generated

**Data Dictionary:**



|  |
| --- |
| PK - Primary Key used in the tables |
| FK - Foreign Key used in the tables |
| INT – Data type, numerical values in the above tables |
| VARCHAR - Datatype, Used to represent text or character data of variable length in the above tables |
| DATETIME - Datatype, Used to represent date and time values |
| DECIMAL – Datatype, Used to store decimal numbers with high precision and scale |
| ENUM - Datatype, Used to define a set of possible values for a column |

**Data Entry & Update:**

**Graphical user interface, text, application

Description automatically generated**

User table creation

**Graphical user interface, text, application, email

Description automatically generated**

Movies table creation

**Graphical user interface, text, application, email

Description automatically generated**

User table Theatres

**Graphical user interface, text, application, email

Description automatically generated**

Screen table creation

**Graphical user interface, text, application

Description automatically generated**

Showtime table creation

**Graphical user interface, text, email

Description automatically generated**

Tickets table creation

**Graphical user interface, text

Description automatically generated**

Reviews table creation

**Graphical user interface, text, application, email

Description automatically generated**

Discounts table creation

**Graphical user interface, text, application, email

Description automatically generated**

Snacks table creation

**Graphical user interface, text, application

Description automatically generated**

Orders table creation

**Inserted Records from Information\_Schema:**

**Graphical user interface, text, application, email

Description automatically generated**

**Data Retrieval and Simple Reports**

1. **Retrieve the movie title and showtime details.**

**Graphical user interface, text, application, email

Description automatically generated**

1. **To retrieve all theatres and their respective screens, even if the theatre dosent have screen numbers**

**Graphical user interface, text, application, email

Description automatically generated**

1. **To retrieve all showtimes and their respective screens, even if there are no showtimes scheduled for a particular screen**

**Graphical user interface, text, application, email

Description automatically generated**

1. **To retrieve the movie title, rating, and review details**

**Graphical user interface, text, application, email

Description automatically generated**

1. **To get all the showtimes for a specific movie**

**Graphical user interface, text, application, email

Description automatically generated**

1. **To get all the movies showing in a specific theatre**

**Graphical user interface, text, application, email

Description automatically generated7. To get all the showtimes for a specific movie in a specific theatre**

**Graphical user interface, text, application

Description automatically generated**

1. **To get all the users who have purchased tickets for a specific movie**

**Graphical user interface, text, application, email

Description automatically generated**