CS353 - DATABASE SYSTEMS

PROJECT PROPOSAL

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GROUP NO: 19

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Introduction

This report proposes our term project for the CS353 Database Systems class. We will create an online movie rental system. In this report, we describe the project and then discuss the functional and non-functional requirements and limitations of the project.

This report will be divided into the following sections:

1) **Project Description**
    - **a)** Reason for Using a Database
    - **b)** The Usage of the Database
2) **Requirements**
    - **a)** Functional Requirements
    - **b)** Non-functional Requirements
    - **c)** Limitations

Project Description

We will design and build an online movie rental system that will act as both a market and a social hub for movie lovers. The system will have several types of users such as customers and employees. We will store information about movies, users, and their ratings and friendship relationships.

The project will provide users with a system where they can rent movies for a period. Any user of the system will have to authenticate in order to log in to the system. There will be employees and customers.

Customers will be able to rent movies. If they had a movie in the past they will be able to rate that movie or recommend it to their friends. Customers will be able to send friendship request to other customers. And they will be able to accept or decline a request. Also, customers will be able to make a new movie request if the wanted movie is not in the system.

Employees of the system will be authorized to manage customers. They will be able to add or delete customers. They can add or delete movies. They will be notified when a new movie request has arrived.

Reason for Using a Database

Following are the reasons that why why the system will need a database system to perform the operations related to the system:

- We need to store the user data in order to separate accounts from each other.
- We need to store movie information. Further, we need to store the possession of the movies by customers because we want to display the watchlist of the users.

- We need to store friendship relations and requests.
- We need to store customer ratings and comments on movies. Further, we should be able to quickly calculate the average score of any movie.

The Usage of the Database

By using a database, we were able to determine the relations between the entities. These relations include the following:

- Users can be customers or employees
- Movies can be created by employees
- A customer can possess several movies while a movie can be possessed by several customers.
- Customers can send friendship requests to several customers and they can receive several friendship requests from other customers.
- A movie can have many ratings and comments but a rating or a comment belongs to one movie.

Requirements

Functional Requirements

- Customers can rent movies.
- Customers can make a new movie request.
- Customers can send friendship requests to customers who are not their friends yet. And they can end their friendship with their friends.
- Employees can add or delete movies. They can delete users. When a user is deleted all of their comments and ratings are also deleted.
- Couriers can view the destination of the shipments they are currently delivering.

Non-functional Requirements

- Up to 5000 people can be online at the same time in the system [Performance Requirement].
- Servers must be online 7/24 [Performance Requirement].
- System crush does not cause data loss [Reliability Requirement].
- The system will be simple as it will have a wide range of users from different backgrounds [Usability Requirement].

Limitations

- Only signed customers can rent movies.
- A customer should possess the movie or be possessed in the past in order to make a comment or rate.
- Friendship requests can only be made to customers who are not friends of the sender.
- A customer can recommend movies to another customer only if they are friends.
- A movie can have an average rating point only if there are 10 ratings.

- A movie can not be rated by the same customers twice, but a customer can make comments about the same movie more than once.

E/R Diagram

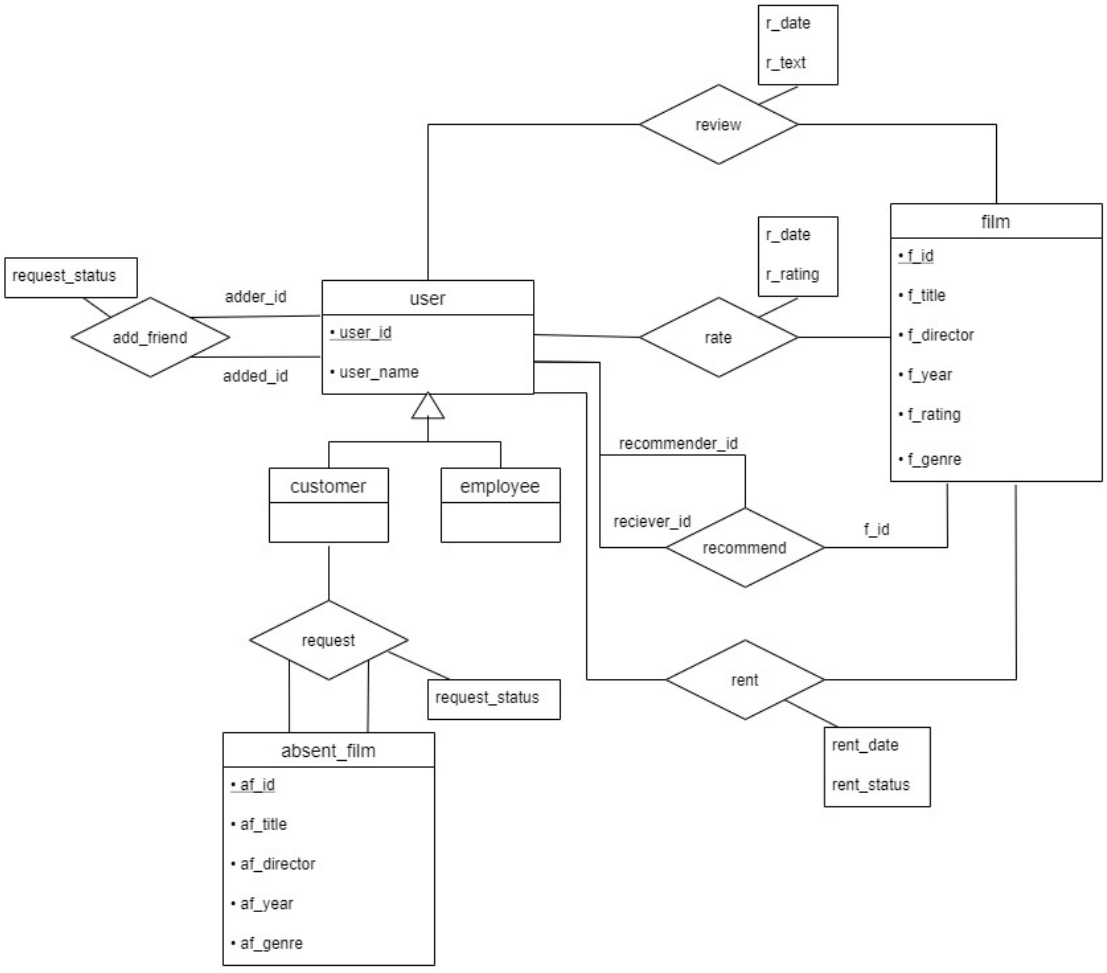

Figure 1: ER Diagram of the Project

Project Web Page

OnlineMovieRentalSystem.github.io