



CS353 Project

“DMGTV”

Project Proposal

Gökberk Beydemir - 21902638

Melis Atun - 21901865

Mert Barkın Er - 21901645

Doruk Kantarcıoğlu - 21902319

[dorukkantarcioglu.github.io/cs-353-website](https://dorukkantarcioglu.github.io/cs-353-website)

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## **Introduction**

When the COVID-19 virus had first emerged in 2019 and all of the people in the world started to spend more time at their homes than ever before due to quarantines, watching movies online has been a major part of people's daily life. Therefore, online movie rental systems have started to be used more often, and accessing hundreds of movies online has become so popular, especially in this quarantine period of the world. Also, although the quarantine period has ended, people got used to watching movies online and they still continue to do so instead of going to the cinema and physically watching there.

The users can go online to the movie rental company's website and select a movie that they want to watch. These movies are recorded in the company's database. Therefore, users can access what movies they watched in the past when they would like to and they can also access what movies they have rented if the rental time is not over.

## **Description**

In this project, we are going to develop an application for an online movie rental system with a relational database. The name of the project is "DMGTV". Using this system, users can buy and rent movies.

Registering to the system, users will be able to buy or rent a movie after selecting it. Then, they will proceed to the second step which is the payment step. If the user has saved their credit card to the system before, they can directly pay. Otherwise, they can enter their card information and pay. After they have rented the movie, users can watch it whenever they want and multiple times in the rental period. The rental period starts from one month and is unlimited

in length, depending on the wish and budget of the user. If the rental period has ended, users can no longer watch the movie that they have rented. Also, users can buy movies directly instead of renting them. This way, there is no time limit to watch.

In the system, users can write movie reviews as well. For example, they can rate a movie from 0 to 10 and write comments about a movie. Therefore, when a user wants to buy or rent a movie, they can decide after reviewing the rating point and comments of the movie.

The system will also be able to order movies according to release dates, genre, rating, and price. When a user wants to select a movie, they can order according to those. In addition, users can search movies according to title, director, genre, and production year. Also, users can add movies to their wishlist so that they can buy or rent them later on or delete them from their wishlist and add new ones as they like.

Furthermore, users can be friends with other users so that they can recommend movies to each other. Customers can also make requests about non-existent movies in the system by providing the title and production year of the movie. Employees can review these requests and add the movies which they see appropriate. Additionally, employees can delete user accounts if they violate terms of service.

In order to keep the information about the user accounts, movies registered in the system, feedback given to movies, credit cards of the users, customer ratings, or relations such as friendship, a relational database will be used which is an optimal and reasonable solution.

# Requirements

In this section, the functional and non-functional requirements of the system are explained.

## Functional Requirements

The users of the system are customers and employees. The functionalities of the system from these users' perspectives are categorized and described below.

### Requirements for All Users

- Users can register to the system with their name and the password that they choose.
- Users can log in to the system with their name and password.
- Users must have a full name and birth date in addition to their username and password.
- Users can update a password to be able to log in easily.
- Users can rent a movie from one month to unlimited amount of time.
- Users can buy a movie.
- Users can enter their credit card information into the system which includes card number, expiration date, and CVV.
- Users can make payments using their credit card that they have saved to the system before or they can pay directly if they would like without saving their card.
- Users can make movie reviews such as rating a movie from 0 to 10 and commenting about the movie.
- Users can view movie-related information.
- Users can like movies.
- Users can add movies to their wishlist or delete movies from their wishlist.

- Users can edit their credentials.
- Users can view their rented and bought movies.
- Users can add or remove their friends.
- Users can make movie recommendations to their friends.
- Users can search movies by title, director, genre, and production year.

### **Requirements for Employees**

- Employees can add a movie to the system.
- Employees can update a movie.
- Employees can delete a movie from the system.
- Employees can review movie requests made by customers.
- Employees can delete movie reviews.
- Employees can delete customer accounts.

### **Requirements for Customers**

- Customers can make requests for non-existent movies to be added to the system and these requests must have a movie title and a production year.

### **Other Requirements**

- Customers must have a registration date.
- Employees must have an employment date and information about their salary.
- The system must keep the registration or cancellation date of the movies.
- The system must keep the registration date of the customers.

# **Non-Functional Requirements**

## **Usability**

- While using the website, the users who are not registered will be able to see movies with their ratings and comments. However, registered users can add ratings and comments and they can also add their friends. Employees can add movies and delete movies.

## **Reliability**

- The system has to be reliable because users will enter their credit card information which contains crucial information of the user and they will pay with their credit cards. In order to protect users' personal information and manage the payments that they make, users will use a password when they log in to the system, and these passwords will not be saved into the database directly. Instead, they will be saved in hash forms. Also, when users make a payment, a message from the bank of their credit card will send a confirmation number in order to secure users' payment completely.

## **Extensibility**

- As described above, employees will be able to add new movies to the system as well as delete movies from the system. Therefore, the website should be extensible in order to make addition of new features easier.

## **Performance**

- The performance of the system is important as it should not be frustrating for users to use the website. To improve the performance of the system, the database will be optimized as much as possible so that it can handle heavy traffic.

# Limitations

In order to ensure a safe application life-cycle and to prevent unintended database accesses/modifications, we have established the following constraints:

- The customers can rent a movie only if they have provided a valid credit card.
- Only registered customers can request a movie to be added.
- Users should choose a unique username.
- Users can only recommend movies to their friends.
- Users cannot rent a movie for less than a month.
- Users cannot rent bought movies and cannot buy rented movies.
- Users can only create a password containing 10 characters including symbols and numbers without space.
- Only employees can add or remove movies.
- Users cannot add the same movie to their wishlist.
- Users cannot add currently rented or bought movies to their wishlist.
- Users cannot like a movie twice.
- Users cannot make the same recommendation to the same friend more than once.
- Users cannot request a movie which is already in the database.
- Only employees can delete an existing customer.
- A movie review cannot be done without rating the movie.



# E/R Diagram

