

Nankai University



College of Software

Web Application Development

Assignment II

DVD MOVIE RENTAL SYSTEM

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By

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Introduction

A DVD rental system refers to a method of renting movies and other forms of entertainment in the form of DVDs. In the past, DVD rental stores were common, where customers could browse through a selection of DVDs, rent their desired movies, and return them after a certain period. However, with the rise of online streaming platforms and digital media, DVD rental systems have evolved to include online rental services and subscription-based models. These systems allow users to access a vast library of DVDs and choose their desired titles, which are then shipped to their doorstep. DVD rental systems offer convenience and variety for movie enthusiasts who prefer physical copies of their favorite films or have limited access to reliable internet connections.

The purpose of the website is to provide an online catalog for a small local library, where users can browse available DVDs and manage their accounts.

Technologies

This system will use the following technologies

- i. Web Framework – Django
Django Version – 4.1.7 and Python Version 3.11
- ii. Database – Sqlite
Sqlite is used for data storage
- iii. Bootstrap
Bootstrap 5 is used for interface design
- iv. Text Editor – Sublime
Latest version is used
- v. Source code management – Git and Github
Git is used to track changes for the source code and Github is used to store the source code
- vi. Hosting – pythonanywhere.com
PythonAnywhere is used to host the web application.

Functionalities

The following are the functionalities of the web application

- i. The system should allow user to create account
- ii. The system should allow user to login
- iii. The system should allow user to browse for all movies
- iv. The system should allow user to view movies by genre
- v. The system should allow user to view movie details
- vi. The system should allow user to view all his/her rented movies
- vii. The system should allow staff to add movies
- viii. The system should allow staff to renew due date
- ix. The system should allow staff to view all rented movies

System Design

The system has two types of users;

- i. Normal user
Can browser for movies, can view list of rented movies and their statuses
- ii. Staff
Can add movies, renew due dates.

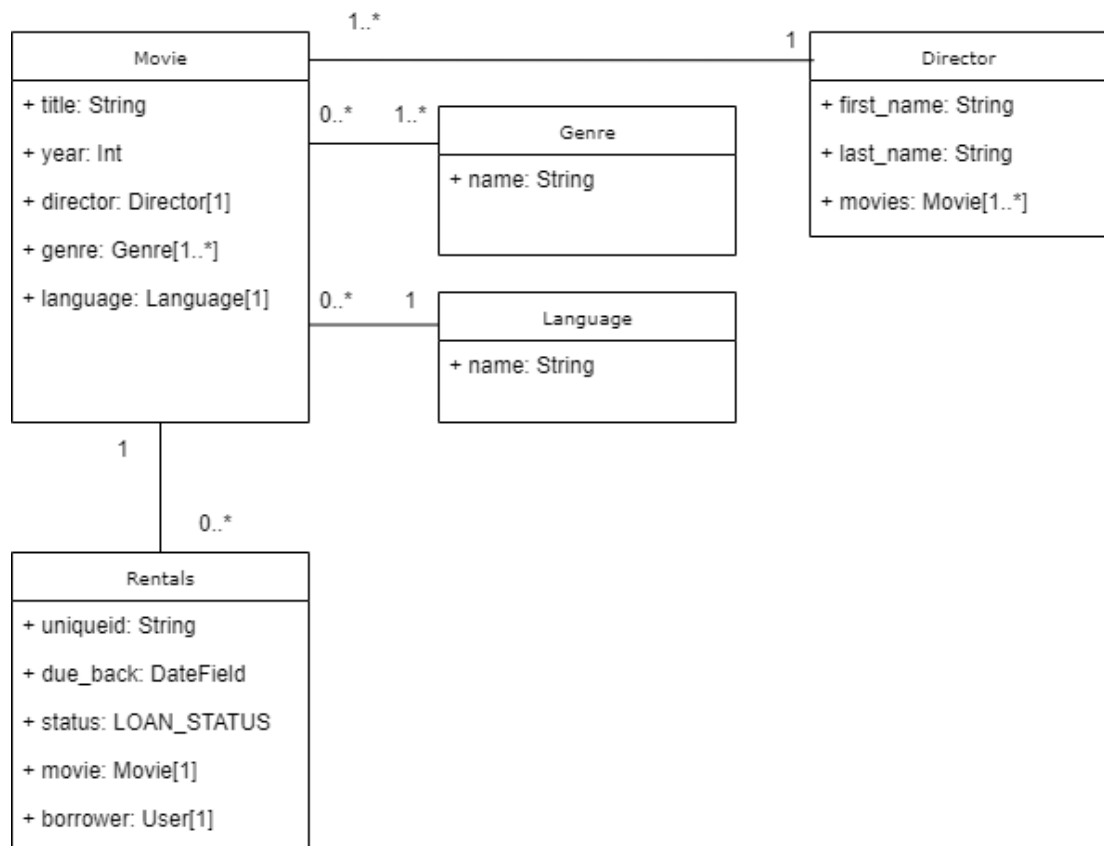


Figure 1 UML Diagram

The system will have the following navigation/menu structure

- Brand
- Home
- All Movies
- About
- Login
- Username
 - My Profile
 - My Rentals
 - Logout

Main Menu	Sub Menu	Description
Brand/Home Page		
All Movies		This link takes the user to the page which show all the movies available in the system
About		This link takes the user to the page where there is description of the website and the developer information
Login		This page displays the form to login
Username		This link shows the username of the logged user. Visible only when user is logged in.
	My Profile	This link will show the profile information of logged in user.
	My Rentals	This link will show the list of logged in user rented movies
	Logout	This link will logout the logged in user

Implementation

1. Coding. Django Python Web framework will be used
2. User Interface.

Source Code

The source code can be found at <https://github.com/josephmtinangi/moviedvdrental>

Conclusion

Django is a high-level, open-source Python web framework that follows the Model-View-Controller (MVC) architectural pattern. It provides a robust set of tools and features for building web applications quickly and efficiently. Django emphasizes reusability, modularity, and adheres to the "Don't Repeat Yourself" (DRY) principle, which promotes writing clean, concise, and maintainable code. The framework includes various components such as an object-relational mapper (ORM) for database interactions, URL routing, template engine, authentication system, and administrative interface. Django also promotes best practices for security, scalability, and performance. Its extensive documentation, active community, and vast ecosystem of packages make it a popular choice for developers looking to build complex and feature-rich web applications.