Online Movie Shop

Overview

The project is to design a simple three-screen application for an online movie shop which displays a list of available movies from an API and calculates movie rental fees for a movie selected from the list. The candidate is responsible for:

- Developing the user interface (**Frontend, Fullstack Engineer**)
- Developing the backend (**Fullstack, Backend Engineer**)

The application has the following requirements:

Data

The data returned from an API consists the following information about the movie

- All movies have the following information:
    - movie Title
    - movie Type (Regular, Children's Movie, New Release)
    - movie Genre (Action, Drama, Romance, Comedy, Horror)
    - popularity
- The following movie types have the following additional properties:
    - Children's Movie
        - Maximum Age
    - New Release
        - Year Released

Etc..

User interface

Login screen

The login screen only requires the user to enter a username and click a login button. No authentication is required.

- User name should be alphanumeric character
- Login button should be disabled if the username input is less than 4 characters
- On invalid input show appropriate error message is displayed

Movie list screen

The movie list screen should display the list of movies retrieved from an API and allow a user to select a movie to rent and enter the number of days for which they want to rent. Upon selecting the movie to rent, the system should take the user to the movie price screen.

- The movie list on this screen should display a list of movies retrieved from API. The list should show at least 5 movies with the following information for each movie.
    - movie Title
    - movie Type (one of Regular, Children's Movie, New Release)
    - movie Genre (one of Action, Drama, Romance, Comedy, Horror)
- The movie list screen should show the name of the user logged in.

Movie price screen

The movie price screen should display the following information

- The title of the movie selected
- Date inputs - user enters the date range when the selected movie is available
- The number of days based on the selected date range
- The calculated price for the rental. This price should be calculated differently for each movie type using a movie type rate and the number of days for rental. The following rates can be assumed:
    - Regular: 1$/day
    - Children's Movie: 0.54$ / Day
    - New Release: 1.5$ / Day
- The calculation for each type is as follows:
    - Regular: rate × days
    - Children's movie: rate × days + (maximum age / 2)
    - New release: rate × days + (release year)

Admin Screen

Admin User should be able to add/remove movies.

- User should enter admin as a username to access this page
- Create movie, Delete movie, set the price
- Maximum number of movies to rent

Backend

API

Write the API in a framework of your choice (e.g. FastAPI). Define endpoints which provide the required interactions to the frontend. Use a ORM of your choice (e.g. sqlalchemy) to interact with the database.

Database

Define the data model and implement it in a database of your choice (e.g. Postgresql) using a ORM of your choice.

Note and Instruction

- Use framework(s) of your choice
- The project will be evaluated based on the following
    - Coding structure
    - Accessibility
    - Best practices
    - Performance
    - Error handling
    - Validation
    - Empty state management
- Bonus points for easily reproducible code (e.g. using docker-compose)
- Make reasonable assumptions where necessary