Individual Project

You'll have to create a Database Design project document for a Video Streaming database. Below is a general description of the database requirements as presented by the product owner. You'll have to design only the database, don't have to design any other components (e.g. web application, services, …). Feel free to add any other information you think is missing and needed for your design.

Database Requirements.

The Video Streaming Database (VSDB) will service following products:

1. Web-based platform used by our clients to stream video content on their devices. Similar to Netflix, Hulu or Disney+
2. Stream maintenance team that adds/removes/modify existing content.
3. Accounting department to review payments.
4. Reporting platform where management review usage reports and statistics.

The VSDB will contain a set of movies and TV Shows. Each movie and tv show will contain at least a description, rating (see ratings symbol table), rating components (zero or more of the movie rating components – see rating component table), genre, score (1-10, based on user scores), cover picture (path to the jpg file with the movie/show poster), actors, directors, release year and cost to distribute the show. TV Shows will be split in multiple seasons, each season having multiple episodes. Each Movie and each TV Show episode will store the path to files where the show file is stored for each resolution (thus we have multiple resolutions for each move). Resolutions may vary from 480p, 720p, 1080p, 1440p, 4K and 8K. Not all shows have all resolutions, but all shows have at least one.

The VSDB will contain also all the information needed for the video-streaming web platform clients to login to their account. Part of the clients accounts it will store at least the login, client name, client address, age, address, payment option (credit card, debit account, paypal, amazon pay and moneygram). Note that each payment option may need different information from the client. Payments will be made monthly. If a user didn't have the payment up to date his account will be marked as inactive. For each account there may be 1 to 5 profiles created. Each profile will contain a profile name and the icon name associated with that profile (this icon will be displayed on the webpage).

The VSDB will store for each movie/show a count on how many distinct users (profiles) that watched the movie/show.

Rating Symbol - Description
G – General Audiences
PG – Parental Guidance Suggested
PG-13 – Parents Strongly Cautioned
R – Restricted
NC-17 – Adults Only
NR – Not Rated
Rating Components
Violence
Language
Drugs and substance abuse
Nudity and sexual content

Web clients will be able to search movies/shows in the database based on their name, genre, year and score.

Beside web clients the VSDB will also contain admin users that are able to maintain the movie/show database. These admin users will login through another web application where they'll be able to search movies/shows by ID and edit these. Of course, they'll also be able to insert and delete movie/shows. For audit purposes the admin users will be able to view who last modified/created/deleted a movie/show and when.

Accounting team will use another web application in order to view deposits and costs associated with the Video Streaming platform. People from the accounting team will be identified based on their login name and password. These users will be able to generate and view profit and loss report generated each month (total distribution cost for the shows added in the given month and total client's payments that month).

Management team will have access to a special reporting application that will give them different reports including: given a movie display viewing history, given a client return access history, given a movie return its profitability, that is number of views divided by its distribution cost, most viewed 10 shows in a given month/day.

The document will contain at least the following sections:

1. Database Initial Study.

Defines the problems and constraints.

Define Objectives.

Define Scope and Boundaries.

2. Database Design

Create semantic database model.

Create conceptual design.

DBMS selection.

Create Physical Design.

Create External Schema Interface. (Views/Functions/Procedures)

3. Implementation and loading.

DBMS configuration parameters.

Create database(s).

Implement External Schema.

Load initial Data (initial show list is stored in a comma delimited text file).

4. Testing and evaluation.

Test the database.

Fine-tune the database.

Evaluate the database.

5. Operation.

Produce the required information flow.

6. Maintenance and Evolution.

Introduce proposed changes.

In case of a group project the following needs also to be considered

1. Each movie will have zero or multiple reviews and 1 or multiple writers.
2. Each movie has a running time in minutes.
3. Each movie will have associated 0 or more film scores (https://en.wikipedia.org/wiki/Film_score) that is the music created for the movie. Music can be searched by client by their artists or song name. Film score may also have a cover attached to it (jpg image).
4. Each user review can be flagged either: Contain Spoilers or Does not Contain Spoilers or Review Not Checked for spoilers.
5. Need to create UML diagram.
6. Each student must email the teacher and the rest of their group members one positive thing and one thing that could be improved about each other member of the group.
7. Each student should also email the teacher private peer grades (10-100) for each member of the group, including themselves. An explanation must be provided for any grade of 60 or below.