

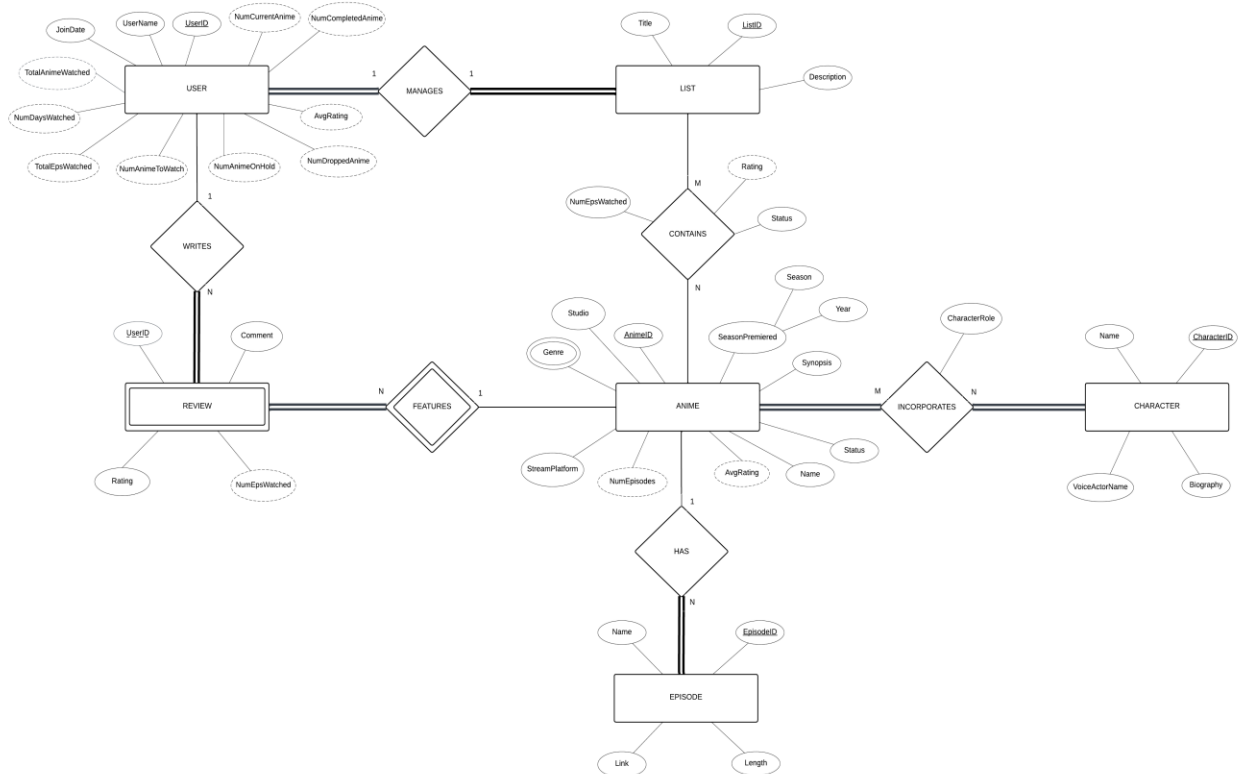
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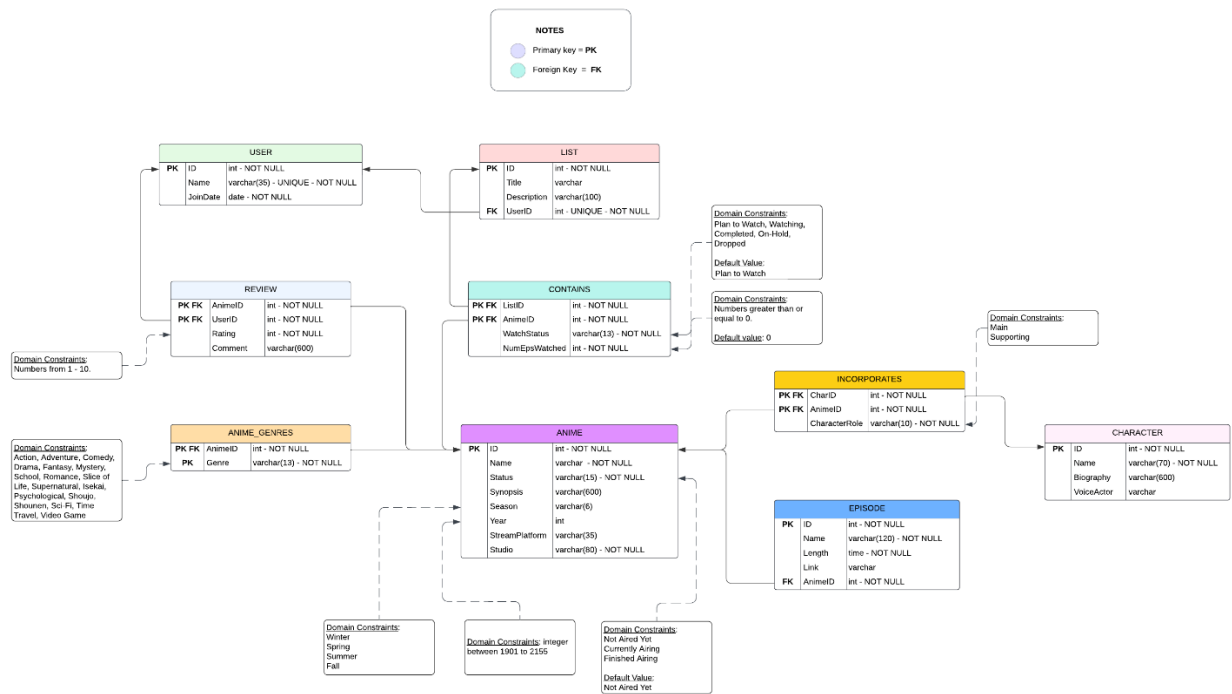
Course/Assignment: CS 3380 Project Phase 2

ANIME WATCHLIST MANAGEMENT SYSTEM

1. Revised ER Model (There is also a standalone view in attached PDF):



2. Relational Database Schema (There is also a standalone view in attached PDF):



3. Application program design (based on the revised functions provided):

* Function 1: **Search_Anime** (Anime search filtering)

Description: This function filters searches for anime. It accesses the ANIME table, ANIME_GENRES table, REVIEW table, EPISODE table, INCORPORATES table, and CHARACTER table.

Input: Rating of anime, a list of inclusive genres, a list of studios, a list of watch statuses, and a list of seasons premiered (season+year attributes) of anime.

Steps:

1. *For all specified genres:* Record the *AnimeID* in the ANIME_GENRES table for each genre specified.
2. Find and record the **intersection** of the *AnimeIDs* associated with each specified genre that was generated from the previous step (since the genre-based search returns anime that have all included genres).

3. *For all specified studios:* Record the *ID* of all anime in the ANIME table based on the specified studios.
4. *For all watch statuses:* Record the *ID* of all anime in the ANIME table based on the specified status of completion.
5. *For all specified seasons:* Record the *ID* of all anime in the ANIME table that meet the criteria of the specified season-year pair.
6. For every **distinct** recorded *AnimeID* from the previous steps:
 - a. Sum up and count all the ratings for the specified anime from the REVIEW table.
 - b. Calculate the average of the ratings.
 - c. Record the *AnimeID* if the average rating is greater than or equal to the specified rating.
7. Retrieve the anime information for every resulting recorded *AnimeID* (Accesses the ANIME table, ANIME_GENRES table, REVIEW table, EPISODE table, INCORPORATES table, and CHARACTER table).
8. Sort the information based on the *Name* of the anime.
9. Display all the filtered anime information.

* Function 2: **Manage_List** (Anime watchlist management)

- Description: This function allows users to manage their watchlist. It accesses the ANIME table, CONTAINS table, REVIEW table, LIST table, and EPISODE table.

Input: The ID of the user, anime ID, rating (if any), watch status (if any), number of episodes watched (if any), and the type of management operation (i.e *add* or *remove* or *update* or *display*).

Steps:

1. Retrieve the list ID for the user from the LIST table (every user already has their list created).

2. *If the management operation is “**add**”:*
 - i. Create and insert a new anime entry in the CONTAINS table with the specified information.
 - ii. If a rating was specified: Create and add a row to the REVIEW table with the specified rating (for the given ID pair).
3. *If the management operation is “**remove**”:*
 - i. Remove the specified anime entry from CONTAINS table.
 - ii. Remove the corresponding review from the REVIEW table.
4. *If the management operation is “**update**”:*
 - i. Update the rating: Update the current rating in the REVIEW table for the specified IDs.
 - ii. Update the current watch status, if specified:
 1. Update the current watch status in the CONTAINS table for the specified IDs.
 2. If “Completed” status is given: Update the number of episodes watched in the CONTAINS table to the maximum number of episodes for the given anime ID.
 - iii. Update the number of episodes watched:
 1. Count the number of rows in the EPISODE table that corresponds to the given anime ID (i.e. count the number of episodes for the specified anime).
 2. *If the number of episodes for the given anime ID is less than the input number: reject the update.*
 3. *Else: update the current number of episodes watched in CONTAINS table.*
5. *If the management operation is “**display**”:*
 - i. For all anime in the CONTAINS table for the specified list ID:
 1. Retrieve the name of the anime from the ANIME table.

2. Retrieve the watch status, and number of watched episodes for the anime from CONTAINS table.
3. Retrieve the user's rating for the given anime from the REVIEW table.
4. Display all the retrieved information.

* Function 3: **Review_Anime** (Anime rating and review)

- Description: This function allows users to rate and review the anime in their watchlists. It accesses the USER table, LIST table, CONTAINS table and REVIEW table.

Input: User ID, anime ID, rating, comment (if any), and the type of management operation (i.e. *create* or *update* or *delete* or *display*).

Steps:

1. Retrieve the list ID for the user from the LIST table.
2. If "**create**" is specified:
 - i. Create and insert a new review to the REVIEW table with the specified information.
 - ii. If the anime being reviewed is not in the users list (i.e. list ID – anime ID pair not in CONTAINS table): Create and add an anime entry into CONTAINS.
3. If "**update**" is specified: Update the rating and/or comment for the anime in the REVIEW table given the IDs.
4. If "**delete**" is specified: Delete the row in REVIEW that corresponds to the specified anime ID and user ID.
5. If "**display**" is specified:
 - i. Retrieve the name of the user from the USER table.
 - ii. Retrieve the user's rating for the anime from the REVIEW table.

- iii. Retrieve the number of episodes watched from the CONTAINS table given the list ID and anime ID.
- iv. Retrieve the user's comment for the anime from the REVIEW table (if any).
- v. Display the information about the user's review.

* Function 4: **Report_Statistics** (Running reports on personal anime viewing history)

- Description: This function derives and shows the stats of a user's watching history from their watchlist. This is done automatically when a user profile is accessed. It accesses the EPISODE table, CONTAINS table, and LIST table.

Input: User ID.

Steps:

- (1) Retrieve the list ID for the user from the LIST table.
- (2) *Display the user's total number of anime watched*: Count and retrieve the number of anime entries in the CONTAINS table corresponding to the list ID.
- (3) *Display the user's total number of watched episodes*:
 - (a) For all anime corresponding to the user's list ID in the CONTAINS table:
 - (i) Count the number of rows in the EPISODE table that corresponds to each anime ID.
 - (b) Display the total sum.
- (4) *Display the user's average rating*:
 - (a) For all anime corresponding to the user's ID in the REVIEW table:
 - (i) Calculate the sum of all the user's rating.
 - (ii) Count each anime entry.
 - (b) Calculate and display the average rating.
- (5) *Display information about the watch status of all the user's anime in their list*:

- (a) For all anime corresponding to the user's list ID in the CONTAINS table:
 - (i) Split each anime into subgroups based on the watch status.
 - (ii) Count and retrieve the number of anime in each subgroup.
- (b) Display the number of anime in each subgroup: Display the user's number of anime they "Plan to Watch", are "Watching", "Completed", put "On-Hold", and "Dropped".