

Movie rating System

Objects

Exercise 1: Creating the Movie Database

1. Define an object named `movieDatabase` that will store our movies and their ratings.
2. The `movieDatabase` object should have a `movies` property that is initialized as an empty array. Each movie will be an object stored in this array, with properties: `title` (a string), `ratings` (an array of numbers), and `averageRating` (a number).
3. Add a method named `addMovie` to the `movieDatabase` object. This method should take a movie title as a parameter and create a new movie object with the given title, an empty `ratings` array, and an `averageRating` of 0. The new movie should then be added to the `movies` array.
4. Add a method named `removeMovie` to `movieDatabase`. This method should take a movie title as a parameter and remove the corresponding movie object from the `movies` array.

Exercise 2: Adding and Removing Ratings

1. Add a method named `addRating` to `movieDatabase`. This method should take a movie title and a rating as parameters. It should find the movie with the given title in the `movies` array and add the rating to its `ratings` array.
2. Add a method named `removeRating` to `movieDatabase`. This method should take a movie title and a rating as parameters. It should find the movie with the given title in the `movies` array and remove the given rating from its `ratings` array.

Exercise 3: Calculating Average Ratings

1. Add a method named `calculateAverageRating` to `movieDatabase`. This method should take a movie title as a parameter. It should find the movie with the given title in the `movies` array and calculate its average rating based on the ratings in its `ratings` array.
2. Modify the `addRating` and `removeRating` methods to call `calculateAverageRating` after adding/removing a rating, so the movie's `averageRating` is always up-to-date.

Exercise 4: Searching Movies

1. Add a method named `searchMovie` to `movieDatabase`. This method should take a string as a parameter and return an array of all movies whose title contains that string (ignoring case).

Exercise 5: Sorting Movies

1. Add a method named `sortMoviesByRating` to `movieDatabase`. This method should sort the `movies` array in descending order based on their average ratings. If two movies have the same average rating, they should be sorted in alphabetical order of their titles.
2. Add a method named `sortMoviesByTitle` to `movieDatabase`. This method should sort the `movies` array in alphabetical order of their titles.