Project2

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The PostgreSQL account is yc3702.

Explanation:

1. Text

Add a text attribute to book table schema. Change the outline attribute from varchar to text, so that users could query books that contain some keywords in the outline.

Query:

SELECT title FROM book

WHERE to\_tsvector(outline) @@ to\_tsquery('interesting | funny');

If the user wants to read books that are interesting or funny, this query could query the books satisfying this request.

1. Trigger:

We define a trigger which will execute after every insertion on the rating table.

In the previous version, we use a rating table to record all the ratings that users give to books. In this case, every time a user query the information of a book, a SQL query of average rating of a book will be executed. This operation is time consuming and there is no need to calculate the average rating of a book because in this scenario, rating of a book tends to remain unchanged for a long time (only change when someone gives a new rating for the book). So we could create a table called rating\_of\_book to store the average rating of a book. After that, when we want to query the average rating of a book, we could directly query from this table. It could greatly improve the efficiency of the application. Every time when a user gives a rating to a book, the insertion operation will awake a trigger that will accordingly update the rating of this book in the rating\_of\_book table.

For example, if user whose uid is 7 gives a rating of 4 to a book whose isbn is ‘978-8422615798’.

This will generate a INSERT SQL on rating table. This operation will awake the trigger defined on rating table. It will accordingly update the information in the rating\_of\_book table.

The INSERT SQL is

INSERT INTO rating(uid, isbn, val) VALUES(7, ‘978-8422615798’, 4);

The information in rating\_of\_book will change like the following:

('978-8422615798', 2.73684210526316)

('978-8422615798', 2.8)

The average rating of this book will change from 2.73 to 2.8 because user 7 gives a relatively higher rating.

1. Array

Add array attribute to the type table to represent subtypes. The subtypes can be more specific and detailed categories under each type. The types from project 1 are too general that each of them could contain many books, which could affect users when they are browsing on the books under that type. Having subtypes for each type can help reduce the time to browse books.

Query:

SELECT subtypes[:2] FROM type WHERE name='Drama';

A user can get the first two subtypes under type of Drama to see if they are his preference.