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.