WolfPubDb Management System

For WolfCity Publishing House

CSC540 Database Management Systems

Project Report 1

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DATE

Assumptions

1. Articles and books are stored online, and the database will only contain links to these documents for efficient storage, rather than storing the entire text.
2. Topics that publications are about have unique names, i.e., the name itself forms a primary key for the Topic entity set.
3. Each publication has a *cost price* and a *selling price*. The former is the price that the distributor buys at from the publishing house. The latter is the price the distributor sells at to the general public. This allows for the database to record the profits from each publication.
4. Distributors are uniquely identified by name.
5. Authors write individual articles or books, or some of both. However, an editor is responsible for collating various articles together into a bigger periodic publication (we assume "articles" do not exist independently), and "authors" as defined in our database do not write publications themselves. This allows for greater flexibility as follows: a "publication" is a generic term that refers to a collection of "articles", atomic written units of a publication written by "authors". As a concrete example, consider a journal issue, which contains several research papers. Each paper is an "article", written by one (or more) authors, and the journal issue is a "periodic publication".
6. Continuing the above example, publications can therefore have different dates of publication than the articles it contains. For example, research papers may be written at an earlier point in time, and perhaps released as a preprint. The journal issue still contains this same paper, but the issue itself is published at a later date.
7. Staff may be re-hired; for that reason, we include their start dates as part of the primary key.
8. Staff may be paid periodically or one-time. In the latter case, we simply set the periodicity attribute to 0, -1, or a different understood value.

Problem Description

WolfCity Publishing House is in need of a system to manage records of their system. At a high level, the system must be able to maintain information about publications, articles, and books. However, it must also contain information about the more intricate aspects of the publishing system—specifically, it must contain details of authors, editors, topics that publications cover, and details of the distributors that distribute publications, along with orders that they must be able to track. Presumably, distributors place these orders with the publishing house and make partial payments, maintaining a balance.

We propose the use of a SQL database management system for this task. Through the constraints of the relational data model and integrity and uniqueness constraints enforceable by SQL, it is easy to build a maintainable, robust, consistent source of data for the entire publishing system. Multiple levels of sanity checks can be performed: at the client (user) level, at the server

level, and at the database level. In a concrete implementation, these would be, respectively, a front-end GUI for the user, a server that accepts queries (possibly also providing a REST interface), and the DBMS itself.

System Users

Managers of the publishing house

The managers of the publishing house can see all the operations of the house, including distribution, authors, editors, etc. They have the most knowledge of the extent of the operations of the house.

Distributors

Distributors place orders of publications with the publishing house. Presumably, they can order by authors, or titles, and therefore can see them in their view.

Editors

Editors are responsible for collating various articles into publications. They also edit books. They know a fairly detailed view of the system, including issues, authors, and topics. They are, however, blind to the distribution system.

Authors

Authors write individual articles and books. They correspond with editors, and can see the topics associated with their articles and books.

User Views

Managers of the publishing house

Managers can see the publications being printed, the articles collated by those publications, and the authors. They can set editors for publications, and view and modify the topics for each publication. Managers can see which distributor placed orders for which publications. Therefore, they have the widest view of the system.

Distributors

Distributors have a limited view of the system. They can see the orders they have placed with the publishing house, and place additional orders. They may make partial payments on orders and track their total balance. Finally, they may update the selling price of each publication.

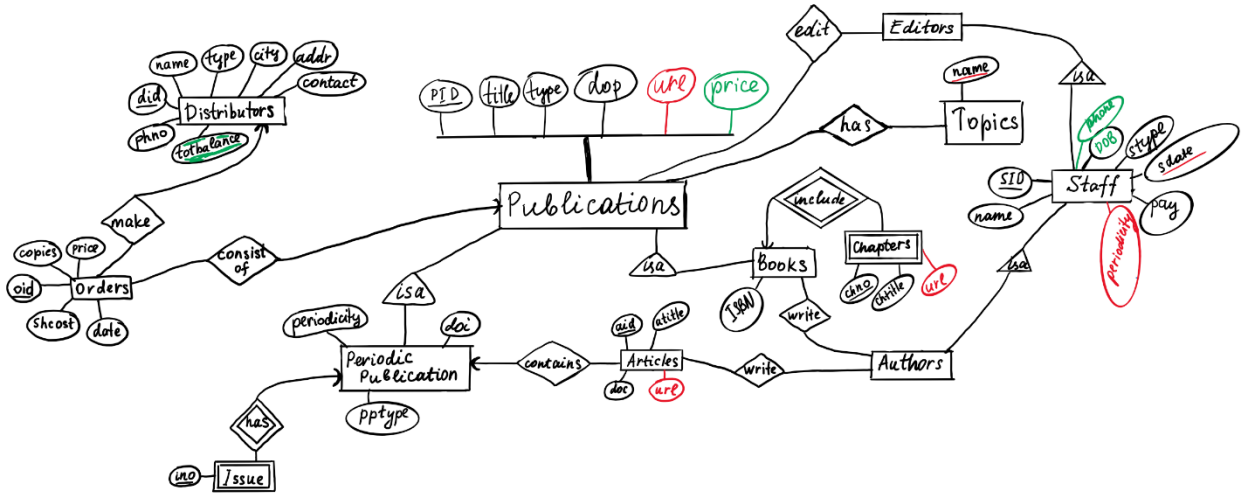
Editors

Editors have a rather wide view of the system. They can see details of articles, books, and the authors who wrote them. They also have access to the issues of each publication and the associated topics. However, they do not see the distribution mechanism, i.e., the orders and the distributors.

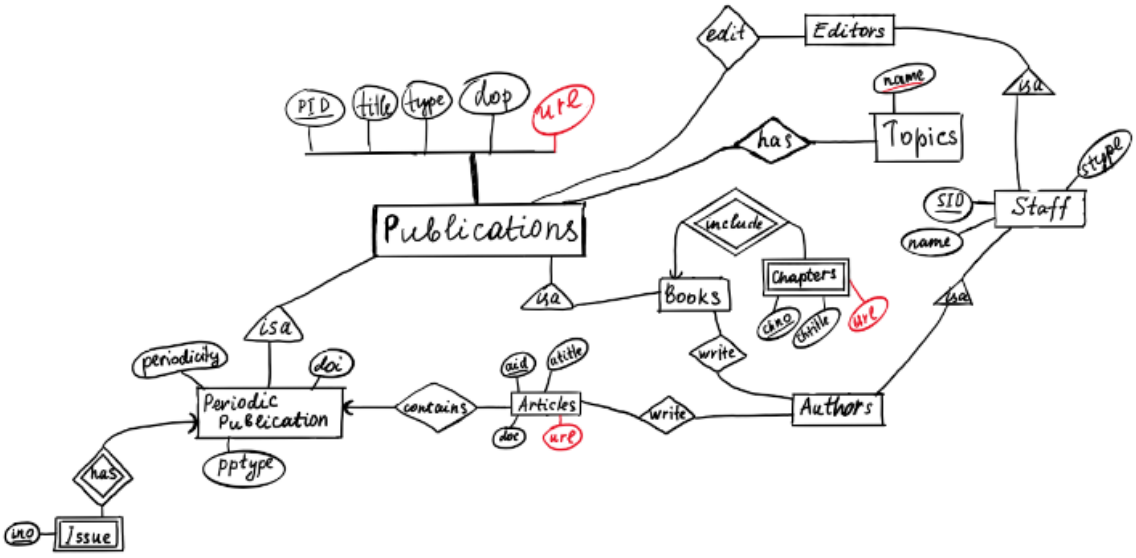
Authors

Authors have the same view as editors, with restricted access. They can view their articles and books, and modify them, but the rest of the system is read-only. They can only view the publications their articles are a part of, and the editors editing and collating their articles and books.

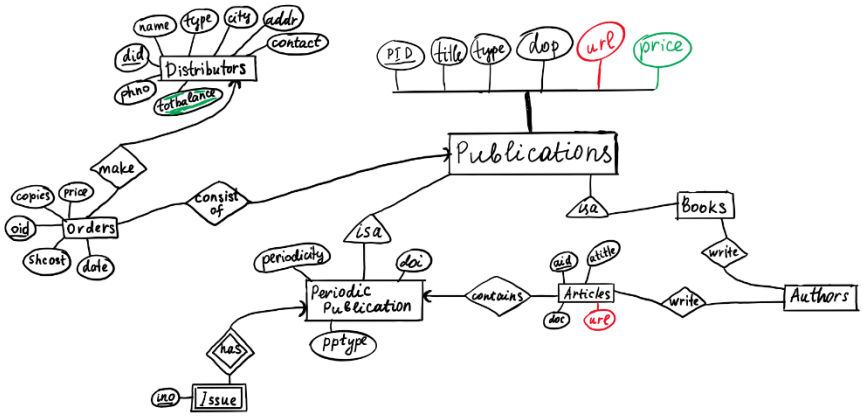
Mangers' view:



Editors'/Authors' view:



Distributor's view: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