



CS 353 Database Systems
Proposal Document

Scientific Paper Digital Library System

Group 13

Beril Başak Tukaç
Nazlı Özge Uçan
Kübra Şen

Spring 2016

Table of Contents

Problem Statement.....	3
Conceptual Design - E/R Model.....	4
Functional Requirements and Limitations.....	5

Table of Figures

Figure1.....	4
--------------	---

Problem Statement

Scientific paper digital library system is a system that is designed to keep track of scientific papers such as scientific publications, conferences, journals, authors, institutions and subscribers.

In the digital library system, a member can register the system. Member may be an author which belongs to an institution or a subscriber. The system allows subscribers to access any publication, attend conferences and subscribe compositions. An authors can either be a student or an academic. When the expertise level of an academic reaches some point he/she will be assigned as an editor.

The system also allows to emit publications such as tech reports and papers. Some number of publications compose and create compositions such as conferences and journals. An editor is able to review a publication and manages the publications that can be in a composition.

Conceptual Design - E/R Model

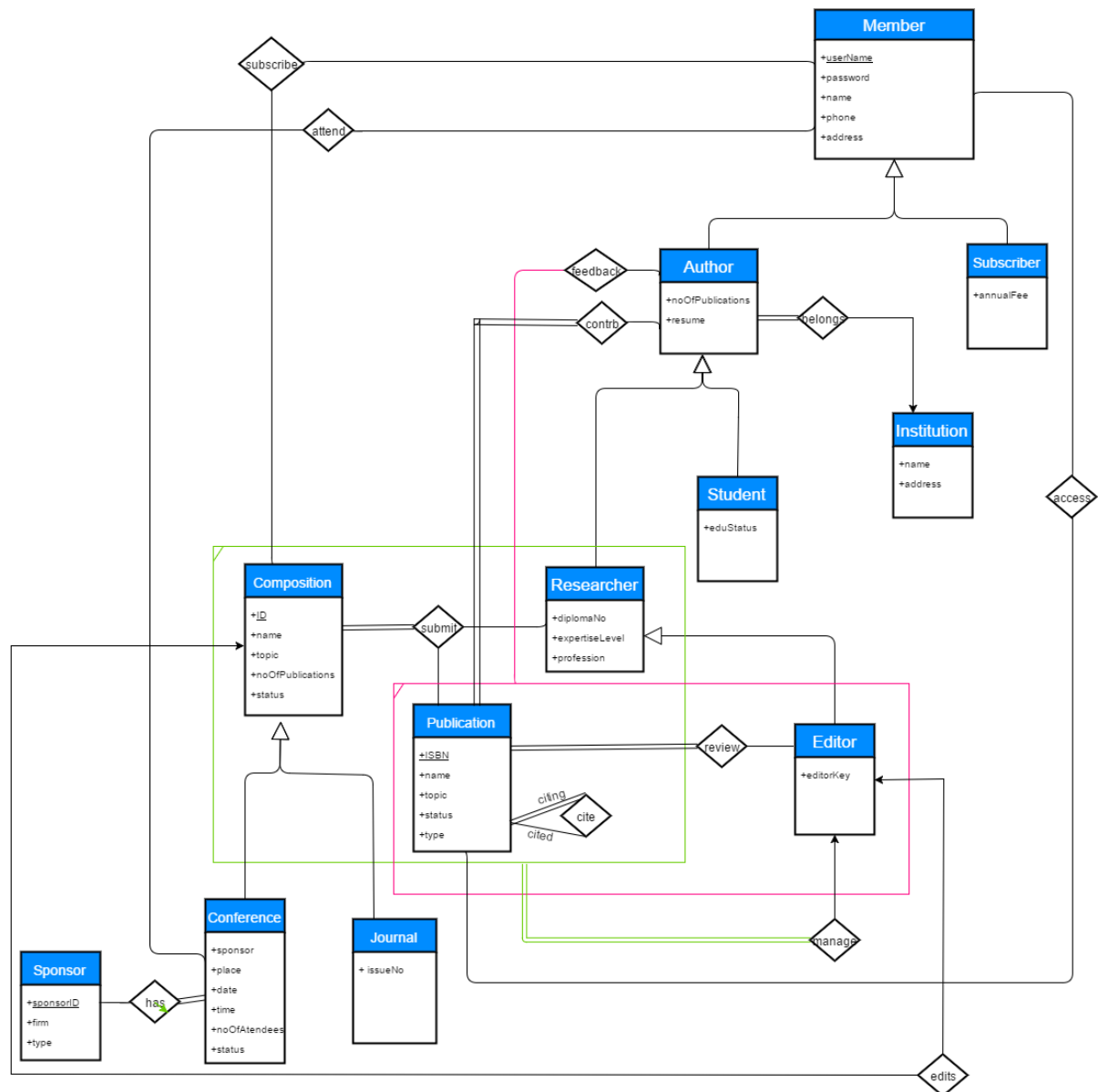


Figure 1 : E/R Diagram

Functional Requirements and Limitations

There are 4 different types of users of the system according to their functionalities: researchers, editors, students and subscribers. All users of the system regarded as member. A member must be either an author or a subscriber. An author can be a researcher or a student. Furthermore, researcher can be specialized as editors. The library system also includes institutions, sponsors, publications and compositions such as journals and conferences.

Member

Member is the generalization of all the users enrolled into the system. A member can have attributes of userName, password, name, phone, address.

Functional Requirements:

- All members should be able to subscribe to a composition.
- All members should be able to view publications.
- The system should inform a member about conferences and journals that the member subscribes.
- A member should be able to attend a conference.
- A person should be able to fill a related enrolment form in order to be enrolled to the system as a member.

Author

An author is a member who can contribute to the publications of the digital library. Thus, does not have a annual fee. An author can have attributes of noOfPublications, resume.

Functional Requirements:

- An author should be able contribute a publication to the library that he/she wrote or collaborated.
- An author should be able to contribute to his/her own publication that is in the library.
- An author should be able to receive feedback of his own publication that is reviewed by an editor.
- An author should be able to contribute to his own publication after he receives feedback.
- An author should be approved by an editor to finalise his registration.

Limitations:

- An author should belong to an institution.

Researcher

A researcher is an author. A researcher can have attributes of diplomaNo, expertiseLevel, profession.

Functional Requirements:

- A researcher should be able to submit a publication to a composition.
- Only a researcher should be able to submit his/her own publication or a publication that he/she contributed to the system.
- A researcher should have a diploma that is applicable.
- A researcher should have an expertise level that is sufficient.
- A researcher should have a valid profession.
- A researcher gains expertise level of 10 when he/she uses the system.

Editor

An editor is an author who is a researcher. In order for a researcher to be an editor he/she should improve his/her expertise level. An editor can have attributes of editorKey.

Functional Requirements:

- An editor should be able to review a publication to determine its status.
- An editor should be able to give feedback to the related author about the publication he/she reviewed.
- An editor should be able to manage composition submissions in order to decide which publications should be involved in a composition.
- After a researcher reaches the specified expertise level, the system should give the editor an editor key.
- An editor should use his/her editor key to review a publication and decides if a publication should involve in a publication or not.

Limitations:

- An editor should have an expertise level at least 100.

Student

A student is an author. A student can have attributes of eduStatus.

Functional Requirements:

- A student should be able to contributes to a publication because of him being an author.

Limitations:

- A student cannot submit his/her work to a composition.

Subscriber

Subscriber is a member of the system. However, he/she does not contribute to the system. Thus, he/she pays an annual fee to have member functions such as access publications, attend conferences and subscribe to conferences and journals. A subscriber can have attributes of annualFee.

Functional Requirements:

- A subscriber should pay an annual fee to remain registered to the system.

Institution

An institution can have attributes of name, address.

Functional Requirements:

- An institution may have many authors.

Publication

A publication can have attributes of ISBN, name, topic, status, type.

Functional Requirements:

- A publication should be able to submitted into a composition.
- A publication should be able to be cited.

Limitations:

- A publication should have at least 5 citations.
- There should be at least 5 authors of a publication to be valid.
- There should be at least 3 researchers.
- A publication can have status accepted, rejected, on review or on submit.
- In order for a publication to be cited by another publication, it should have status “accepted”.
- In order for a publication to be submitted into a composition, it should have status “accepted”.
- A publication can be type of paper or tech report.

Composition

A composition is either a conference or a journal. A composition is managed by an editor. A composition can have attributes of ID, name, topic, noOfPublications, status.

Functional Requirements:

- A publication should be able to be submitted to a composition.
- A composition should be able to be subscribed.
- A composition should be edited by only one editor.
- A composition’s status should be done to be published.

Journal

A journal is a composition. A journal can have attributes of issueNo.

Functional Requirements:

- A journal should be able to be accessed through the library system.

Limitations:

- A journal should be published monthly.
- A journal should contain at least 7 publications.

Conference

A conference is a composition. It is a collection of publications that is presented in a conference hall. A conference can have attributes of sponsor, place, date, time, noOfAttendees, status.

Functional Requirements:

- A conference's date and time should be viewed in the system.

Limitations:

- A conference should have at least 1 sponsor.
- A conference has a status that is either upcoming, past or cancelled.
- A member should be able to attend a conference if the event is upcoming. If the conference is past, he/she should be able to attend it on the library system.
- A conference should have a proper conference hall.
- A conference should have at least 30 attendees. Otherwise, the conference will cancel and the status will be "cancelled".
- The attendee number should only be incremented when the status is "upcoming".
- A conference should present at least 5 publications.

Sponsor

A sponsor can have attributes of sponsorID, firm, type.

Limitations:

- A sponsor should be type gold, silver or bronze.