CSC343 A3

ER MODELLING AND DATABASE DESIGN

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Contents

Part I

Assumptions

1 Setup and login phase

Number of reviewers. Each conference has a fixed number of reviewers assigned per paper.

Conference participant multiplicity. Every user can participate in at most one role per conference, otherwise we have a conflict of interest. (E.g. a chair has the power to choose who gets to review a paper, so she might choose herself.)

Conference topic multiplicity. Every conference can define its own topics, or use existing topics from other conferences.

File storage. We'll only store filenames of papers, forms, and letters in the database. The files themselves will be stored on a hard drive somewhere outside the database.

2 Submission phase

Author conferencce participation. An author may have an account without being registered in any conference. She may upload a paper without submitting it to any one.

Different submissions are different papers. An author has the option to update an existing submission instead of submitting an identical copy, but that's application, not database-level design, so we don't have to worry

about that.

Author VS coauthor. We don't distinguish between authors and coauthors: everyone author of a paper is a coauthor.

3 Reviewing phase

Reviewer preference: bidding process. To bid on a paper, a reviewer expresses her level of interest by assigning an integer between 0 (low) and 5 (high).

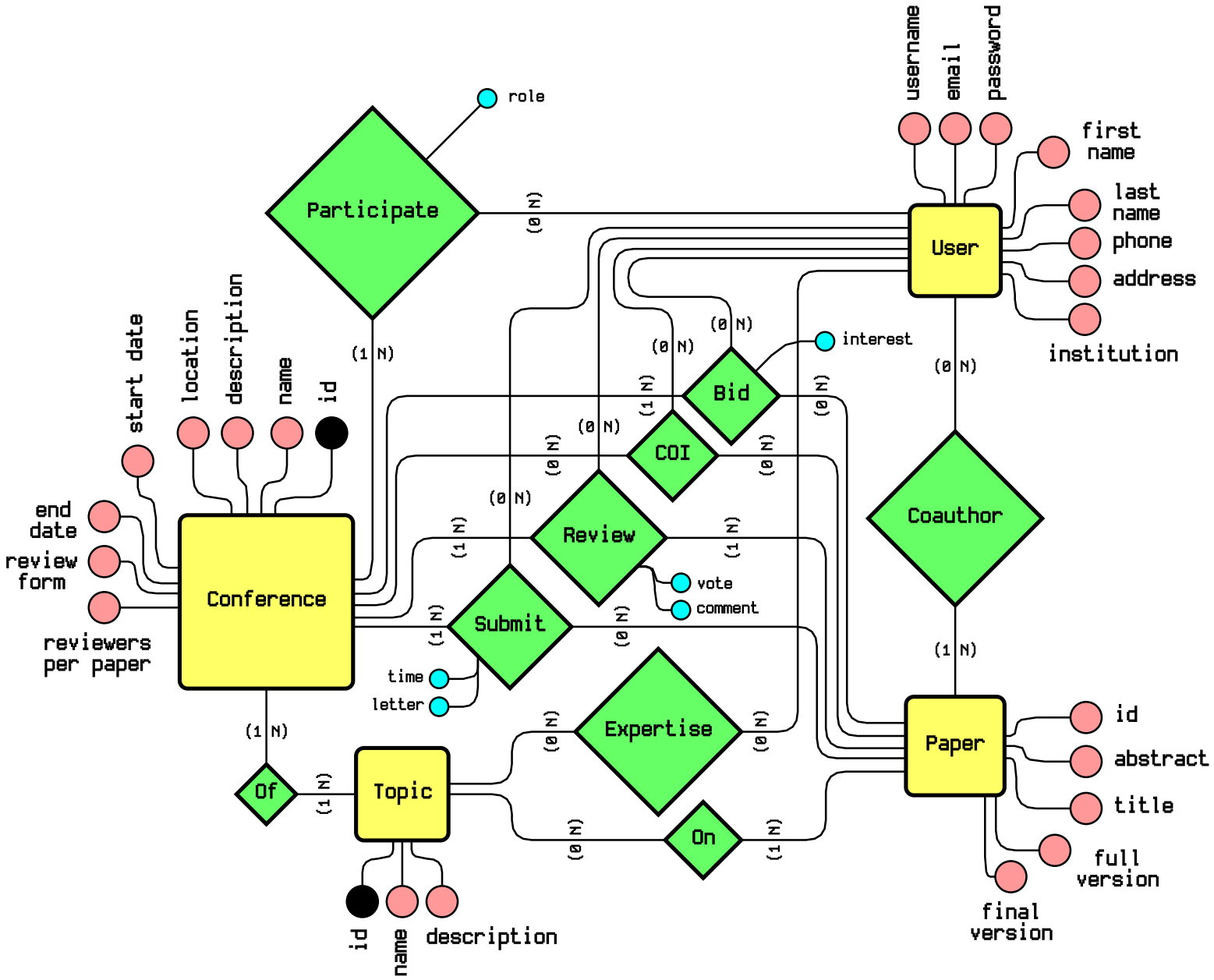
Reviewer's choice. A reviewer casts a vote of YES or NO on whether or not she thinks the paper should be published.

4 Decision and publishing phase

One letter per paper. The chair sends only one acceptance notification letter per paper, to the coauthor who submitted it.

Part II

ER diagram


role
Participate
(0 N)
User
username
email
password
first name
last name
phone
address
institution
(1 N)
start date
location
description
name
id
(0 N)
interest
Bid
(1 N)
(0 N)
COI
(0 N)
Coauthor
end date
review form
reviewers per paper
Conference
(0 N)
Review
vote
comment
Submit
time
letter
(1 N)
Expertise
Paper
id
abstract
title
full version
final version
Of
Topic
On
id
name
description

Part III

Relational schema

Users: (User name, E-mail, Password, First name, Last name, Institution, Address, Phone number)

User's expertise: (User name, Topic ID)

User's bid for paper: (User name, Paper ID, Conference ID, Interest)

User's COI: (User name, Paper ID, Conference ID)

User's review: (User name, Paper ID, Conference ID, Vote, Comment)

User's submission: (User name, Paper ID, Conference ID, Time, Letter)

Papers: (Paper ID, Abstract, Title, Full version, Final version)

Paper's co-authors: (Paper ID, User name)

Paper's topic: (Paper ID, Topic ID)

Conferences: (Conference ID, Name, Description, Location, Start date, End date, Review form, Reviewers per paper)

Committee: (Conference ID, User name, Role)

Conference's topics: (Conference ID, Topic ID)

Topics: (Topic ID, Name, Description)

Part IV

PostgreSQL database definition

```
CREATE TABLE Expertise
(
User_id             VARCHAR(255) NOT NULL,
Topic_idb           VARCHAR (255) NOT NULL,
CONSTRAINT Expertise_User FOREIGN KEY (User_id) REFERENCES User (Id),
CONSTRAINT Expertise_Topic FOREIGN KEY (Topic_id) REFERENCES Topic (Id),
CONSTRAINT pk_Expertise PRIMARY KEY (User_id, Topic_id)
);

CREATE TABLE COI
(
User_id             VARCHAR (255) NOT NULL,
Paper_id            INT NOT NULL,
Conference_id       INT NOT NULL,
CONSTRAINT COI_User FOREIGN KEY (User_id) REFERENCES User (Id),
CONSTRAINT COI_Paper FOREIGN KEY (Paper_id) REFERENCES Paper (Id),
CONSTRAINT COI_Conference FOREIGN KEY (Conference_id)
REFERENCES Conference (Id),
CONSTRAINT pk_COI PRIMARY KEY (User_id, Paper_id, Conference_id)
);
```

```
CREATE TABLE Submission
(
User_id             VARCHAR (255) NOT NULL,
Paper_id            INT NOT NULL,
Conference_id       INT NOT NULL,
Time                TIME NOT NULL,
Letter              VARCHAR (255) NOT NULL,
CONSTRAINT Submission_User FOREIGN KEY (User_id) REFERENCES User (Id),
CONSTRAINT Submission_Paper FOREIGN KEY (Paper_id) REFERENCES Paper (Id),
CONSTRAINT Submission_Conference FOREIGN KEY (Conference_id)
REFERENCES Conference (Id),
CONSTRAINT pk_Submission PRIMARY KEY (User_id, Paper_id, Conference_id)
);

CREATE TABLE Author
(
User_id             VARCHAR (255) NOT NULL,
Paper_id            INT NOT NULL,
CONSTRAINT Author_User FOREIGN KEY (User_id) REFERENCES User (Id),
CONSTRAINT Author_Paper FOREIGN KEY (Paper_id) REFERENCES Paper (Id),
CONSTRAINT pk_Author PRIMARY KEY (User_id, Paper_id)
);

CREATE TABLE Conference
(
Id                  INT NOT NULL AUTO_INCREMENT,
Name                VARCHAR (255) NOT NULL,
Description         VARCHAR (255) NOT NULL,
Location            VARCHAR (255),
Start_date          DATE,
End_date            DATE,
Review_form         VARCHAR (255),
Num_reviewer        INT,
PRIMARY KEY (Id)
);
```

```
CREATE TABLE ConferenceTopic
(
Conference_id       INT NOT NULL,
Topic_id            INT NOT NULL,
CONSTRAINT Submission_Ctopic FOREIGN KEY (Conference_id)
REFERENCES Conference (Id),
CONSTRAINT Ctopic_Topic FOREIGN KEY (Topic_id) REFERENCES Topic (Id),
CONSTRAINT pk_Ctopic PRIMARY KEY (Conference_id, Topic_id)
);
```