



CSCI 585- Database Systems
Spring 2010
Homework Assignment 1, Part 1
Due: 02/10/2010

Project Description

The goal of this assignment is to 1) design a conceptual schema using the (E) ER Data model, 2) incorporate this schema into an OR-DBMS, and 3) run queries on this database.

Part 1: Extended ER data model (50 points)

Design a schema that incorporates the specification described below as efficiently as possible. You should submit a written diagram of your schema design using the notation given in the class. In this diagram, indicate all the classes, subclasses, relationships (weak & strong), relationship cardinalities and degrees, total participations, attributes, and primary keys. In addition, specify whether each attribute is single-valued or multi-valued, stored or derived, and atomic or composite. In your design, you can make and state reasonable assumptions if they are not specified in the specification.

Design Specification



The following is a description of the information required for a database system that processes information about *PhotoGeek*, an online photo sharing website provides users with different functionalities and features.

The database must represent the following information:

Photo Information

A photo is identified by a photo ID. Every photo is published by a user. Each photo has information about the time and location it was taken. Each photo can have several tags (keywords describing the photo). Each photo is taken by a camera. Each photo belongs to a certain category. As an example a photo can be in the category of portrait, art or screenshot. Moreover, the privacy level of a photo can be either private or public. A description is also assigned to each photo.

User Information

Every user has a unique screen name (id). Each user also has a name, date of birth and age which is computed from his date of birth. He also has contact information which includes his email and phone number. Users can be either guests or members. Guest has an expiration date. Members can be either basic members or pro members. Pro members have an annual membership fee while basic users have two limitations: number of photos they can upload and amount of disk they can use. One user can be friend of other users. Users can comment on as many photos as they want or they can make any photo as their favorite (they can have 0,1 or more favorite photos) as long as the privacy level of the photo is public. Each comment has a description and time.

Camera Information

Cameras are identified by a unique identifier (camera id). Cameras also have brand name and model number.

Set Information

Photos can belong to sets. Each set can have one or more than one photos. It's not mandatory for each photo to belong to a set. Some photos can belong to more than one set. Each set has a creation date and description. Each set also has a privacy level (either public or private).

Session Information

Users surf *PhotoGeek* in several (0,1 or more) sessions. A session has a session-id, a start date/time, an end date/time, and a duration which is computed from start and end time. Each session includes a reference to one user in the system. The session-id is unique for a given user but it may be redundant across several users.

Submission Guidelines

1. You are REQUIRED to submit a hardcopy of your EER diagram (part1). This hardcopy should be handed in the class before the 02/10/10 class starts. It should also include your reasonable assumptions.
2. DEN students can use the digital dropbox on the DEN website to upload their EER diagram. To do so, you login to DEN, and go to the course page. Click on the Tools option on the left panel and then click on the Digital Dropbox. There you can send your file with the name "HW1-LastName-firstName". Make sure you see the confirmation that your homework has been successfully sent.
3. Note that ONLY DEN students should submit their assignment electronically.
4. We will post the description of part 2 and part 3 on 02/10/10, after the class to complete the homework assignment 1.