

Homework 01

Due: Feb 13, 2017 by 11:00 pm uploaded to Canvas.

Submission Directions:

- From the File menu, choose Make a Copy into your personal google drive account. Complete the questions below.
- For any SQL, format it consistently in a fixed-point font.
- For relational algebra, you can find the operators in the **Insert | Special Characters...** menu.
- Only submit a **PDF** file of your solutions.

Use the following scenario to answer questions 1 – 12.

This schema represents a portion of a photographer's database. It allows storage of information about people that are in each picture. The Picture table stores the picture id (pict_id), location the picture was taken (location), the camera with which the picture was taken, and the date it was taken. The Tags table represents the relationship between Picture and Friend. The Friends table represents the people that are tagged in photos.

Pictures (pict_id, location, camera, date_taken)

Friends(friend_id, name, email)

Tags(pict_id, friend_id, tag_date)

Some constraints to help you:

- It is not possible for a single friend to be tagged more than once in any picture.
- Dates are represented in exactly the same way as they are in MySQL and can be queried in the same manner.
- location, camera, name, and email are strings.

Provide Relational Algebra Expressions for each of the following:

- 1) Give a list of picture ids that John Doe is tagged in.
- 2) In what locations does Jane Smith appear in pictures?
- 3) I need a list of the names and email addresses of all the people that were tagged in pictures from Boston from the trip last March.
- 4) Who appears in pictures with John Doe?

Provide SQL queries for each of the following:

- 5) Give a list of picture ids that John Doe is tagged in.
- 6) In what locations does Jane Smith appear in pictures?
- 7) I need a list of the names and email addresses of all the people that were tagged in pictures from Boston from the trip last March.
- 8) Who appears in pictures with John Doe?
- 9) How many pictures contain Sally Jacobs?
- 10) How many pictures were taken at each location?
- 11) Provide an alphabetical list of locations in which Dan Smith was photographed?
- 12) List the names and email addresses of all friends that don't appear in any photos.