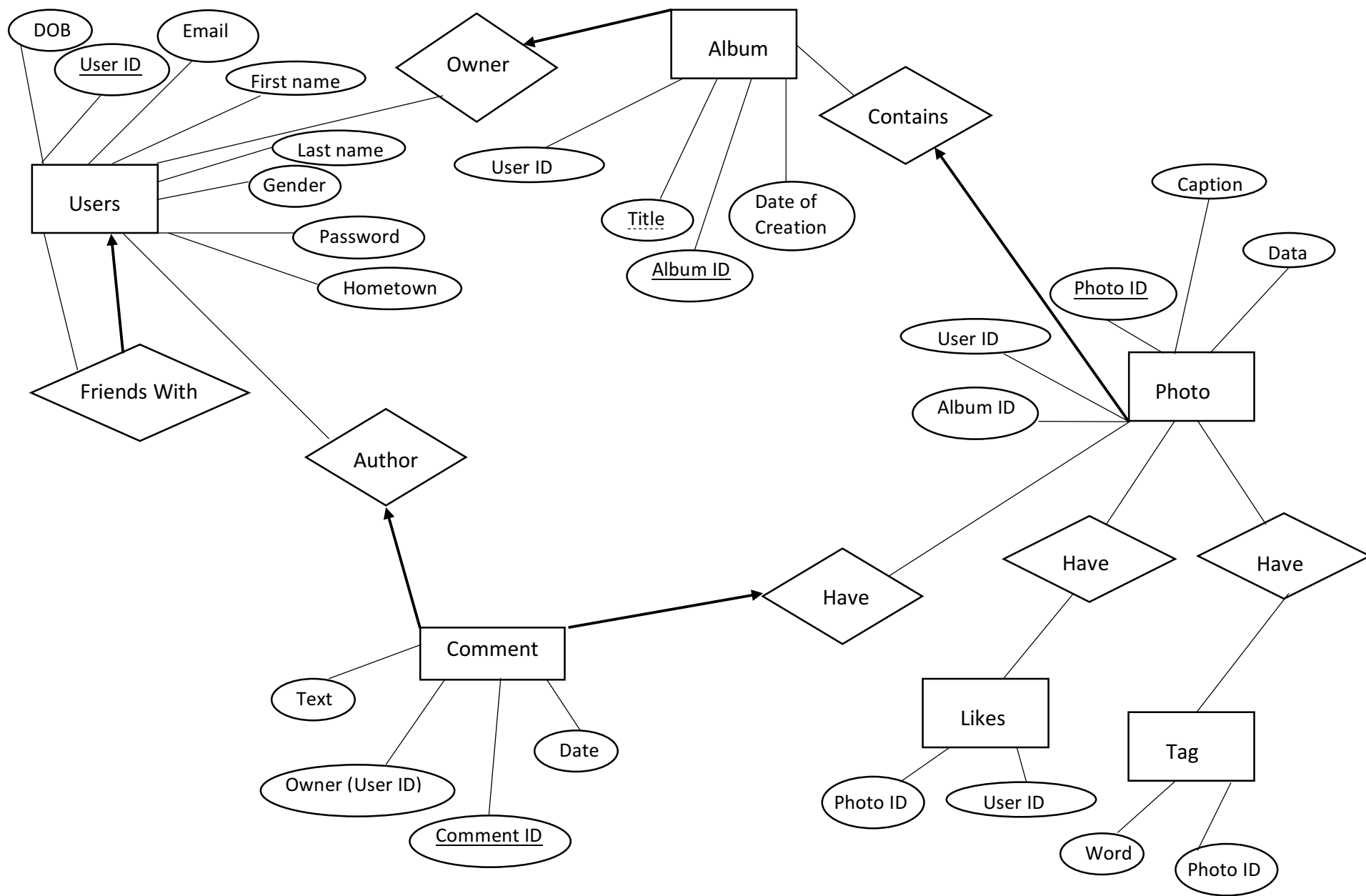Sarah Ferry
CS 460
10/11/16

Additional assumptions:
- Comments are associated with photos
- Albums are an entity with a unique title and are associated with a specific user ID
- Users have friends who are also users
- The tag entity has both a word attribute and a list of photo ID's attribute
- Weak entities: tag, album
- Assume unregistered users have user id = -1

Integrity constraints:
- Users
  - Primary key: User ID
  - Relationships: has 0, 1, or more *albums*
- Photos
  - Primary key: Photo ID
  - Relationships: belongs to only 1 *album*, has 0, 1, or more *comments*, has 0, 1 or more *tags*
- Tags
  - Foreign key: Photo ID
  - Weak entity
  - Relationships: associated with 1 or more *photos*
- Comments
  - Primary key: Comment ID
  - Foreign key: User ID
  - Relationships: associated with only 1 *photo*, authored by 1 *user*
- Albums
  - Foreign key: User ID
  - Primary key: Title, album ID
  - Relationships: associated with 0, 1, or more *photos*, owned by only 1 *user*

Relational Schema

SQL Statements (also in schema.sql)

```sql
CREATE DATABASE photoshare;
USE photoshare;

CREATE TABLE Users (
    user_id INT4 AUTO_INCREMENT,
    first_name VARCHAR(255),
    last_name VARCHAR(255),
    DOB DATE,
    hometown VARCHAR(255),
    gender ENUM('F', 'M', ''),
    email varchar(255) UNIQUE,
    password varchar(255),
  CONSTRAINT users_pk PRIMARY KEY (user_id)
);

CREATE TABLE Friends_of (
  user_id INT4,
  user_id_friend INT4,
  CONSTRAINT friends_of_fk FOREIGN KEY (user_id) REFERENCES Users(user_id)
);

CREATE TABLE Album
(
  album_title VARCHAR(255),
  album_id INT4 AUTO_INCREMENT PRIMARY KEY NOT NULL,
  user_id INT NOT NULL,
  date_of_creation DATE,
```

```sql
  CONSTRAINT album_fk FOREIGN KEY (user_id) REFERENCES Users(user_id)
);

CREATE TABLE Pictures
(
  picture_id int4  AUTO_INCREMENT,
  user_id int4,
  imgdata longblob,
  caption VARCHAR(255),
  album_id INT4,
  INDEX upid_idx (user_id),
  CONSTRAINT pictures_pk PRIMARY KEY (picture_id),
  CONSTRAINT album_pix_fk FOREIGN KEY (album_id) REFERENCES Album(album_id)
);

CREATE TABLE Liked_pictures
(
  picture_id int4,
  user_id int4,
  CONSTRAINT liked_picture_id_fk FOREIGN KEY (picture_id) REFERENCES Pictures(picture_id),
  CONSTRAINT liked_user_id_fk FOREIGN KEY (user_id) REFERENCES Users(user_id)
);


CREATE TABLE Tagged_Photos
(
  word VARCHAR(20),
  picture_id INT NOT NULL,
  CONSTRAINT tagged_fk FOREIGN KEY (picture_id) REFERENCES Pictures(picture_id)
);
```

```sql
CREATE TABLE Comment
(
  comment_id INT4 NOT NULL PRIMARY KEY AUTO_INCREMENT,
  user_id INT NOT NULL,
  text VARCHAR(60000),
  date DATE,
  CONSTRAINT comment_fk FOREIGN KEY (user_id) REFERENCES Users(user_id)
);

CREATE TABLE Commented_photos
(
  comment_id INT4,
  picture_id INT4,
  CONSTRAINT comment_photo_fk FOREIGN KEY (comment_id) REFERENCES Comment(comment_id),
  CONSTRAINT comment_photo_fk_2 FOREIGN KEY (picture_id) REFERENCES Pictures(picture_id)
);


INSERT INTO Users(user_id, first_name, last_name)  VALUES(-1, "Anonymous", "");
```