

# SQL Project

## CS3700

### Introduction to Database systems

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## 1 Introduction

We try to model a Social Networking site. This is especially relevant today where social networking plays a very important role in each and every person's life. Proper interpretation (Forming non trivial queries) of data so obtained would help us to know the impact (in terms of spread) and issues (privacy) involved with such a modelling. Although the model proposed is rather simplistic, it would serve the underlying purpose.

## 2 The Entity Relationship(ER) Model

The Main entity here is the User. The other entities are Event, Credentials, Page, Album, post, photo, Video comment. As we have mentioned before a real time networking site would incorporate more than these but the entities used herein would in principal be sufficient.

**User:** This is the main unit of the Model. Most of the relationships revolve around it. The attributes of the User are Name, gender, UserID (primary key), Birthdate.

**Event:** It is a weak entity owned by a User. The attributes are EventID, place, Date.

**Page:** Page has attributes called name and description and the user can follow a page.

**Post, Comment:** Post has attributes like PostId, status, likes and a user can create a post. There can be comments on a post and this is a 1:M relationship i.e. Each Post can have M comments but each comment is associated with a specific post.

**Video, Album, Photo:** Video has attributes called length, likes and VideoID. The Album has M:N relationship with Photo as well as Videos. Each photo has at- 1

tributes PhotoId, places, Time, Likes. Both Photo and Video has M:N relationship with comments.

**Credentials:** It is a weak entity owned by the User. The attributes are Login Id, Password.

The relationships are

- 1) Recursive relationship of the User( "*Friend*")
- 2) "*Login*" relationship between user and credentials(Weak entity). This is a 1:N relationship.
- 3) User Event(Weak entity) "*attends*" relationship.
- 4) User Page "*Following*" relationship.
- 5) User Post "*Post*" relationship
- 6) User Album "*Album*" relationship
- 7) User Photo "*Tags*" relationship
- 8) Album Photo "*containsp*" relationship
- 9) Album video "*containsv*" relationship
- 10) All of photo, videos, post have a relationship with comment.

Some of the other relationships are not mentioned and can be found from the ER diagram.

We should also note that Age is a derived attribute which can be found from the Date of Birth. Middle name is a multi value attribute. The name is a composite attribute consisting of First name, Middle name and Last name. In certain cases the relationship also has attributes.

Some of the constraints here also are worth mentioning. For example, Constraints might be used to indicate that every Post must have been written by exactly one User (many to one total participation) and every Photo must have been tagged by some User (many to one total participation) otherwise there could be posts or photos that are not associated with any user.