UNIVERSITY OF PUERTO RICO
RECINTO UNIVERSITARIO DE MAYAGÜEZ
MAYAGÜEZ, PUERTO RICO
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Project Phase Three: Photo Messaging Application

ICOM 5016 - 116 : Database Systems
Prof. Manuel Rodriguez

Bernardo Sein
Jean C Merced
Noel Valentín

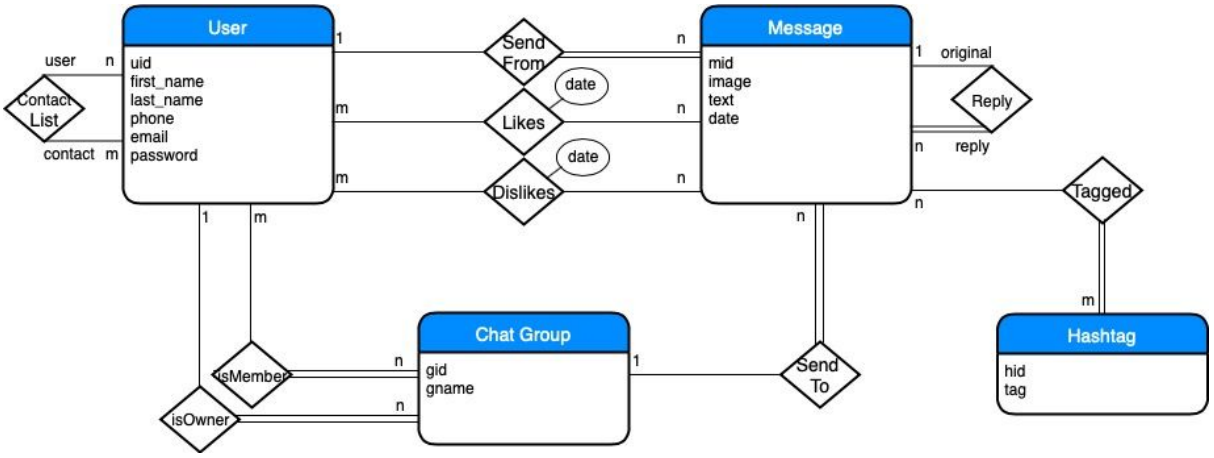

Figure 1 - ER Diagram

The E-R Diagram above has the following entities:

- *User* Entity, with attributes for user ID, First name, Last name, phone, email and password.
- *Message*, with attributes for the message ID, image, text, and date of publication.
- *Chat Group*, with attributes for Group Chat ID and name.
- *Hashtag*, with an ID for each hashtag and the tag that it represents.

The user will have a *ContactList* that will be based on their respective user IDs, which is why the relationship stays within the same entity. The *User* entity also maintains a relationship with the *Chat Group* entity, *isMember*. It requires total participation from the group side, given the fact that there cannot be a group without any members, but there can be users without certain group chats. If the user is the owner of a particular group, then another relationship, *isOwner*, is formed between the user and the group. This relationship is one to many with total participation by the group since a group must have only one owner but a user can be owner of multiple groups or none at all.

The user also has three relationships with the *Message* entity: *SendFrom, Likes & Dislikes.* The user can send messages, and the messages will contain the ID of the user that posted the message within its attributes as a foreign key. With *Likes and Dislikes*: each like element will have the ID information of the user that performed the "like", along with the ID of the message that the "like" was intended for, as well as the date of the like. The same goes for "dislikes". The messages also have a relationship with themselves, *Reply.*Therefore, replies are also messages. Given the fact that there can be messages without replies but no replies without original messages, it is a one-sided total participation

relationship where the message ID of the original post to which the message is a reply to will be referenced as foreign key in the *Message* entity.

Finally, each message could have one or more *Hashtag* as part of its content, which should be tagged as trending topics. Thus, the hashtag will have an ID and the respective string that shows the Hashtag that was sent in the message. Since there can be messages with no hashtag, yet there can't be hashtags without messages, there is total participation on the Hashtag side of the relationship *Tagged*.