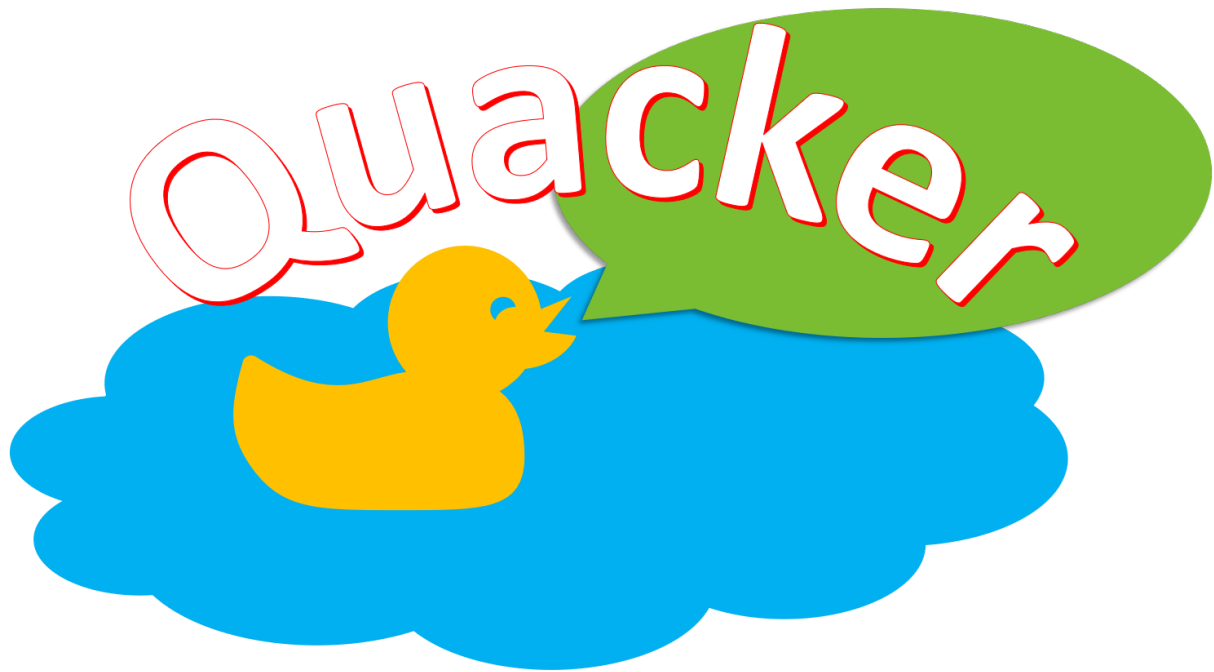


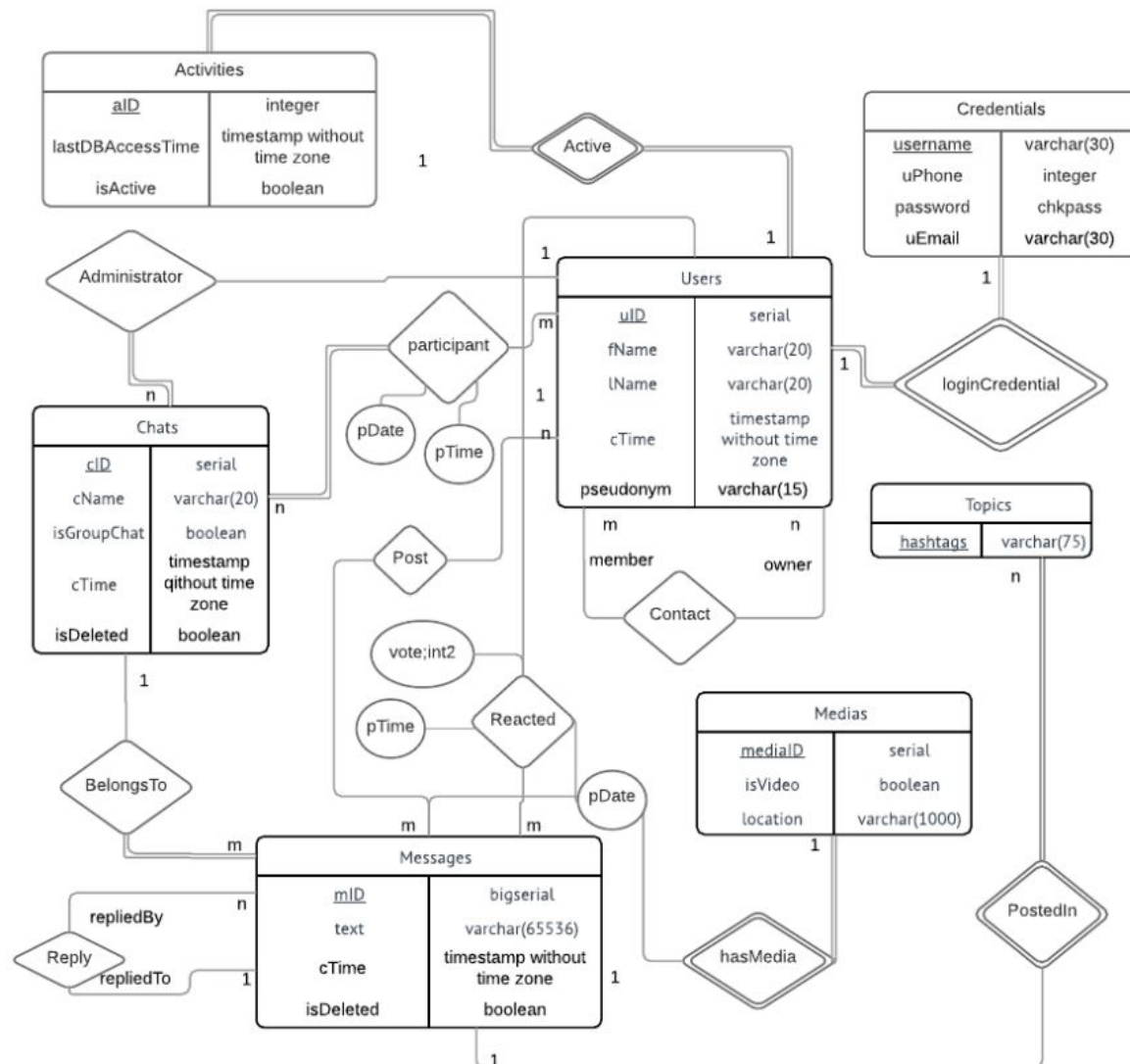
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Project Phase 1

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I. ER Diagram



II. Entity-Relationship and Attribute Explanations

A. Entities:

1. Users - This entity represent the user's of the quacker application.
 - a) Attributes:
 - (1)UID:serial Primary Key - User Identification
 - (2)FName:varchar(20) - User's first name
 - (3)LName:varchar(20) - User's Last name
 - (4)UTime:timestamp without time zone - Account creation time

- (5) Pseudonym:varchar(15) - An pseudonym for the user to use if they wish to not use their real name.
- 2. Credentials - A weak entity dependant of User that holds the login credentials for security.
 - a) Attributes:
 - (1) Username:varchar(30) partial key - User's login username
 - (2) UPhone:char(10) - User's registered phone number
 - (3) UEmail:varchar(30) - User's email address
 - (4) Password:chkpass - User's login password
- 3. Activities - A weak entity dependant of User that contains the necessary information to determine if an user is active or not.
 - a) Attributes:
 - (1) UID:serial partial key - An id to identify an active account.
 - (2) isActive:boolean - It determines if a user account is still an active account.
 - (3) lastDbAccessTimestamp:Time - The time of the last time the user accessed the database.
- 4. Chats - An entity that contains the information related to a chat or chat group.
 - a) Attributes:
 - (1) CID:serial primary key - Chat ID
 - (2) CName:varchar(20) - Chat name
 - (3) CDate:date - Chat's creation date
 - (4) CTime:timestamp without time zone Chat's creation time
 - (5) isGroup:boolean - Determines if the chat is a group chat or not.
 - (6) isActive:boolean - Determines if a chat has been deleted or not.

5. Messages - An entity that represents a message sent in a chat.
 - a) Attributes:
 - (1)MID:bigserial primary key - Message ID
 - (2)Text:varchar(65536) - Text in a message
 - (3)CTime:timestamp without time zone - Time of the posted message
 - (4)isDeleted:boolean - Determines if a message has been deleted.
6. Medias - A weak entity of Message, it manages the images that a message might include.
 - a) Attributes:
 - (1)MediaID:Serial partial key - Media ID
 - (2)isVideo:boolean - determines if the media is a video or a photo.
 - (3)Location:varchar(1000) - The address of the media in question.
7. Topics - A weak entity of Message, it contains any topics mentioned in the messages.
 - a) Attributes:
 - (1)Hashtag:varchar(75) - The topic mentioned in the chat.

B. Relationships:

1. LoginCredentials - A relationship between User and Credential. An user uses the credentials to login into the app.
 - a) Participation:
 - (1)Users: Total participation
 - (2)Credentials: Total participation
 - b) Cardinality: 1 to 1
2. Active - A relationship between User and Activity. An user needs to have an active or inactive mode.
 - a) Participation:
 - (1)Users: Total participation
 - (2)Activities: Total participation
 - b) Cardinality: 1 to 1

3. Contact - A self relationship with User. An user has a contact list composed of other users.
 - a) Participation:
 - (1) Owner: Partial participation
 - (2) Member: Partial participation
 - b) Cardinality: Many to Many
4. Post - A relationship between User and Message. The user posts messages.
 - a) Participation:
 - (1) Users: Partial participation
 - (2) Messages: Total participation
 - b) Cardinality: Many to 1
5. Participant - A relationship between User and Chat. A chat must contain users to exist.
 - a) Participation:
 - (1) Users: Partial participation
 - (2) Chats: Total participation
 - b) Cardinality: Many to Many
 - c) Attributes:
 - (1) PTime:time - Time an user got added to a chat
6. Administrator - A relationship between User and Chat. A chat has as an admin the user that created it.
 - a) Participation:
 - (1) Users: Partial participation
 - (2) Chats: Total participation
 - b) Cardinality: 1 to Many
7. Reacted - A relationship between User and Message. An user reacts to a message by liking or disliking it.
 - a) Participation:
 - (1) Users: Partial participation
 - (2) Messages: Partial participation
 - b) Cardinality: Many to Many
 - c) Attributes:
 - (1) RDate:date - Date an user reacted to a message

- (2) RTime:timestamp without time zone - Time an user reacted to a message
 - (3) Vote:short - The vote a user gave to a message, 1 for like and -1 for dislike.
- 8. BelongsTo - A relationship between Chat and Message. A message belongs to a chat for it to be displayed in.
 - a) Participation:
 - (1) Chats: Partial participation
 - (2) Messages: Total participation
 - b) Cardinality: 1 to Many
- 9. Reply - A self relationship with Message. A message can reply another message.
 - a) Participation:
 - (1) RepliedBy: Partial participation
 - (2) Replied_To: Partial participation
 - b) Cardinality: Many to 1
- 10. HasMedia - A relationship between Message and Media. A message can contain 1 media content video or photo.
 - a) Participation:
 - (1) Messages: Partial participation
 - (2) Medias: Total participation
 - b) Cardinality: 1 to 1
- 11. PostedIn - A relationship between Message and Topic. A message can contain multiple topics depicted with hashtags.
 - a) Participation:
 - (1) Messages: Partial participation
 - (2) Topics: Total participation
 - b) Cardinality: 1 to Many

III. SQL Create Table Commands

create table Users(uid serial primary key, fname varchar (20), lname varchar(20), utime timestamp without time zone, pseudonym varchar(15));

```
create table Credentials(uid integer references Users(uid), username varchar(30)
unique, password chkpass , uemail varchar(50) unique, uphone char(10),
primary key(uid, username));
```

```
create table Activities(uid integer references Users(uid), lastdbaccesstime
timestamp without time zone,isActive boolean);
```

```
create table Contacts(uid integer references Users(uid), memberid integer
references Users(uid), primary key(uid, memberid));
```

```
create table Chats(cid serial primary key, cname varchar(20), ctime timestamp
without time zone, isgroupchat boolean, isactive boolean, uid integer references
Users(uid));
```

```
create table Participants( cid integer references Chats(cid), uid integer
references Users(uid), ptime timestamp without time zone , primary key(uid,
cid));
```

```
create table Messages(mid bigserial primary key, text varchar(65536), ctime
timestamp without time zone, uid integer references Users(uid), cid integer
references Chats(cid), isDeleted boolean, rid integer references Messages(mid));
```

```
create table Topics(hashtag varchar (75), mid integer references Messages(mid),
primary key (mid, hashtag));
```

```
create table Reacted(uid integer references Users(uid), mid integer references
Messages(mid), rtime timestamp without time zone, vote smallint, primary key
(uid, mid), check (vote = 1 OR vote = -1));
```

```
create table Medias(mid integer references Messages(mid), isvideo boolean,
location varchar(1000), primary key (mid, mediaid));
```

