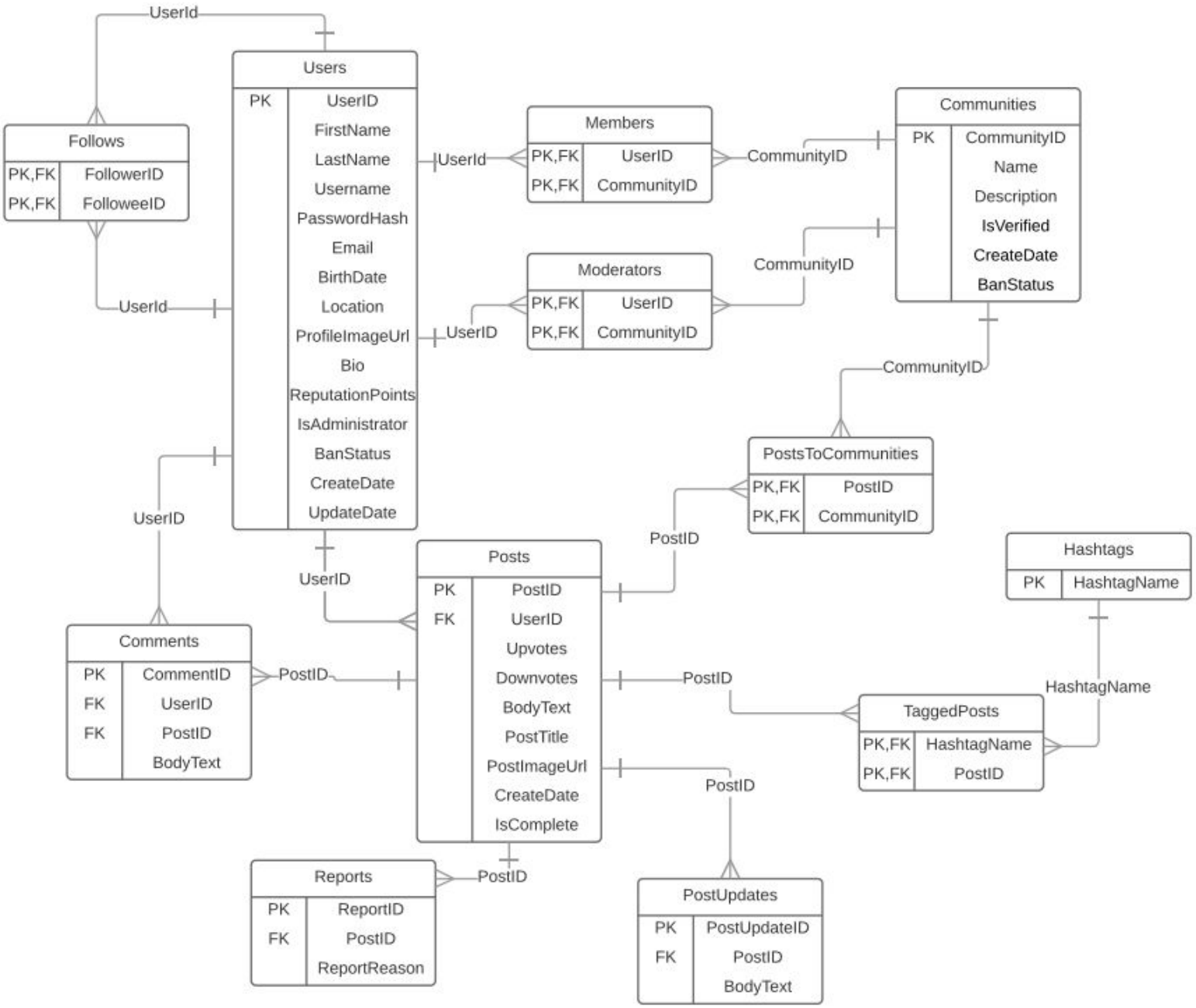
Helping Hands ER Diagram



ER Diagram Documentation

Users: Table that holds all users of the social network
UserID - Primary Key
FirstName- User's first name
LastName- User's last name
Username- User's username (handle)
PasswordHash - User's password (hashed for security)
Email- User's email
BirthDate- User's date of birth
Location- User's geographical location
ProfileImageUrl- User's profile picture URL (stored on server)
Bio- User's profile bio description
ReputationPoints- User's reputation points
IsAdministrator- User's admin status
BanStatus- User's ban status
CreateDate- User's profile creation date
UpdateDate- User's last update date

Follows: Table that tracks which users are following which users
FollowerID-Primary Key, Foreign Key, References Users.UserID
FolloweeID- Primary Key, Foreign Key, References Users.UserID

Communities: Table that holds the religions / communities that users may belong to
CommunityID- Primary Key
Name- Name of the community
Description- Description of the community
IsVerified- Is the community a verified community (verified by the admins)
CreateDate- When was the community created
BanStatus- Community's ban status

Members: Table that tracks which users belong to which communities
UserID- Primary Key, Foreign Key, References Users.UserID
CommunityID- Primary Key, Foreign Key, References Communities.CommunityID

Moderators: Table that tracks which users are moderating which communities
UserID- Primary Key, Foreign Key, References Users.UserID
CommunityID- Primary Key, Foreign Key, References Communities.CommunityID

Posts: Table that hold posts / prayer requests that users create
PostID- Primary Key
UserID- Foreign Key
Upvotes- Number of upvotes
Downvotes- Number of Downvotes
BodyText- Body text
PostTitle- Title of post
CreateDate- Date of creation
IsComplete- Boolean value that marks a post as a complete or a prayer as “answered”

PostUpdates: Table that holds all updates that users add to their posts
PostUpdateID- Primary Key
PostID- Foreign Key, References Posts.PostID
BodyText- Body text for the post update

PostsToCommunities: Table that tracks which posts are posted on which communities
PostID- Primary Key, Foreign Key, References Posts.PostID
CommunityID- Primary Key, Foreign Key, Reference Communities.CommunityID

TaggedPosts: Table that tracks which hashtags are used on which posts
HashtagName- Primary Key, Foreign Key, References Hashtags.HashtagName
PostID- Primary Key, Foreign Key, References Posts.PostID

Hashtags: Table that holds all the hashtags that are created by users
HashtagName- Primary Key, the unique name of the hashtag

Comments: Table that holds all comments that are posted on users’ requests
CommentID- Primary Key
UserID- Foreign Key, References Users.UserID
PostID- Foreign Key, References Posts.PostID
BodyText- Body text for the comment

Reports: Table that holds moderator / admin reports for problematic posts
ReportID- Primary Key
PostID- Foreign Key, References Posts.PostID
ReportReason- Reason for the report (message from the reporter)

IT Requirements

1. Server Platform (for each “server” required)

1.1. Physical system requirements

1.1.1. Storage capacity

Due to limitations set by Marist College, we have been allotted a maximum of 50 gigs storage capacity.

1.1.2. Speed requirements / response time parameters

To ensure optimal user experience and satisfaction, the server response time must be no greater than a 2 second delay.

1.1.3. Scalability plans

Scalability is high in terms of adding more servers to support more users, more space for backups, and a more efficient maintenance period.

1.2. Virtual system requirements

1.2.1. Ubuntu Linux 16.04

1.2.2. Number of images expected

Currently we will have 1 image of the standard settings of our servers. As time progresses and we have more users and must tweak settings to accommodate more server load, we will have perhaps 2 or 3 separate images for servers having to deal with increased load, connections, roll back servers that take the last image of the most updated server

1.3. Connectivity

1.3.1. Network considerations

Traffic will be handled by our database.

1.3.2. Interconnection to what other systems

Servers will be able to connect to each other.

2. Reliability

2.1. Service Level Agreements

2.1.1. Uptime Requirements

100% uptime with back up servers for to use while the main servers are in maintenance.

2.1.2. Response Time Requirements

In order to ensure positive user experience response time must be no greater than 2 seconds.

3. Recoverability

3.1. Where are things backed up? How often? We’re backing up to other servers.

Backups are initiated by the hour, and as time progresses and the servers grow, the time between backups will halve until it is within the seconds. One hour -> 30minutes -> 15minutes -> 7.5minutes -> 3minutes -> 1minute -> as a person changes content.

3.2. Access to backups?

Only the admin can remote access into the server, anyone else needs physical access to the server with the correct permissions.

3.3. What data is transient and doesn't need to be stored longer term?

In order to preserve server space, posts older than 1 year will be archived, anything older than 5 years will be sent to heaven.

4. Security and Privacy

4.1. Database

4.1.1. Access controls by userid / roles

DB Admin: Full database access to users, roles, any form of database required information. Can edit entire tables.

DB Editor: Able to read files, but can only write to some files. Cannot edit entire tables.

DB Helping Hand (Someone who works for Helping Hand): View/Read Only access to database lists. NO EDIT POWERS.

4.1.2. Update vs. Access

DB Admin has update power only.

DB Helping Hand only has access to view the data.

4.2. Account information

4.2.1. User data

4.2.1.1. Username and Password are stored on a database and encrypted via database side encryption.

4.3. Admin access controls

4.3.1. Admins have the power to create new users and delete users. Remove old/inappropriate prayers (shared between admin & moderator).

5. Maintenance

5.1. Planned down time requirements

5.1.1. Database maintenance

Database is maintained at a 100% uptime and done so with the use of backup servers.

5.1.2. Times of year when IT does maintenance

January, June for now, after more servers are established, then the maintenance will be most likely weekly with no downtime.

5.1.3. Times of year when the systems are not available?

100% uptime.