

Design a social network

We want to design a social network where a user can choose to follow another user.

Furthermore a user can create 'circles' of users of which the user can share update, as a extra layer of privacy. So a post is only visible if the the post is posted in a circle which the user is member of or public.

The solution should be designed such that the number of documents needed for each 'view' is a minimum.

The social network we are designing should at least contain user information (name, gender, age, ...). A user should also be able to create a negative list (or blocked list of other users). To make this social network a success we need to be able to share data without a connection between the users. So we also need a posts concept. A post should contain some content (at least two different types¹ should be supported), which circle it is posted in and some information about the author and creation time. Other users can then make comments to these posts.

The social network should display a 'feed' of posts created by the user, directed to the user - by the circles he/she is member of and from the public posts by users which is followed

The social network should also make it possible to show posts from a user (wall).

Both views should show a small number of comments for each post.

System should be optimized for read, since we assume that querying will be done a lot more than writes in a type of system like this.

Consider what problems there is by sharding, if our Social Network take off and become popular.

Querying data should be possible in the sample application, the following methods for querying is mandatory:

Query:

`feed(logged_in_user_id)` -> show the users feed - including the latest xx posts the uses has access rights

`wall(user_id, guest_id)` -> show the wall, including at least the latest xx posts from the user, which the guest_id user has access rights to.

Post data:

`create_post(owner_id, content, cicles)`

`create_comment(post_id, comment)`

¹ Text, image, video, poll etc.