

6.170 Project 3: Crowd-approved Comments

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Problem Analysis

Purpose and Goals

The goal of the system is to provide a crowd-sourced knowledge base platform (Quora-like) for internet users to post questions (“question”) and answer existing posts and/or questions (“answer”).

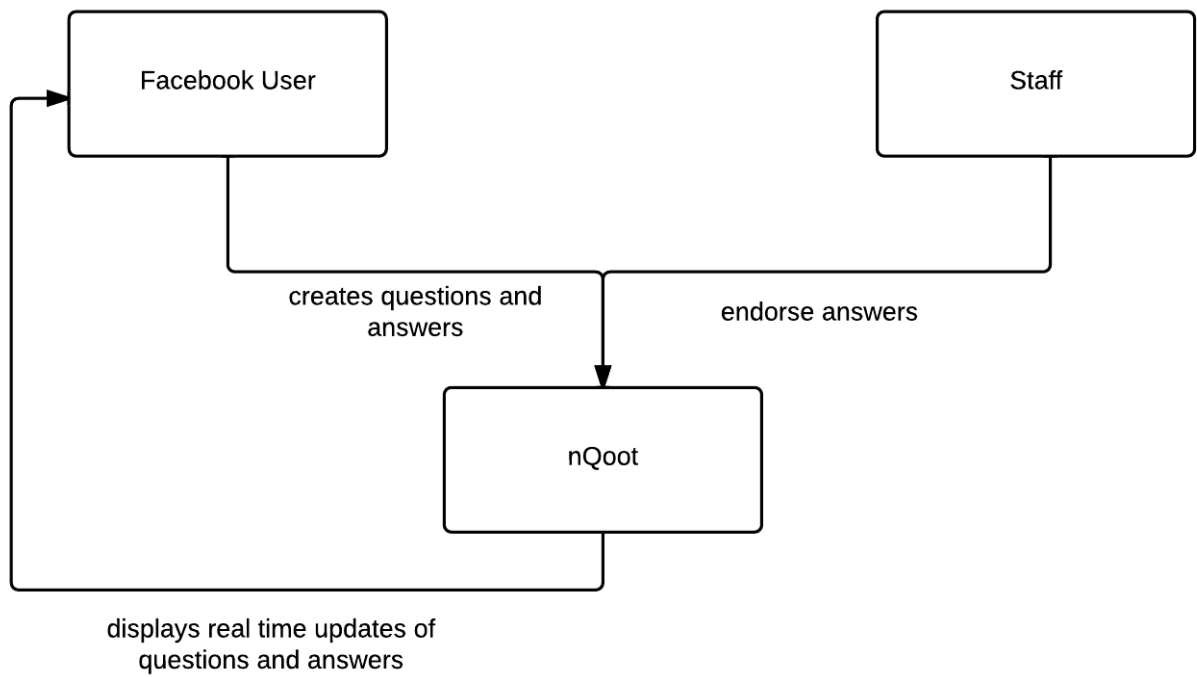
The basic implementation of this system will allow users to create and have several questions and be able to answer questions. Users will also be able to upvote/downvote answers. A specially privileged user called a *staff* will be able to endorse answers to questions. All endorsed answers will appear highlighted in the website.

Unusual Requirements

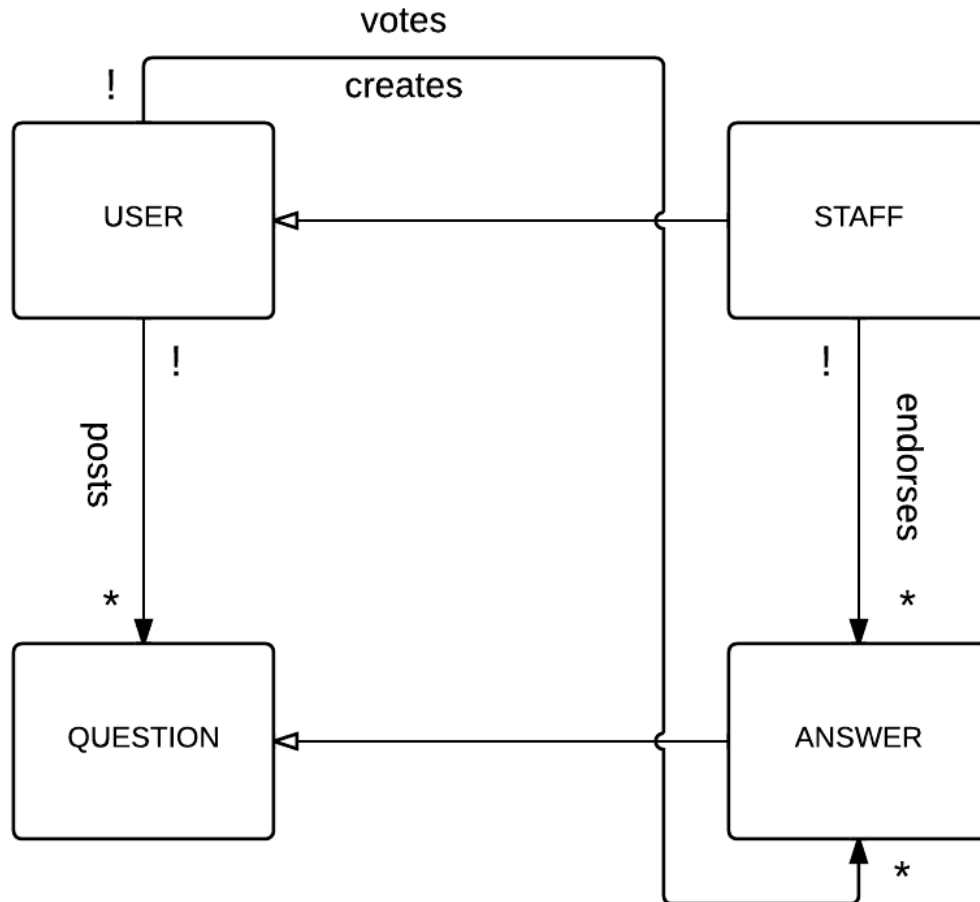
One of the most essential requirements of this system is auto-updating of the page as answers (or updates to answers i.e. upvotes and endorsements) come in. In this case, users do not need to refresh the page every time in order to see new answers. It is essential for the page to get or receive new information from the server. That is, the implementation approach can have a page that constantly queries the server for new information (i.e. answers, upvotes, endorsements) or the server has an open channel between all its clients and send new information as they come in. The latter approach might be a little harder to implement.

Another important aspect of this crowd-sourced knowledge base platform is user identity. How do we ensure the integrity of the answers from random users? In order to at least increase our level of confidence that the users are who they say they are, users need Facebook accounts in order to login to this system.

Context Diagram



Object Model



- In terms of the Facebook-integration feature, the User is basically the Facebook authenticated user since the user credentials are all taken from Facebook.
- For the invariant of 1 user per vote, a Vote table in the database is created to keep track between the answer and the users. If it exists, then the user has already voted that answer.

Event Model

User events

- **add_question:** user creates new question
- **delete_question:** user removes question that belongs to it

- **up_vote:** user upvotes an existing answer to a question
- **down_vote:** user downvotes an existing answer to a question if user has upvoted it previously
- **add_answer:** user adds answer to an existing question
- **delete_answer:** user deletes answer to an existing question if answer belongs to user

For the advanced version, a staff user exists. The staff inherits all user events.

Staff events

- **endorse_answer:** staff endorses an existing answer
- **delete_answer:** staff deletes any answer

Standard scenario

- user_login
- add_question
- edit_question
- add_answer
- up_vote
- down_vote
- user_logout

Orderings

Since staff is basically a user with additional privileges, it has the same login and logout events.

- **User** ::= user_login add_question add_answer* up_vote* down_vote* delete_answer* user_logout
- **Staff** ::= user_login endorse_answer* delete_answer* user_logout

Feature descriptions

- Users will use Facebook authentication to login into the system; there is no need to create a separate login credentials.
- Allow users to add, edit, and delete questions as well as answer on existing questions.
- Enable staff to monitor questions including endorsing answers to questions.
- Users can upvote/downvote answers to existing questions.
- Real-time updates of a question page.
- Answers are ranked according to the number of votes.

Security concerns

- While there isn't a huge security risk in this platform or system, it is necessary to ensure the credibility of the user. That is, users can only upvote answer that doesn't belong to it. It must not also have access to staff privileges. It follows that only staff accounts can only have access to staff privileges.
- Ensuring the credibility of the identity of the user can be challenging. Different systems implement their own checking mechanism. In this system, each user is required to have a Facebook account to login. While this is not foolproof, it increases our confidence that the identity of the user is credible.

Wireframe

The flow of the user interface is basically the same for User and Staff since the staff is simply a user with additional privileges (indicated in red box).

A sample wireframe is also included after the flowchart.

