2 Requirements Contents

2.1 Statement of work

The purpose of this project is to create an easy platform for students to study effectively by teaching and learning from other students. Our project is designed to solve some of the problems that students face throughout their school career, including:

- Professors not explaining complex topics/problems well.
- Determining whether the student grasps the material and understands it well.
- The student's questions do not get answered:
- 300+ students in class make it impossible to ask questions in class
- Scared to ask the question in class
- Still don't understand the material after asking about it.
- Unable to see how other schools solve problems/learn material
- Tutors/other students don't always have time to answer questions.

Our project will aim to solve all of these by creating an online school forum where students can ask and answer questions related to material and general concepts from the chapter. The expected output would be a whole forum filled of questions and answers that can be saved and stored so that users can go back and view questions from previous years.

2.2 Stakeholder definition

One of the most impacted stakeholders from this project would be the students using the forum. The students will get the most out of the system and will be able to gain knowledge and guidance from the project. Another stakeholder would be the professors and teachers that decide to use this system. They will be able to gain insight into what topics students are stuck on and will be able to gear their lesson plans towards the topics the students are struggling with. The team members of this project (Eddy Yeung, John Carter, Jeff Cave, Dominic Scola, Meredith Alcorn) also are stakeholders in the project. We all will have worked on some aspect of the project and are interested in the completion of the project.

2.3 User Definition

The users for the project will be students looking to gain more knowledge in their classes. Professors could also use this to see where their students are struggling and what their students are grasping.

2.4 Detailed Functional Objectives and Use cases

A user will first set up an account to access the site. Once their account is created and the project stores this info into a database, the user will be able to ask and answer questions based on a menu presented to them.

- Question mode
    - Search a large repository of questions already asked
    - Ask a new question
    - Look at your questions history, along with whether it was answered or not
    - See a feed of other questions recently answer?
    - Rating system to verify correctness of answers
    - Tipping system?
- Answer mode
    - Provide a video recording interface (face and screen)
    - A queue of questions categorized by direct and indirect questions towards the answerer
- Live virtual office hours

2.5 Publications

The objectives for supporting documentation would be to create documents that are brief, simple to follow, and include a lot of support. If the documents are long, no sane person will sit down and read them to solve their issue. The documents should be simple enough that somebody with limited to no experience on the site should be able to grasp what the document is saying to do. Finally, the document should be able to help as many people as possible. Knowing about errors and only documenting a few of them will not be beneficial to users.

2.6 Efficiency

We expect/hope for our project to be fairly quick as it is just going back and forth between front end, back end, and database. All of these operations are for the most part very quick. We do not see efficiency in this project being a big concern.

2.7 Reliability and Availability

The reliability/availability of the system is obviously important, but is not imperative that it stays on 24/7. While not having the ability to view and ask questions would be frustrating to users, occasional technical downtime for upgrades would not be a major problem.

2.8 Data loss tolerance

A lot of this system would have catastrophic results if we had data loss. If, for example, a user creates an account and it is lost, all that user information will need to be re-entered which could anger the user. Another possible information loss could be the loss of threads/posts. Additionally, these would be disastrous.

2.9 Compatibility

This system will interact with Node.js and Node.js MongoDB for backend and JavaScript for a front end.

2.10 Configurability

Notification settings would be an important aspect of configurability. This would help to decrease wait times for users asking questions, but would also be beneficial to those receiving the notifications so that they would not be bombarded with notifications. Some other possible configurable items discussed are the addition of profile pictures, statuses, and themes.

2.11 Security

The security objectives for this project would be to make sure that user information is kept hidden from others. This will be accomplished that necessary precautions will be taken and access to the database and places of sensitive information will be extremely limited.

2.12 Legal and Corporate Constraints

N/A

2.13 Installation

Because this is a web application, this is N/A.

2.14 Serviceability and Maintainability

We plan to implement a feedback feature where users can write to us and let us know what they like and dislike about the project. With this tool, we can get a better idea for what our users would like to see in our project.

3 Use Cases

1. User navigates to website. Creates an account
2. The system sends all of this information to a database. This stores all of the account information for this specific user
3. User decides to ask a question
   a) User is asked to input the specifics of the question (what topic is this question based on, etc.)
   b) User types in question in. Posts the question
   c) The question is stored
4. User decides to answer a question
   a) User types in answer to question. Posts the answer
   b) The answer is stored
5. User logs off

4 Feature Prioritization And Incremental Development Planning

Essential Functions:
- Create a user and allow that user to login to their account
- Allow the user to ask a question of the forum
- Allow the user to answer questions on the forum
- Search users (Drawing a blank on what we meant by this)? Maybe search topics by keywords, and not search users; or both.

Desirable Functions:
- Upvotes/Rating System on questions (Send the highest upvoted to the top)
- Feed of answered questions in Question Mode
- Feed of asked questions in Answer Mode
- Video Recording Interface for solutions/virtual office hours

Optional Functions:
- A user's question history

Future Functions:
- Teacher/professor accounts
  - Similar to student accounts, but cannot answer a question until it has been posted for one day
  - The ability to delete posts. Relevant if a student posted a question about homework problems.