Block Diagram

Team SD_7 - CyNote

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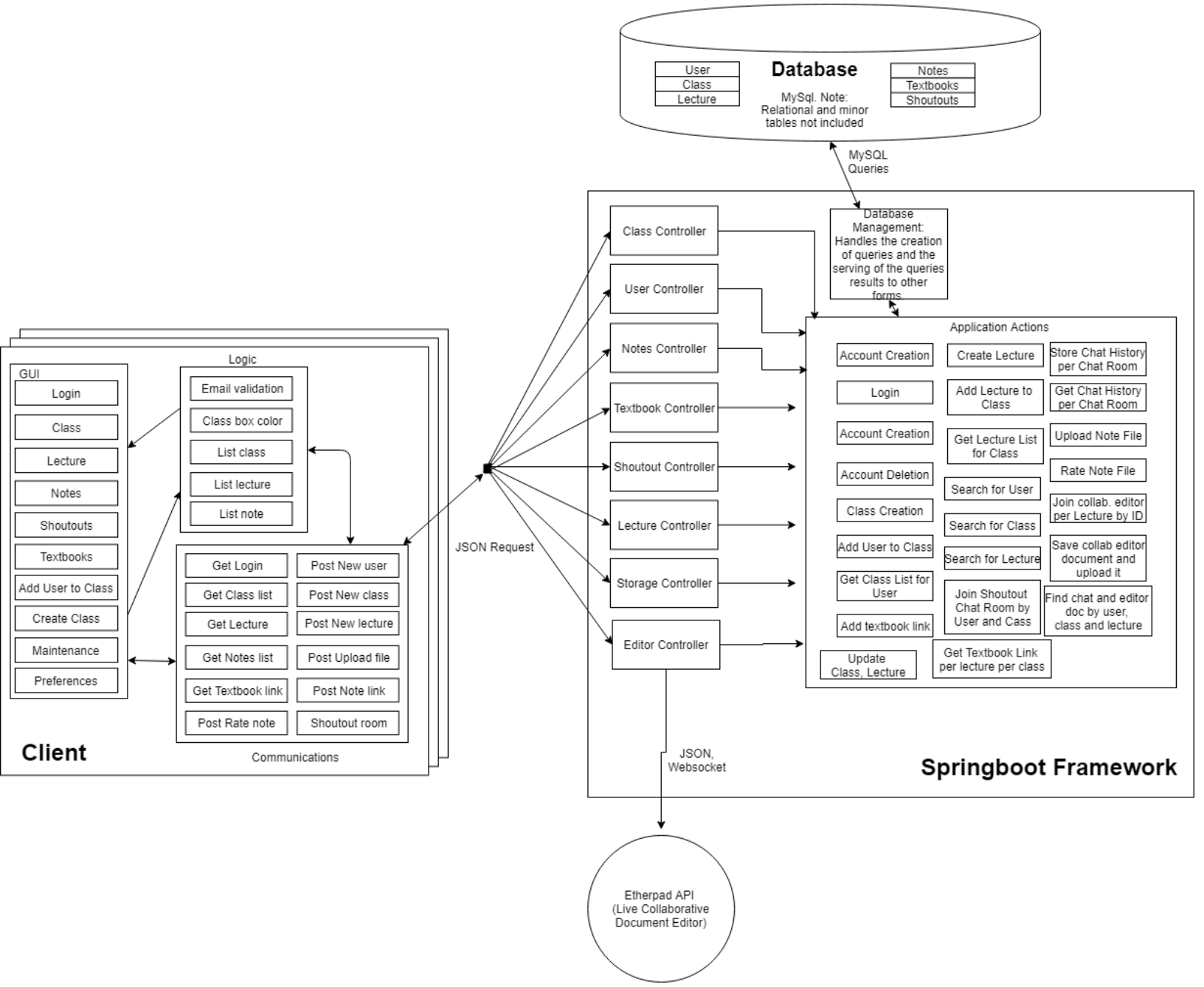
Database
User
Class
Lecture
Notes
Textbooks
Shoutouts
MySql. Note: Relational and minor tables not included
MySQL Queries
Database Management: Handles the creation of queries and the serving of the queries results to other forms
Class Controller
User Controller
Notes Controller
Textbook Controller
Shoutout Controller
Lecture Controller
Storage Controller
Editor Controller
Application Actions
Account Creation
Login
Account Creation
Account Deletion
Class Creation
Add User to Class
Get Class List for User
Add textbook link
Update Class, Lecture
Create Lecture
Add Lecture to Class
Get Lecture List for Class
Search for User
Search for Class
Search for Lecture
Join Shoutout Chat Room by User and Cass
Get Textbook Link per lecture per class
Store Chat History per Chat Room
Get Chat History per Chat Room
Upload Note File
Rate Note File
Join collab. editor per Lecture by ID
Save collab editor document and upload it
Find chat and editor doc by user, class and lecture
Springboot Framework
JSON Request
JSON, Websocket
Etherpad API (Live Collaborative Document Editor)
GUI
Login
Class
Lecture
Notes
Shoutouts
Textbooks
Add User to Class
Create Class
Maintenance
Preferences
Logic
Email validation
Class box color
List class
List lecture
List note
Get Login
Get Class list
Get Lecture
Get Notes list
Get Textbook link
Post Rate note
Post New user
Post New class
Post New lecture
Post Upload file
Post Note link
Shoutout room
Communications
Client

Design Description:

We allow Professors to create classes, and both TA's and Professors to add students to said classes by their ID's. Each class has an ordered, numbered list of lectures similar to the structure on canvas. A professor or TA will create a new lecture for each class, or even each week of class. Within each lecture/class, there are the following functions and features:

- Shoutouts: A live websocket chat between all people in the class
    - Any student may post a question or message to a live chat and the professor or a TA will instantly be able to view and answer that question during the lecture. Students post these anonymously, to avoid stress of raising hands and nervous students.
    - There are separate live chats per lecture per class. Each of these live chats are only active during the given lecture. Upon completion, the log of the chat is served in the lecture for later viewing.
- Notes: Both non-live note sharing and live collaborative note taking capability
    - Note Sharing:
        - We allow students, TA's and the professor to upload their notes for a specific lecture in any document/text file format.
        - Students may upvote notes that they find useful, and TA's and Professors can star notes they deem as particularly important.
        - The uploaded notes will propagate a ranked list based on popularity, and starred notes will always be at the top of the list.
    - Live, Collaborative note taking:
        - We implemented etherpad API to allow live collaborative document editing.
        - During each lecture, a live document will be created at a specific url. All users in the corresponding class will be served this URL to open in their browser on their phone, tablet, or laptop.
        - Similarly to google docs, each user will have their own cursor with their own name and color. Students and TA's will be able to collaboratively take notes, record answers to questions, etc in this document during the lecture.
        - Upon the lecture's completion, the document will be saved and served in that lecture as a document for later viewing.
- Textbooks:
    - For each class as a whole, a student, TA or professor may upload a URL to the course textbook (if there is one). This is to allow students to easily find/see if the textbook is available online for free versus buying the textbook.
    - Once someone uploads a URL, it will be verified by the professor or TA for integrity. Once all resources are posted and verified, the upload will be locked and nothing more can be added to the list.

Tables and Fields:

- Class: id, name
- Lecture: id, class_id
- Shoutout History: lecture_id, shoutout message
- Notes: id, address, lecture_id, rating, title
- Preference: id, color preference, favorites, start page, user_id
- Textbook: id, book_link, rating, class_id
- User: id, creation time, email, password, username, type
- User's classes (relational): class_id, user_id

Relationships:

1:1 User - Preference

M:M User - Class

1:M Class - Lecture

1:M Lecture - Shoutout History

1:M Lecture - Notes

1:M Class - Textbook