

StudyNest

Project Backlog - Team 23

Leanne Alsatie, Cadence Chan, Kalea Gin, Advait Panicker

Problem Statement:

We aim to build a study app that helps students study together virtually. Most similar services cater to more community-centered features—working anonymously with other students or joining public study rooms—while ours is more about having a personalized group study experience. As opposed to Discord, our study app is explicitly designed for studying and delivers a distraction-free easy-to-use study platform. Our study app will have more unique features (whiteboard, PDF upload, YouTube watch together bookmarks, etc), which also separates it from any individual group study platform.

Background Information:

Audience:

StudyNest is aimed for students of all ages, especially for those who are looking for a space to study with others. With a virtual study room, it can be more convenient to meet up together while having digital tools to study and work with others.

Similar Platforms:

Similar platforms include existing collaborative platforms such as Microsoft Teams, as well as existing group chat software such as Discord. Our program is also inspired by particular features of other software, for example, there exist online whiteboard web applications, from which we drew ideas for our whiteboard functionality. Other methods of group music-sharing also exist, such as Spotify Jam.

Limitations:

As a web application, we are limited in that we must be able to operate on a browser, and will have various policy restrictions that will restrict certain functionalities for user privacy and security. Furthermore, we will be limited by the efficiency of our server code to be able to simultaneously handle multiple requests.

Functional:

Joining / Leaving

- 1) As a user, I would like to join a room with other users.
- 2) As a user, I would like to use a shareable link to join another user's room.
- 3) As a user, I would like to be able to join another user's room with a room code.

- 4) As a user, I would like to login with my Google account.
- 5) As a user, I would like to have the option to join as a guest, not having to make an account.
- 6) As a user, I would like to be able to leave a group.
- 7) As a user, I would like to not need a Google account and be able to log in with an email and password, if time allows.

Account Options

- 8) As a user, I would like to choose a profile icon to represent me from a list of icons.
- 9) As a user, I would like to be able to upload my own custom image to be my profile icon.
- 10) As a user, I would like to be able to choose a username and change it later.
- 11) As a user, I would like to be able to see all the rooms I've joined, and join and leave them as I please.
- 12) As a user, I would like to be able to change notification settings, if time allows.
- 13) As a user, I would like to be able to give friends nicknames, if time allows.
- 14) As a user, I would like to have a profile bio, if time allows.
- 15) As a user, I would like to delete my account, if time allows.
- 16) As a user, I would like to reset my password and or username, if time allows.

Room Options

- 17) As a user (host), I would like to set permissions for my groupmates.
- 18) As a user (host), I would like to customize the appearance of my room.
- 19) As a user, I would like my room to be private. Unauthorized users will be disallowed to access my room.
- 20) As a user, I would like to save my study progress to come back to later.
- 21) As a user, I would like to be able to engage in multiple rooms.
- 22) As a user, I would like to be able to mute a group, if time allows.

Functions

Whiteboard

- 23) As a user, I would like to draw on the shared whiteboard and see other users' drawings.
- 24) As a user, I would like to have different pen colors and writing tools available to interact with the whiteboard.
- 25) As a user, I would like to be able to erase on the whiteboard.
- 26) As a user, I would like to paste images into the whiteboard, if time allows.

Chat

- 27) As a user, I would like to be able to send and receive live messages from other users.
- 28) As a user, I would like to be able to send images, gifs, and stickers.
- 29) As a user, I would like to be able to ping other users and send them a notification with my message content.
- 30) As a user, I would like to be able to edit and delete my messages, if time allows.
- 31) As a user, I would like to be able to download and choose sticker packs, if time allows.

32) As a user, I would like to be able to react to another user's message with an emoji, if time allows.

33) As a user, I would like to be able to send embeds in the chat, if time allows.

File sharing/links

34) As a user, I would like to upload a file into the room.

35) As a user, I would like to see the same file as everyone else in the room.

36) As a user, I would like to make notes on the file that everyone else in the room can also see.

37) As a user, I would like to make highlights on the file that everyone else in the room can also see.

38) As a user, I would like to remove notes and highlights from the file.

39) As a user, I would like to be able to emphasize a highlight or part of the file, if time allows.

40) As a user, I would like to connect to Google Drive, if time allows.

41) As a user, I would like to export the annotated file, if time allows.

Video streaming

42) As a user, I would like to have a queue of videos that I can watch/listen to.

43) As a user, I want to pause, skip, and fast-forward the video, and have the video sync with other users in the room.

44) As a user, I would like to be able to make comments and annotations on the video that are persistent and can be viewed by others, if time allows.

Miscellaneous

45) As a user, I would like to have a clock to do pomodoro studying.

46) As a user, I would like to be able to receive email notifications regarding activity in my account or rooms I am in.

47) As a user, I would like to be able to voice chat with my friends, if time allows.

48) As a user, I would like to have multiple brain break activities available to play.

Non-Functional:

1. Availability and Performance

- a. The app should have high availability, with an aim for 24-hour availability discounting maintenance periods.
- b. The average latency should be less than 5000 ms for user interactions in the room, including sending messages and making annotations. More real-time features, including video streaming and voice chat, should have lower latency.
- c. The system must be able to handle 10 users per room.

2. Storage

- a. User files should be stored in blob-like file storage, including documents, images, and other static content.

- b. There should be a separate database for storing smaller pieces of data, including text conversations, room metadata, and potentially annotations.
- c. User credentials and other sensitive data should be stored in a relational database.

3. Security

- a. Unauthorized users should not be able to join rooms they are not authorized to join.
- b. Users should only be able to access their static files and chat messages. This should be mitigated by only allowing users to access links to messages/media posted in rooms they are members of.
- c. Users should be notified via email of changes to their account settings, including password resetting.
- d. If a user account gets deleted, data should be saved for a certain period to allow for account recovery.

4. Usability

- a. The web application should be easy to navigate and user friendly.
- b. Users should be able to intuitively find core features. Users should not have to struggle finding important tools like the whiteboard, file sharing, and chat.
- c. The web app will be compatible with different browsers and screen sizes, if time allows.