Team 10 Backlog

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Problem Statement

Many businesses and people possess sensitive information they wish to store with a higher level of security. This includes passwords, files, photos, journals, and more. They need their vault to offer the option to store information offline locally for maximum security. Additionally, they need their vault to also offer a server-based vault allowing for synchronization between several devices that uses zero knowledge encryption. They need an application that encompasses many vault-related features such as password creation and cycling. Our application, Lock-in, aims to provide businesses and people with a free open source vault that can satisfy all of these many requirements within one app.

Background Info:

Audience

Cloud storage has provided a new opportunity to create and store files digitally. However, a major concern with these solutions for people who want to store information securely is that these services either don't encrypt or don't encrypt end-to-end. This means theoretically the data could be intercepted in transit or decrypted by a malicious server. Our target users are users and businesses who need a secure offline or cloud-based vault to securely store and share text and audio files.

Similar Platforms

There are many forms of digital cloud content storage specialized for different tasks. Notion for workspaces, Google Workspace for office products, Google Cloud for storage, 750words for journaling, etc. All of these services allow the user to write text, image, and audio files stored on the cloud and accessed from any device, assuming the account is signed in.

Limitations

However, the problem with all of these services is they are either not encrypted, or not encrypted end-to-end. This poses a problem as the server can theoretically access your data. Our goal is to provide a completely free, open-source, trustless encrypted storage space for notes, passwords, and more.

Functional Requirements:

1. As a user, I would like to be able to register for a Lock-in account.

2. As a user, I would like to be able to login to my Lock-in account.
3. As a user, I would like to be able to change my master password.
4. As a user, I'd like to add an email to my account to work as two factor authentication.
5. As a user, I would like to be able to create notes to be saved.
6. As a user, I would like to be able to delete my account and all related information.
7. As a user, I would like to use a client-only option that doesn't require a connection.
8. As a user, I would like to view all my notes by name.
9. As a user, I would like to be able to modify my notes after creating them.
10. As a user, I would like my notes to be synced on multiple devices.
11. As a user, I would like to be able to generate my master password for it to be strong and secure.
12. As a user, I would like the option to set a time interval to be reminded to change my master password.
13. As a user, I would like to be able to remove notes permanently.
14. As a user, I would like to be able to search for specific notes by name on the website.
15. As a user, I would like to be able to sort the notes in several ways (i.e. last modified, alphabetical, ect)
16. As a user, I would like to be able to pin important notes to the top of the list
17. As a user, I would like my information to be completely and solely usable only by me.
18. As a user, I would like to optionally add a second password to a note
19. As a user, I would like to be able to specify if a note is saved to the server, the client, or both
20. As a user, I would like to be able to save images as its own note
21. As a user, I would like to be able to upload audio files as their own note
22. As a user, I would like to be able to securely transcribe audio files if they contain speech.
23. As a user, I would like to be able to view image and audio notes without downloading them
24. As a user I would like to be able to search and filter notes by date and type (text, image, or audio)
25. As a user, I'd like any discrepancies between the server and client to be resolved automatically by using the newest information.
26. As a user, I'd like a small feature to help me remember my password by repeatedly entering it.
27. As a user, I would like to be able to rename and delete my notes.
28. As a user, I would like to be able to securely share a copy of a note with another user using a one time use code.

29. As a user, If I am sent a note with the same name as one of my notes, I would like the option to change the new note name instead of just overwriting my current note.
30. As a user, I would like to have a keybind that can quickly hide what I am viewing/working on so that my information is secure if someone walks in
31. As a user, I would like to be able to change my hide information keybind so that it can be unique to me if someone else tries to unhide my info.
32. As a user, I'd like an about page explaining how to use the website with some additional information about security.
33. As a user, I would like to be warned all of my information will be unretrievable if I forget my password.
34. As a user, I would like to be told if my password is incorrect instead of receiving a bunch of gibberish files.
35. As a user, I would like to be notified if a new device logs into my account.
36. As a user, I would like to be able to switch between a light more and a dark mode so that I don't strain my eyes in different settings.
37. As a user, I would like a settings page where I can adjust preferences such as text size.
38. As a user, I would like to know when the server is down.
39. As a user, I would like to store video files as notes. (If time permits)

Non-Functional Requirements:

Architecture and Performance
We plan to develop a browser-based front-end for logging in and managing files, written with the React framework. All encryption happens on the client end, which makes this solution end-to-end encrypted, zero-knowledge, and trustless. The server-side backend will be written in Node.js with a database in Supabase.

Security
Security is the most important part of this project, as sensitive files are being stored. Node.js has a production-grade cryptography library, "crypto" that provides secure cryptographic algorithms and random number generation. More specifically, we plan to use the AES-256 encryption algorithm for storing files on the server side for standard mode or in a secure enclave on the user's computer for client-only mode.

Usability
The user will interact with Lockin via the website. We intend to design our GUI to be minimalist, with no clutter. We intend to make information presented regarding notes intuitive to understand and screen through but still safe. We intend to make it clear where information being sent to a vault is going to be saved (Locally or on Server) and to make the toggle between these options clear and easy to use.

Hosting/Deployment

The client-only option can be deployed fully locally and doesn't require any hosting. However, the server-side version which allows for cross-platform notes synchronization requires server-side hosting. We plan to use either Railway or some other similar server hoster for simple small scale server hosting.