CS301.1 Master Vault IDD Report

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# Goals & Objective

**Goals:**

* Enhance security measures to protect user data from unauthorized access.
* Offer diverse password customization options.
* Deploy application online for public use.

**Objectives:**

* Implement 256-AES encryption to secure user passwords and sensitive data.
* Introduce animal ID authentication feature to enhance login security.
* Add paraphrase generator to improve our password generator.
* Expand current MasterVault for family password managements.

## Updated Timeline

Fig 1: Updated Timeline

## Feature List

### New Features

* Saving different login details
* Adding types of account options
* Search & Filter
* Secure/lock passwords

### Improvements

* 256-AES Encryption
* Securer login
* Move MasterVault online
* Paraphrase Generator

## Team Members Responsibilities

For the development of this product, we decided to divide the work into back-end development and front-end development. I (Conor) will work on the back-end development, while Nicki will work on front-end development. However, we will not exclusively work on front and back-end. These are just the main area each of us will focus on.

Conor

* 256 AES Encryption
* Moving app online

Nicki

* About Us Page
* Animal ID

Conor & Nicki:

* Paraphrase Generator
* Family Accounts

## Tools & Technologies

### Figma

(Field, 2016)

We used Figma for making the Lo-fi and High-fi wireframe, as well as for User Testing.

### Git Hub

(Wanstrath et al., 2008)

GitHub will be used for code collaboration. It has been a stable product for collaboration, and we have plenty of experience using it in the past.

### Trello

(Cannon-Brookes & Farquhar, 2011)

Trello is a project management tool. It allows us to have a visual representation of tasks using lists and cards. It allows us to assign work to teammates and track the progress of one another and the progress of the project.

### Visual Studios Code

(Microsoft, 2021)

Visual Studios Code is a programming software that has many inbuild features and downloadable extensions that will be vital for development.

### Python

Python's simplicity, extensive libraries, and built-in cryptography make it ideal for developing a password manager across multiple platforms. It also has a code library for web development

### Flask

### Flask is a lightweight and flexible web development framework for Python. It simplifies building web applications with its minimalistic design and extensive libraries.

### MongoDB

(P. Ryan, 2009)

MongoDB is a powerful NoSQL database, perfect for storing and managing unstructured data efficiently. Its flexibility makes it ideal for web applications, providing fast and reliable data storage.

# SRS Document

## Functional Requirements

### Save Different Login Details

Users should have the ability to save different login details aside from the traditional email and password. They should have the ability to store dates, pins and more for ease of access.

### Account Types

This feature allows users to create different account types within the password manager, such as personal and family accounts. With a family account, members can share saved passwords among authorized family members***.***

### Search and Filter

Users should have the ability to search for specific login details or apply filters to quickly locate desired accounts among their saved information.

### Secure/Lock Passwords

The password manager should provide mechanisms to securely store and lock passwords, preventing unauthorized access to sensitive information.

### 256-AES Encryption

Utilizing 256-bit Advanced Encryption Standard (AES) encryption ensures that stored data is highly secure and protected against unauthorized access or data breaches.

### Secure Login

This feature addresses the inadequacies of the previous login system by enhancing security measures. The goal is to significantly improve upon the previous login system, ensuring that user authentication processes are robust, resilient, and capable of effectively safeguarding sensitive information from unauthorized access.

### Paraphrase Generator

This feature generates complex and unique paraphrases based on a keyword provided by the user, which can be used as strong passwords for their accounts, enhancing security by creating passwords that are difficult to guess or crack through brute-force attacks.

## Non-Functional Requirements

### Security

### Usability

### Performance

### Reliability

## Diagrams

Fig 2: Paraphrase Generator Activity Diagram

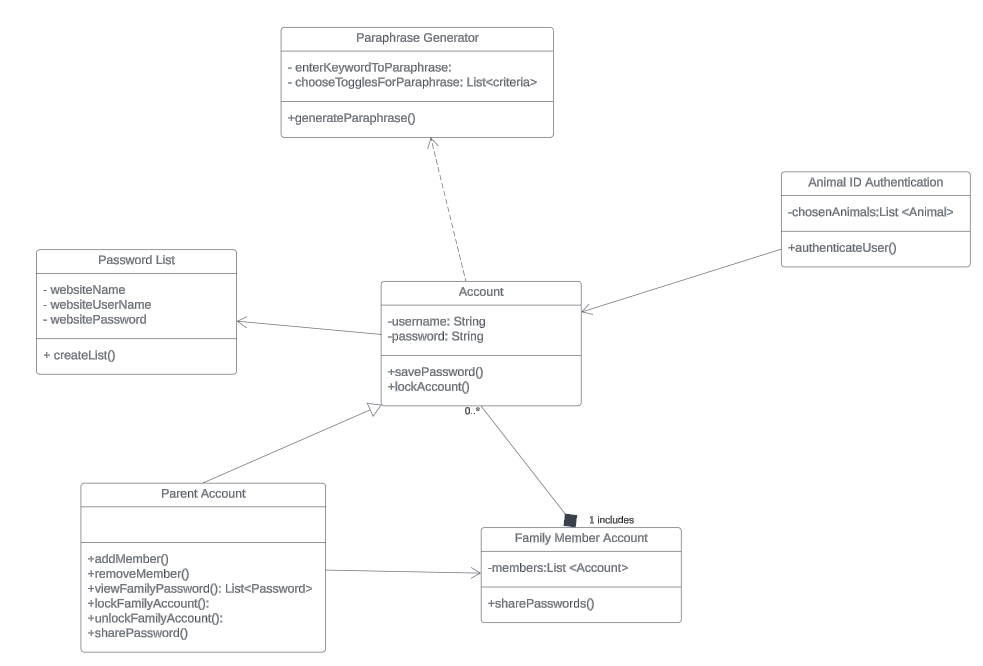


Fig 3: MasterVault Class Diagram

This is a class diagram for the MasterVault system. It explains what each account has permissions to do.

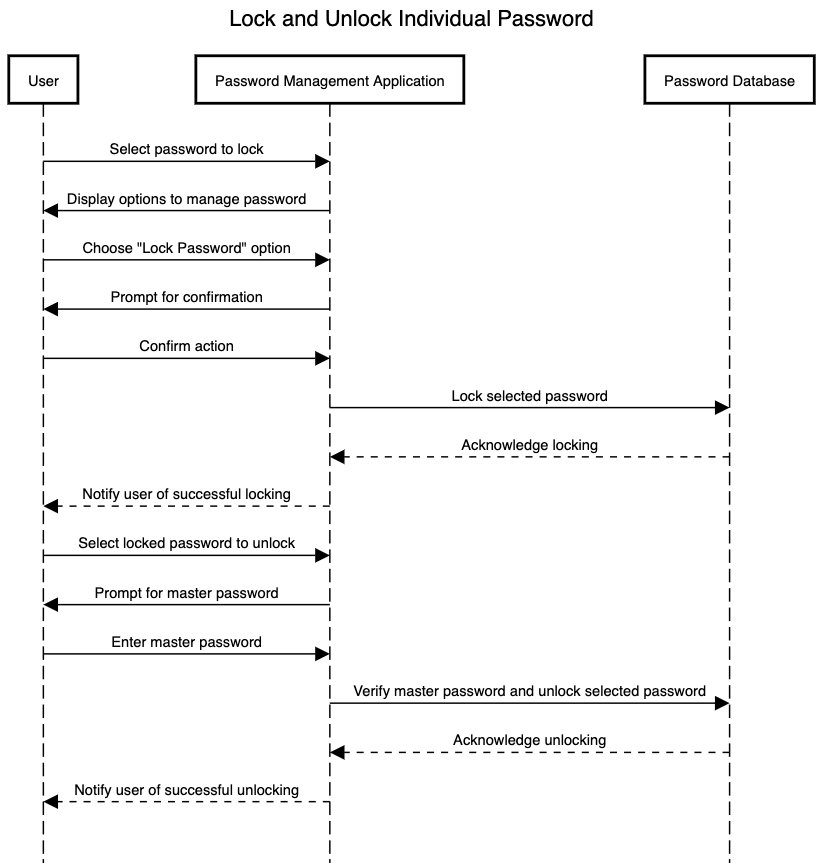


Fig 4: Lock Password Sequence Diagram

This is a sequence diagram explaining how the lock and unlock password function works.

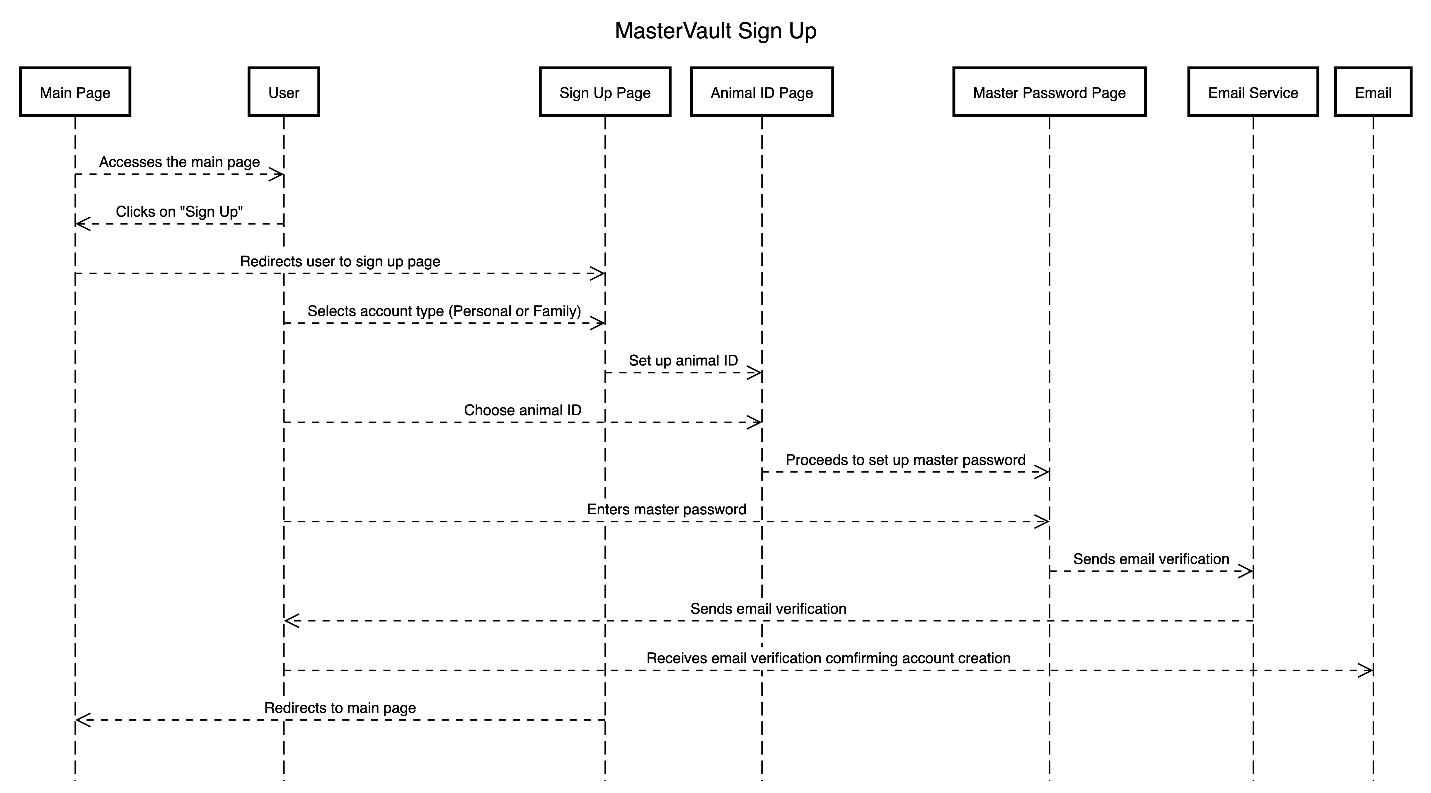


Fig 5: Sign Up Sequence Diagram

This is an updated sequence diagram for the MasterVault signup.

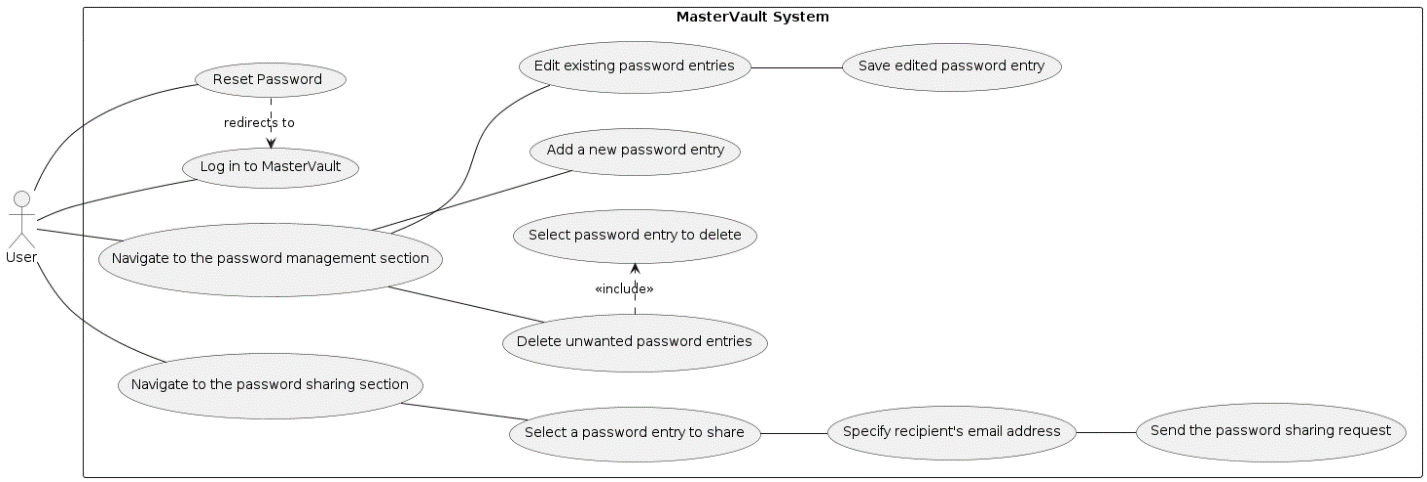


Fig 6: System Use Case Diagram

This is use case diagram explaining how the main system of MasterVault works.

# UI/UX Modelling

## A screenshot of a login form Description automatically generatedLo-fi Wireframe

Fig 10: Create Master Password

Fig 8: Login Master Password

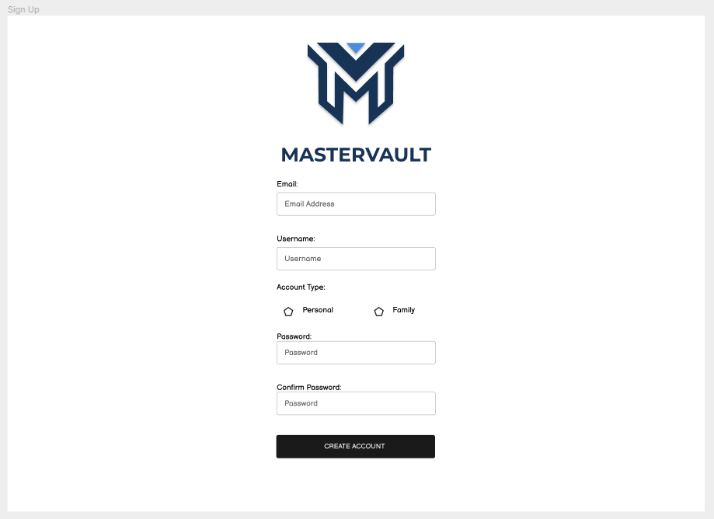


Fig 9: Sign Up

Fig 7: Login

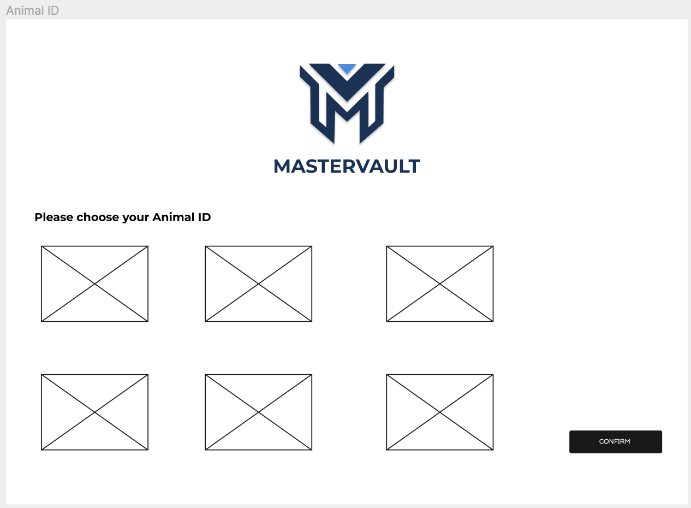
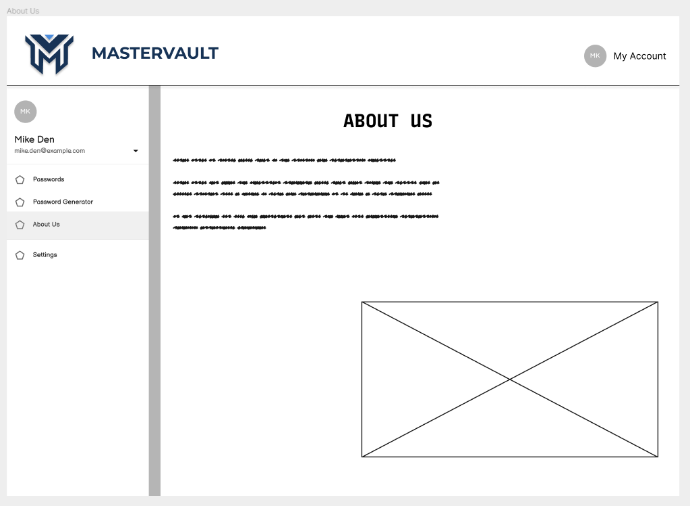
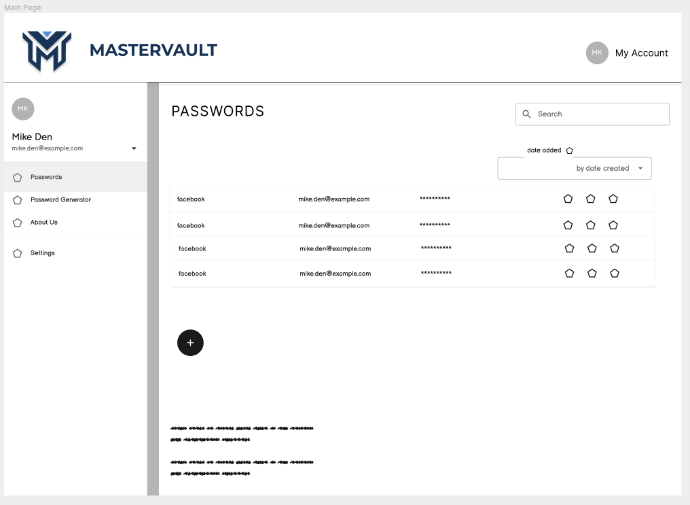
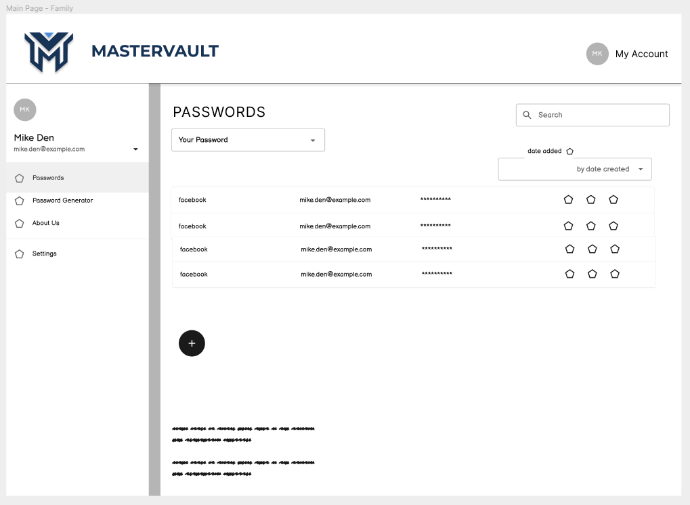
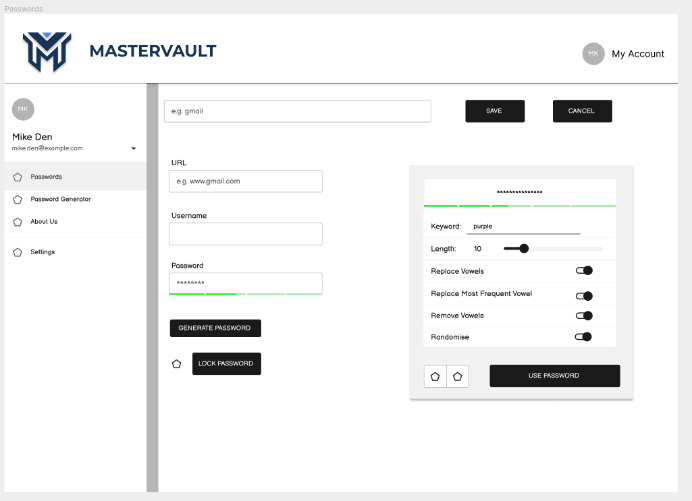
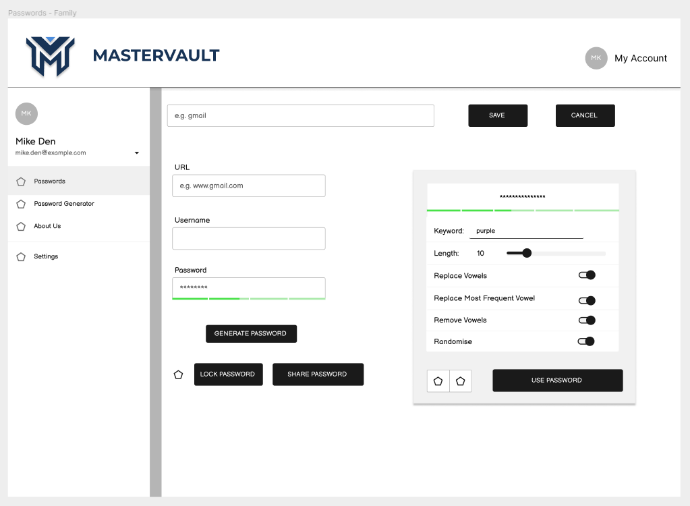


Fig 16: Password View (Family)

Fig 15: Password View

Fig 14: Password List (Family)

Fig 13: Password List

Fig 12: About Us

Fig 11: Animal ID

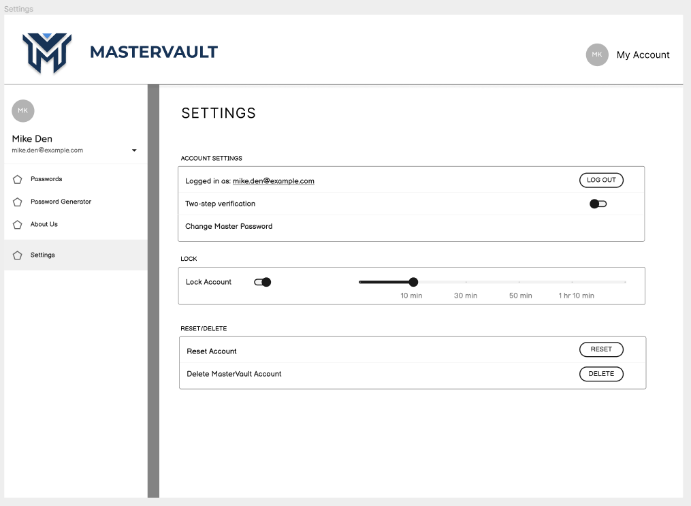
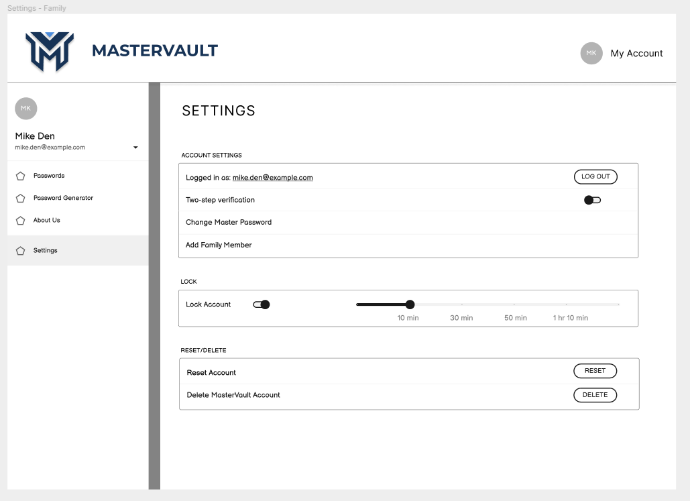
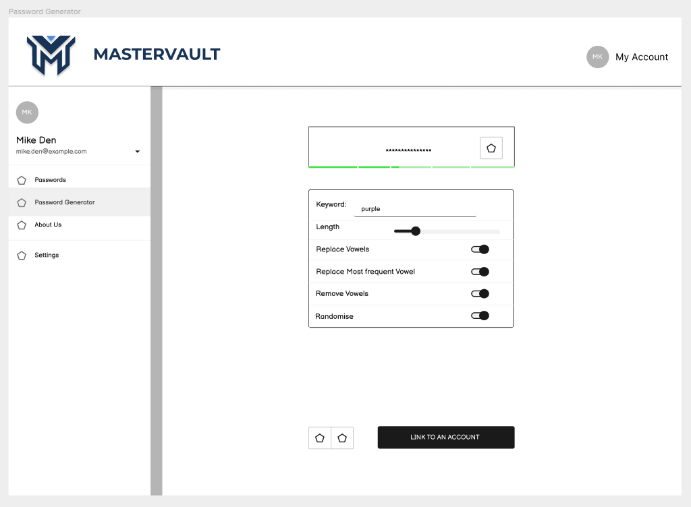
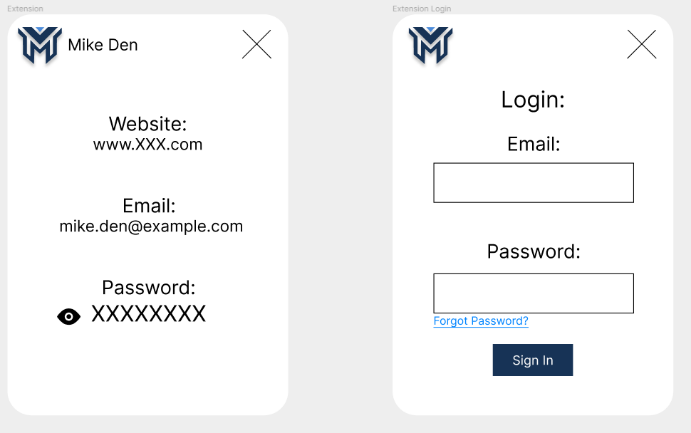


Fig 20: Extensions

Fig 19: Paraphrase Generator

Fig 18: Settings (Family)

Fig 17: Settings

## Usability Testing

For User Testing we got three different people to test our lo-fi wireframe. Before each user began, we asked them the following four questions.

1. How old are you?
2. How would you describe your computer knowledge?
3. What is your employment/educational status?
4. What password manager do you use?

We then watched them navigate through the wireframe and afterwards asked for their feedback on various elements about the system and whether they would use the final product or not.

### Tester 1: Hayden

Occupation: Unemployed

Age: 22 years old

Computer Knowledge Level: Mid-level

Password Manager Usage: Browser-based

Notes:

* Hayden demonstrated a good understanding of the layout.
* Found the paraphrase generator interesting.
* No specific comment provided on the locking of passwords feature.
* Expressed a liking for the Animal ID for login feature.
* Questioned the functionality of the Family Account feature.
* Stated, “Depending on the final product, I would use it”.

### Tester 2: Caisson

Current Status: Formerly worked at Whitcoulls, now studying at Victoria University

Age: 19 years old

Computer Knowledge Level: Low-mid level

Password Manager Usage: Browser-based

Notes:

* Initially confused by the layout but gained a good understanding by the end of the testing session.
* Expressed liking for the paraphrase generator feature.
* Initially questioned the redundancy of locking passwords but later understood the concept.
* Liked the Animal ID for login feature.
* Expressed liking for the Family Account feature.
* Stated, “I wouldn’t buy it now, since I don’t need many passwords. But if I needed one in the future, I would use this.”

### Tester 3: Jackson

Occupation: Works for his mother's mowing company

Age: 19 years old

Computer Knowledge Level: Mid-high

Password Manager Usage: Dashlane (Liautaud, 2009)

Notes:

* Very good understanding of the systems layout
* Expressively liked the paraphrase generator feature. Asked numerous questions about how the paraphrase generator works and proposed a new idea for paraphrasing the keyword.
* Liked the idea of locking passwords.
* Expressed appreciation for the Animal ID feature.
* Approved of the Family Account feature.
* Stated, “I would buy it purely for the paraphrase generator.”

### Results

While our sample size for user testing was rather small, we benefited from a diverse group of people to gather data from. The testers showed interest in all the new elements and improvements we plan on adding to MasterVault. The positive feedback we got from the testers will be very important for development of the final product.

## A screenshot of a computer Description automatically generatedHigh-fi Wireframe

Fig 22: Login Master Password (High-fi)

Fig 21: Animal ID (High-fi)

Fig 23: About Us (High-fi)

# References

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# Appendix 1

Fig 1: Updated Timeline Page 3

Fig 2: Paraphrase Generator Activity Diagram Page 9

Fig 3: MasterVault Class Diagram Page 10

Fig 4: Lock Password Sequence Diagram Page 11

Fig 5: Sign Up Sequence Diagram Page 12

Fig 6: System Use Case Diagram Page 12

Fig 7: Login Page 1

Fig 8: Login Master Password Page 1

Fig 9: Signup Page 1

Fig 10: Create Master Password Page 1

Fig 11: Animal ID  Page 1

Fig 12: About Us Page 1

Fig 13: Password List Page 1

Fig 14: Password List (Family) Page 1

Fig 15: Password View Page 1

Fig 16: Password View (Family) Page 1

Fig 17: Settings Page 1

Fig 18: Settings (Family) Page 1

Fig 19: Paraphrase Generator Page 1

Fig 20: Extensions Page 1

Fig 21: Animal ID (High-fi) Page 1

Fig 22: Login Master Password (High-fi) Page 1

Fig 23: About Us (High-fi) Page 1