Planning Document: Sprint 1

Team 19 – Sentinel Data Vault

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SPRINT OVERVIEW

Sprint 1 will lay the groundwork for future sprints to build upon. Our main goals for this sprint are:

1. Write class skeletons for the system, so that these can be filled in as we build the system.
2. Complete a fully functional GUI, writing all the classes that support it.
3. Complete the GUI-related functionality of the controller.
4. Write User class and the DataEntry abstract class, along with the DataEntry subclasses.
5. Research and attempt to setup the SQL database.
6. Implement functionality to create a user account and login to the data vault.

Scrum Master: Adam Petty

Scrum meeting time: MWF 12:30pm

Risks/Challenges: We will need to familiarize ourselves with git version control to make sure everyone can effectively use it. We will be learning GUI related functionality in Java as well as implementing an SQL database.

CURRENT SPRINT DETAIL

User Stories (UI – Main):

- As a user, I want a visually appealing interface, largely free of the clutter seen in existing managers.
- As a user, I want an intuitive and easily navigable interface.
- As a user, I want a main screen to view stored data entries and access all areas and functionality of the application.

Task Description	Owner	Estimated Time
Implement MainView class to display the main application window, which will feature a file browser interface to display data entries and navigation to all areas of the application.	Jiho Choi	11
Create buttons for users to navigate to different areas of the application or perform different functionality, such as creating entries.	Jiho Choi	4
Create a display area to show data entry details.	Jiho Choi	4
Create a display area to show user account information (login details, last login, etc.)	Jiho Choi	4

Acceptance Criteria:

- When a user logs into the data vault, then the main screen will be displayed to them.
- When a user is at the main screen, they will see a file browser interface for selecting their data entries and viewing its information.
- When a user is at the main screen, they will see their account details to the left of their data entries.

- When a user is at the main screen, they will see buttons that will take them to different windows to perform specified functionality when clicked on, such as Security, Settings, and Help.
- When a user is at the main screen, the first column of the data entry browser will have folders based on entry type with respective data entries.
- When a user is at the main screen, the rightmost column will be a display area to show selected data entry information.

User Story (UI – Login): As a user, I want to be able to login to the data vault by entering user email and password.

Task Description	**Owner**	**Estimated Time**
Implement LoginView Class to display the login screen to handle user login and take in login credentials.	Dingfu Sun	10
Create email and password entry fields to take in login credentials.	Dingfu Sun	4
Create buttons to login, sign up (create new account), and reset password (forgot password).	Dingfu Sun	4
Check for correct login credentials and notify user of login failure using one-way secure hashing algorithm (SHA).	Adam Petty	8
Implement DatabaseManager to handle requests for passwords and usernames from database to LoginView.	Adam Petty	3

Acceptance Criteria:

- When a user opens the data vault application, they will be presented with a login screen asking for their login information.
- When a user is at the login window, they will see login entry fields and buttons to login, sign up, or reset password (forgot password).

- When a user enters their login credentials and clicks “login”, the user will be taken to the main screen if their credentials are correct. If the credentials are incorrect, they will be informed via a pop-up window.
- When a user clicks sign up, they will see a signup window.

User Story (UI – Signup): As a user, I want a signup window to enter new account information for a new data vault account.

Task Description	**Owner**	**Estimated Time**
Implement SignupView class to display an account creation window to take in new account information required to create a new data vault account.	Dingfu Sun	4
Create text entry fields and a dropbox to take in new user account information, including email, password/confirmation, and security question/answer.	Dingfun Sun	3
Create a “Create Account” button that will take in entered user account information and check that all required fields were properly entered.	Dingfu Sun	4

Acceptance Criteria:

- When the user clicks “Sign Up” from the login window, they will be given an account creation window that will ask for the required information to create a new data vault account.
- Given the user has entered information into the text entry fields, when they click “Create Account,” they will be given a success pop-up message or a failure message if the fields were not entered correctly (mismatched passwords, missing fields, and too short a password).
- When the user clicks on the “Security Question” dropbox, they will be able to select from multiple security questions.
- When the user clicks on the “Cancel” button, the sign up window will close out, the account creation will be cancelled, and the user will be returned to the login window.

User Stories (UI – Security):

- As a user, I want a separate section of the application to generate passwords and check password strength.
- As a user, I want to have a sophisticated password generator.
- As a user, I want to check the strength of passwords and be notified of weak passwords.

Task Description	Owner	Estimated Time
Implement the SecurityView class to display the password generator and password checker.	Thomas Worns	6
Implement a password generator that will take case, numbers, parameters, and length as parameters.	Thomas Worns	6
Implement a password strength checker that will determine if a password is strong, adequate, or weak.	Thomas Worns	5

Acceptance Criteria:

- When a user clicks the “security” button on the main screen of the data vault, a window will be displayed with two tabs, one for the password generator and another for the password strength checker.
- Given a user wants to generate a password and is on the “Password Generator” tab, when the user sets their desired parameters and clicks “generate”, a strong password will be displayed.
- Given a user wants to check the strength of a password and is on the “Password Strength Checker” tab, when the user enters a password into the text entry field and clicks “Check”, they will be notified if the entered password is strong, adequate, or weak.
- If at any point a user clicks the “cancel” button on either the “Password Generator” or “Password Strength Checker” tab, then the Security window will close and the user will be returned to the main application window.

User Story (UI – Settings):

- As a user, I want to be able to view a settings window with the options to set High Security, max lockout period, backup frequency, and file size limit.

Task Description	**Owner**	**Estimated Time**
Implement SettingsView class to display the adjustable data vault settings.	Thomas Worns	4
Create “High Security” toggle to indicate application-wide security level.	Thomas Worns	2
Create a “Max Lockout” counter to indicate the maximum lockout period.	Thomas Worns	2
Create a “Backup Frequency” selector to indicate the frequency that backups will occur.	Thomas Worns	2
Create a “File Size Limit” selector to indicate the max backup file size.	Thomas Worns	2

Acceptance Criteria:

- When the user clicks “Settings” on the main application window, a user settings window will be displayed showing the application options available to set, including high security, max lockout period, backup frequency, and file size limit.
- When the user clicks the “High Security Level” toggle, a check indication will appear to show whether or not it is set.
- The user is able to type or set the “Max Lockout Time” in the range of integers between 1 and 7.
- When the user clicks the “Backup Frequency” dropbox, they are able to select from multiple frequencies from hourly to yearly.
- When the user clicks the “File Size Limit” dropbox, they are able to select a maximum allowable backup size from 10MB to 5GB.
- When the user clicks the “Cancel” button, the settings window will close and the user will be returned to the main application window.

User Stories (Help):

- As a user, I want a help section in the application to provide more detailed FAQs and explanations of functionality.

- As a user, I want context-based help with tips/clarifications separate from the help section.

Task Description	Owner	Estimated Time
Implement HelpView class to display FAQs and their detailed explanations.	Jiho Choi	7
Implement hover ToolTips for items and fields of Settings and Security.	Thomas Worns	1

Acceptance Criteria:

- When the user selects “Help” from the Menu Bar, a help window will be displayed.
- When the help window is displayed, a column of FAQ topics will show up on the left half of the window with space for the details/explanations on the right half.
- When the user clicks “Close”, the help window will close the user will be returned to the main application window.
- Given the User is in the Settings or Security windows of the application, when they hover the cursor over the different fields, ToolTips will appear to provide tips or clarifications about that particular field.

User Story (Data Management):

- As a developer, I want to have a database for storing user and data entry information.

Task Description	Owner	Estimated Time
Research and learn all necessary aspects of SQL and SQL databases.	Adam Petty	10
Choose and set up a Relational Database Management System (RDBMS) to work with for this project.	Adam Petty	2
Design the database to store user and data entry information.	Adam Petty	5
Integrate the chosen RDBMS with the Sentinel Data Vault Java application.	Adam Petty	5

Implement the abstract DataEntry class and its subclasses to represent data entries and their required information.	Zhaoji Jiang	15
Implement the User class to represent a data vault user and their account-specific information.	Zhaoji Jiang	10

Acceptance Criteria:

- Must have chosen and setup an RDBMS to use with this project.
- Must have designed a database that will allow for the storage of user and data entry information.
- Must have integrated the chosen RDBMS for use with Java and the data vault.
- Must have implemented SingleFieldEntry, DoubleFieldEntry, and MultiFieldEntry classes to extend the abstract DataEntry class to represent data entries and their required information within the data vault.
- Must have implemented the User class to represent a data vault user and their account-specific information within the data vault.

REMAINING BACKLOG

Functional:

1. As a user, I want to create an account for the data vault.
2. As a user, I want to set a password for my data vault account.
3. As a user, I want to reset my account password.
4. As a user, I want to set an account password hint to help remember forgotten password.
5. As a user, I want to access all my stored information in the manager using only my account password.
6. As a user, I want to be able to create multiple accounts within the data vault, each with its separate data.
7. As a user, I want to be able to completely delete my account.
8. As a user, I want to be able to completely delete all data associated with my account.
9. As a user, I want to have a sophisticated password generator. (can specify password length, whether or not special characters are allowed, etc.)
10. As a user, I want to check the strength of passwords and be notified of weak passwords.
11. As a user, I want to be able to store a wide variety of data items (passwords, licenses, PINs, etc…).
12. As a user, I want to be able to sort my stored data by type or name.
13. As a user, I want to be able to copy out logins, passwords, etc. to the clipboard.
14. As a user, I want to be able to hide/show passwords in text fields.
15. As a user, I want to be able to search for an information entry.
16. As a user, I want to be able to backup my account data.
17. As a user, I want to be able to specify a location for backups to be stored.
18. As a user, I want to be able to export all my passwords and logins from the application to an encrypted file for porting to a new machine.
19. As a user, I want to have a shared folder that will be available across multiple accounts.
20. As a user, I want to be able to share a data item securely with another user. (e.g. sharing a WiFi password)
21. As a user, I want to have a reminder to change my passwords (configurable time interval between reminders).
22. As a user, I want my data to be securely deleted after a certain number of failed login attempts (number would be configurable).
23. As a user, I want to have two-factor authentication for account access.
24. As a user, I want to have a built-in virtual keyboard.
25. As a user, I want to have the ability to attach images to a data item.

26. As a user, I want to have an overall security rating based off total password strength.
27. As a user, I want to have automatic internet form filling option. (*if time allows*)
28. As a user, I want to have an avatar or picture associated with my account (*if time allows*).
29. As a developer, I want to more strongly encrypt data deemed highly sensitive (e.g payment info, SSN, etc.).

Non-functional:

1. As a user, I want the application to run smoothly and be highly responsive.
2. As a user, I want my information to always be secure.
3. As a user, I want to be able to input passwords and information easily.
4. As a developer, I want to have a high upper limit to the number accounts in the
5. manager.
6. As a developer, I do not want to have limits on the number of passwords for one user.
7. As a developer, I want the application to be available on Windows, Linux, and Mac.
8. As a developer, I want user data and backup files to be very strongly encrypted.
9. As a developer, I want to clear the clipboard after a copy and paste operation to increase security.
10. As a developer, I do not want to store sensitive information as plain text on disk.
11. As a developer, I want the ability to change encryption in the future and upscale security.