



Team 16 – Sprint 1 Planning Document

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Sprint Overview

Over the course of this sprint, we plan to implement the basic functionality of our app such as logging in, adding expenses, and other UI components. In addition, much testing needs to be done on our initial work to make sure that no hidden bugs remain for later sprints.

Scrum Master: Jaineek Parikh

Meeting Plans: Tuesday at 6:30 P.M. and Saturday at 10:00 A.M.

Risks and Challenges:

The goal for this spring is going to be establishing the base functionality of our app and settings the foundation for future springs. We have a very limited time constraint and many user stories to finish this sprint, so it is going to be challenging to implement everything correctly in a way that it will all work together nicely. In addition, it is going to be challenging to write in such a way that will be seamless for future springs. It is crucial that we do this sprint correctly or we will spend a lot of time in the future sprints correcting mistakes.

Current Sprint Detail

User Story 1

As a User, I would like to be able to create an account on the app.

#	Description	Time	Owner
1	Create a Login screen	2 hrs	Aakash
2	Create New Account Screen	2 hrs	Canyu
3	Connect UI to Firebase API for account management	1 hrs	Lucas
4	Debug and test login with unit tests	4 hrs	Wynn, Zhenmu

Acceptance Criteria:

- Given the UI is implemented correctly, when the user clicks on the 'Create New Account' screen from the 'Login' screen, then they should be successfully navigated to the new screen.
- Given the UI is implemented correctly, when the user clicks on the 'Create New Account' screen, then a new account should be successfully created, and the user navigated to the 'Login' screen.
- Given that 'Create New Account' is implemented correctly, when the user attempts to login, then they should successfully log in and seamlessly navigated to the new screen.
- Given the backend is implemented correctly, when the user requests to make a new account that already exists, then they should be prompted that the account already exists.

User Story 2

As a User, I would like to be able to login with my Google account

#	Description	Time	Owner
1	Connect UI to Firebase API for Google login	1 hrs	Wynn
2	Create prompt for when login fails	1 hrs	Lucas
3	Debug and test login with unit tests	2 hrs	Jaineek

Acceptance Criteria:

- Given the UI is implemented correctly, when a user clicks on the 'Google Account' button on the 'Login' screen, then they should successfully be logged in and navigated to the home screen.
- Given the UI is implemented correctly, when a user fails to login with their Google account, then they should be prompted to login again or quit.
- Given the backend is implemented correctly, when a user signs in with a Google account for the first time, then a fully-fledged user should be created.

User Story 4

As a User, I would like to login and access my information

#	Description	Time	Owner
1	Connect UI to Firebase for regular login	1 hrs	Canyu
2	Set up Firebase to manage account logins securely	2 hrs	Lucas
3	Create prompt for when regular login fails	1 hrs	Zhenmu
4	Allow app UI to set itself up for the appropriate user on login	2 hrs	Wynn
5	Debug and test login failure with unit tests	5 hrs	Aakash, Jaineeek

Acceptance Criteria:

- Given the UI is implemented correctly, when the user enters a username and password, the app should either login or notify the user their information is incorrect.
- Given the backend is implemented correctly, when a user requests to login, the login information should be encrypted via HTTPS when sent to the Firebase servers.
- Given the backend and UI are implemented correctly, when a user requests to login, then a successful login should load information pertaining to the user.

User Story 5

As a User, I would like to be able to access my personalized app every time I login.

#	Description	Time	Owner
1	Provide login token functionality	2 hrs	Lucas
2	Efficiently check login validity at startup	2 hrs	Zhenmu
3	Check preferences and set app accordingly at startup	3 hrs	Canyu, Aakash
4	Debug and test loading with unit tests	5 hrs	Wynn, Canyu

Acceptance Criteria:

- Given the UI is implemented correctly, when the user opens the app, then the app should look consistent with what the user has seen previously.
- Given the login tokens are implemented correctly, when the user opens the app and the login token is valid, then they should be seamlessly logged in without ever seeing the 'Login' screen.

- Given the backend is implemented correctly, when the user opens the app and the login token is invalid, then the user should be prompted that the session has expired and redirected to the 'Login' screen.

User Story 6

As a User, I would like to be able to manage my account (changing information, deleting).

#	Description	Time	Owner
1	Delete button to Firebase API for account removal	1 hr	Aakash
2	Connect Information Change UI to Firebase API to change relevant information	2 hr	Jaineek
3	Debug and test changing information with unit tests	4 hr	Zhenmu, Canyu

Acceptance Criteria:

- Given the backend and UI are implemented correctly, when the user clicks on the 'Delete Account' button from the 'User Information' screen, then they should be able to successfully delete the account and all their information is expected to be wiped from Firebase.
- Given the UI is implemented correctly, when the user requests to delete their account, then their account should be deleted and redirected to the 'Login' screen.
- Given the UI is implemented correctly, when the user clicks on their user profile icon from the home screen, then a new account should be directed into 'User Information' screen and the user can choose the type of information he/she would like to change.

User Story 10

As a User, I would like to store history for expenses so that change over time is measurable

#	Description	Time	Owner
1	Add time stamps to expenses	2 hrs	Canyu
2	Sort user database using timestamps	6 hrs	Wynn, Aakash
3	Display sorted database in client with cards	4 hrs	Lucas
4	Debug and test sorting with unit tests	8 hrs	Jaineek, Zhenmu

Acceptance Criteria:

- Given that the entries are implemented correctly, when the user adds new expenses, then the time stamps should be accurate and change accordingly to the time zone the user is in.
- Given that the database is implemented correctly, when a user requests to sort via time, then the sorting algorithm should sort the expenses properly and not be any slower than $n\log(n)$.
- Given that the sorting is implemented correctly, when a user requests to sort via time, then the expenses are displayed in a list of cards where each card is clickable.

User Story 11

As a User, I would like to upload photos so that receipts can be stored for future access.

#	Description	Time	Owner
1	Add file storage locally	2 hrs	Wynn
2	Compress photos using a lossless algorithm	4 hrs	Aakash
3	Encrypt all files stores locally	4 hrs	Jaineek
4	Upload photos into Firebase real-time database	1 hrs	Zhenmu
5	Debug and test encryption and storage with unit tests	4 hrs	Lucas

Acceptance Criteria:

- Given that the UI is implemented correctly, when a user adds a new photo, then the photo is safely stored in a hidden folder on the device that is inaccessible via normal means.
- Given the UI is implemented correctly, when a user adds a new photo, then the photo is compressed using a lossless algorithm to maximize space efficiency.
- Given that the file storage is implemented correctly, when the user adds a new photo, then the photo is immediately encrypted using a secure 256-bit encryption algorithm.
- Given that the file storage is implemented correctly, when the user adds a new photo, then the photo is immediately uploaded to Firebase and there should be no difference between the files stored locally and in the Firebase database.

User Story 12

As a User, I would like to be able to view my uploaded photos.

#	Description	Time	Owner
1	Access locally stored files/pictures.	2 hrs	Aakash
2	Decrypt stores files	2 hrs	Zhenmu
3	Display decrypted files on a screen	4 hrs	Canyu
4	Debug and test decryption with unit tests	4 hrs	Wynn

Acceptance Criteria:

- Given that the storage is implemented correctly, when the user clicks on a button to display their photos, then only 10 photos are decrypted and loaded into memory.
- Given the backend is implemented correctly, when the user clicks on a button to display their photos, then the first batch of photos should be displayed in chronological order.
- Given that the storage is implemented correctly, when the user scrolls down the photos screen, then the next batch of photos is loaded from storage and displayed in chronological order. (This continues until all photos are displayed).

User Story 13

As a User, I would like to be able to delete my uploaded photos when I do not want them to be on the app anymore.

#	Description	Time	Owner
1	Be able to select and delete photos	4 hrs	Zhenmu
2	Delete a photo stored locally	1 hrs	Lucas
3	Delete a photo on the Firebase server	1 hrs	Wynn
4	Generate new checksum for storage synchronization validity	3 hrs	Jaineek
5	Debug and test deletion with unit tests	6 hrs	Aakash, Canyu

Acceptance Criteria:

- Given the backend and UI are implemented correctly, when the user clicks on the 'Delete' button in gallery view on a photo, then that photo should be removed locally and server-side

- Given the backend is implemented correctly, when a user clicks on the 'Delete' button in the gallery, then the photos should be deleted and a new checksum generated to validate that both the local storage and server contain the same information.
- Given the UI is implemented correctly, when a user deletes a photo, then they should be directed to the next photo in the gallery or directed back to the gallery card view with a prompt 'No Stored Photos.'

User Story 15

As a User, I would like to be able to see my data in graphical form so that I can easily monitor my spending.

#	Description	Time	Owner
1	Create UI for monitoring expenses	2 hrs	Jaineek
2	Add dynamic animations for when expenses change	4 hrs	Lucas, Wynn
3	Debug and test animations with unit tests	2 hrs	Lucas

Acceptance Criteria:

- Given that the UI is implemented correctly, then when a user enters the 'Home' screen, then they should correctly see their total accumulated spending for the week, month, and year.
- Given that the UI and backend are implemented correctly, when a user adds or deletes an expense, then the total spending on the 'Home' screen should be updated accordingly.
- Given that the UI is implemented correctly, when a user adds or deletes an expense, then there should be an animation flipping the numbers up or down.

User Story 16

As a User, I would like to be able to switch between viewing my information in multiple graph designs so that I may use whichever suits my preferences.

#	Description	Time	Owner
1	Implement UI to allow for graphs on the 'Home' screen	2 hrs	Canyu
2	Implement different graphs	10 hrs	Lucas, Wynn, Aakash
3	Choose color scheme for graphs that matches user preferences	3 hrs	Zhenmu

4	Debug and test graphs with unit tests	6 hrs	Jaineek, Aakash
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Acceptance Criteria:

- Given that the local storage is implemented correctly, when a user enters the 'Home' screen, then their default graph should be displayed first.
- Given that the UI is implemented correctly, then when a user enters the 'Home' screen, they should see their default graph and be able to switch to any number of pre-selected types of graphs.
- Given that the UI is implemented correctly, then when the user enters the 'Home' screen, then the colors they should see should match their preferences and the Android material design dynamically.

User Story 17

As a User, I would like to save my graphical preference so that the app remembers my choices when I log in.

#	Description	Time	Owner
1	Create UI in 'Settings' screen to pick default graph	1 hrs	Jaineek
2	Save last graph as default if user has not picked one	1 hrs	Jaineek
3	Dynamically track most used graphs after a certain amount of time, and set that as default	6 hrs	Canyu, Zhenmu
4	Debug and test default graphs with unit tests	3 hrs	Wynn

Acceptance Criteria:

- Given that the UI is implemented correctly, when the user enters the 'Settings' screen, then they should see an option for default graph and successfully pick one of the pre-selected options
- Given that the backend is implemented correctly, when a user leaves the 'Home' screen, they have not picked a default graph and have not been signed up for more than 30 days, then last graph they were on is saved as the default graph.
- Given that the backend is implemented correctly, when a user leaves the 'Home' screen, they have not picked a default graph, and have been signed up for more than 30 days, then the graph they view the most is set as the default graph.

User Story 24

As a User, I would like to download template budget plans so that I may track my own expenses alongside them.

#	Description	Time	Owner
1	Create UI screen for downloading budgets	2 hrs	Lucas
2	Allow user to upload template budget	1 hrs	Aakash
3	Allow user to delete template budget	1 hrs	Wynn
4	Allow user to download template budget	4 hrs	Canyu, Zhenmu
5	Debug and test templates with unit tests	4 hrs	Jaineek, Canyu

Acceptance Criteria:

- Given the UI is implemented correctly, when a user clicks on the 'Upload Template' button, then they should be navigated to a screen to create a template and then it is subsequently uploaded to the database.
- Given that the UI is implemented correctly, when a user clicks on the 'Download Template' budget, then they should be able to download the template and apply it to their current situation.
- Given that the UI is implemented correctly, when a user clicks on the 'Delete Template' button, then the template should be deleted off their device and off the database. The template should not be deleted for those who have already downloaded it, but it should not show up in the community market.
- Given the UI is implemented correctly, when a user requests to change their template, then the UI should dynamically change to reflect the new template.

User Story 26

As a User, I would like to store my salary range so that I can get a good estimate of my financial situation in mind of how much I make.

#	Description	Time	Owner
1	Create UI for user to enter financial information	1 hrs	Zhenmu
2	Create UI in 'Settings' screen for user to edit their information	1 hrs	Canyu
3	Store information locally and on the server	1 hrs	Canyu
4	Debug and test with unit tests	3 hrs	Zhenmu, Lucas

Acceptance Criteria:

- Given the UI is implemented correctly, when a user first creates an account, then they are navigated to the 'Financial Information' screen and prompted to enter their information.
- Given the UI is implemented correctly, when a user navigates to the 'Settings' screen, then they are able to edit their financial information.
- Given the backend is implemented correctly, when a user first creates an account and enters their information, then the information is encrypted and stored locally and in the database.

User Story 35

As a User, I would like to have the option to receive monthly account statements.

#	Description	Time	Owner
1	Decide what information should go into a monthly statement	1 hrs	Aakash
2	Create UI popup that shows monthly statements	1 hrs	Aakash
3	Create graphs that go on the monthly statement	2 hrs	Zhenmu
4	Create algorithm to recommend future ways to cut spending	6 hrs	Jaineek, Lucas
5	Create notification that goes off at the end of the month	2 hrs	Wynn
6	Debug and test monthly statement with unit tests	6 hrs	Aakash, Wynn

Acceptance Criteria:

- Given that the UI is implemented correctly, when the user reaches the end of the month, then they receive a notification telling them that their monthly statement is available.
- Given that the UI is implemented correctly, when the user clicks on the monthly statement notification, then they are navigated to the page that shows their monthly statement.
- Given that the backend is implemented properly, when a user views their monthly statement, then they will see information about their spending that month, and advice on how to lower spending in the future based on their spending patterns.

Remaining Backlog

Functional Requirements

- ~~1) As a User, I would like to be able to create an account on the app.~~
- ~~2) As a User, I would like to be able to login with my Google account.~~
- 3) As a prospective User, I would like the ability to use the app anonymously and later transfer my data to an account.
- ~~4) As a User, I would like to be able to login and access my information.~~
- ~~5) As a User, I would like to be able to access my personalized app every time I log in.~~
- ~~6) As a User, I would like to be able to manage my account (changing information, deleting).~~
- ~~7) As a User, I would like to be able to manage my account password.~~
- ~~8) As a User, I would like to be able to recover my password if I forget it.~~
- ~~9) As a User, I would like to manually input new expenses and information about them.~~
- ~~10) As a User, I would like to store history for expenses so that change over time is measurable.~~
- ~~11) As a User, I would like to upload photos so that receipts can be stored for future access.~~
- ~~12) As a User, I would like to be able to view my uploaded photos.~~
- ~~13) As a User, I would like to be able to delete my uploaded photos when I do not want them to be on the app anymore.~~
- 14) As a User, I would like my receipt photos to add total expenses automatically through OCR so that I don't have to type in everything manually.
- ~~15) As a User, I would like to be able to see my data in graphical form so that I can easily monitor my spending.~~
- ~~16) As a User, I would like to be able to switch between viewing my information in multiple graph designs so that I may use whichever suits my preferences.~~
- ~~17) As a User, I would like to save my graphical preference so that the app remembers my choices when I log in. (If time allows)~~
- 18) As a User, I would like to be able to add scheduled additional splurges to my budget plan so that I can plan for vacations or events.
- 19) As a User, I would like to see quick statistics on my daily, weekly, and monthly spending so that I can track my spending history quickly and accurately.
- 20) As a User, I would like to be able to modify my data so that I can fix mistakes and update values.
- 21) As a User, I would like to be able to rate budget plans so that I can provide feedback to the community.
- 22) As a User, I would like to set alerts so that I can get notifications of specific payments.
- 23) As a User, I would like to set alerts so that I can get notifications when I am over budget for the month.
- ~~24) As a User, I would like to download template budget plans so that I may track my own expenses alongside them.~~
- 25) As a User, I would like to have access to data/budget plans specific to me so that I know they are accurate for my situation.

- 26) ~~As a User, I would like to be able to store my salary range so that I can get a good estimate of my financial situation in mind of how much I make.~~
- 27) As a User, I would like to be able to create my own budget.
- 28) As a User, I would like to place items into categories so that I can customize my graphs.
- 29) As a User, I would like to create custom categories so that all my purchases may be classified regardless of size.
- 30) As a User, I would like to be able to have efficient customer support so that when technical difficulties arise, I know who to contact.
- 31) As a financially savvy user, I would like to upload my budget templates online so that others may benefit from them. (If time allows)
- 32) As a User, I would like to be able to customize notification frequency.
- 33) As a User, I would like to have the option to enable email notifications.
- 34) As a User, I would like to be able to receive SMS notifications.
- 35) ~~As a User, I would like to have the option to receive monthly account statements.~~
- 36) As a User, I would like to be able to sort my historical data
- 37) As a User, I would like to search my historical data.
- 38) As a User, I would like to add tags to my uploaded photos.
- 39) As a User, I would like to be able to set the amount of on-board storage allotted for imagery.
- 40) As a User, I would like upload and download progress bar on my images.
- 41) As a User, I would like to be able to use the app at all times, even when I'm uploading or downloading something from the server (aka background processes).