



CS 407 - Software Engineering Senior Project

## Sprint Two Planning Document

Team 5:

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## Sprint Overview

The main focus of this sprint is a mixture of optimizing and improving our current pages and features, and adding a few new features. We will strive to standardize and improve our UI and general appearance of many of our currently existing pages, and extend functionality for many functions as well. Some of the new features we will implement include things like push notifications, credit card spending features, and location tracking.

## Scrum Master

Henry Wellman

## Meeting Schedule

Sunday 4:30pm

Tuesday 5:30pm

Thursday 8:30pm

## Risks and Challenges

We anticipate that most of the challenges of this sprint will be a mixture between two things. First, the necessary research and preparation needed to implement many of the new features. Things like location tracking, or credit card information will probably require working with other API's or things outside of the flutter framework. So, this adds potential headaches when it comes to the integrations into our development stack. The second challenge would be that of our consistent and improved UI design. This will require collaboration between group members for additional meetings and understanding of code bases for features not worked on. Sprint 1 had the benefit of each of us having our own distinct features and pages to focus on, whereas this sprint will introduce far more collaborative stories and work.

## Current Sprint Detail

### User Story #1 (Backlog #21)

As a user, I would like to be able to see a history of the places I visited.

#	Description	Estimated Time	Owner
1	Create a new page to list location history	3 hours	John
2	Access a location-tracking API such as Google Maps	2 hours	John
3	Implement the API into the newly created widget	3 hours	John
4	Create a test that checks for location history access	2 hours	John
<i>User Story #1 Total Hours -</i>		10 hours	

#### Acceptance Criteria:

- Given the user can login, they can navigate to the location history page
- Given the user can access the location history page, they can give access to their location history
- Given the user can give access to their location history, they can see a list of locations from a certain amount of time.

### User Story #2 (Backlog #23)

As a user, I would like to enter how much I spent at the places I visited in my location history.

#	Description	Estimated Time	Owner
1	Add user-input into the location history page	2 hours	John
2	Send the user-input to the database and stop showing locations with completed inputs	3 hours	John
3	Create a page for the user to edit past location inputs	2 hours	John
4	Create a test that checks if the database has been updated after user input	2 hours	John
<i>User Story #2 Total Hours -</i>		9 hours	

#### Acceptance Criteria:

- Given the user can access their location history, the user can input an expense into the text field attached to the location history
- Given the user can input an expense, it is shown in the database
- Given the user can input an expense, it is shown in their budget

### User Story #3 (Backlog #22)

As a user, I would like the option to get notified at a time of my choosing when to enter my expenses at stored locations.

#	Description	Estimated Time	Owner
1	Create a preferences page for the user	3 hours	John
2	Allow a toggle to add a notification and a field to enter the time	1 hour	John
3	Create a system notification at the specified time	2 hours	John
4	Create a test that will input a notification time and assert that it is done at the proper time	2 hour	John
<i>User Story #3 Total Hours -</i>		8 hours	

#### Acceptance Criteria:

- Given that the user can login, they can access the preferences page
- Given that the user can access the preferences page, they can toggle that they want to be notified to input expenses at their previous locations
- Given that the user can toggle the option, they can add a time each day to be notified
- Given that the user can add a time, they will receive a notification at the specified time.

### User Story #4 (Backlog #24)

As a user, I would like the option to get notified to enter my expenses whenever I leave a location.

#	Description	Estimated Time	Owner
1	Using the location API, create location categories	2 hours	John
2	Add a toggle to be notified when leaving categorized locations to add the amount of money you spent	1 hour	John
3	Create the notification and add the text field to enter in the expense	2 hours	John
4	Add expenses to the database to be synced with the	2 hours	John

	user's budget		
5	Create a test that shows the notification for each category, inputs a number, then checks if it is shown in the budget	2 hours	John
<i>User Story #4 Total Hours -</i>		9 hours	

*Acceptance Criteria:*

- ~~Given the user can access the preferences page, they can toggle to be notified when they leave categorized locations:~~
  - This is being deleted because in flutter web, location cannot be tracked in the background
- Given the user can click the toggle, they will get a notification at some point asking to input how much they spent at a certain location
- Given the user gets a notification, they can input an amount spent
- Given the user can input an amount spent, they will see the amount spent reflected in their budget

### User Story #5 (NEW / Backlog #65)

As a user, I'd like to have an aesthetic dashboard view for quickly viewing my information.

#	Description	Estimated Time	Owner
1	Add profile information such as name and profile picture to the homepage	2 hours	John
2	Add the user's current budget as a graph to the homepage	1 hour	John
3	Create much more aesthetic buttons for navigating throughout the app	1 hour	John
4	Create a test that checks for successful accesses to the database when the user logs in	2 hours	John
<i>User Story #5 Total Hours -</i>		6 hours	

*Acceptance Criteria:*

- Given the user can login, they can see a welcome message and their profile picture
- Given the user can login, they can see an image of their current budget
- Given the user can login, they have large buttons to send them to other pages

### User Story #6 (NEW / Backlog #62)

As a user, I would like to add data consistency and utilization to the investments page.

#	Description	Estimated Time	Owner
1	Synchronize the investment page data with our database	4 hours	Henry
2	Utilize the "Amount" column for the investment table when generating graphs	3 hours	Henry
3	Add the "Bar Chart" graph functionality	4 hours	Henry
4	Test that the amount of shares owned for a stock effects their weights within the graph	1 hour	Henry
<i>User Story #6 Total Hours -</i>		12 hours	

#### Acceptance Criteria:

- Given the synchronization with the database is working, when I visit the investments page, I should see the investments I was previously tracking automatically load in the DataTable.
- Given the "Amount" section has been properly utilized, the generated graph will display updated weight values for the investments along with their prices.
- ~~Given the "Bar Chart" button works, when I click on it, a bar chart displaying the weights and values of my currently tracked investments is displayed.~~
  - Realized that this was a whole user story unto itself and was far more time consuming than anticipated. Will rework it into Sprint 3.
- Given the "Amount" section has been properly utilized, the Price column in the DataTable will display the initial stock price multiplied by however many shares you have in the Amount column.

#### User Story #7 (Backlog #41)

As a user, I would like to see tips on what stocks to invest in based on my level of risk.

#	Description	Estimated Time	Owner
1	Add a new button "Recommendations" that brings up a dedicated user interface	2 hours	Henry
2	Be able to select risk level to generate investment recommendations	3 hours	Henry
3	Be able to select asset preferences to generate investment recommendations	3 hours	Henry
4	Test that different groups of investments are	1 hour	Henry

	recommended depending on the risk level selected		
<i>User Story #7 Total Hours -</i>		9 hours	

*Acceptance Criteria:*

- Given the “Recommendations” button works, when I click on it a dedicated user interface will appear.
- Given the risk level section works, I will see different investment recommendations depending on my selected risk level.
- Given the asset preference section works, I will see different investment recommendations depending on my selected preferences.

## User Story #8 (Backlog #29)

As a user, I would like to see how my spending would look on multiple different credit cards.

#	Description	Estimated Time	Owner
1	Create a page dedicated to viewing credit card information	2 hours	Henry
2	Have an interface that lets user select from several credit cards	2 hours	Henry
3	Show how spending would look like depending on which credit card was selected	4 hours	Henry
4	Test that you can see different cash returns depending on the credit card selected	1 hour	Henry
<i>User Story #8 Total Hours -</i>		9 hours	

*Acceptance Criteria:*

- Given the Credit page works correctly, you will be able to see and navigate to the page from the home screen and an indicator that you are on the credit page.
- Given the interface works, you will be able to select from a dropdown list different credit cards.
- Given the functions work, you will be able to see some new data about your spending depending on which credit card you selected.

## User Story #9 (Backlog #35)

As a user, I would like tips on how to use a credit card to keep my credit score from getting low.

#	Description	Estimated Time	Owner
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1	Have an interface that lets the user input their credit score	2 hours	Henry
2	Generate different tips depending on the user's credit score	3 hours	Henry
3	Develop a pleasant UI for these features	2 hours	Henry
4	Test that the tips change recommendations depending on the user's credit score	1 hour	Henry
<i>User Story #9 Total Hours -</i>		8 hours	

*Acceptance Criteria:*

- Given the “Tips” button works, when you click it user's will be shown a dedicated user interface.
- Given the interface works, users will be able to manually input their credit score.
- Given the tips section works, different tips should display depending upon the credit score.

## User Story #10 (Backlog #38)

As a user, I would like to see different colors for investments based on overall ROI results.

#	Description	Estimated Time	Owner
1	Create a new “Compare” button that shows the difference in price of an investment from when you purchased it.	2 hours	Henry
2	Have the prices that are generated scale depending on the amount of shares the user has	2 hours	Henry
3	Have the color of the selected investment change depending on the growth of the investment	3 hours	Henry
4	Test that the color of the selected stock changes appropriately depending on whether it gained or lost money	1 hour	Henry
<i>User Story #10 Total Hours -</i>		8 hours	

*Acceptance Criteria:*

- Given the compare button works, when you click it you will be able to see the percent change in growth of your investment from when you bought it.
- Given the amount of shares integration works, the prices that are compared will be factoring in the quantity of the investment purchased.



- Given the interface works, after you compare an investment ~~it's color will change~~ depending on the percent growth.
- Given the interface works, after you compare an investment the percent change that is displayed will change color depending on the percent growth.

### User Story #11 (Backlog #30)

As a user, I would like to be able to set specific saving goals for big purchases.

#	Description	Estimated Time	Owner
1	Design the user interface for setting big purchase goals	3 hours	Wes
2	Implement the functionality to set specific saving goals for big purchases.	4 hours	Wes
3	Integrate the saving goals with the budget system.	3 hours	Wes
4	Create testing inputs and perform testing.	1.5 hours	Wes
User Story #11 Total Hours -		11.5 hours	

#### Acceptance Criteria:

- Given a user is on the budget management page, when the user navigates to the "Wishlist" section, then the user should see a user-friendly interface for specifying saving goals.
- Given the user wants to set a saving goal for a big purchase, when the user enters the purchase details and the target amount, then the system should successfully record and display this saving goal within the budget.
- Given the user has set saving goals for big purchases, when the user views the budget, then the system should accurately track progress toward these goals and display them to the user.
- Given the user views the budget and has saving goals set, when the user has reached a saving goal, then the system should provide a clear indicator to notify the user.

### User Story #12 (Backlog #31)

As a user, I would like to receive warning alerts if my spending has reached a certain threshold for the different categories.

#	Description	Estimated Time	Owner
1	Design the user interface for configuring spending threshold alerts.	3 hours	Wes

2	Implement the functionality to set spending thresholds for different categories.	2 hours	Wes
3	Implement the color setting functionality	3 hours	Wes
4	Trigger warning alerts when category spending reaches the specified thresholds.	3.5 hours	Wes
5	Create testing inputs and perform testing.	1.5 hours	Wes
User Story #12 Total Hours -		12 hours	

*Acceptance Criteria:*

- Given a user is on the budget management page, when the user navigates to the “Budget Usage” section, then the user should see an easily understandable UI that displays their expenses and how close they are to the threshold.
- Given the user wants to set spending thresholds for specific categories, when the user defines these thresholds, then the system should accurately monitor category spending and display when the thresholds are exceeded.
- Given the user views the spending thresholds section, when the user has some costs close to the threshold, then the color of the graph should change to reflect that.
- Given the user has set spending thresholds and exceeded them, when the user views the budget, then the system should display clear warning alerts for the categories that have exceeded their spending thresholds.

### User Story #13 (Backlog #37)

As a user, I would like there to be different colors for spending categories shown in the generated graphs.

#	Description	Estimated Time	Owner
1	Design the user interface for selecting custom colors for spending categories.	1.5 hours	Wes
2	Implement the functionality to assign different colors to spending categories.	2 hours	Wes
3	Integrate custom colors with the graph generation.	3 hours	Wes
4	Create testing inputs and perform testing.	1.5 hours	Wes
User Story #13 Total Hours -		8 hours	

*Acceptance Criteria:*

- Given a user is on the budget management page, when the user accesses the budget creation page, then the user should see a user-friendly interface for selecting custom colors for spending categories.
- Given a user is on the budget management page, when the user accesses the budget creation or editing page, then the user should be able to select preset graph colors.
- Given a user is on the budget management page, when the user accesses the budget page, then the user should see a user-friendly interface for selecting custom colors for spending categories.
- Given the user wants to assign custom colors to spending categories, when the user sets these colors, then the system should apply these colors to the generated graphs, ensuring clear differentiation between categories.

### User Story #14 (Backlog #64)

As a user, I would like to create and view multiple budgets.

#	Description	Estimated Time	Owner
1	Design the user interface for creating and managing multiple budgets.	3 hours	Wes
2	Implement the functionality to create and view multiple budgets using the database	5 hours	Wes
3	Ensure that users can switch between different budgets.	2 hours	Wes
4	Create testing inputs and perform testing.	1.5 hours	Wes
User Story #14 Total Hours -		11.5 hours	

#### Acceptance Criteria:

- Given a user is on the budget management page, when they open the page, then the user should see a user-friendly interface for creating, switching between, and managing multiple budgets.
- Given the user wants to create multiple budgets, when the user creates new budgets, then the system should allow them to switch between these budgets easily.
- Given the user has created and switched between multiple budgets, when the user views a budget, then the system should display the budget and its associated data accurately.

### User Story #15 (Backlog #3)

As a user, I want to be able to reset my password.

#	Description	Estimated Time	Owner
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1	Add an option to reset password to the sign in page	3	Patrick
2	Ensure that the password updates in Firebase	3	Patrick
3	Test password resetting	1	Patrick
<i>User Story #15 Total Hours -</i>		7 hours	

*Acceptance Criteria:*

- Given password resetting has been implemented, there will be a way for a user to select to reset their password.
- Given password resetting has been implemented, a user will be able to reset their password.
- Given password resetting has been implemented, a user's updated password will persist in Firebase and be usable to login with.

### User Story #16 (Backlog #33)

As a user, I would like to be able to personalize push notifications based on category and how much my budget has been exceeded.

#	Description	Estimated Time	Owner
1	Implement a notifications section in the UI (page or subpage)	4	Patrick
2	Add functionality for notifications	6	Patrick
3	Test notifications	2	Patrick
4	Add notifications personalization	5	Patrick
5	Test personalized notifications	2	Patrick
<i>User Story #16 Total Hours -</i>		19 hours	

*Acceptance Criteria:*

- Given that notifications have been implemented, there will be a place in the app where a user can view them.
- Given that notification personalization has been implemented, a user will be able to alter things about what notifications they receive.
- Given that notifications have been implemented, they will occasionally appear as a result of events within the app.

### User Story #17 (Backlog #32)

As a user, I would like the option to enable or disable push notifications for the app.

#	Description	Estimated Time	Owner
1	Add a button/sliding button for enabling/disabling notifications	2	Patrick
2	Add functionality for persistence to a user's notification setting	3	Patrick
3	Test notification controls	1	Patrick
<i>User Story #17 Total Hours -</i>		6 hours	

*Acceptance Criteria:*

- Given that notifications disabling has been implemented, a button will be available that allows a user to disable all notifications.
- Given that notifications disabling has been implemented, pressing the button will toggle whether a user will receive notifications.
- Given that notifications disabling has been implemented, a user's notification setting will persist even when they log out.

## User Story #18 (Backlog #63)

As a user, I would like a cohesive appbar with a homepage button and settings options that appears on every page.

#	Description	Estimated Time	Owner
1	Update appbar to include homepage and settings buttons	3	Patrick
2	Place appbar on every page that appears after login	2	Patrick
3	Test updated pages	1	Patrick
4	Improve code	3	Patrick
<i>User Story #18 Total Hours -</i>		9 hours	

*Acceptance Criteria:*

- Given that the appbar has been updated, it will include a button that returns the user to the homepage/dashboard.
- Given that the appbar has been updated, it will include a button that allows a user to access their settings.
- Given that the appbar has been updated, it will appear on every page after a user has logged in.

## Sprint 2 Hours Breakdown

Name	Hours
Wes Turnbull	43
John Robinson	42
Henry Wellman	46
Patrick Spitzer	41
Total:	172

# Backlog

L: Login

UI: UI/UI Elements

B: Backend (Database, website functionality)

F: Part of a feature

*If time allows*

ID	Function Requirement	Category
1	<del>As a user, I would like to be able to create a <i>FinanceFriend</i> account</del>	L
2	<del>As a user, I would like to login to my Finance Friend account.</del>	L
3	<del>As a user, I want to be able to reset my password.</del>	L
4	<del>As a user, I want to be able to delete my <i>FinanceFriend</i> account.</del>	L
5	<del>As a user, I want to be able to update my login information.</del>	L
6	<del>As a user, I would like to be greeted with an overview of my finances.</del>	UI
7	<del>As a user, I would like for my data to be saved for the next time I login to <i>FinanceFriend</i></del>	B
8	<del>As a user, I would like there to be a dedicated page for investment information.</del>	UI
9	<del>As a user, I would like there to be a dedicated page for tracking bill deadlines and other important dates.</del>	UI
10	<del>As a user, I would like a calendar interface on the tracking page so I can easily see how many days I really have left.</del>	UI
11	<del>As a user, I would like to be able to add new bills and their deadlines to the project and see them on the tracking page.</del>	F
12	<del>As a user, I would like to generate graphs to see my percentages of spending within my budget in a new way.</del>	UI
13	<del>As a user, I would like to be able to create a new budget with a custom name and categories.</del>	F
14	<del>As a user, I would like to see the percentage and exact amounts I have spent in each category.</del>	F

15	<del>As a user, I'd like there to be a database for the data I enter into FinanceFriend.</del>	B
16	<del>As a user, I would like to see each transaction in the budget section in an itemized list/table format.</del>	UI
17	<del>As a user, I would like to track the prices of my investments in the investments section.</del>	F
18	<del>As a user, I would like to generate graphs to see the percentages of my total investment portfolio.</del>	UI
19	<del>As a user, I would like to see how my investment prices have changed over time and see the percentage growth.</del>	F
20	<del>As a user, I would like to be able to create spending goals and have a system notify me if I achieved the goals or not.</del>	F
21	<del>As a user, I would like to be able to see a history of the places I visited.</del>	UI
22	<del>As a user, I would like the option to get notified at a time of my choosing when to enter my expenses at stored locations.</del>	F
23	<del>As a user, I would like to enter how much I spent at the places I visited in my location history.</del>	F
24	<del>As a user, I would like the option to get notified to enter my expenses whenever I leave a location.</del>	F
25	<del>As a user, I would like to be able to use FinanceFriend on multiple devices.</del>	B
26	<del>As a user, I would like to get specific feedback on my spending and areas where I can save</del>	F
27	<del>As a user, I would like to be able to add/omit any spending data from the budget tracking</del>	F
28	<del>As a user, I would like to customize the dashboard to prioritize the information that matters most to me.</del>	UI
29	<del>As a user, I would like to see how my spending would look on multiple different credit cards</del>	F
30	<del>As a user, I would like to be able to set specific saving goals for big purchases</del>	F



31	<del>As a user, I would like to receive warning alerts if my spending has reached a certain threshold for the different categories</del>	F
32	<del>As a user, I would like the option to enable or disable push notifications for the app.</del>	F
33	<del>As a user, I would like to be able to personalize push notifications based on category and how much my budget has been exceeded.</del>	F
34	As a user, I would like the option to see my expected future costs for certain categories based on data from previous periods.	B
35	<del>As a user, I would like tips on how to use a credit card to keep my credit score from getting low</del>	F
36	As a user, I would like to highlight certain transactions in the itemized list that were not planned.	F
37	<del>As a user, I would like there to be different colors for spending categories shown in the generated graphs</del>	UI
38	<del>As a user, I would like to see different colors for investments based on overall ROI results.</del>	UI
39	As a user, I would like to be able to request my friends to see their calendars.	F
40	As a user, I would like to generate graphs based on the expected future spending reports.	F
41	<del>As a user, I would like to see tips on what stocks to invest in based on my level of risk.</del>	F
42	As a user, I would like to be able to request my friends to see their budgets.	F
43	<i>As a user, I would like my budget to be exportable to a CSV-type format</i>	B
44	<i>As a user, I would like an encouraging summary at the end of the month telling me about my spending habits</i>	F
45	<i>As a user, I would like there to be a social hub where I can share my spending goals with my friends on the app</i>	UI
46	<i>As a user, I would like to add fellow users as friends</i>	F

47	<i>As a user, I would like to be able to comment on my friend's goals and their progress</i>	F
48	<i>As a user, I would like to be able to make posts on the social hub that my friends can see</i>	F
49	<i>As a user, I would like there to be a dedicated page for creating budgets.</i>	UI
50	<i>As a user, I would like the ability to direct message users that are my friends.</i>	F
51	<i>As a user, I would like the ability to block other users.</i>	F
52	<i>As a user, I would like to be able to see what money-saving challenges my friends are participating in.</i>	F
53	<i>As a user, I would like to be able to export an overview of my spending suggestions and analytics to a PDF format</i>	F
54	<i>As a user, I would like to see a color indicator for how effectively I am managing my budget.</i>	UI
55	<i>As a user, I would like to see cohesive branding across the app in the form of images, stylized text, and quality logos.</i>	UI
56	<i>As a user, I would like to see animations when switching pages.</i>	UI
57	<i>As a user, I would like to see a loading animation when logging in.</i>	UI
58	<i>As a user, I would like to see a list of challenges for me to join based on what I need to save money on</i>	F
59	<i>As a user, I would like to join a challenge to save money with other users</i>	F
60	<i>As a user, I would like to add a short description to my account describing what my financial goals are</i>	F
61	<i>As a user, I would like to add a profile picture to my account</i>	F
62	<del><i>As a user, I would like to add data consistency and utilization to the investments page.</i></del>	F
63	<del><i>As a user, I would like a cohesive appbar with a homepage button and settings options that appears on every page.</i></del>	UI

64	<del>As a user, I would like to create and view multiple budgets</del>	UI/B
65	<del>As a user, I'd like to have an aesthetic dashboard view for quickly viewing my information.</del>	UI