

CyFinance Documentation

Actors & Use Cases

- ***Admin***
 - Change user's info (Names, type, and role)
 - Add users
 - Remove users
 - Manage user credentials (Password, PIN)
- ***Users***
 - Students
 - Tracking loans
 - Budgeting
 - Building Credit
 - Emergency Fund
 - Financial Wellness Education
 - Newly graduated (Young Professionals)
 - Loan management strategies
 - Budgeting and Expense tracking
 - Planning for financial investments
 - Building Credit
 - Debt Heavy Individuals
 - Debt pay-off strategies
 - Debt relief program
 - Married Couples
 - Joint Accounts
 - Joint Assets
 - Families
 - Joint Accounts
 - View dependent accounts and manage their finances

Non Functional Requirements

- **Security**
 - Authentication: Validating users when accessing different pages to confirm they are still authenticated using cookies.
- **Maintainability**
 - Clear documentation: Utilize swagger for effective documentation.
 - Modular code: OOP approach to our software design.
- **Usability**
 - UI Design: Maximum of five interactions to get to any page
- **Performance**
 - Responsive: Maximum of one second wait time for any interaction with the UI
- **Reliability**
 - Error handling: The app must have error handling and fault tolerance.
- **Compatibility**
 - OS: The application must work on Android OS
- **Scalability**
 - Users: The app must be able to downscale to zero users and support more than five users

Questions for TA

- **Documentation for frontend?**

Tables and Data

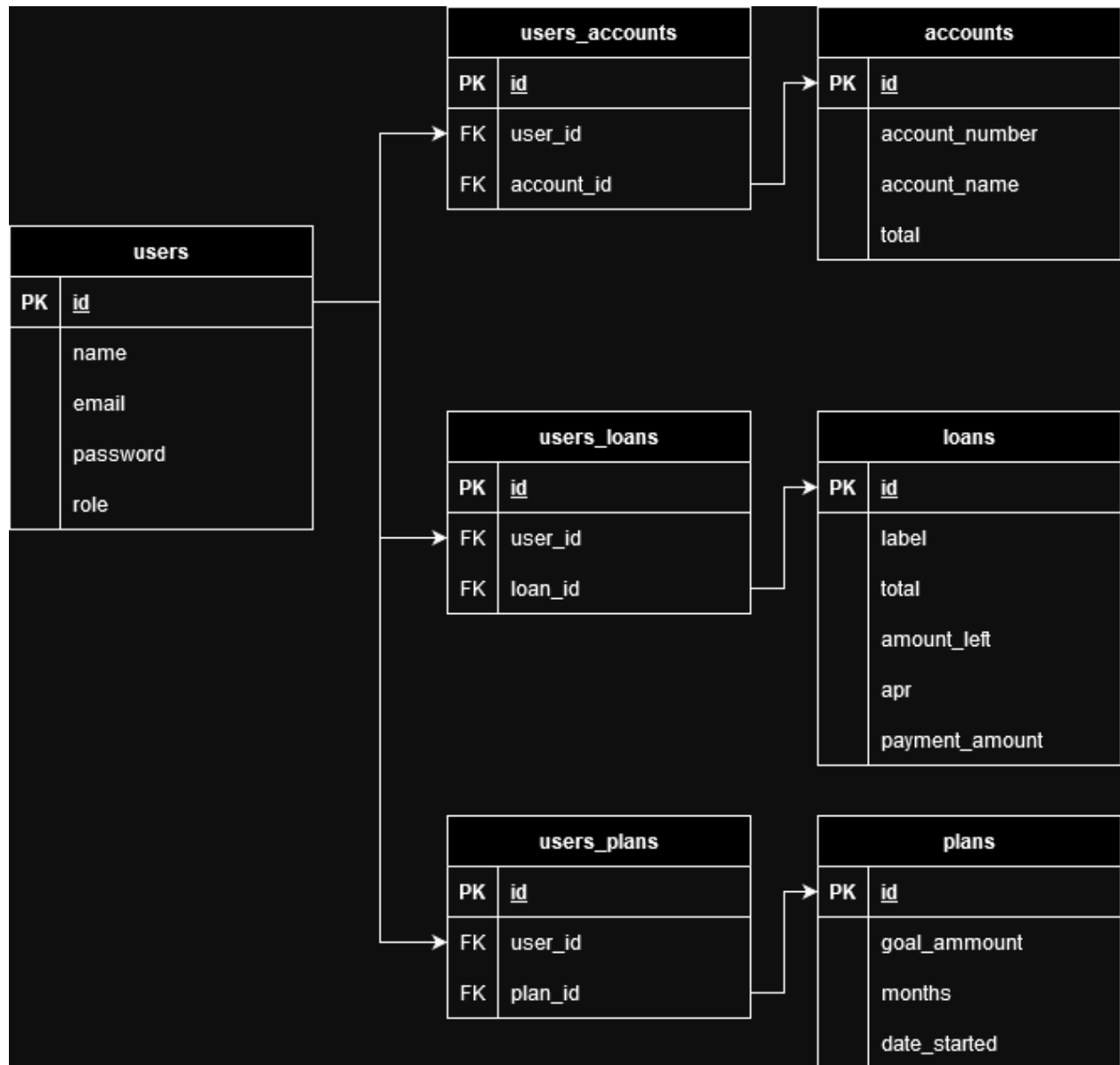


Figure 1.0
James Joseph

Below is a description of the tables in figure 1.0, each table modularly provides information about the users.

Actors & Use Cases

- **Users**
 - ID (Primary key)
 - Name (Human-readable user identifier)
 - Email
 - Password
 - Role (Specifies which actor the user is)
- ***Users_accounts (Joining table to relate a user to their accounts)***
 - User_ID
 - Account_ID
- ***Accounts (Financial accounts that users have added)***
 - ID (Primary Key)
 - Account_number (The number used to link an account)
 - Account_name (A user-defined name to help keep track which accounts are which)
 - Total (The amount of money in the account set by the user)
- ***Users_loans (Joining table to relate users to their loans)***
 - User_ID
 - Loan_ID
- ***Loans (Financial loans that have been added by users)***
 - ID (Primary Key)
 - Label (A user-created loan to identify different loans)
 - Total (The initial amount taken out for the loan)
 - Amount_left (The amount left to repay on the loan)
 - Apr (Percentage of loan added to payments as interest)
 - Payment_amount (How much the user is putting towards the loan each month)
- ***User_plans (Joining table to relate users to their financial plans)***
 - User_ID
 - Plan_ID
- ***Plans (Financial goals set by user)***
 - ID (Primary key)
 - Goal_amount (The amount a user wants to get up to)
 - Months (How long the saving term is)
 - Date_started

UI Design Diagram

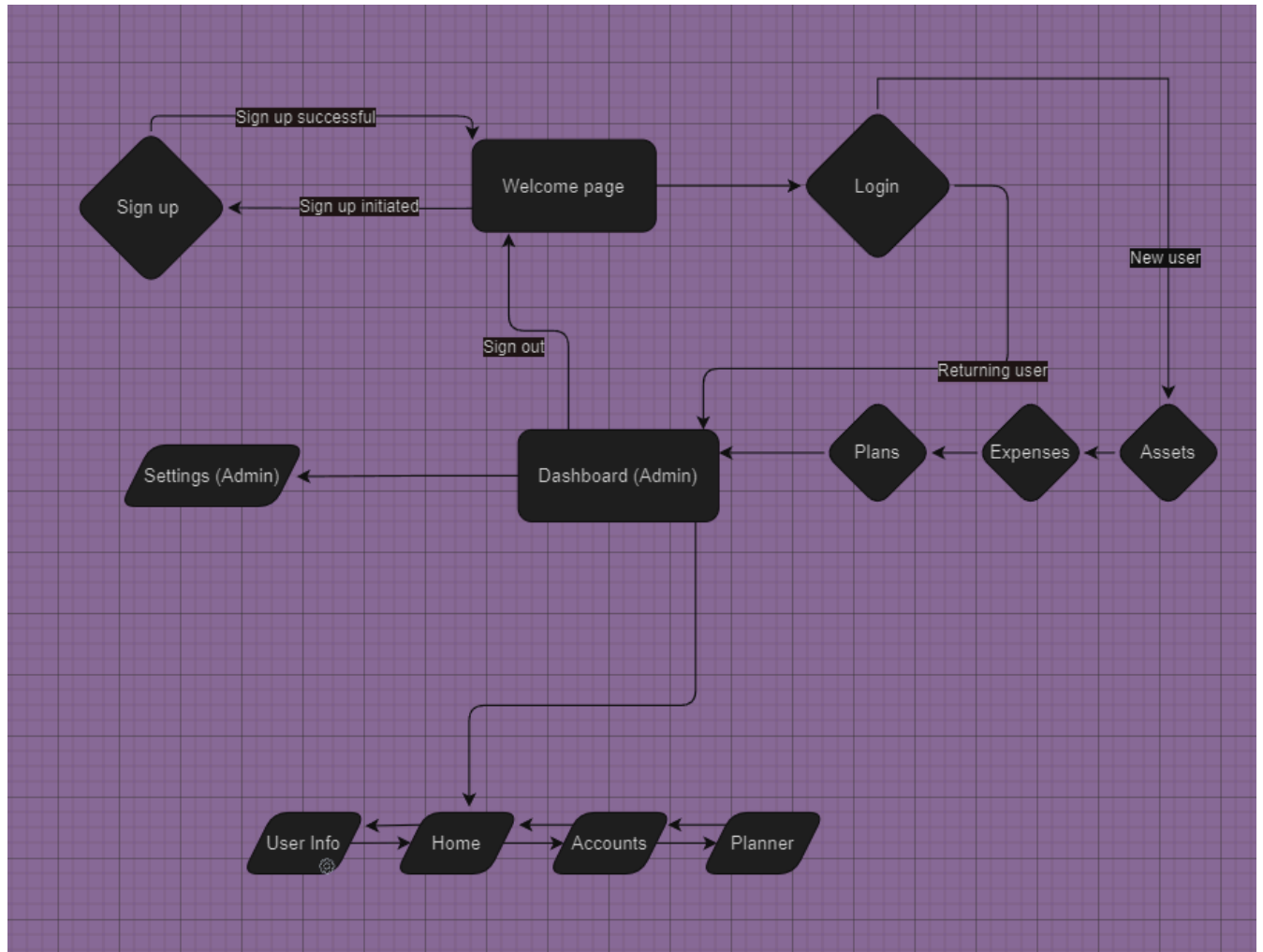
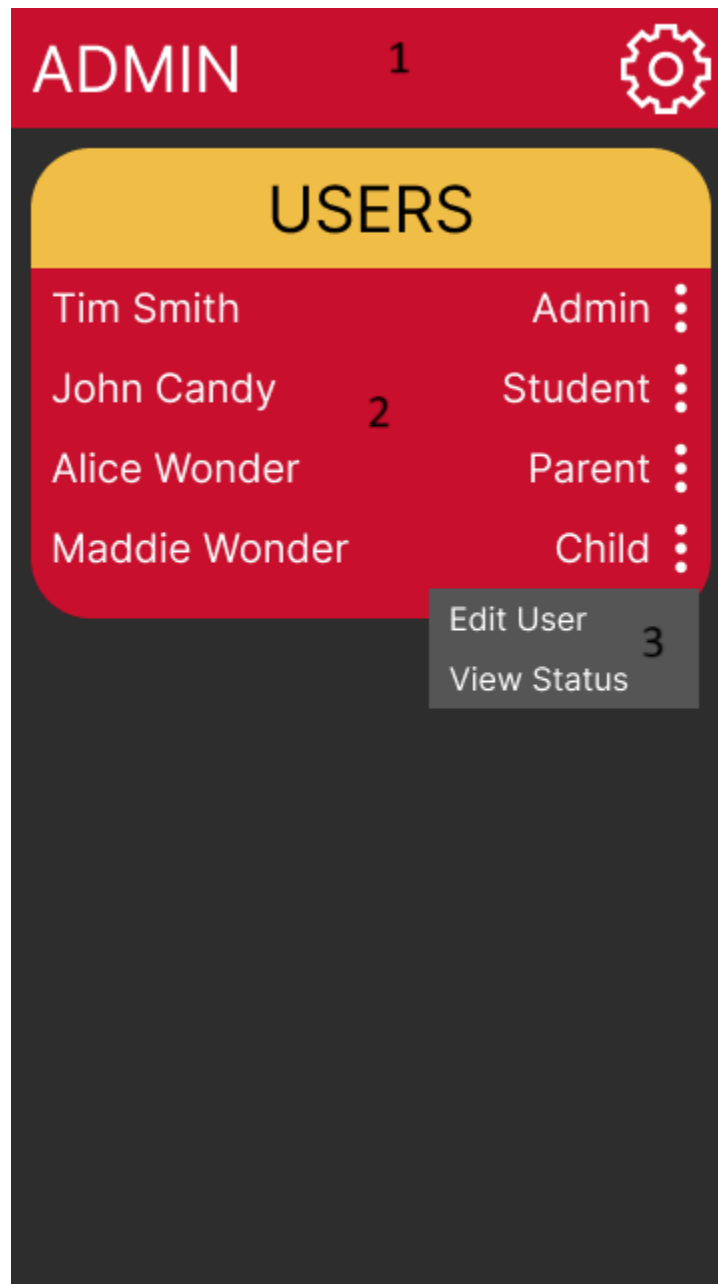


Figure 1.1
Mohamed Elaagip


Figure 1.1 demonstrates how the user will be interacting with our user interface. We designed it to be interactive yet simple and to the point. This decision was made with regards to user comfort and seamless interactions with no redundancy for the user. This makes for an efficient and user friendly user experience.

Admin Panel - James

Screen by James Joseph

The main function of this page is to view what users are on the platform and to edit their status as needed.

1. The header shows the screen's name as well as a way to get to the user's settings.
2. The main panel shows a list of users along with their primary role.
3. The pop-out panel allows an administrator to go to a user's settings or home page to modify items or view the status.

EXPENSES 1 

Please enter your monthly expenses for each category

Food:

Rent&Bills:

School:

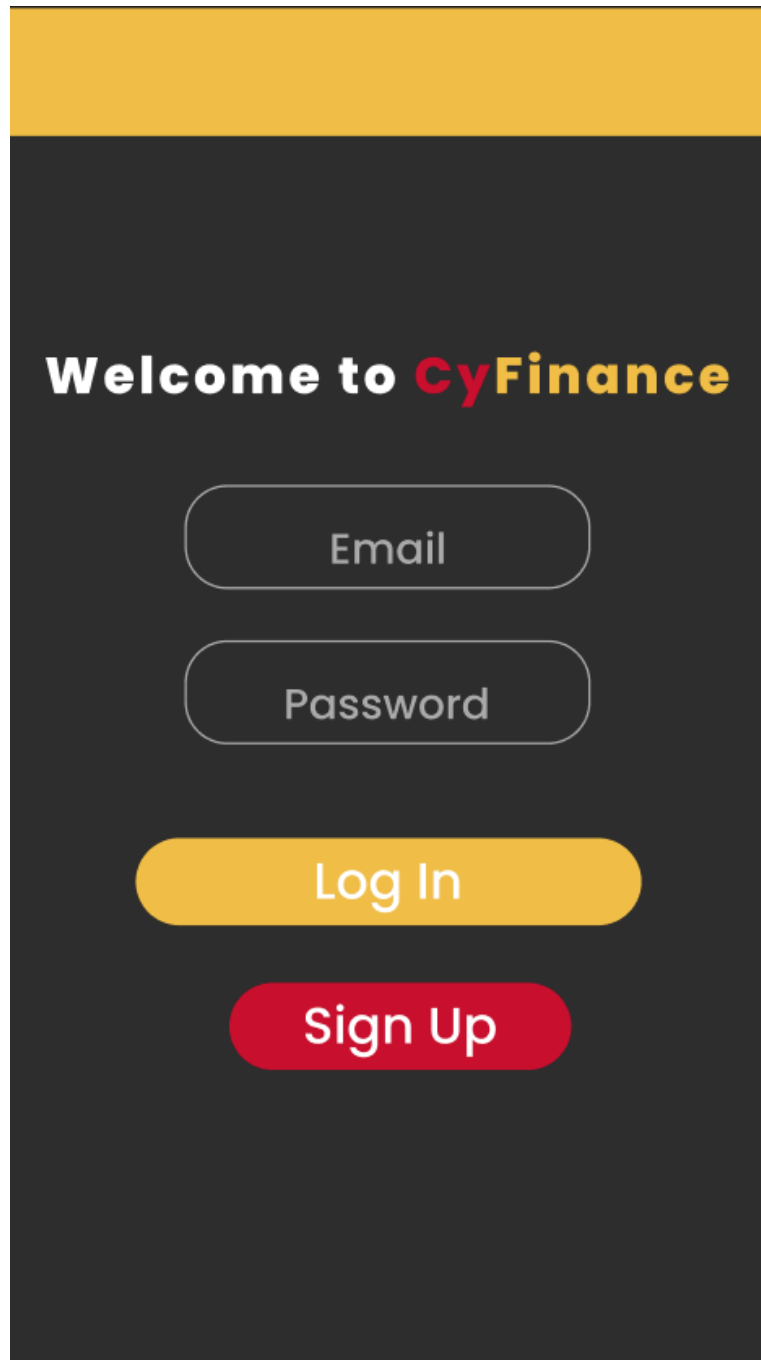
Other Necessities:

Extras:

Screen by James Joseph

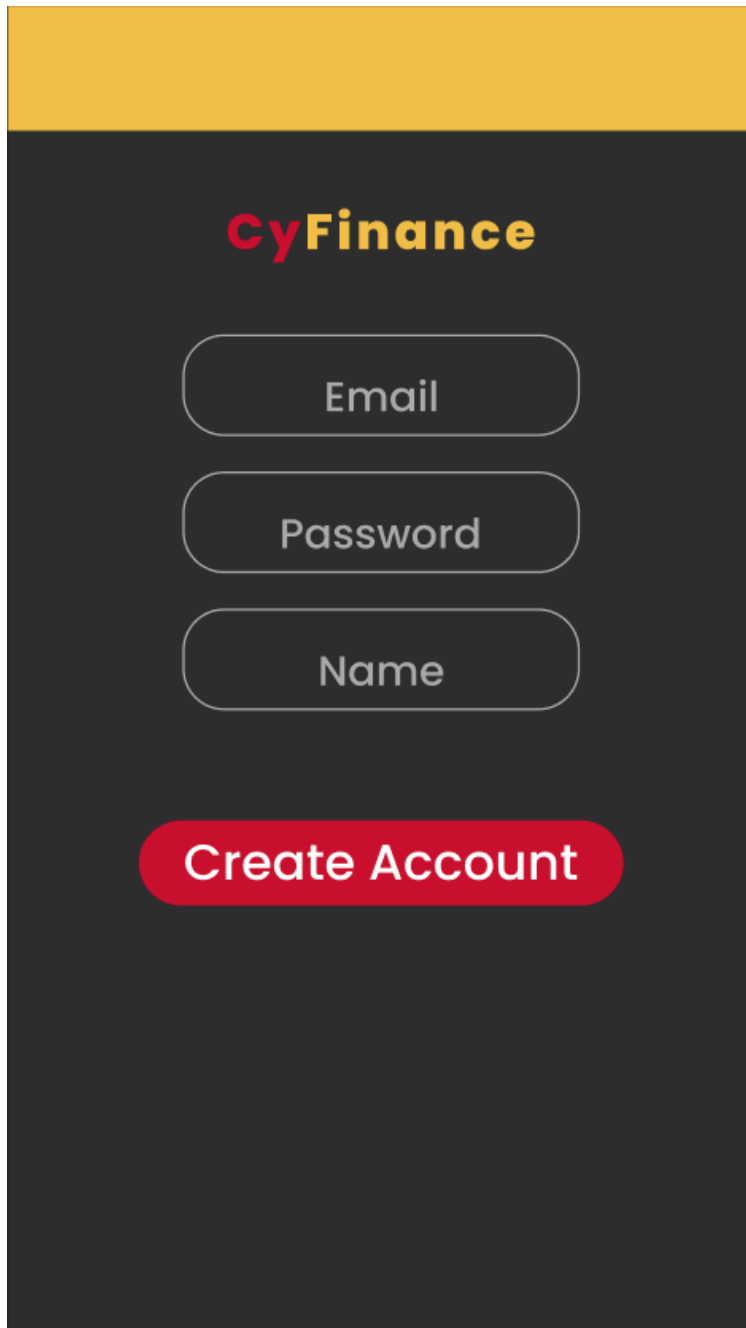
This screen is where the user will enter their expenses during the signup process.

1. The header displays the page name and a settings button that can be used to change the previously entered user information.
2. The main fields of this section aim to collect monthly spending information for recommendations later.



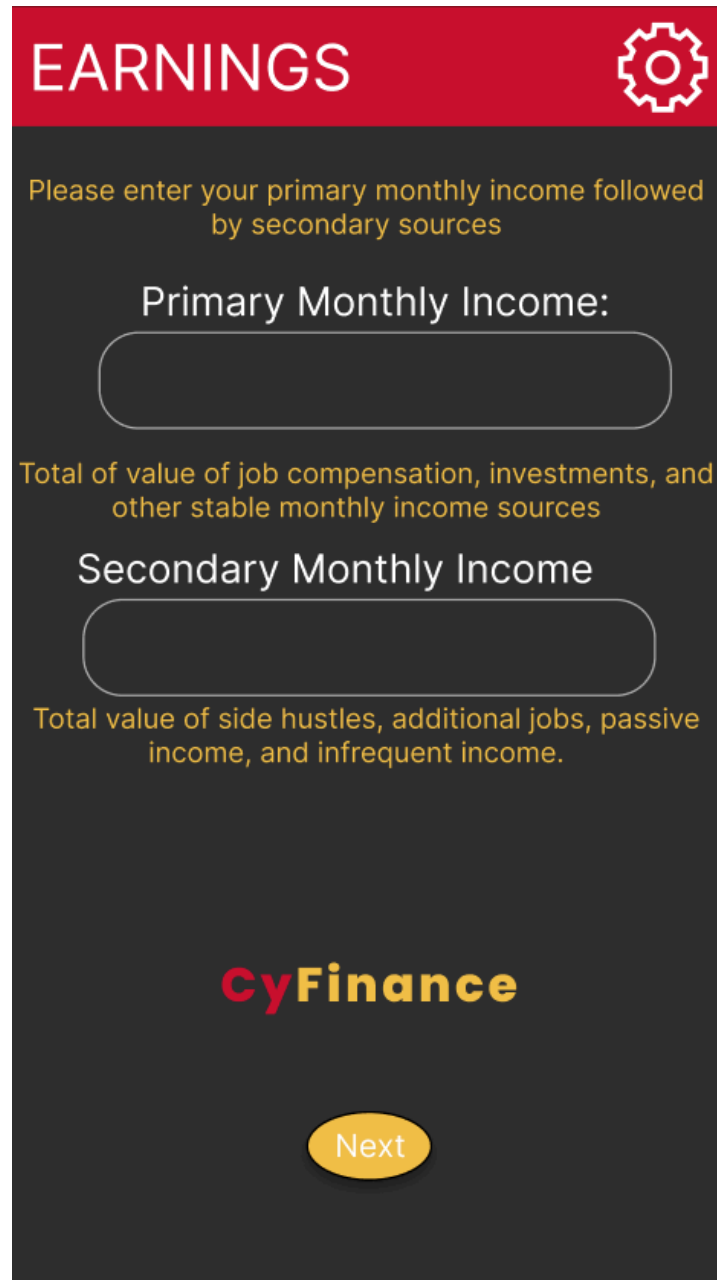
Welcome screen by Mohamed Elaagip

This is the first screen the user will see. If they are a returning user, they will simply enter their information and proceed to login. This will take them to the home screen if they are any role other than Admin. Admins will be directed to the Admin dashboard. If it's a new user, they can click sign up which takes them to the sign up page.

The image shows a mobile application screen for signing up. At the top is a solid yellow header. Below it, on a dark grey background, is the 'CyFinance' logo in red and yellow. There are three rounded rectangular input fields stacked vertically, labeled 'Email', 'Password', and 'Name' in white text. Below these fields is a prominent red button with the text 'Create Account' in white.

Sign Up screen by Mohamed Elaagip


This is the screen that the user gets redirected to after pressing the sign up button. After they're done inputting their information, they will be taken back to the login screen with their new account created. They can then proceed to login using their information from the welcome screen.

The image is a vertical rectangular mockup of a mobile application screen. At the top is a red header bar with the word "EARNINGS" in white, bold, sans-serif capital letters on the left, and a white gear icon on the right. Below the header, the background is dark grey. The first section contains the text "Please enter your primary monthly income followed by secondary sources" in a small, yellow, sans-serif font. Below this is the label "Primary Monthly Income:" in white, followed by a large, empty, rounded rectangular input field with a thin white border. The second section contains the text "Total of value of job compensation, investments, and other stable monthly income sources" in the same small yellow font. Below this is the label "Secondary Monthly Income" in white, followed by another large, empty, rounded rectangular input field with a thin white border. The third section contains the text "Total value of side hustles, additional jobs, passive income, and infrequent income." in the same small yellow font. At the bottom of the screen, the "CyFinance" logo is centered in a bold, sans-serif font, with "Cy" in red and "Finance" in yellow. Below the logo is a yellow oval button with the word "Next" in white, centered inside.

Earnings screen by Mohamed Elaagip

This is the earnings screen a newly created account will get directed to after logging in. This information shall be modifiable if the user wants to in the future. The reason for this screen to be shown during initial account set up is because earning information is very static and tends to be the same over longer periods of time. This enhances user experience and makes for seamless interaction.

NET WORTH



Please enter the value of your assets and liabilities into the respective fields

Assets:

\$

E.g: Real estate, vehicles, businesses, stocks, etc.

Liabilities:

\$

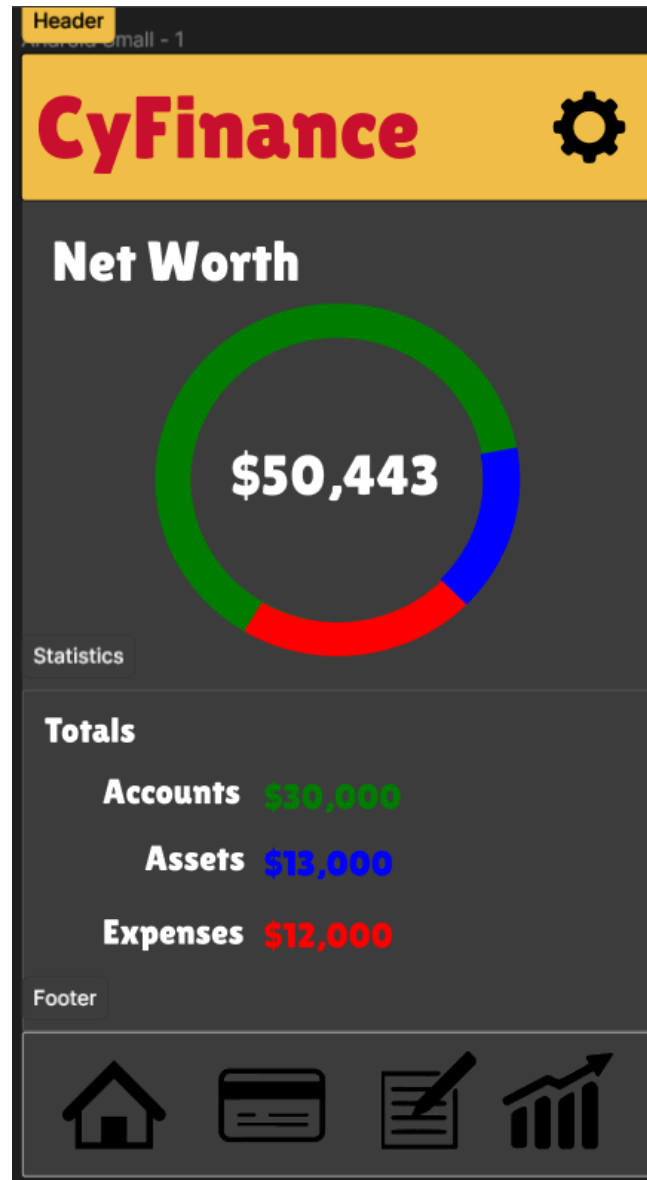
E.g: Loans, mortgages, accrued expenses, etc.

CyFinance

Next

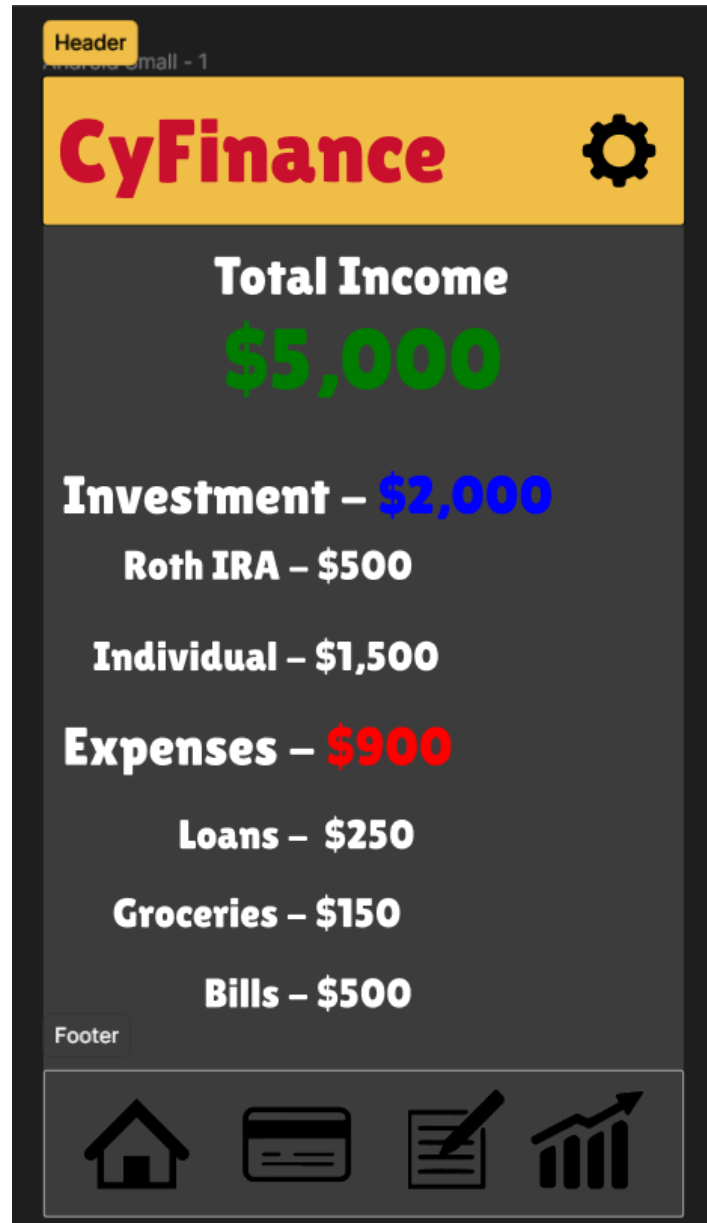
Net Worth screen by Mohamed Elaagip

This is our net worth tab to obtain user's financial net worth information. This is important for our calculations for the user's future goals and current financial condition. For example, if our user has negative net worth, they would be warned.



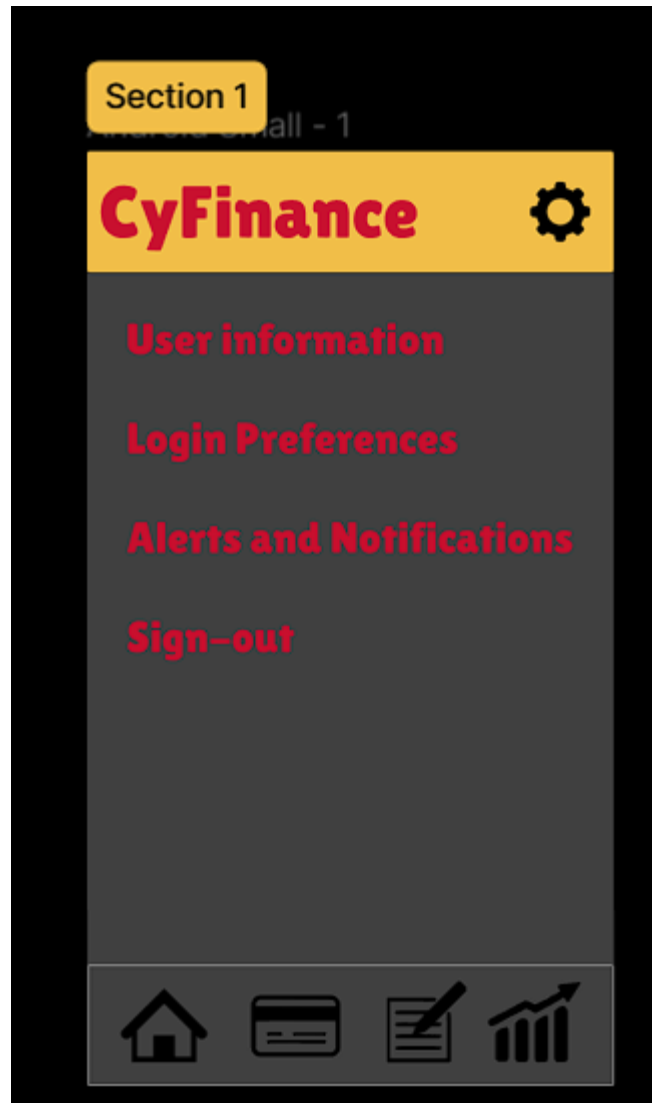
Home Page By: Casper Run

Overview of the user's net worth with all Accounts, Assets, and Expenses added up. I used a donut chart to represent the percentages and the total net worth in the middle of the donut. The bottom of the page has a totals section that separates the accounts, assets, and expenses, respectively, with color coordination to represent the data on the donut chart. This data is pulled from a user's inputs when signing up and manipulated.



Planner Page By: Casper Run

Based on user input from the sign-up page and preset percentages, the planner page will display Income going into investments and expenses. These presets can be changed later in the settings tab by the user. At the top of the page, the total income is displayed, which is set to be distributed into Investment and Expenses. Separated into two tabs, I made investments and expenses tabs that drop down to reveal subcategories, which the user can add. This is a fantastic way for users to view where their money is going directly.



Settings page by: Hussein Baderddeine

The main function of this page is for the user to go to different settings tabs: basically there's a page to go to for specific changes: you're 1 button away from signing out if you want to from the bottom red button. Otherwise, I chose to split up the 3 other tabs as any modern finance/ banking app would since there's so much for all this information to be contained in 1 page. I chose to keep the bottom icons for the homepage, accounts page, planner and income. This enhances user experience since it keeps the main functionalities of the app 1 button away.

Section 4

CyFinance

User Information

Name Hussein

Addresss Ames

Primary mobile 3194573048

Email husseinbaderdine55@gmail.com

Password

Activity Logs

Submit


User information Page By: Hussein Baderdaine

This page could be reached by clicking on the user information to modify it if the user chooses it. I didn't want to put the bottom icons here since the user has to make a submission every time they login here. This may be a little inconvenient but important from security perspective in case an intruder tries to change the information and not allow the user to get in: it would log all accounts out, which will automatically give the user a fraud alert(just in case it wasn't them)

Section 6

CyFinance

Login Preferences



Security Question:

What's your oldest aunt's name?





Timeout Preferences

1 year

Device management

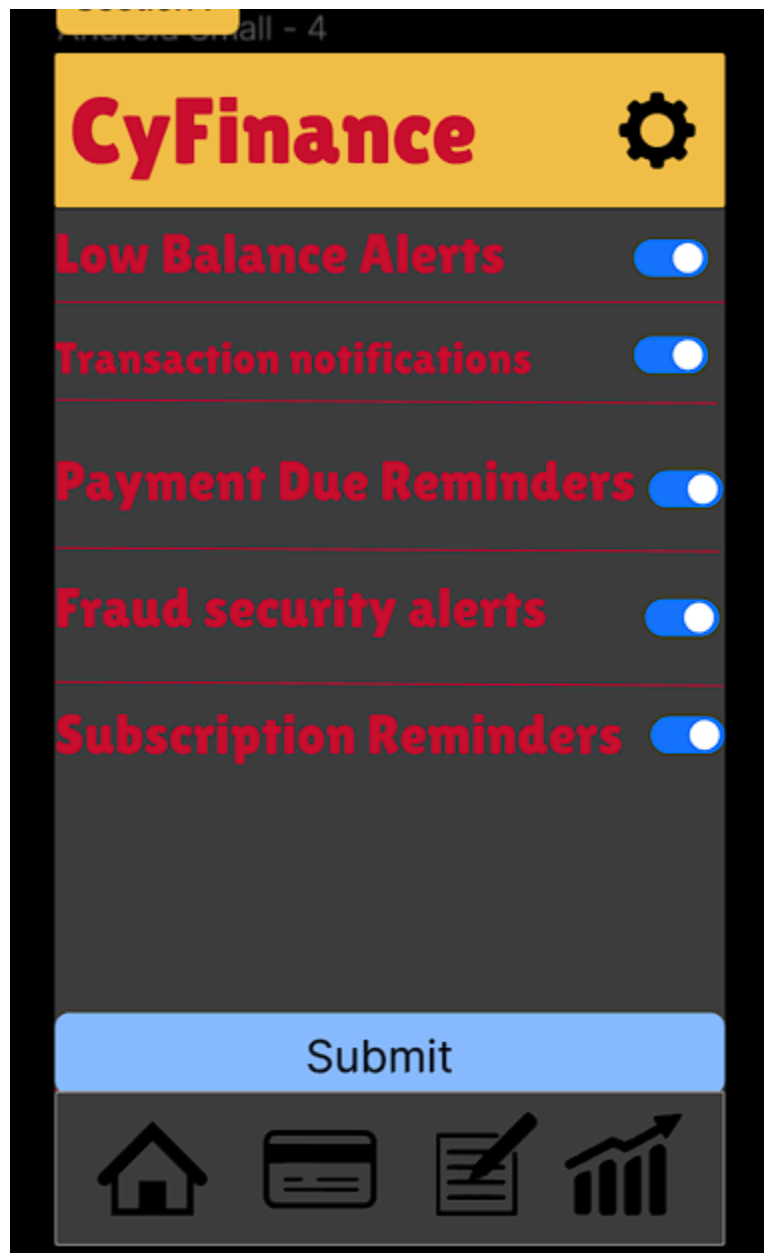
Active devices: 2

Submit

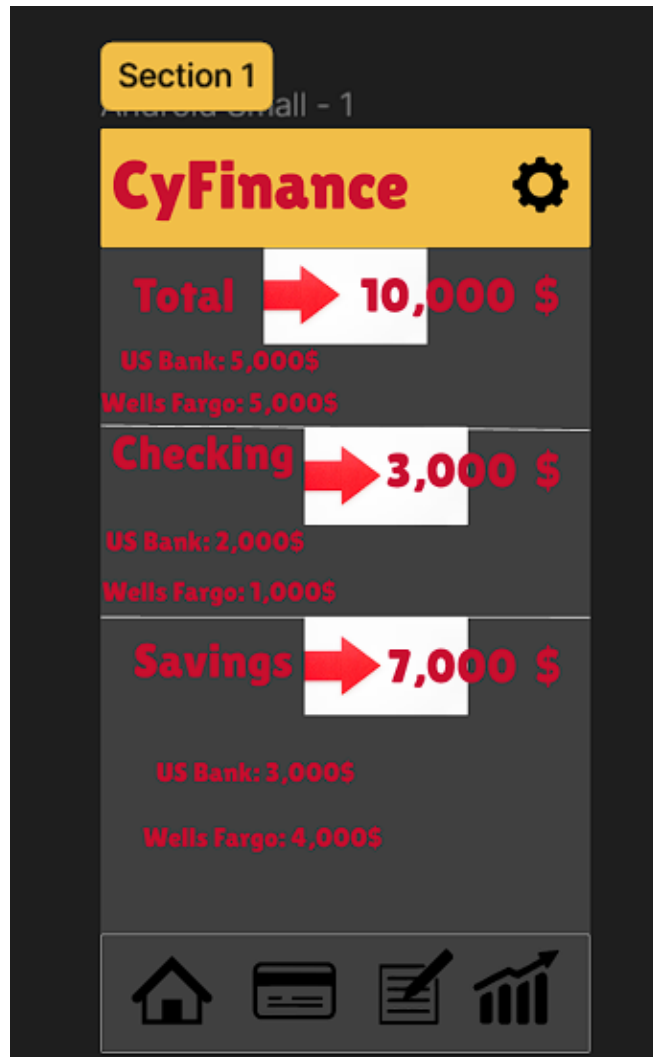
Login Preferences page by: Hussein Baderddeine

This page is to allow the user to customize the settings to whatever is more convenient for them as far as logging in: number of devices, how often they need to login again, security question in case they forgot the password. I kept the bottom icons in the bottom for convenience given that these settings aren't as sensitive as the page above.



Notification Alerts page by: Hussein Baderddeine

Some users don't like to have 10 useless notifications they already knew about daily, others like the reminders to stay on top of their bills and to be aware of everything happening in their accounts. Thus, we chose to add: low balance alerts, payment reminders, subscription reminders. Otherwise, it's important for users to know about certain transactions or fraud occurrences to keep them safe. We chose to keep the bottom icons here for convenience too.



Accounts page by: Hussein Baderddeine

Users most likely have 2 types of accounts: checking and savings, which is why I split them here into 2. We added the Total option on the top for them to have the convenience of not having to do the math. Otherwise, everything is split depending on the type of account and the banking institution to make things easier for them.

