



BudgBuds

Low-fi Prototyping & Pilot Usability Testing

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Value proposition:

- **Tag line:** “where you don’t have to budget alone”
- **Value proposition:** BudgBuds help individuals create and maintain both individual and group budgets (that considers each member’s constraints) by leveraging social interactions and accountability.

Mission Statement:

- To remove obstacles hindering individuals from maintaining their budgets.

Problem/Solution Overview:

- **Problem:** People who regularly spend in social groups are often unable to regulate their expenses and give in to social pressure.
- **Solution:** An app supplemented by social accountability, for these groups to collectively budget for activities that require communal spending, while factoring in individual financial means.

SKETCHES

Concept sketches (15-25)

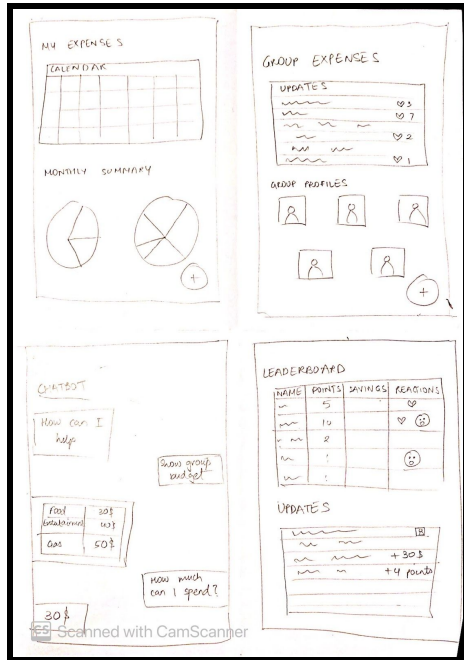


Figure 1: Mobile-focused application sketches

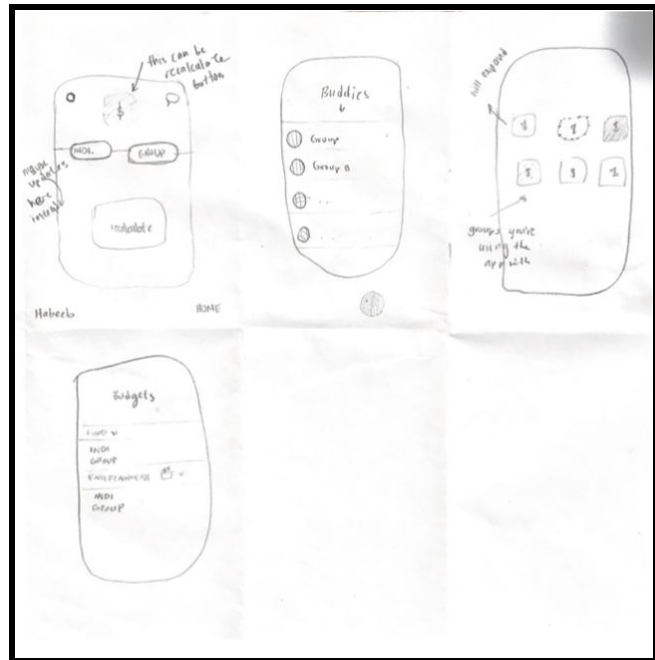


Figure 2: Mobile-focused application sketches

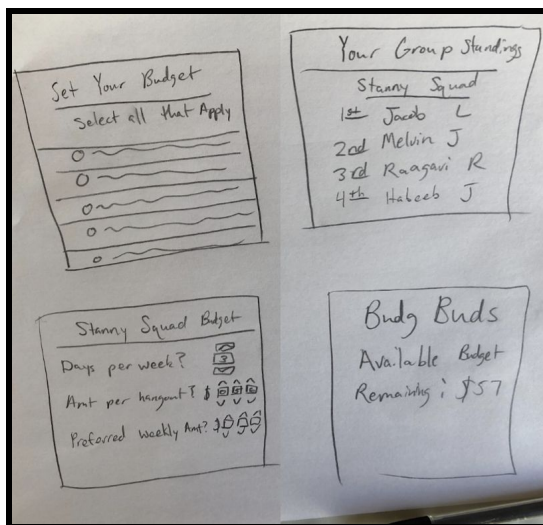


Figure 3: Watch-interface sketches

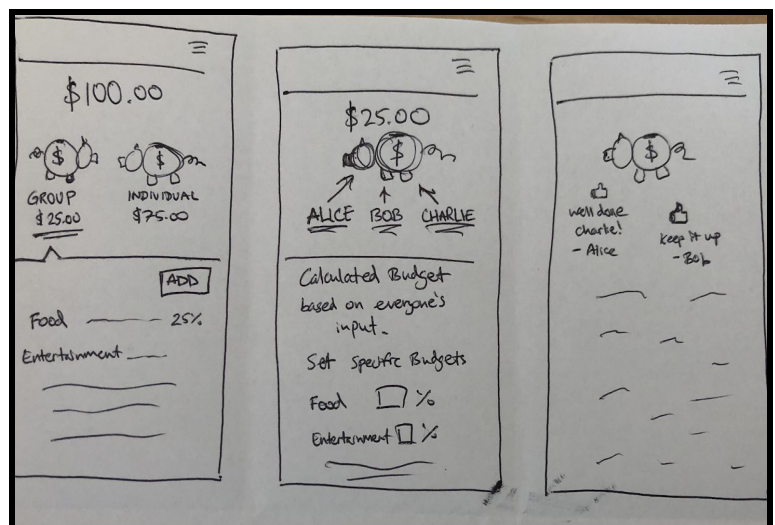


Figure 4: Skeuomorphic mobile application sketches

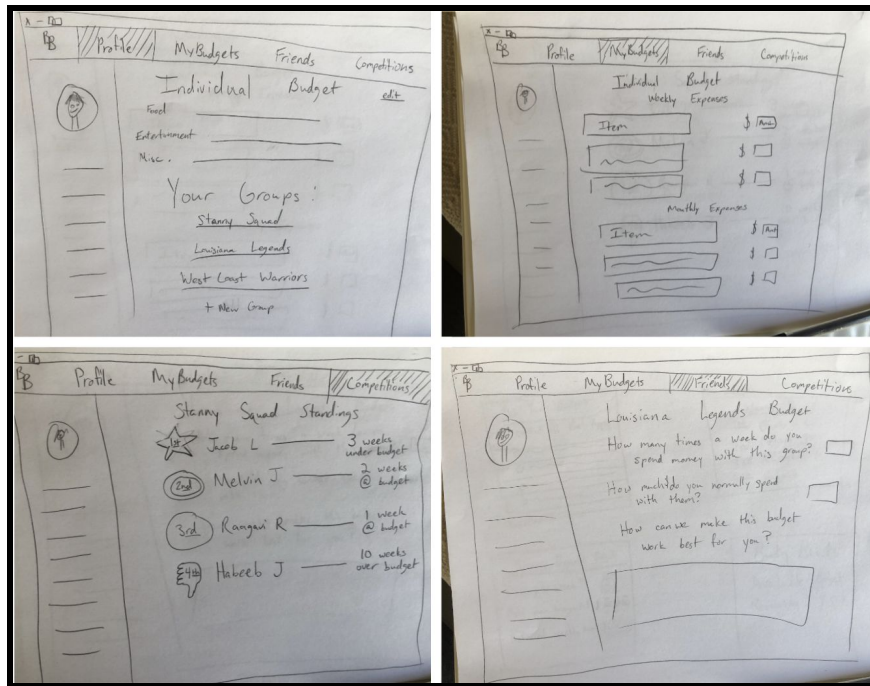


Figure 5: Web application design sketches

Top 2 designs storyboarded in more detail

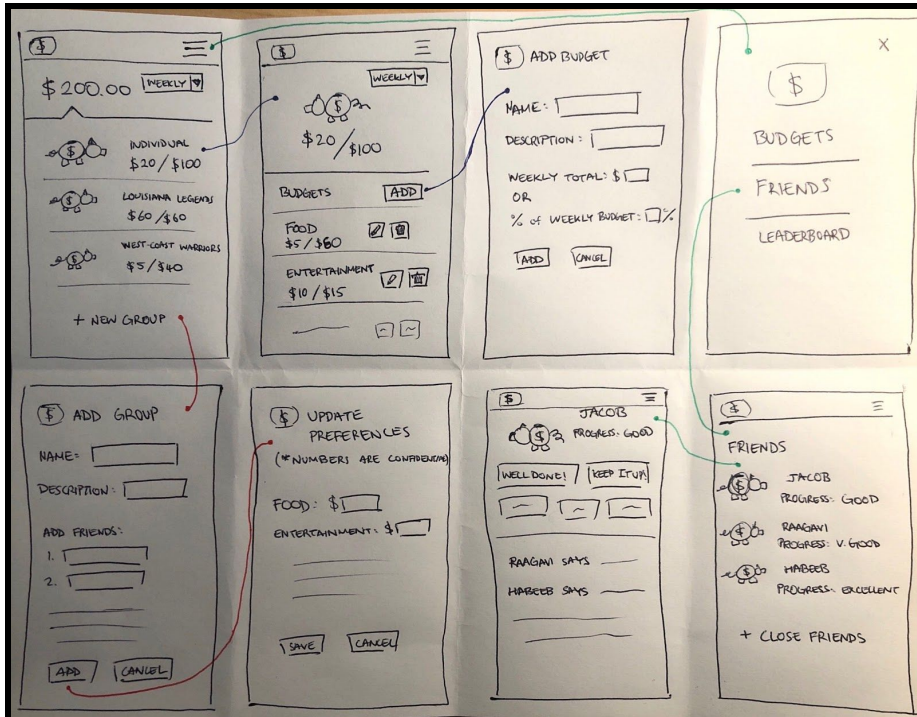


Figure 6: Main application interface

Pros

- Very visual/interactive/engaging for users
- Clean, easy to understand, feels like an actual app
- Covers all the tasks
- Flows well, the order of screens is intuitive
- Relatively low set-up time / effort
- Pretty simple
- Allows users to name/describe their budgets easily
- Able to input budget as either a number or percentage

Cons

- Doesn't give full visibility on specific expenses
- Low visibility on budgeting progress
- Maybe comparing progress isn't the best way to show encouragement?
- Wish we could see a group page more generally
- Needs to show progression of expenses

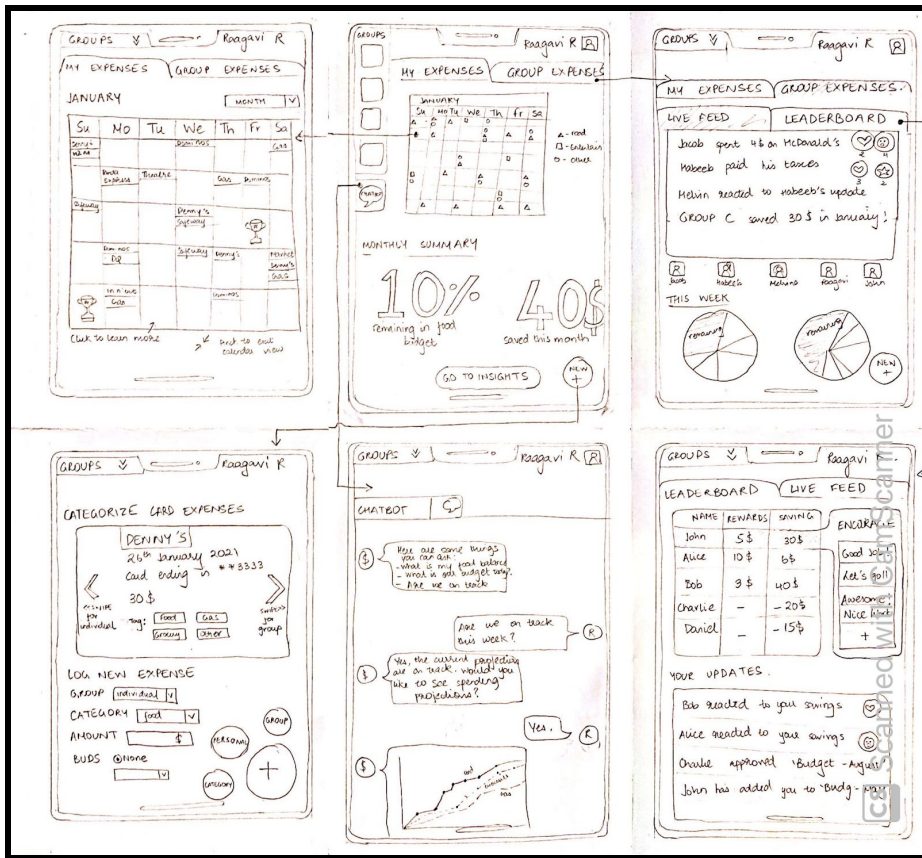


Figure 7: Mobile application interface

Pros

- Clear visibility of expenses
- Easy and intuitive to switch between individual and group expenses / budgets
- Easy to switch between groups
- Good use of tabs
- Social interactions very prominent
- I like the leaderboard and social interactions
- Groups very intuitive to get to

Cons

- Not sure how to add a budget (e.g. food budget)
- Calendar is overwhelming (maybe having a popup window when a shape/day is clicked)
- Not sure how to leave expanded calendar
- The live feed may be too much information?
- Calendar might be too much

Reasoning

We chose the first design with the piggy bank icons because it has a much simpler and intuitive flow. We liked the piggy banks as a representation of saving money in a way that could bring nostalgia to our users. For some, the idea of budgeting may be daunting or cumbersome, so we reasoned that a simpler and intuitive interface that also had friendly / nostalgic elements may offset some of the negative feelings.

The first design also allows us to create similar interfaces between individual and group pages, which in addition to the simplicity of the app, will allow for a shorter onboarding time. We think a short onboarding time is crucial so that users are not turned away from the app before trying its features. However, we do realize that distinctions will need to be made such that it is always clear to the user whether they are looking at their individual budget or a group budget.

Noting the cons from the design, we recognize that we will need to build upon the storyboard and add more pages to provide further clarity. We are also wary that no information should be lost from choosing the first design over the second design, so we will look to integrate some of the ideas outlined from our second design to our final design.

SELECTED INTERFACE DESIGN

Storyboards for 3 tasks

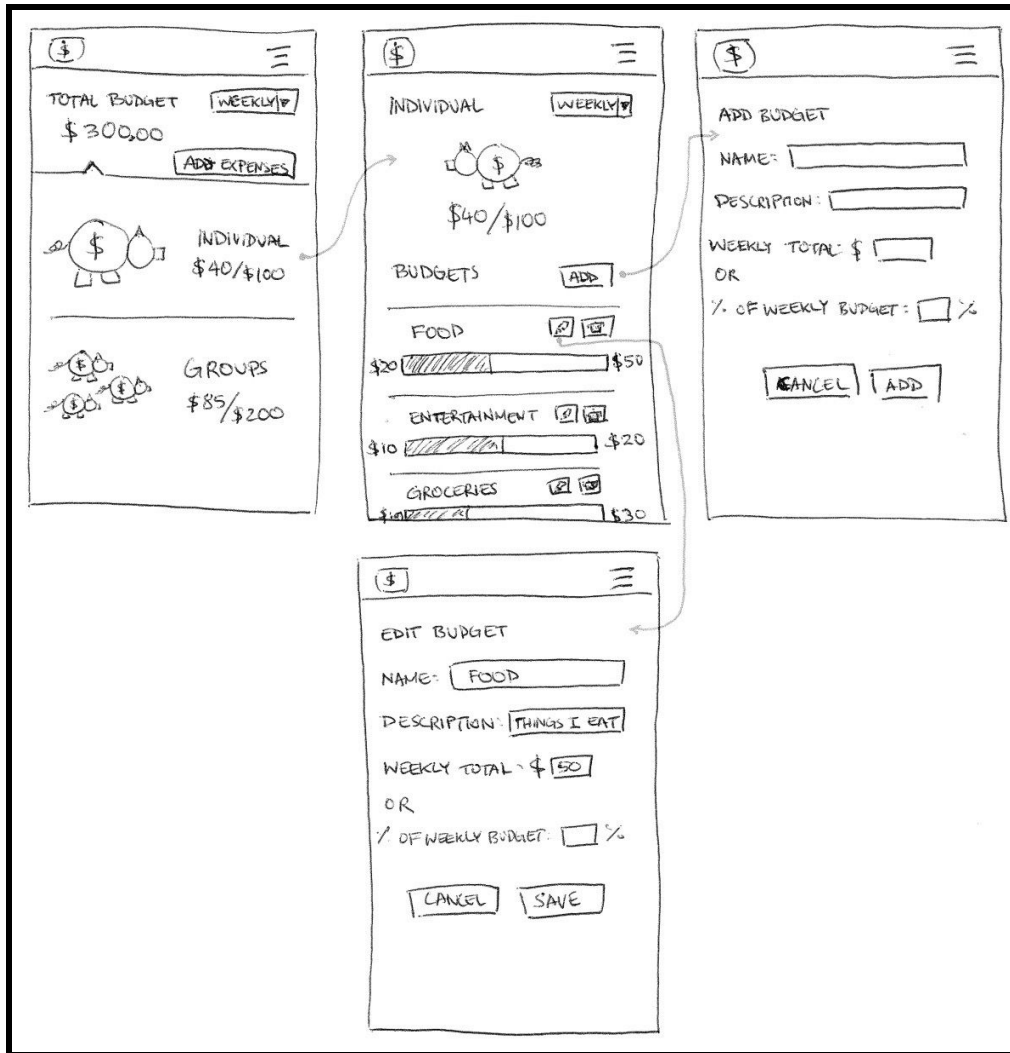
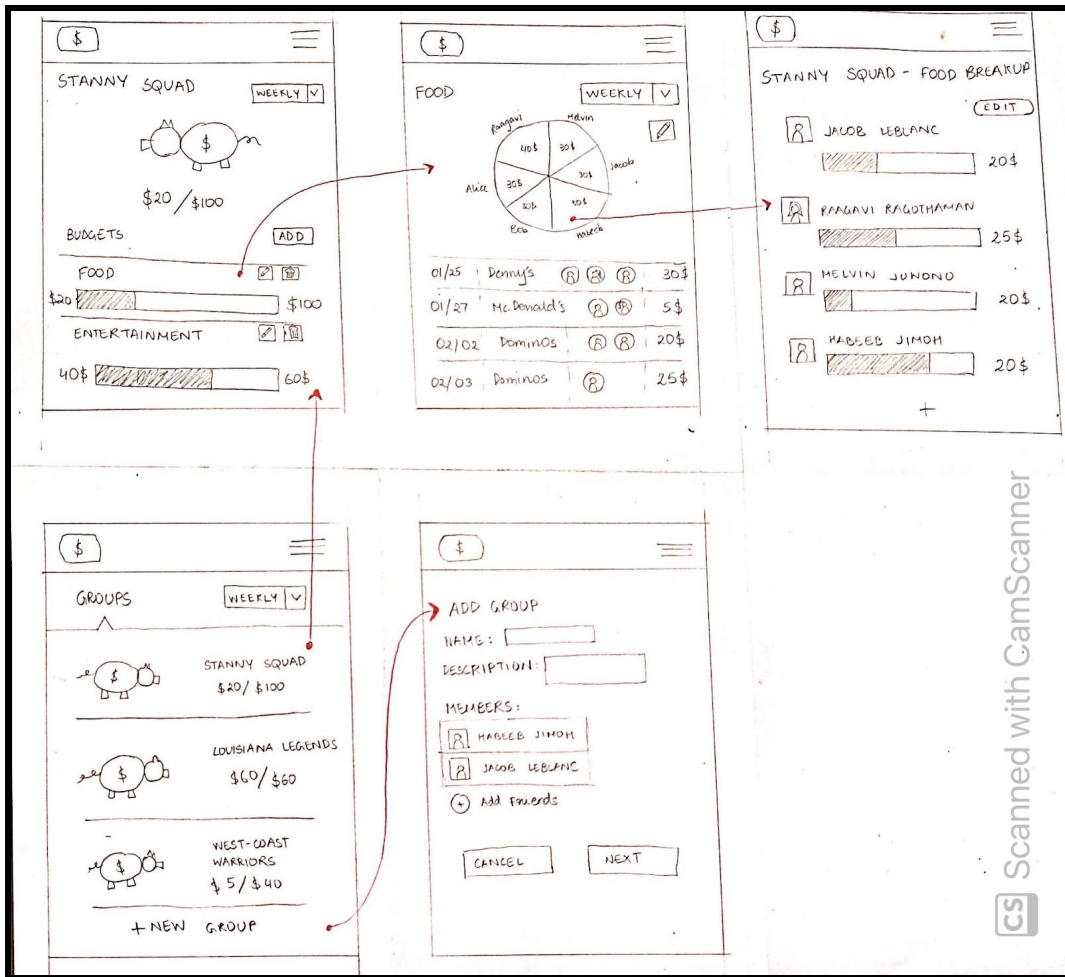


Figure 8: Simple Task - Set up separate budgets for individual expenses



Scanned with CamScanner

Figure 9: Moderate Task - Create a group to budget with and allocate your budget to different types of expenses

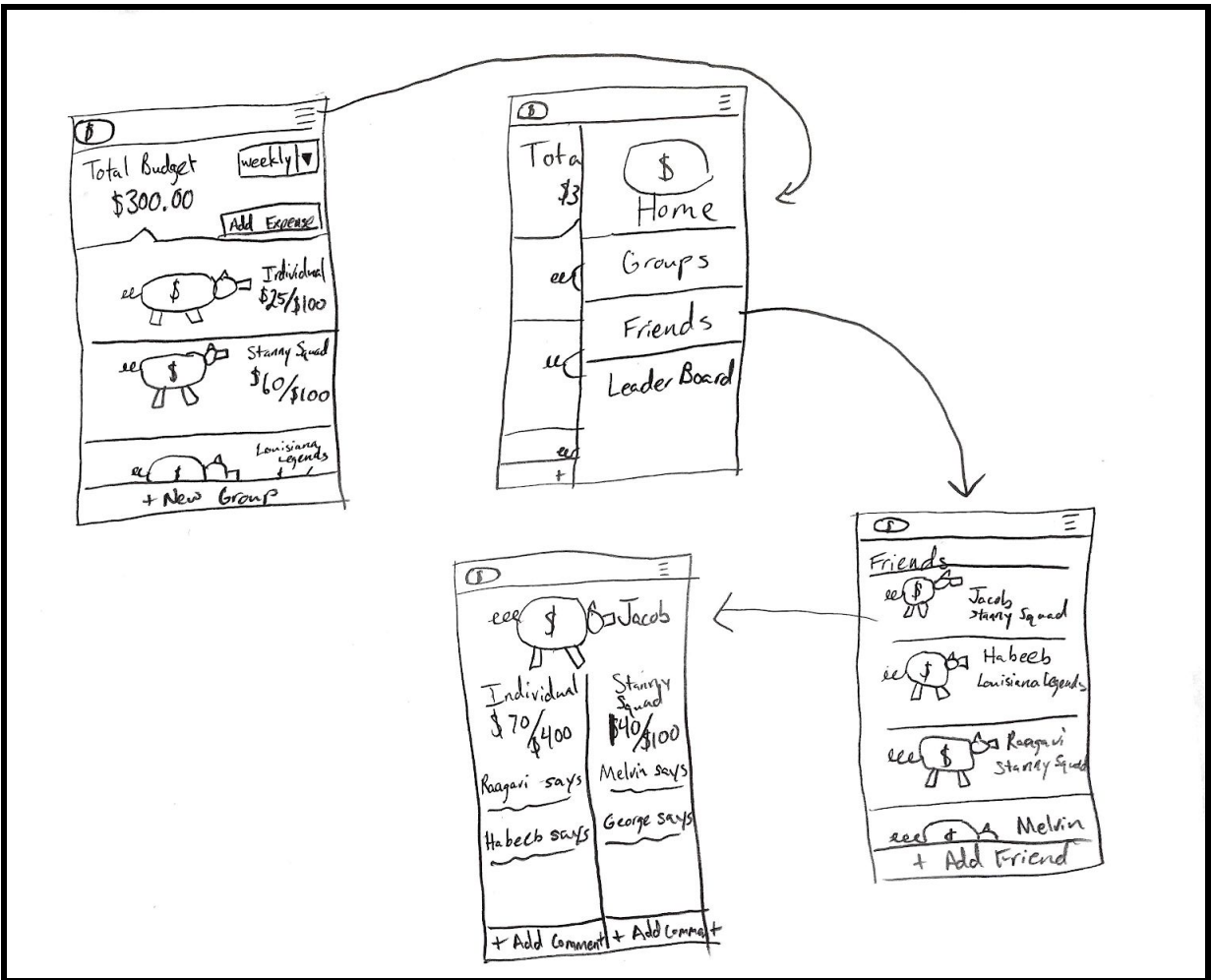


Figure 10: Complex Task - Motivate everyone within the group to stick to both individual and group budget

Task Flow Reasonings

Simple Task

pros	cons
<ul style="list-style-type: none"> • Simple design • Clear buttons to show how to complete task 	<ul style="list-style-type: none"> • Takes many clicks to actually complete the task

Moderate Task

pros	cons
<ul style="list-style-type: none">• Very detailed - shows lots of information• Easy to get to the groups and then actually access information for a specific group	<ul style="list-style-type: none">• Takes a lot of clicks to get to the most detailed pages

Complex Task

pros	cons
<ul style="list-style-type: none">• Friends list easy to see and navigate	<ul style="list-style-type: none">• Comment page very cluttered• Menu bar not the most clear

PROTOTYPE DESCRIPTION

We designed our prototype on paper, displaying all the screens that a user would need access to in order to complete the tasks described. We included additional screens not related to the tasks described to record possible instances where a participant is confused.

After designing on paper, we took a scan of each screen and uploaded them to Figma, where we used Figma's prototype tools to make hand-drawn components clickable and redirect participants to the appropriate pages.

Interface Element	Functionality
individual budget page	Allow users to see their budget as well as create new subsets of their budget.
group budget page	Allow users to look at their group, edit their preferences (individual budget constraints), and invite new people to the group.
friends page	A way to give motivation to group members for maintaining budget.
hamburger menu	Allow users to navigate to other parts of the app.
expense breakup page	Gives users details about specific proportions of the group's spending.
leaderboard page	Gamification to motivate users to stick to their budget.
expense history page	Details the group's spending history by listing each expense categorically.

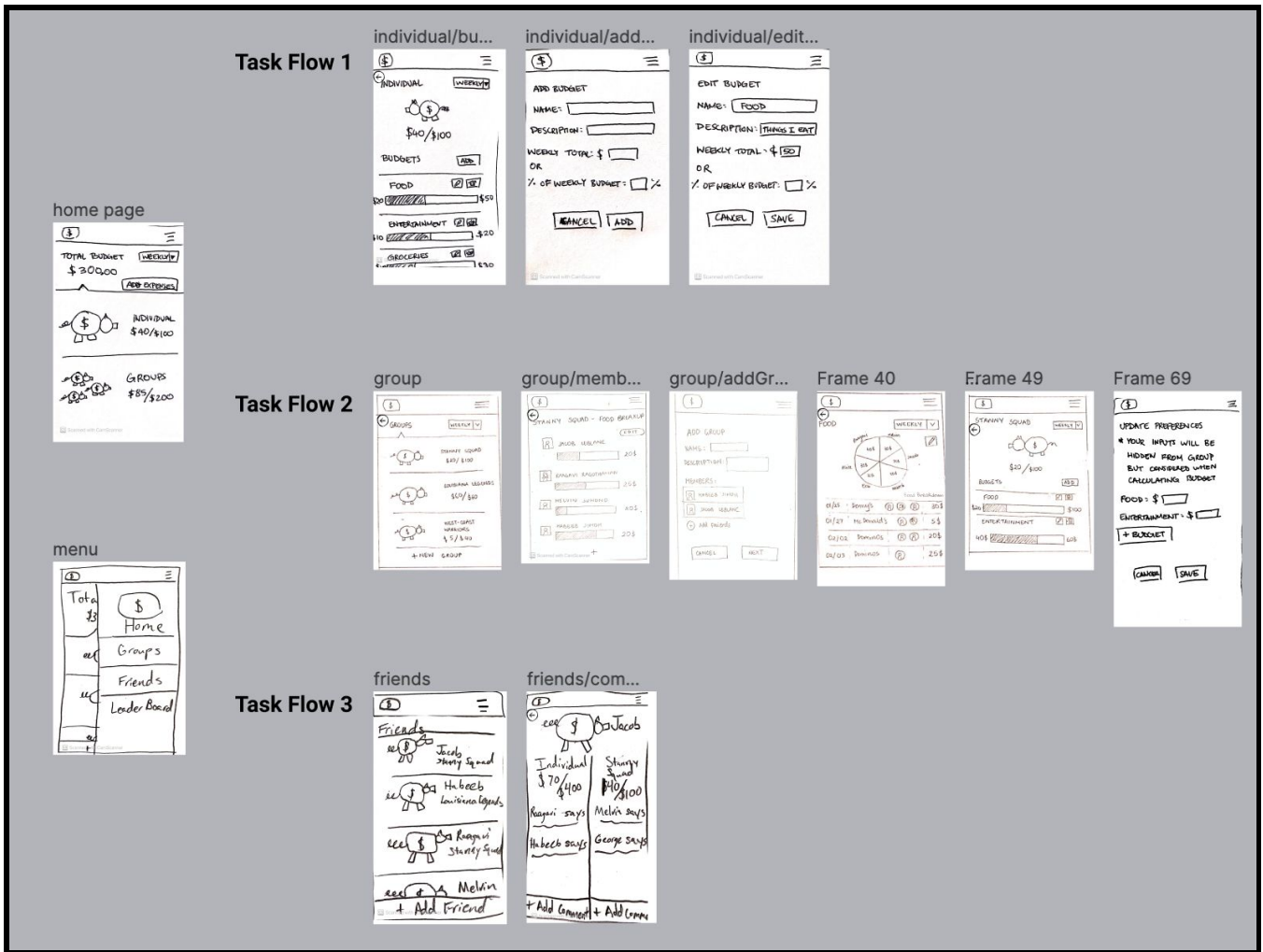


Figure 11: Entire System

TESTING METHODOLOGY

Participants: demographics, how they were recruited

- Participant 1 is a PhD student in Stanford's Chemical Engineering program, recruited through social media.
- Participant 2 is a software engineer at NCR Corporation, recruited as an acquaintance of our team members.
- Participant 3 is a junior currently studying accounting at Santa Clara University, recruited through a mutual friend.

Environment

All tests were conducted over Zoom as we complied with COVID guidelines. Doing so also enabled us to select a more diverse group of individuals, including participants from other states.

The prototype was hosted on Figma, and the combination of Zoom's "share screen" feature with Zoom's "give remote control" feature allowed for an easy and smooth setup where the facilitator shares their screen and gives the participant remote control.

Tasks

- Add a new individual budget
- Create a group to budget with and give the group your preferences or constraints
- Check who has spent the most on food in the Stanny Squad group budget
- Give some encouragement or motivation to Jacob, your close friend

Procedure

1. Introduce the project, explaining the basis behind both the project and the class as a whole.
2. Bring the participant to the front page of the prototype, and give them the first task, "add a new individual budget," and allow them to complete it independently unless they ask for help.
3. Ask the participant what they found to be unclear in completing the task.
4. Repeat steps 2 and 3 for the other tasks.
5. Ask the participant what feedback they had for the prototype as a whole.

Test Measures

Success

- How obvious the use of some of the buttons were
- Having minimal error - being able to accomplish it in one go

Failures

- Unable to complete tasks without asking for assistance
- Design leading users astray, things taking them in unexpected directions

Team Member Roles

We played various roles based on availability. For notetaker we recorded the zoom meeting as a way to refer back to what occurred.

- 1 greeter/facilitator - This is the only person who speaks throughout the test.
- Dedicated observer. If we didn't have enough team members acting as dedicated observers, we recorded the zoom meeting and took notes/observations afterwards

Results

User Interface Workflow Feedback

- Trying to find the breakup of food doesn't seem intuitive
- Back button
- Hamburger menu was confusing
- Didn't like the extra click from pie chart to breakup of categories
- Confusion between member names and where expenses were spent

Feature Recommendations

- A user recommended having the edit and delete icon inside each category instead of near the list of categories
- Have common page be more social-esque (having an interface that's more instagram like for commenting on friend's progress)

8. Discussion

Overall, we found that our users enjoyed the general concept of our project, but there were a few features in our UI design that impaired our users progress in completing their tasks. Most evident of these was the hamburger menu, which showed to be rather unintuitive for people to use, so we have decided to implement a bottom navigation bar to replace this while still having the same usability. Additionally, users found it difficult to go back after making a single click mistake, so we have added a back button to many of the pages. Going forward, we will aim to make sure that these features are more clear, and we aim to ensure that all of our clickables are clearly buttons.

On a more successful note, our users found creating and editing both individual and group budgets straightforward and intuitive, as well as managing their group after it had been created. Users also found the design easy to learn how to use, which confirms for us that the idea behind this iteration of UI works well.

In terms of limitations, we weren't able to get a sense of how impactful the gamification aspect of the app was. Additionally, we weren't able to test the assumption that they would be intrinsically motivated to give encouragement to close friends and maintain social accountability (we were only able to test whether the flow of giving encouragement was intuitive).

Word Count: 1489