Budget Buddies
Low-fi Prototyping & Pilot Usability Testing

CS 147 Winter 2021
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Introduction and Problem/Solution Overview
Budget Buddies is a product that helps users "Spend with Confidence". In our user testing, we uncovered significant anxiety about how much is "normal" to spend, especially amongst people who had a specific reason to feel anxious such as a low-income upbringing or a new baby. Our application will help people in their 20s through 40s feel more confident about their spending by allowing them to (1) set a long term budget plan (2) compare spending with others and (3) make a plan to achieve the future they want.

Mission: Spending with Confidence

Value Proposition: People feel anxious about money, whether due to a big move, a new baby, or just wanting to feel secure. Budget Buddies helps you feel great about your financial decisions and helps you achieve what matters most.

Sketches

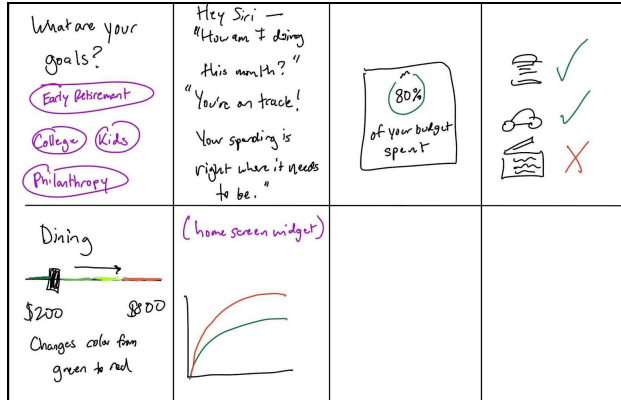Figure 1: sketches including mobile and audio interfaces

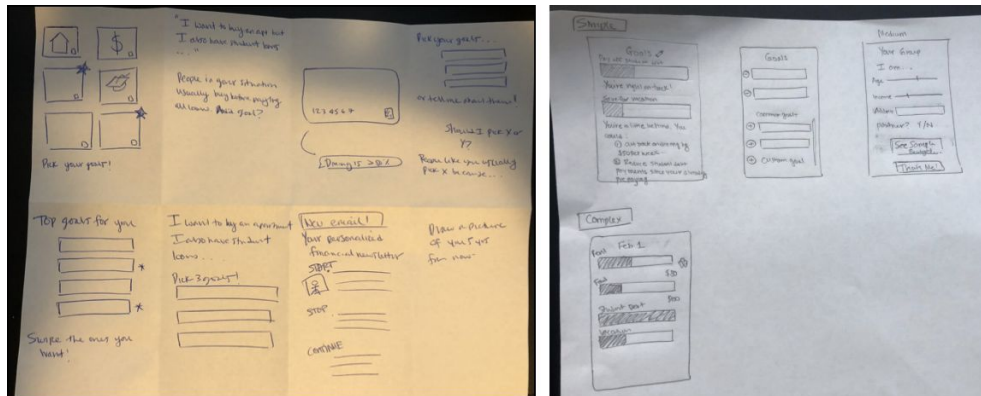Figure 2: Sketches including a variety of ways to display data

Figure 3: Sketches including test interfaces, a smart credit card, and a mobile application
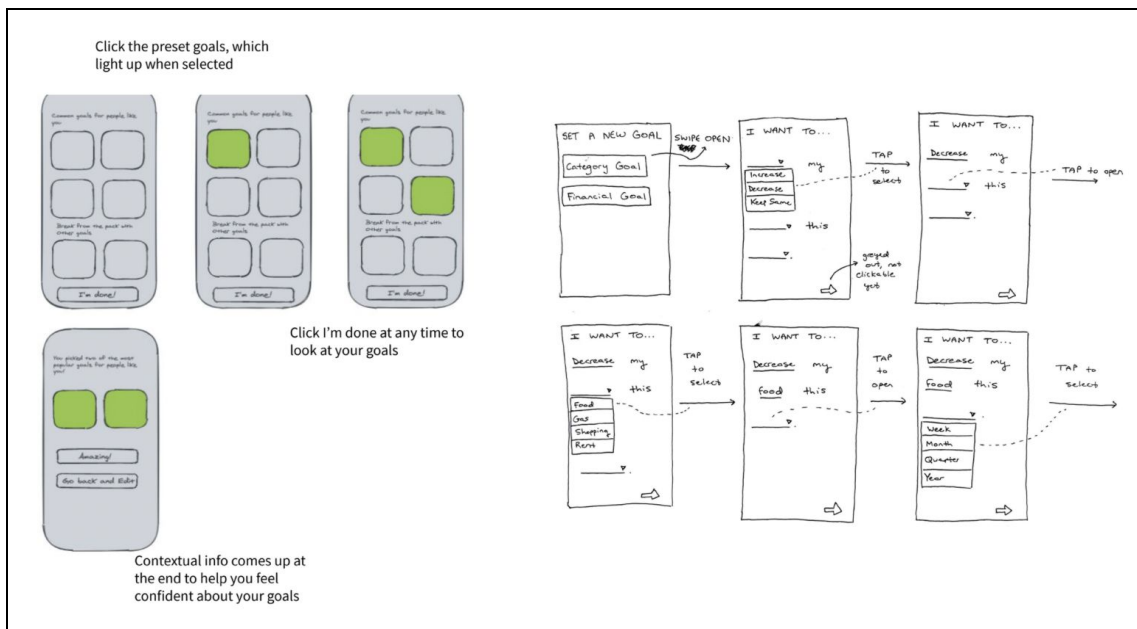
Top Design Storyboards

Figure 4: Top Two Designs Selected

We selected these because during needfinding, there was a strong pain point around understanding how different financial goals (e.g. 401k, saving for investments, debt) come together. We wanted to help our users feel less stressed about this by allowing them to center the financial plan around a number of different goals that we would automatically balance for them.

In the first interface, the user selects from a range of pre-made goals. We liked this interface because it is simple and easy, addressing the emotional undertone of anxiety that came through in needfinding. In the second interface, the user enters their goals through a mad-libs approach, which we liked because it allows for a lot of options in a relatively simple interface because of the combinatorial effect of combining different options.

Below are the pros and cons of each:

Pre-Made Goals	Mad-Libs
Pros: ● Simple and easy ● Limits the amount of information on screen ● Allows for smart recommendations Cons: ● Limited personalization of the goals ● Doesn't allow flexibility ● Many other apps look like this	Pros: ● Allows a lot of flexibility ● Unique approach, doesn't look like other apps ● Allows for fine-grained personalization ● Allows for many options with a relatively small amount of space Cons: ● More complex ● More data on screen ● Some combos may not make sense

Final Selected Interface Design

We ultimately chose the mad-libs design because we liked the flexibility it provides. In needfinding interviews, many of our interviewees used excel instead of existing applications because of the additional flexibility it provides. We therefore thought that a more flexible design would help us meet the needs of these users that isn't currently being addressed.

Additionally, other apps in market, such as Mint, use the "goals as boxes" interface already. We wanted to try something different to see if we could meet a broader range of needs that we found during our interviews.

Finally, our comparison with peers task requires very fine-graining knowledge of our users. In interviews, our users routinely brought up that they'd like to see comparisons and recommendations based on very specific attributes, such as trying to pay down student debt or saving for a house. We hope that allowing the user to set very specific goals will not only help us accomplish this but also create a sense that we "know" the user very well and create trust.
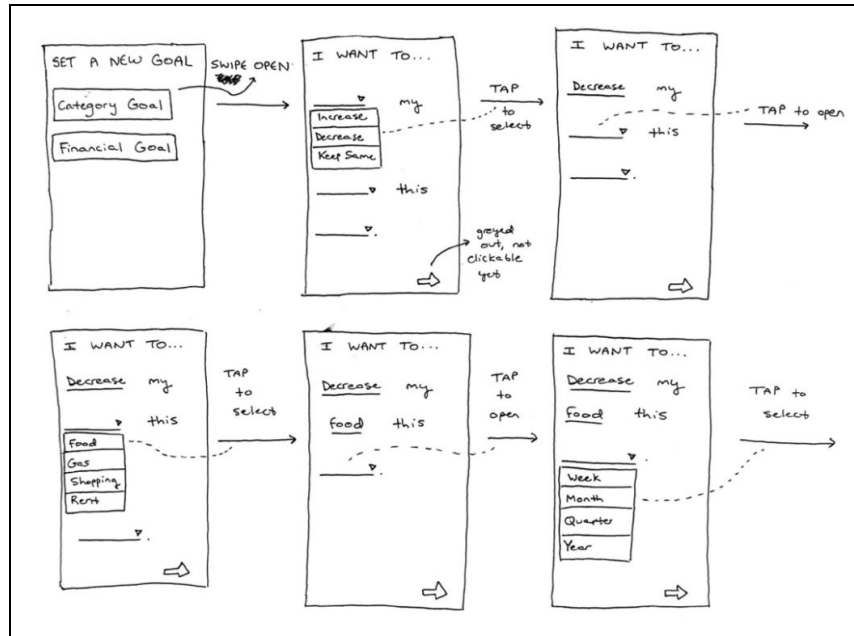

Figure 5: Top Design Selected
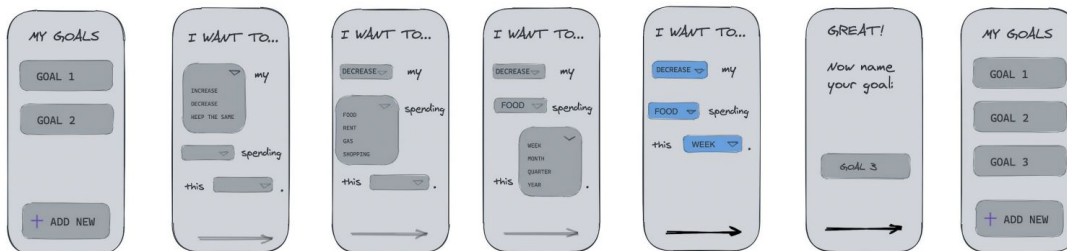
Storyboards

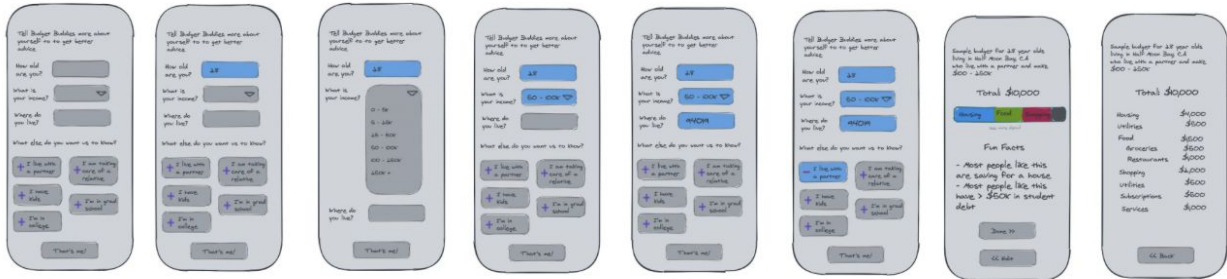Figure 6: Task (1) Set long term budgeting plan

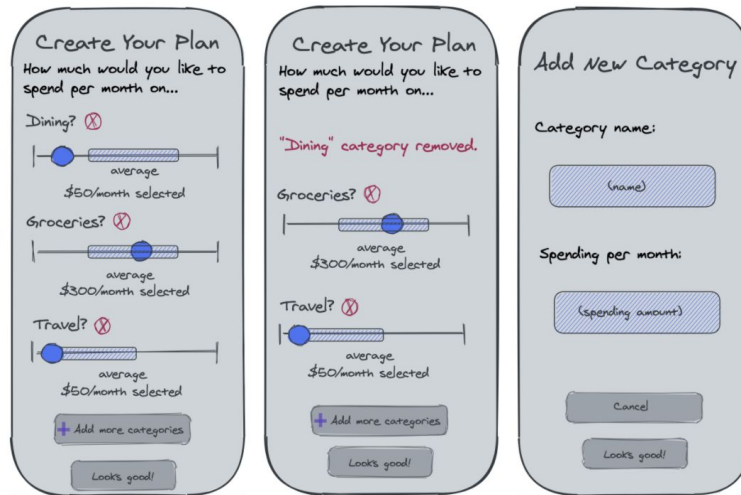Figure 7: Task (2) Compare spending with others

Figure 8: Task (3) Make a plan to achieve the future you want

Low-Fi Prototype

We used Marvel Pop to create a paper prototype, which can be found at this link. All screens
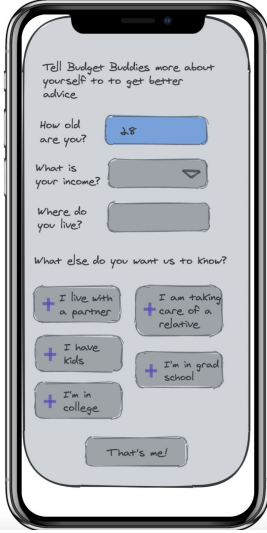
below. https://marvelapp.com/prototype/6hca27j/screen/76731325

Screen 1

Tell Budget Buddies more about yourself to to get better advice

How old are you?

What is your income?

Where do you live?

What else do you want us to know?

+ I live with a partner   I am taking care of a relative

+ I have kids   I'm in grad school

+ I'm in college

That's me!

Screen 2

Tell Budget Buddies more about yourself to to get better advice

How old are you?   28

What is your income?

Where do you live?

What else do you want us to know?

+ I live with a partner   I am taking care of a relative

+ I have kids   I'm in grad school

+ I'm in college

That's me!

Screen 3

Tell Budget Buddies more about yourself to to get better advice

How old are you?   28

What is your income?

0 - 5k
5 - 25k
25 - 50k
50 - 100k
100 - 250k
250k +

Where do you live?

That's me!

Screen 4

Tell Budget Buddies more about yourself to to get better advice

How old are you?   28

What is your income?   50 - 100k

Where do you live?

What else do you want us to know?

+ I live with a partner   I am taking care of a relative

+ I have kids   + I'm in grad school

+ I'm in college

That's me!

Screen 5

Tell Budget Buddies more about yourself to to get better advice

How old are you?   28

What is your income?   50 - 100k

Where do you live?   94019

What else do you want us to know?

+ I live with a partner   + I am taking care of a relative

+ I have kids   + I'm in grad school

+ I'm in college

That's me!

Screen 6

Tell Budget Buddies more about yourself to to get better advice

How old are you?   28

What is your income?   50 - 100k

Where do you live?   94019

What else do you want us to know?

− I live with a partner   I am taking care of a relative

+ I have kids   + I'm in grad school

+ I'm in college

That's me!

Screen 7

Sample budget for 28 year olds living in Half Moon Bay, CA who live with a partner and make $100 - 250k

Total: $10,000

Housing | Food | Shopping

see more detail

Fun Facts

- Most people like this are saving for a house
- Most people like this have > $50k in student debt

Done >>

<< Edit

Screen 8

Sample budget for 28 year olds living in Half Moon Bay, CA who live with a partner and make $100 - 250k

Total: $10,000

Housing	$4,000
Utilities	$500
Food	$1,500
Groceries	$500
Restaurants	$1,000
Shopping	$2,000
Utilities	$500
Subscriptions	$500
Services	$1,000

<< Back

MY GOALS

GOAL 1

GOAL 2

+ ADD NEW

I WANT TO...

my

INCREASE
DECREASE
KEEP THE SAME

spending

this ____ .

→

I WANT TO...

DECREASE my

spending

FOOD
RENT
GAS
SHOPPING

this ____ .

→

I WANT TO...

DECREASE my

FOOD spending

WEEK
MONTH
QUARTER
YEAR

this .

→

Figure 9: All Paper Prototype Screens

Elements	Functionality
Demographic Drop Down	Enter Age, Income, and Zip Code
Attribute Button	Add custom attributes such as having a partner or children
See More Detail Button	Expand sample budget

Back Button	Go back to un-expanded sample budget
Edit Button	Go back to edit demographic and attribute info
Done Button	Move to Goals
Add New Button	Add a new goal
Drop down mad-libs	Customize goals
Forward arrow	Finalize new goal and move to budget sliders
Budget slider	Move circle up or down to change monthly budget in a category
X to delete	Delete budget category
Add more categories Button	Add an additional budget category
Text entry new budget category	Name new budget category and add an amount
Looks Good button	Finalize budget or finalize new budget category

Figure 9: Selected Screenshots from Paper Prototype

Prototyping Testing

<u>**Method**</u>

Participants and Environment

We selected three participants of varying ages and genders. The first participant was a male in his early 30s who had just purchased a house and was thinking about children. The second participant was a female in her 60s who was thinking about buying a house as well as retiring in the next 5 years. The third participant was a male professional in his 30s. We conducted all three interviews over zoom, asking the participant to share their screen as they used the prototype but also keeping an eye on their facial expressions.

Tasks

1. Simple: Set long term budgeting plan
2. Moderate: Compare spending with others
3. Complex: Make a plan to achieve the future you want

Procedures

We began by asking our participants what was on their mind from their financial life. We then described the class and our project, giving an overview of our value proposition and mission. We then asked them to imagine that they were in their home with a free moment as they interacted with the application interface, and asked them to complete each of the three tasks. We stayed silent during the task testing. After the tasks were complete, we asked them about their likes and dislikes about the experience.

Test Measures
We looked for confusion, speed, and delight as the participants used the interface. Confusion when combined with speed helped us know which elements of our application were intuitive and which were not. Delight, through smiles and verbal exclamations, helped us know which parts of our interface brought joy to the participants.

Team Member Roles:
Facilitator: Glynnis
Computer: Gaby
Observer: Pierce

Results
- All 3 users commented on the madlibs not making sense when certain combinations were chosen
- All 3 users expressed delight at the sliders to adjust the budget
- 2 of the users expressed confusion about the low-stakes nature of the goals in the mad-libs interface
- 2 of the users expressed confusion about the connection between the goals and the budgets
- 2 of the users expressed delight at being able to see more detail in the sample budget
- 2 of the users asked for even more granularity in the same budget

Discussion
The main design issues centered around making the goals relevant and important enough. Confusion about the goals one could make created hesitation in our participants. For example, one participant verbally said they were taken aback by the fact that you could make a goal to increase food spending. Additionally, small, category specific goals were not inspiring to our users and did not address the underlying anxiety about finances. The users wanted to be able to make higher level goals around larger, longer-term spending needs such as paying down debt. While this "meta-feedback" overshadowed some of the design specific feedback, we were able to ascertain that the madlibs interface style was intuitive, based on the speed that the participants filled out the goals.

All of the users were interested in the sample budget, with 2 clicking to it specifically. The third participant did not see the "see more details" button because it was too small, but expressed interest in the functionality after the interview. As a result, we feel that the sample

budget needs to be more granular and relevant off the bad, rather than needing to click to see a more detailed view.

Finally, all users enjoyed using the budget slider. However, it was unclear whether the shading that indicated the peer group comparison was intuitive. This is something that we will need to test further as we continue to refine the application.

Appendix

We rated the severity of incidents between 0 (no problem, great success), 1 (cosmetic problem, suggestion), 2 (minor usability problem), 3 (major usability problem), and 4 (usability catastrophe).

Critical Incidents: Participant 1

Couldn't enter his correct age	0 ("Feature" of the paper prototype)
Accidentally deleted a budget category	3
Tried to click to see more detail in sample budget	3
"Meh" reaction to fun facts	2
Took a long time to read and process text in sample budget	2

Critical Incidents: Participant 2

Tried to click on existing goals to see them in more detail	2
Accidentally deleted a budget category	3
Tried to click to see more detail in sample budget	3
Tried to click on grayed out arrows when entering goal	3

Critical Incidents: Participant 3

Did not see "more details" in sample budget and then asked about it later	2

Didn't know what to do once new goal was created	3
Wanted to see peer average when making a new budget category	4
Tried to click on grayed out arrows when entering goal	3
Got caught in a "loop" of cancel/looks good when adding a new budget category	4
Trouble reading font	0 ("Feature" of the paper prototype)

Consent Form Given to Participants