CS147 | Travel

Assignment 5

Low-Fi Prototyping & Pilot Usability Testing

planit

travel with a ***game*** plan.

People aren't confident in their plans without the input and approval of family and friends, who are generally unmotivated to respond. We aim to gamify the planning process with family and friends, allowing it to be easier, more efficient, and more enjoyable for all.

Caroline G

Catherine J

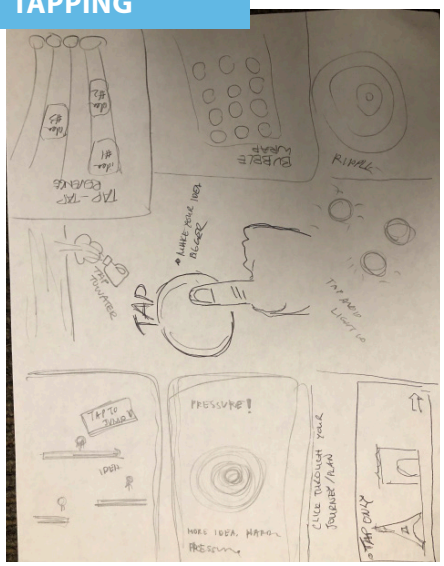
Lisa L

Johnson S

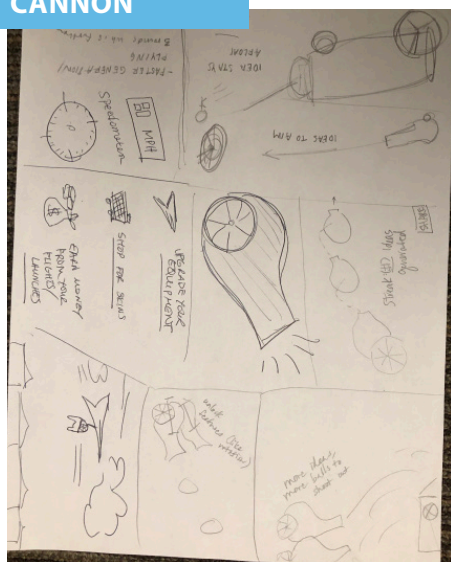
Sketches

Figure 1. Overview image of our sketches, ranging across 5 different themes (tapping, cannon, balloons, cards/Tinder, fruit ninja):

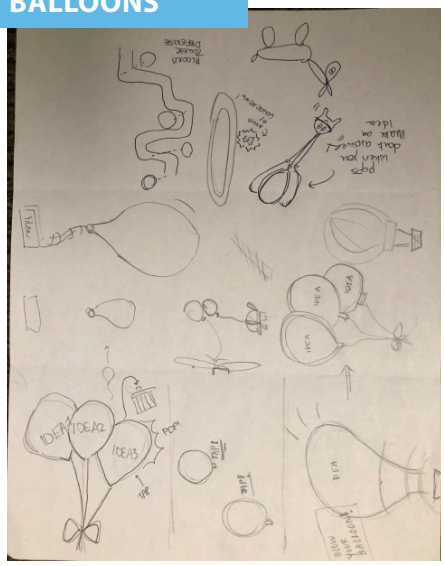
TAPPING



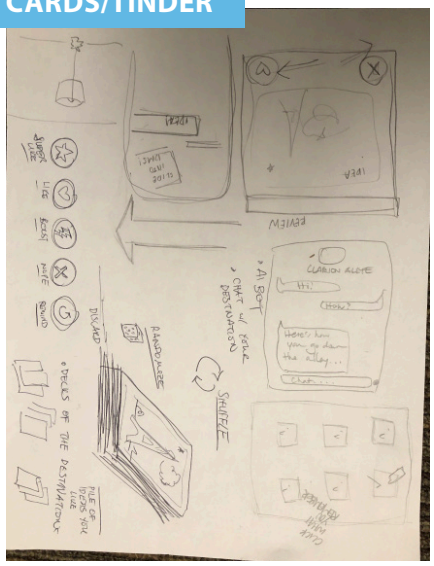
CANNON



BALLOONS



CARDS/TINDER



FRUIT NINJA

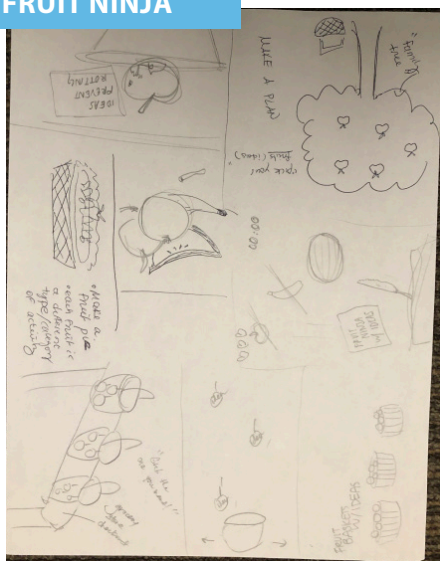
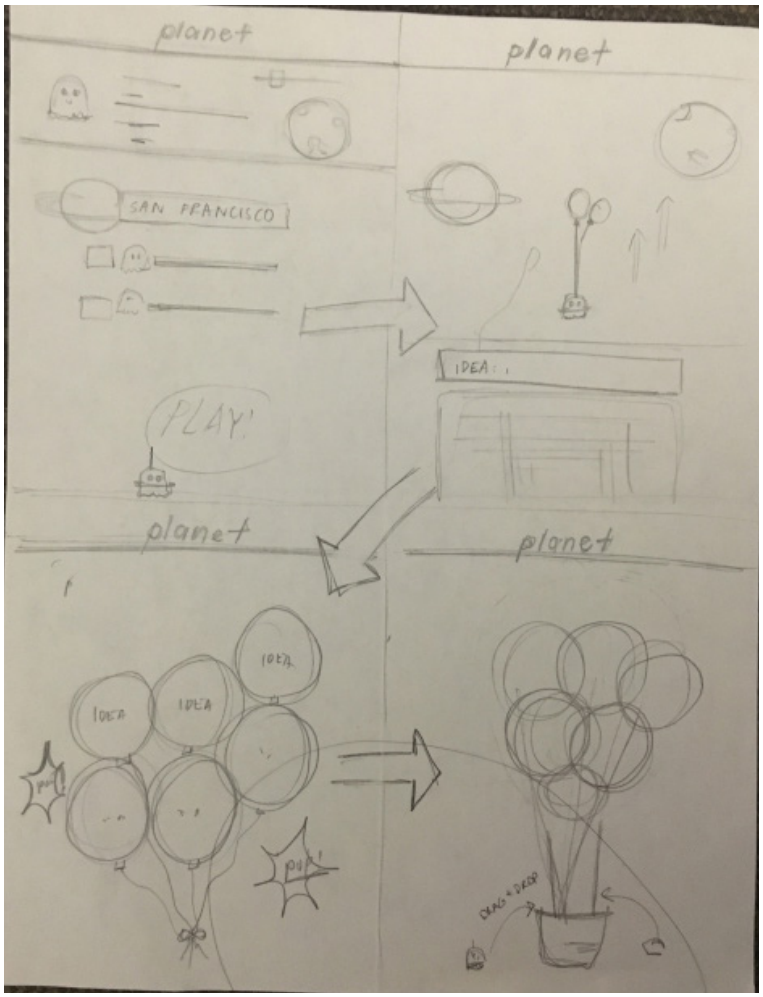
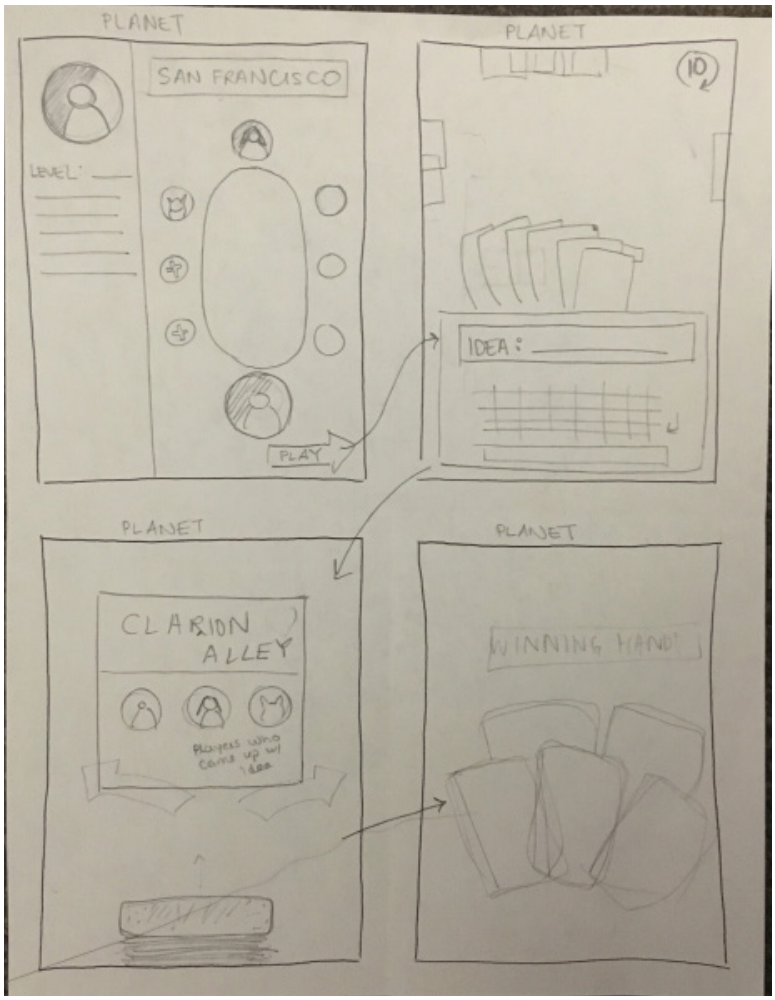


Figure 2. Top two designs storyboarded in more detail (Balloons Theme Game and Cards Theme Game)





Selected Interface Design

Up Up and Away - "Balloon" Interface

+

Effective way to bring in friends through synchronization with address book

Simple to verify final plans with friends through "share" feature

Consistent balloon theme reflects the idea of travel throughout the experience

-

Keyboard input method takes up half of the screen and has accessibility issues

Requires live, real-time interaction for gameplay

Shuffle Me Off My Feet - "Cards" Interface

+

Texas Hold'em and Tinder environments are familiar to user

Gestural interaction makes it simple to decide "yes" or "no" for an idea

Countdown timer creates sense of competition and urgency

-

No interactive way of determining group agreement of selected travel plans

Keyboard input introduces accessibility issues and takes up a large part of view

We chose the "balloon" interface because it allows users to:

Collect balloon bouquets after each ideation/gameplay session, contributing to future and past investment in the app

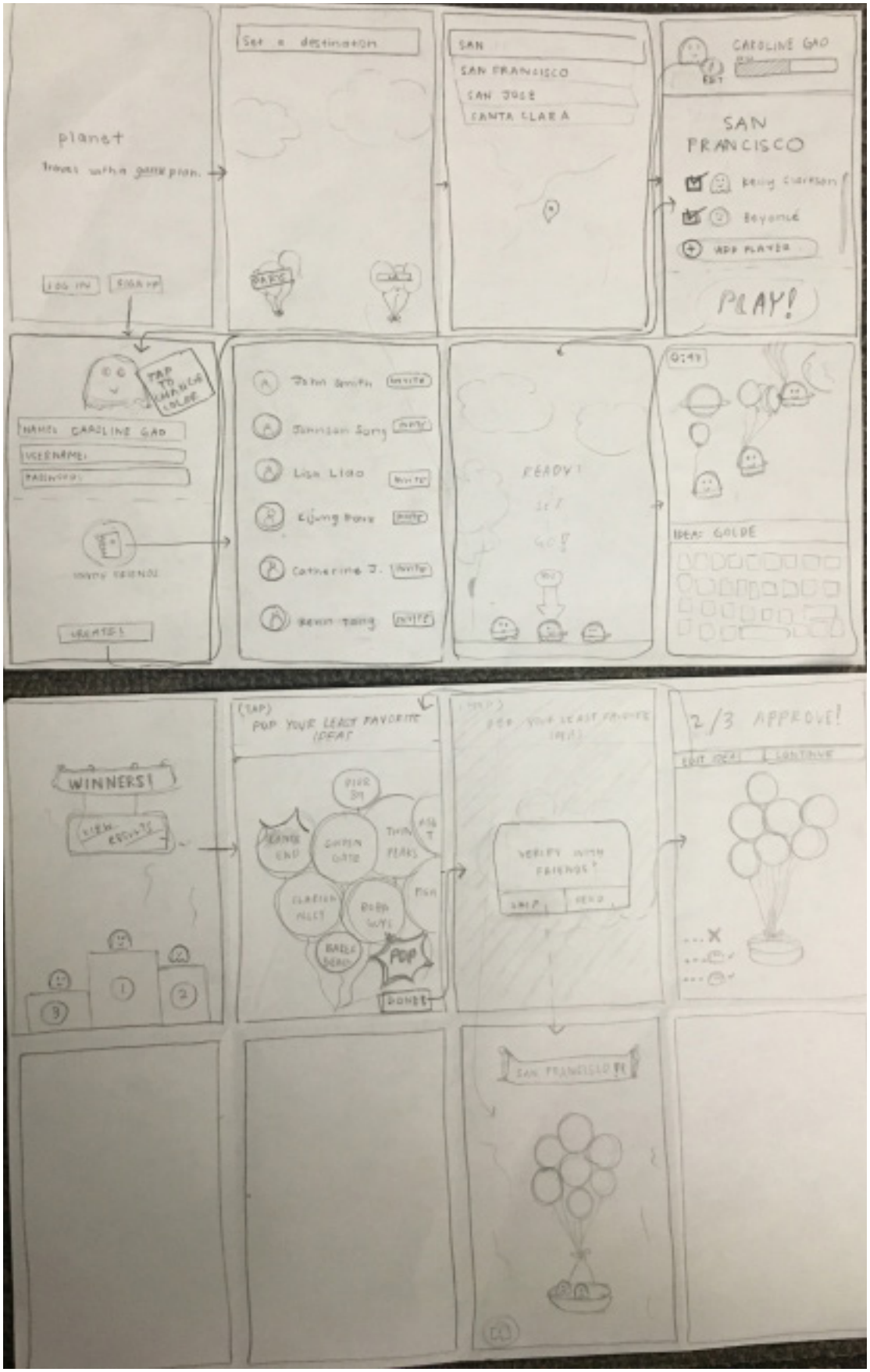
Embark on a metaphorical "journey" through the gameplay as they lift higher into the atmosphere, exciting them for their eventual literal journey

Have more autonomy and engagement in eliminating undesired ideas by "popping" them

Better understand the experience and integrate it with the concept of exploration

End with a more explicit family and/or friend agreement because they must be "on board" in order for bouquet to lift off

Figure 3. Storyboard for our three tasks.



Prototype

Description:

1. Begin by logging in or signing up

2. First-time users arrive at the account creation screen.
   They customize username, password, and avatar.
   They are asked to synch with contacts, bringing pop-up modal asking for permission.

3. Users arrive at dashboard screen to plan for a new destination through text input, or tap to view previous planning session results.

4. On submission of new destination text, map pops up to verify desired destination. On click, user is brought to game lobby screen.

5. User's avatar and stats are shown in top module. Bottom portion allows user to add friends to the brainstorming session.

6. On "add friends to game" click, user arrives at friend selection screen.

7. After desired friends or players are confirmed, click "PLAY" to begin game.

8. All players show on screen with user in center. Players are given two minutes to race to the finish by generating as many ideas as they can through a text input. Each idea allows them to propel upwards with additions of balloons to the avatar that lift the avatar higher. They see, in real time, other players' progress.

9. When time is up, results are loaded where top 3 players appear on a podium. User moves to idea review page.

10. All generated ideas are displayed in their individual balloons, and user has option to tap to pop the least favorite ideas. User clicks "done" button to arrive at final screen.

11. Final screen allows dropdown of final plans, and option to share with friends or return to dashboard, with results of brainstorming session now in the system.

Figure 4. Entire system of prototype: Context 1 on top, Context 2 on bottom (see Method for more info)

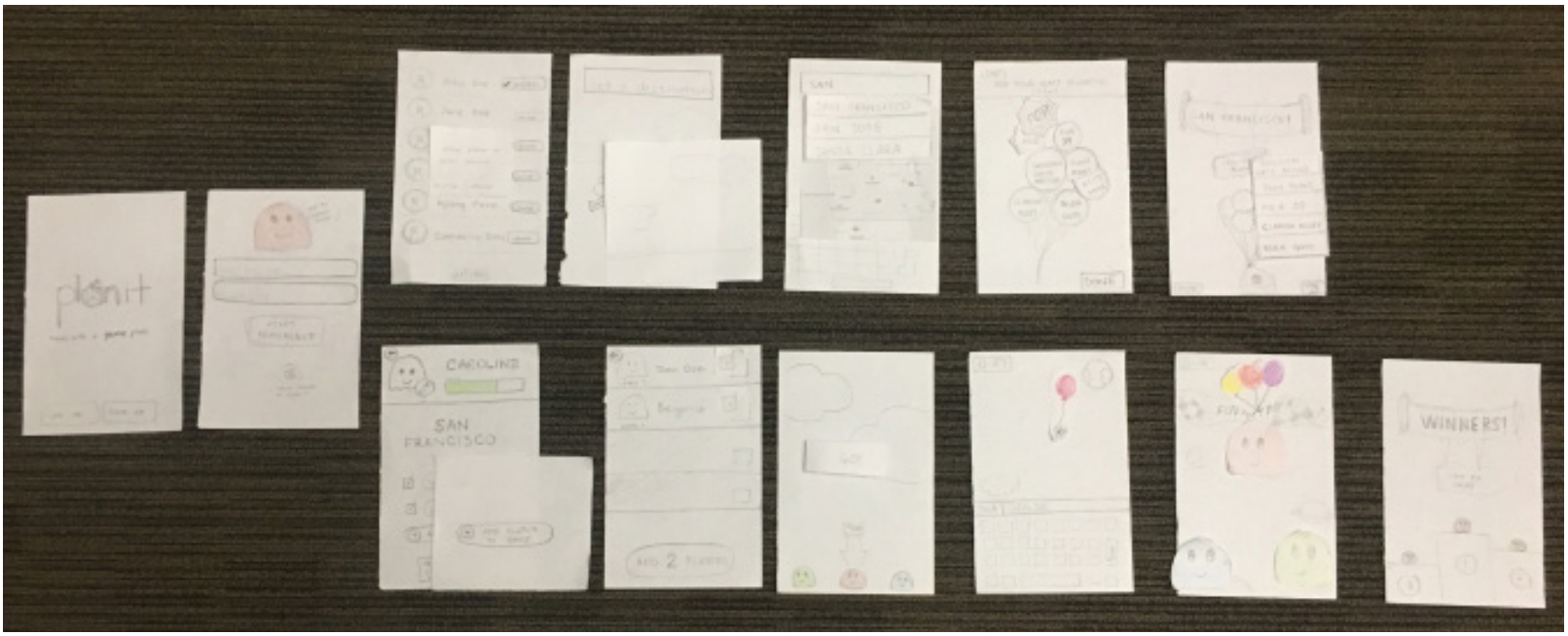


Figure 5. Sign up/login pages are the same for both contexts.

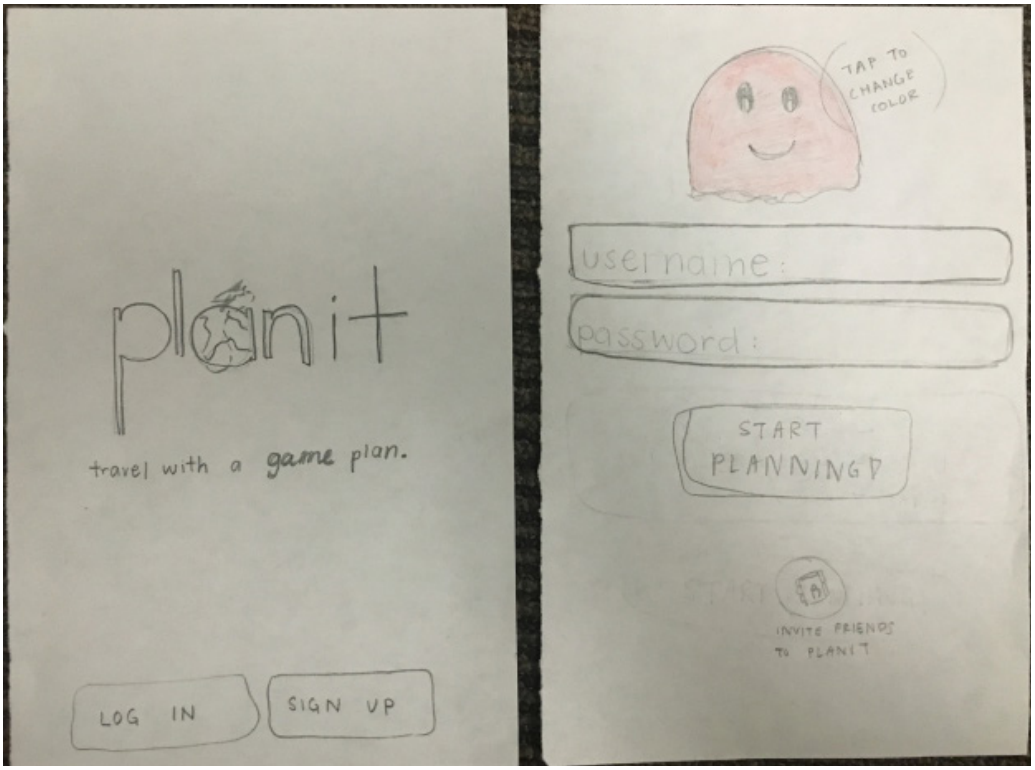


Figure 6. Context 1 (see Method for more info)

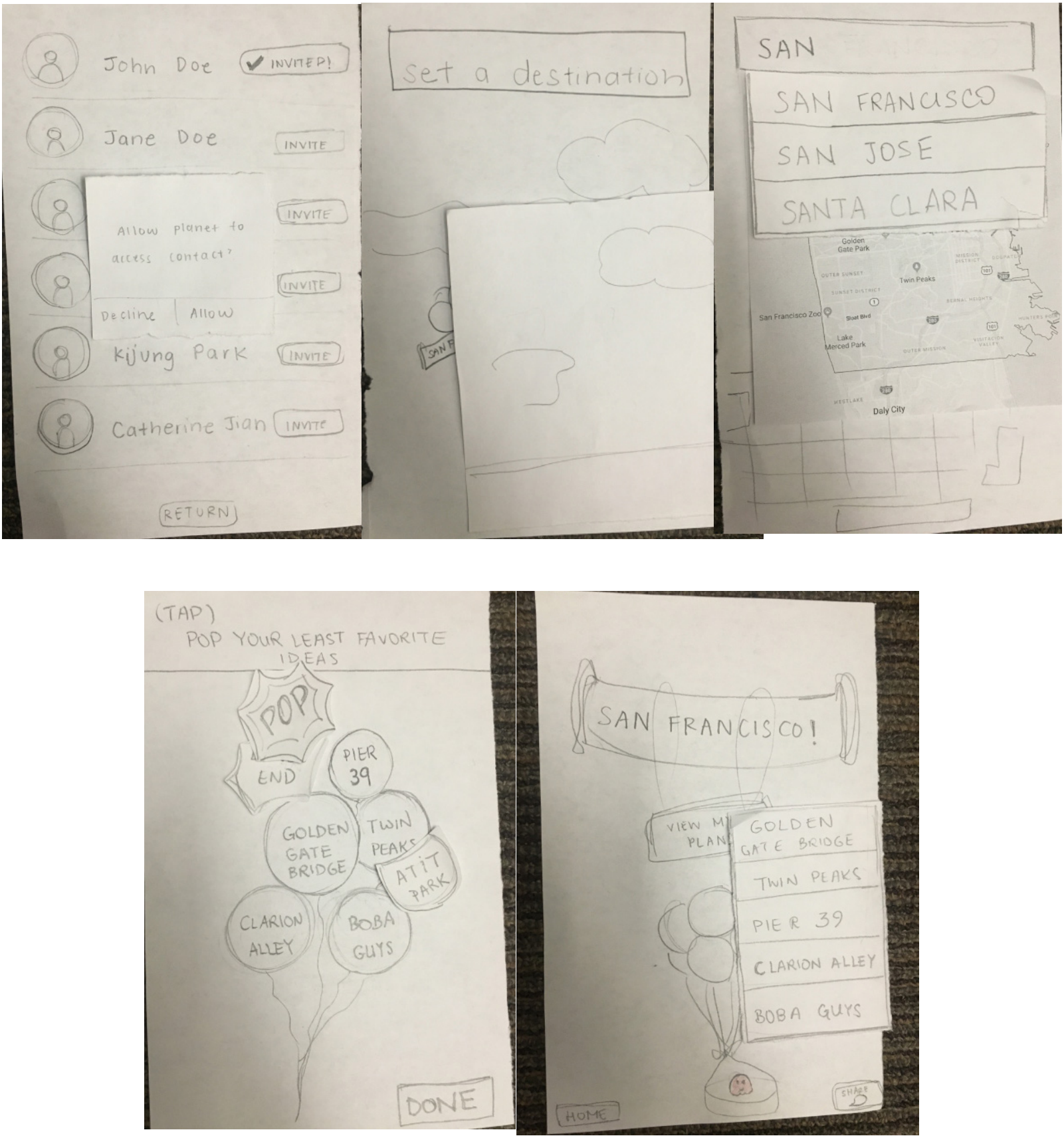
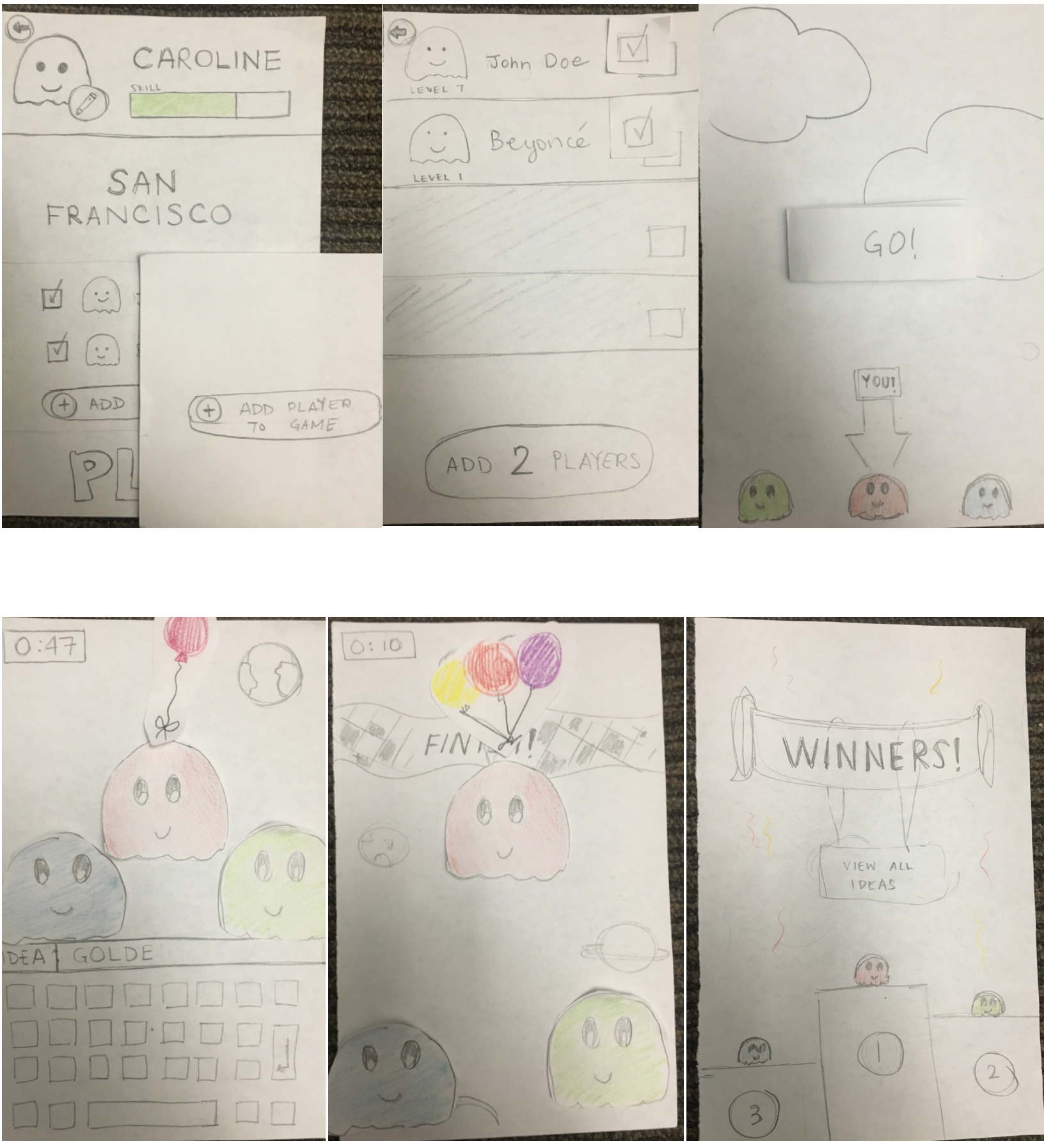


Figure 7. Context 2 (see Method for more info)



Method

a. Participants

Our subjects had international backgrounds (i.e. are not from the United States). We recruited international subjects because they traveled to the United States to be on Stanford campus, and we are interested in how people people plan their travels. Our subjects were recruited in the Stanford bookstore. No compensation was provided.

b. Environment

The experiments were conducted in the Stanford bookstore. Slides from our prototype were presented individually to each subject and slides were changed when the prototype was interacted with.

c. Tasks

Tasks for context 1 (see procedure for context descriptions):

1. Invite friends to play the game
2. Choose the best ideas for a trip plan
3. Share trip plan with friends

Tasks for context 2 (see procedure for context descriptions):

4. Help your friend generate ideas for a trip

d. Procedure

1. We gave each subject two contexts in which they were to use the app.

   Context 1:

   One context was using the app from the perspective of someone who is stuck with no ideas of activities to do and wants help coming up with ideas.

   Context 2:

   The other context was using the app from the perspective of someone who has been asked to provide ideas by a friend.

2. We gave our subjects specific exercises to complete using the prototype that corresponded with the tasks we had for our project. We recorded their responses (parts of the prototype that were clear, parts of the prototype that were confusing, and the time it took to complete each task) while they completed each exercise.

3. We asked for final feedback they had on parts of the prototype that they liked or were confused about.

e. Test Measures

1. Successes: the number of tasks our subjects successfully completed
2. Errors: the number of tasks executed in error before the correct interaction was carried out, including incorrect navigation attempts
3. Timing: The time it took for subjects to complete each task, including time spent to understand the intended interactions and clarify points of confusion

f. Team Member Roles

Computer: Catherine J.
Recorder/Observer: Lisa L.
Facilitators: Johnson S., Caroline G.

Results

For **task 1**, invite friends to play the game, all subjects were able to quickly and easily complete the task. Participant #2 gave the suggestion of adding a "add all friends" button instead of just functionality to add participants individually.

For **task 2**, choose the best ideas for a trip plan, all subjects were able to quickly and easily complete the task. This task was the most straightforward of all the tasks for the subjects to complete. The only time-concerning aspect of this task was related to taking time to pick the best ideas for the trip plan.

For **task 3**, share trip plan with friends, all subjects were able to quickly and easily complete the task. The only minor confusion with this task was with Participant #2, who was wandering through which platform the ideas would be shared through.

For **task 4**, help your friend generate ideas for a trip, all subjects were able to complete the task. Subjects were generally confused on the instructions page because the instructions were too long to read. Subjects were also generally confused about the purpose of the map shown after destination selection. During the game, some suggestions were given to Participant #2, who was unsure about what type of ideas to input (i.e. location or activities).

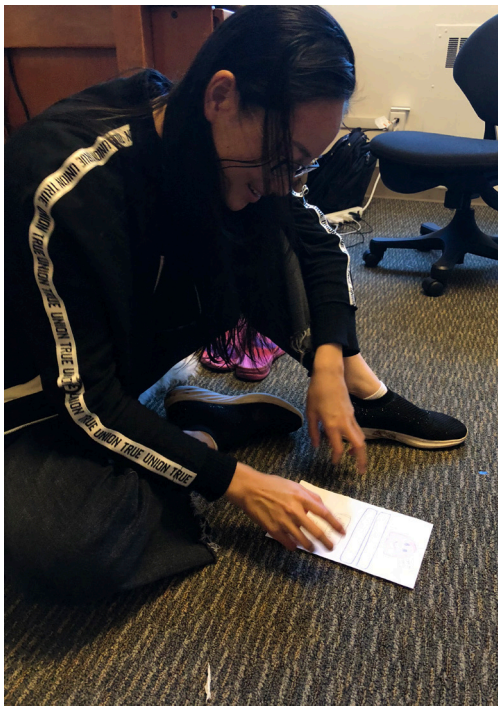


Figure 8.

Participant #1 **Participant #2** **Participant #3**

Discussion

Overall, we found that though participants were pleased and excited by the balloon game to help plan their travels, they also encountered certain points of confusing regarding the usage of the prototype and interface.

We found that before the gameplay/ideation, users had mixed feelings about whether or not to invite friends to an app that they themselves did not fully understand. Some skipped this step entirely while another noted that it would be neat to be able to play with strangers. When selecting the destination that they were planning for, some participants exhibited confusion with the map feature. To some, the map was contradictory to the whole point of the game and they wondered if the map itself could give ideas of places to go.

The actual gameplay also had somewhat of a learning curve to it. Participants were unsure about what the avatars were doing, the relationships between their avatar and the "competing" ones (were they friends? were they strangers?), and the role of the friend in the game. After idea-generation, participants were able to independently figure out the interface, and they enjoyed the option to share the results of the "game" with their friends and family. However, participants did note some aspects they would like in this stage such as a call-to-action with the results, or a way to discuss the results with friends.

Our experiment did not allow us to test the implementation of the "invite" feature and its integration with existing technologies. We were also unable to test (directly) the interaction between a person planning with friends and his/her friends playing the game. Lastly, we could not examine a single user's assumption of two roles in separate contexts (i.e. as the primary planner vs. as the friend helping).

Our biggest takeaways are that a simple interface is often more effective at guiding the user along than having features that were expected to contribute to the experience but ended up detracting from it or confusing the user. We also learned a lot about what features would be helpful in the future, and our lo-fi prototype testing resulted in insight that was logical and relevant for our future development. It made us realize overlooked factors such as displaying details of the final plan and giving more information to the travelers about the destinations they had picked for each other (including photos and descriptions).

Appendix

Severity Rating Scale:
0 = no problem
1 = cosmetic problem
2 = minor usability problem
3 = major usability problem
4 = usability catastrophe

Participant #1

Incident	Severity
Directly clicked “start planning” instead of “invite friends” because doesn’t want to risk inviting friends w/o knowing about app first time around	2
Confused with San Francisco map: tried to zoom, asked if map could give you ideas of places to go	3
Confused at instructions step: too many words so didn’t read through	4
On view plans page, tapped idea and wanted to know what activities could be done within the idea	2

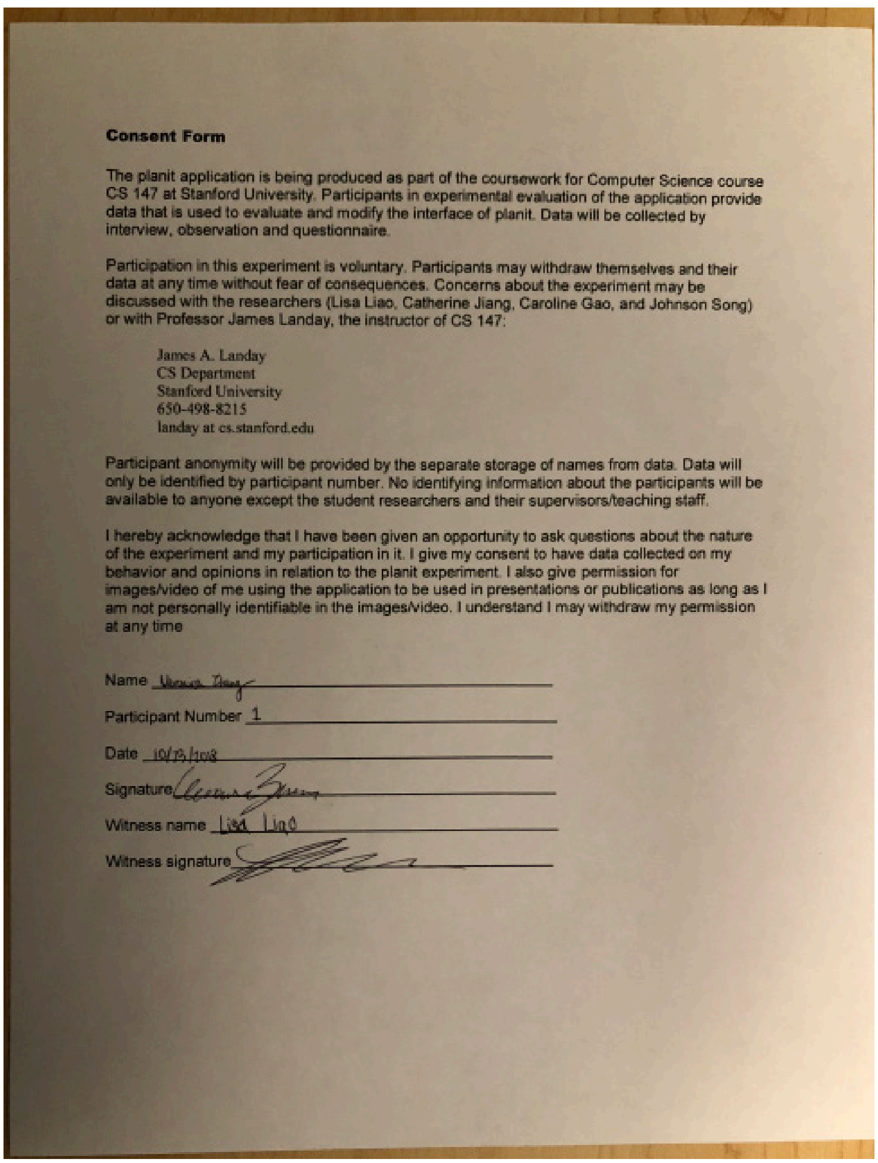
Participant #2

Incident	Severity
Would be nice to have an “invite all” button instead of inviting friends individually	2
Would be nice to tap each idea to show what/how far it is/other activities to do when there	2

Participant #3

Incident	Severity
Would be nice to be able to invite strangers to join the game	2
Would be nice to be able to plan trips in other countries (not only in US)	2
Would be nice to be able to see photos of what a generated idea	2

Figure 9. Consent Forms



Consent Form

The planit application is being produced as part of the coursework for Computer Science course CS 147 at Stanford University. Participants in experimental evaluation of the application provide data that is used to evaluate and modify the interface of planit. Data will be collected by interview, observation and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear of consequences. Concerns about the experiment may be discussed with the researchers (Lisa Liao, Catherine Jiang, Caroline Gao, and Johnson Song) or with Professor James Landay, the instructor of CS 147:

James A. Landay
CS Department
Stanford University
650-498-8215
landay at cs.stanford.edu

Participant anonymity will be provided by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the student researchers and their supervisors/teaching staff.

I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the experiment and my participation in it. I give my consent to have data collected on my behavior and opinions in relation to the planit experiment. I also give permission for images/video of me using the application to be used in presentations or publications as long as I am not personally identifiable in the images/video. I understand I may withdraw my permission at any time

Name [illegible]

Participant Number 1

Date 10/15/2018

Signature [illegible]

Witness name Lisa Liao

Witness signature [illegible]

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Name Julian V.

Participant Number 2

Date 10-23-18

Signature

Witness name Johnson Song

Witness signature

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Name Tatiana G.

Participant Number 3

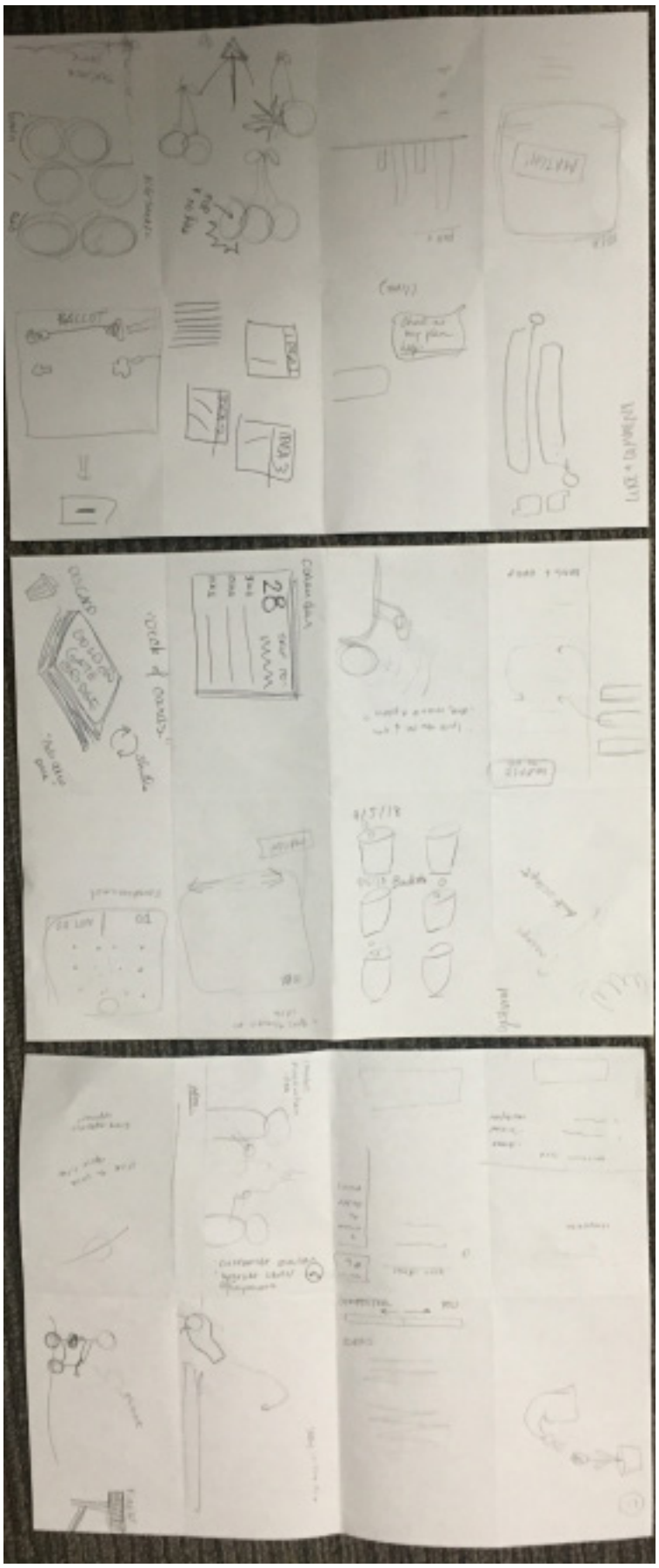
Date 10-24-18

Signature

Witness name Caroline Gao

Witness signature

Figure 10. Other Brainstorming Pictures



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