

FINAL FEEDBACK AND PROTOTYPE

This week, we created a final iteration of our chosen prototype based on our user testing from last week, studio feedback, and analysis of needs and interpretations. Our P3.3 milestone here addresses the process we undertook to reach our final prototype, including a full visual documentation. Full a more detailed dive into the iteration, testing, and analysis of how we created the final prototype, we have also included our updated documentation for P3.1 and P3.2 after our summary of our final design.

Addressing the needs

We started this project with the initial prompt of creating a technology that a family could use in deciding how to focus on and donate to different causes. Because there may be an imbalance of power within a family with people of varying ages and responsibilities, we wanted to create a way to give everyone a fair amount of “say” in the final determination of the charitable giving plan.

Along the way, as we iterated on our prototypes and conducted user tests, we found that a key need was to create a way to fairly allocate decision-making power through the metric of passion. Here are some other needs that we discovered and amended through our testing:

- Find a way to help everyone have a say in the decision
- Have trust for the cause or project they donate to
- To feel control over where the money will be allocated if it’s one’s own money
- Educate other members about the causes they are not familiar with

Our final prototype, a point-based game, has evolved from the first stages of Project 3 to focus on the key idea of passion as a metric for decision-making, as well as to address the needs listed above. Each family member is initially given the chance to identify a cause they want as their “primary cause”—something that they, as well as their family members, will be able to learn more about through the game. The game

uses points as a way of measuring the amount of effort put in by each family member through activities such as doing research or completing tasks related to each of the chosen causes (such as volunteering, taking shorter showers, and eating no meat). These tasks—about all the selected causes—are introduced through informational videos about each cause, and a person can choose to accept or skip a task. Once a task is completed, a predetermined amount of points will be attributed to the person finishing the task (and other family members will be notified and can track the progress of each person).

The goal is to see how effort translated into passion can be used to divide decision-making power and fairly allocate “say” in the charitable giving plan. Through the various videos and activities, each family member will be able to learn more about each of the causes, and create a personal connection to the causes that they are getting involved with. Finally, there is a fair amount of control being given to each person, although it is introduced in a game format—participants can choose to put in as much or as little effort as possible, and if they feel uncomfortable with a task, they can choose to move on to a different activity. There is a lot more that we hope to improve upon and explore more thoroughly in this model—but based on our studio critique and feedback from users and families we tested with, we believe that we are heading in a promising direction to create an equitable, engaging way of helping families decide on donation allocation together.

Our approach

Our general strategy for this project was to prototype, gather feedback from testers (primarily local families), analyze the feedback we received, and then perform further prototyping and testing until we arrived at our current project. Though we began with a smorgasbord of ideas ranging from VR to video chatting, we went through several iterations of user testing before finally settling on the idea of gamification.

Passion was the driving force behind our design. To elucidate, we believe that passion is an effective metric for how to allocate donation funds. Indeed, this belief was verified by the various subjects we tested, which included a family of three (two parents and a child in high school) and a set of parents.



User-testing with parents

The idea of passion can manifest in various ways, ranging from knowledge to willingness to expend effort. Given this, we experimented with various ways of evaluating user passion. Firstly, we decided to represent passion using a points-based system—gamifying the decision-making process. Our user-testing revealed that a points-based system seems fair and can often gauge a person's commitment to a cause. Then, we thought about how we could use points to represent different forms of passion.

Another issue we wanted to address is the imbalance of power in the archetypal American family. We felt that games were an effective way to disrupt the power dynamic because both parents and children have equal opportunities to accumulate points. Games are also an effective way of stimulating discussion between players, as we also observed from our user-testing.

Our prototypes in P3.2 were largely focused towards testing various types of games and how they addressed fair distribution of points. Then, in P3.3, based on the feedback we received during studio, we were able to flare on the game idea we felt was most compelling (which we describe in depth later in the report).

Ultimately, we wanted our application to create an emotional journey for the family of four. We wanted to be able to put ourselves in the shoes of a family using this app to make a charity decision, and thus we wanted to engineer an experience that is as engaging as it is practical.

Accounting for feedback

Based on our user feedback and re-evaluation of our needs from P3.2, we incorporated the following aspects into our final design:

Feedback point: Based on our user testing, we found that gaining points in the system was not always enough motivation to get people to do research.

Iteration: As suggested by our studio TA, we hypothesized that other than doing research and volunteering, people would be more willing to do **small, positive daily life activities** relevant to a particular cause. For example, if someone's cause is environmentalism, some possible tasks could be take public transportation to work or take a sub-5 minute shower. As a quick test of this idea, we brainstormed 3-5 activities around a variety of topics (full list included with our final prototype) and surveyed several students. We proposed the same scenario as in our P3.2 prototype where we describe the game and then ask if they would be willing to do research/watch an educational video on another cause. Although people weren't interested in doing research on causes they weren't personally passionate about, we found that they were more willing to do one of the small activities and that they enjoyed their more dynamic, engaging nature.

Feedback point: In our prototype for our Jeopardy idea from last week, we tested whether or not people knew about the causes they chose and found that people knew a lot of local ways to get involved (but didn't necessarily know about the larger scope of the issue or specific charities). Even though we didn't end up pursuing this idea, wanted to incorporate this community-specific knowledge into our final prototype.

Iteration: After someone chooses their cause, in addition to the activities we propose, people also have the option of adding their own **custom activities**. Since this is not a core feature of our application, we felt that in the limited time scale of this assignment, this was a lower priority to test with users but some key questions we would test include whether people would be able to come up with these custom activities and whether other family members would be interest in doing these community-specific tasks.

Feedback point: Fairness was something that user testers particularly valued when it came to the final decision. For example, when we described our Jeopardy idea with users, they felt that there wasn't a strong correlation between the amount of facts/trivia they could answer about various causes and how passionate they were, and thus said that they probably wouldn't use this system because they felt it wasn't fair. On the other hand, our point-based game was praised for allocating funds in a manner that seemed fair to people because they felt that effort is a better marker for who should have more say in the decision making process.

Iteration: In P3.2, we came up with various ways of points allocation (e.g. a collaborative game, a Jeopardy-esque trivia game, etc.). We decided to move forward by focusing on the idea of **points corresponding to effort**, making that the core of the decision-making process. By giving people more points (and thus more say) for doing short activities, educating themselves about causes, and volunteering, we allow extended engagement and commitment to correspond with having more decision making power in the system.

Feedback point: People had a need to trust the causes that they as a family are donating to. For example, when we were testing our Escape the Room prototype, the users we tested with said that they wouldn't be comfortable committing to a decision they made under time pressure because they felt unsure that their donation was going to a good cause.

Iteration: We want to encourage people to learn about not just their own cause, but also the causes that their family members were interested in so that they could feel more ownership over their family's collective donations. Other than the ideas already mentioned, we brainstormed several other ways to incentivize this, continuing to build on the gamification concept. One idea we had was to give a **point bonus** for completing tasks for other family members' causes.

Updates to our final prototype

We received studio feedback that including more activities (other than just researching and volunteering) would make our point-based system more engaging and accessible, so we brainstormed some other fun ways of getting involved with different causes. These activities can be easily integrated into family's everyday life, and can also correspond to point allocation. Here are some of the considerations we had in mind:

- More difficult activities (for instance, more time-consuming tasks or tasks that are not as easily accessible) should correspond to more points

- Short informational videos about each cause can provide some context around the activity being introduced
- People have a lot of knowledge about ways they can contribute to a cause in their local communities—maybe we can allow families to propose custom tasks
- Posting pictures of completed tasks (as well as notifying family members when completing a task) can inspire motivation in others, and create a more complete picture of the donation process in the game
- If an activity is not for your selected cause (and is related to cause from another family member), you may get a point boost

In addition to tasks like doing research about a cause, here are some examples we came up with of fun tasks we can do every day:

Environment

- Take a <5 minute shower
- Buy locally sourced groceries/produce
- Post about __ environmental issue on Facebook
- Take public transportation/bikes/environmental-friendly way of transportation for a day
- Use a reusable water bottle for a week

Education

- Tutor an underclassman
- Donate used books (ex. to the library)
- Read a book to a kid at the library

Arts

- Attend a local figure drawing meetup
- Help out with a community arts project (mural, etc.)
- Visit a local art gallery or craft fair/support local artists

Health

- Organize a local sports meetup
- Bring a toy to a local children's hospital

Animal rights

- Adopt a pet (collaborative)
- Share an animal rights post on Facebook
- Go meatless for a day

Miscellaneous

- Support __ organization on Facebook/Twitter
- Buy a homeless person lunch
- Call someone at the local retirement home
- Contact your congressperson about a cause
- Read a book about __ cause

Drafting our interface

For our initial interface design, we wanted to draw attention to the core features of our game: performing tasks, sharing them with family, and visualizing the amount of points collected per family member.

The focal point of the home screen is a large button that prompts the user to view the most recent task being assigned to them. From there, they can view a video clip describing the task, read a description of the task, and choose to either accept or reject the task. Below the button, a feed of recent tasks completed by family members (along with their current point values) is displayed. These two components make it easy for users to tackle their next task and to be incentivized to perform another task (after seeing the tasks that other family members have completed).

After completing a task, the user is prompted to upload a picture representing the completion of their task. This serves as visual proof that a task has been completed, and makes the social aspect of the app more compelling (since so much of social media now is photo-based, and humans are wired to respond to visual cues).

From the hamburger menu on the home screen, the user can access a list of their previously completed tasks as well as a visual representation of each family member's accumulated points.

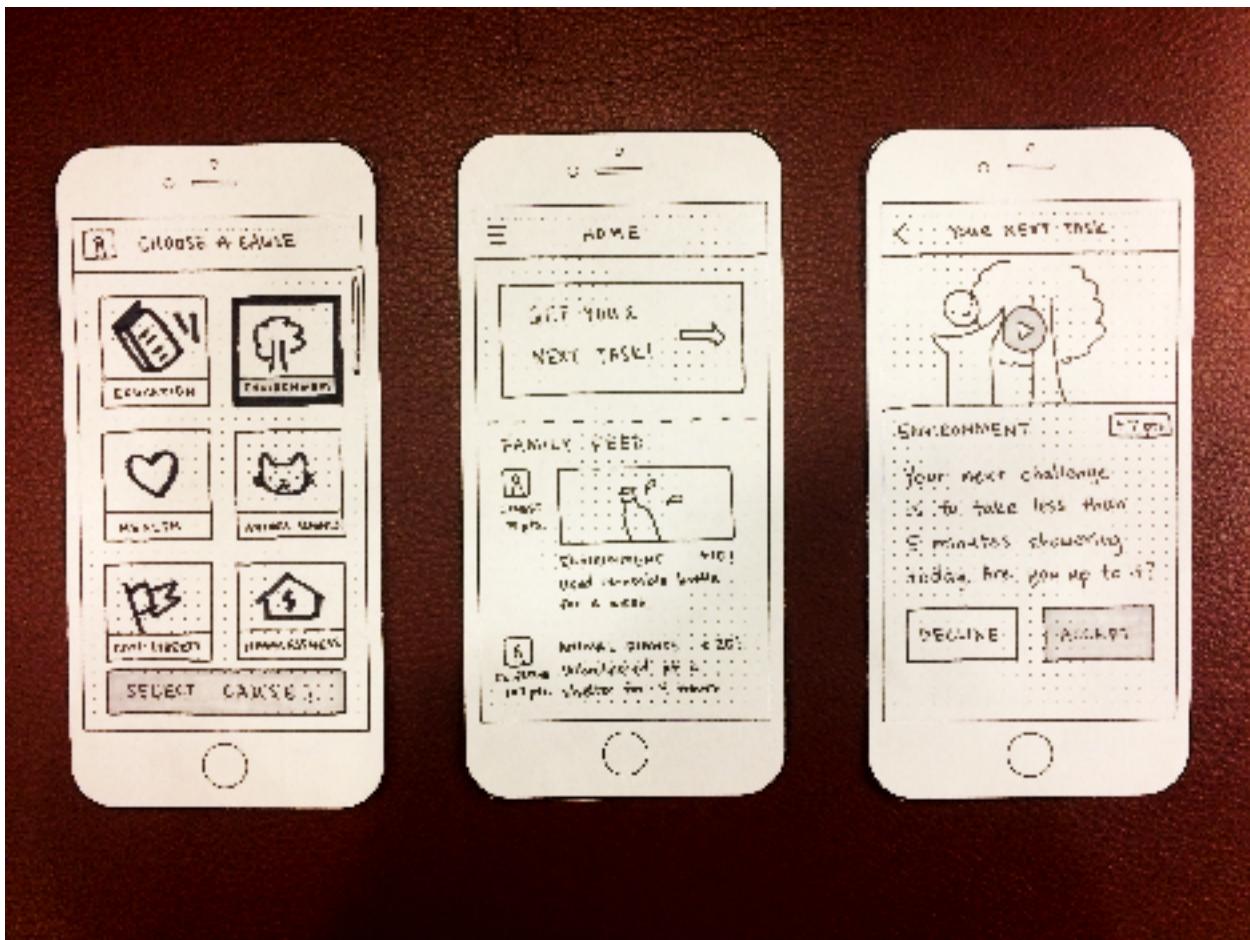
After the number of days allocated has passed (set by the family at the outset of the game), the app prompts the family to distribute their funds to their selected charities, with the amounts proportional to the number of points each family member has earned.

Photos and documentation

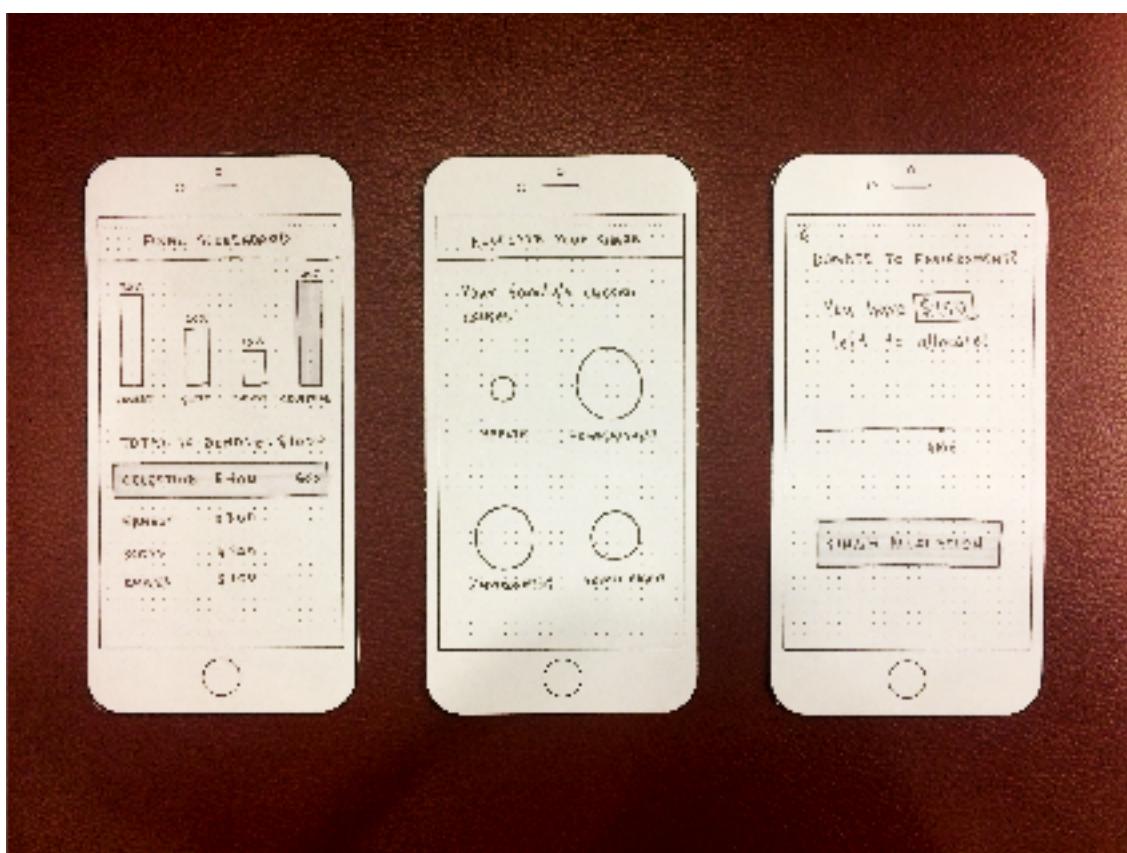
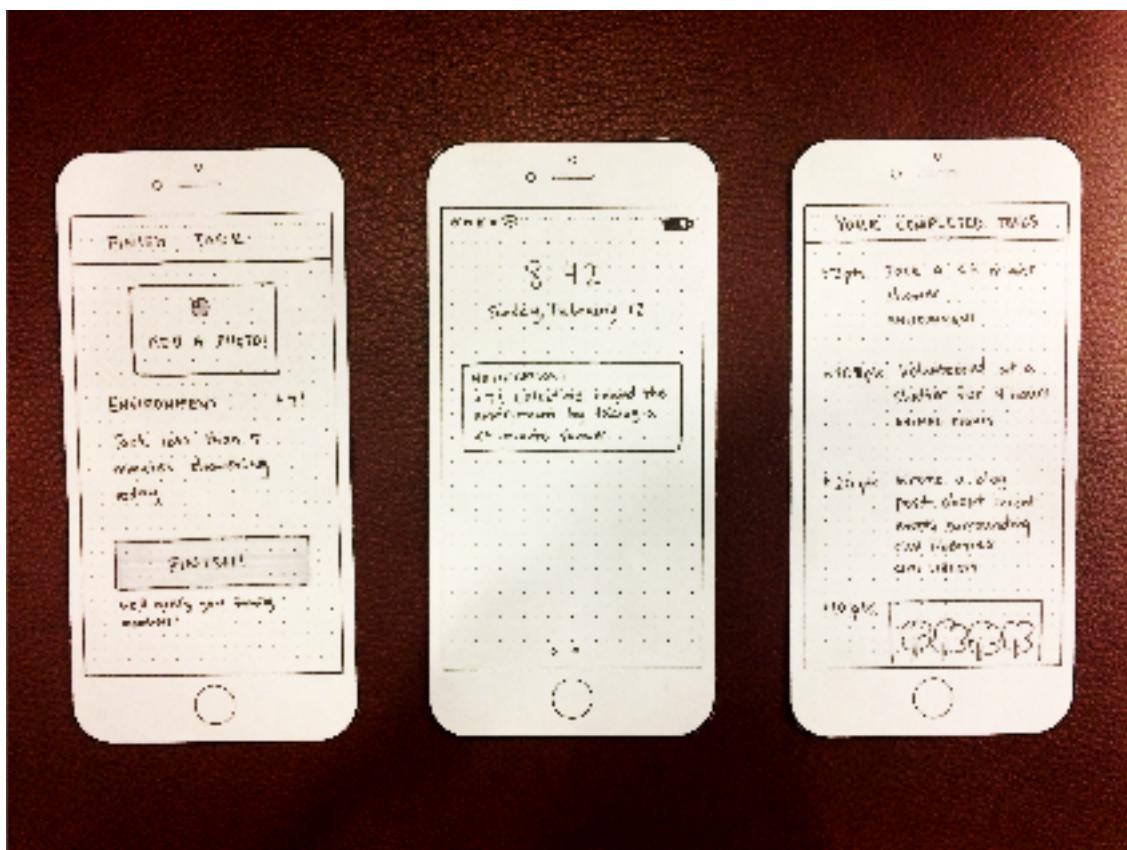
We produced a video to illustrate how our design might be used:

<https://youtu.be/nXCrC-Wkr1s>

Here are some photos of our final paper prototype:



Paper prototype for our final design idea (details in the "Drafting our interface" section above)



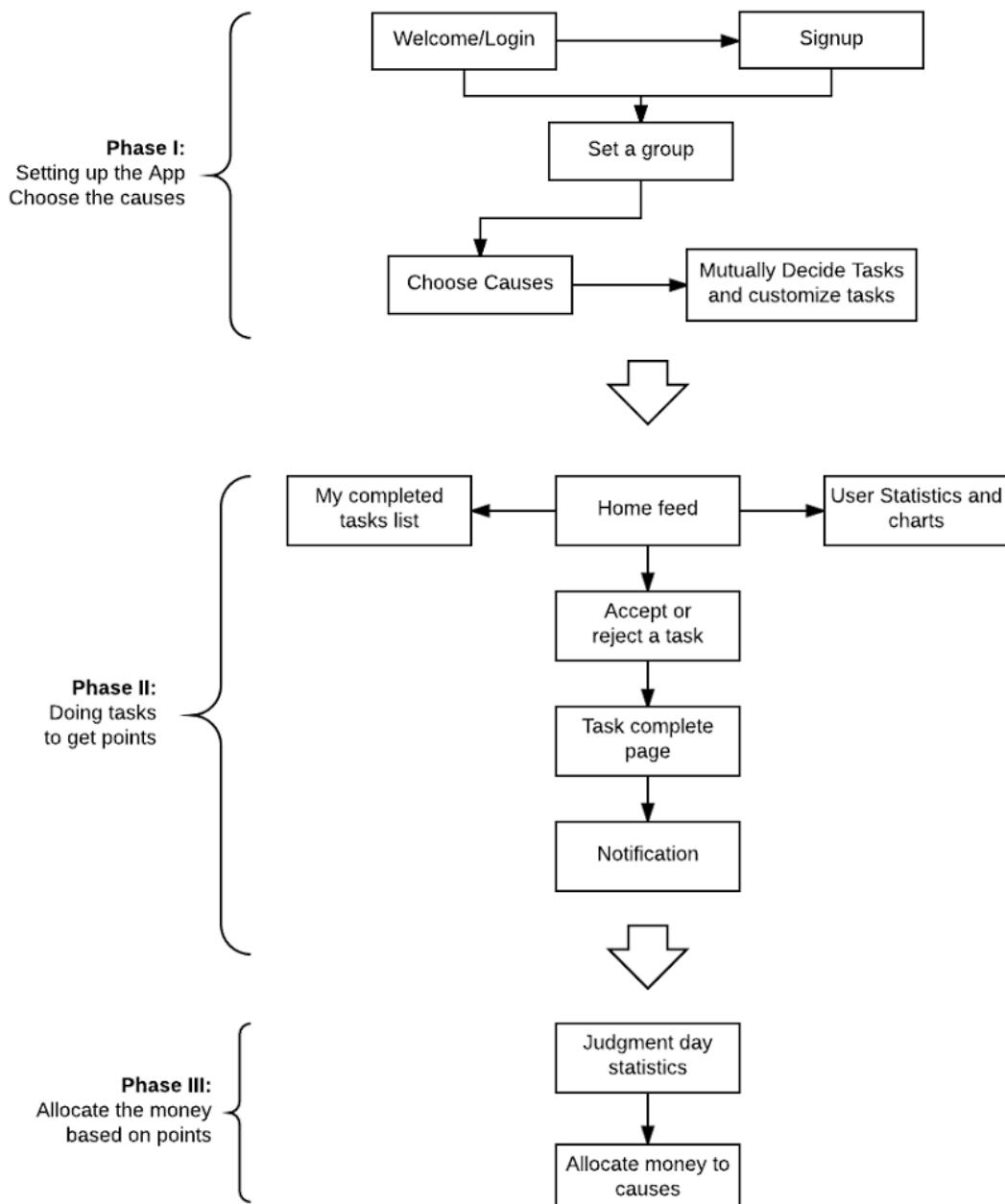
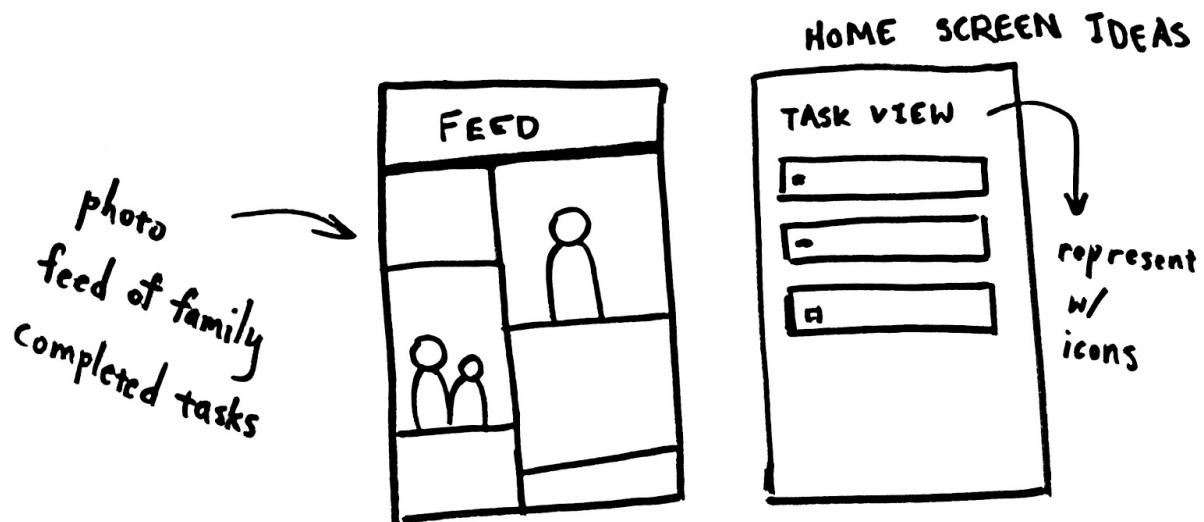
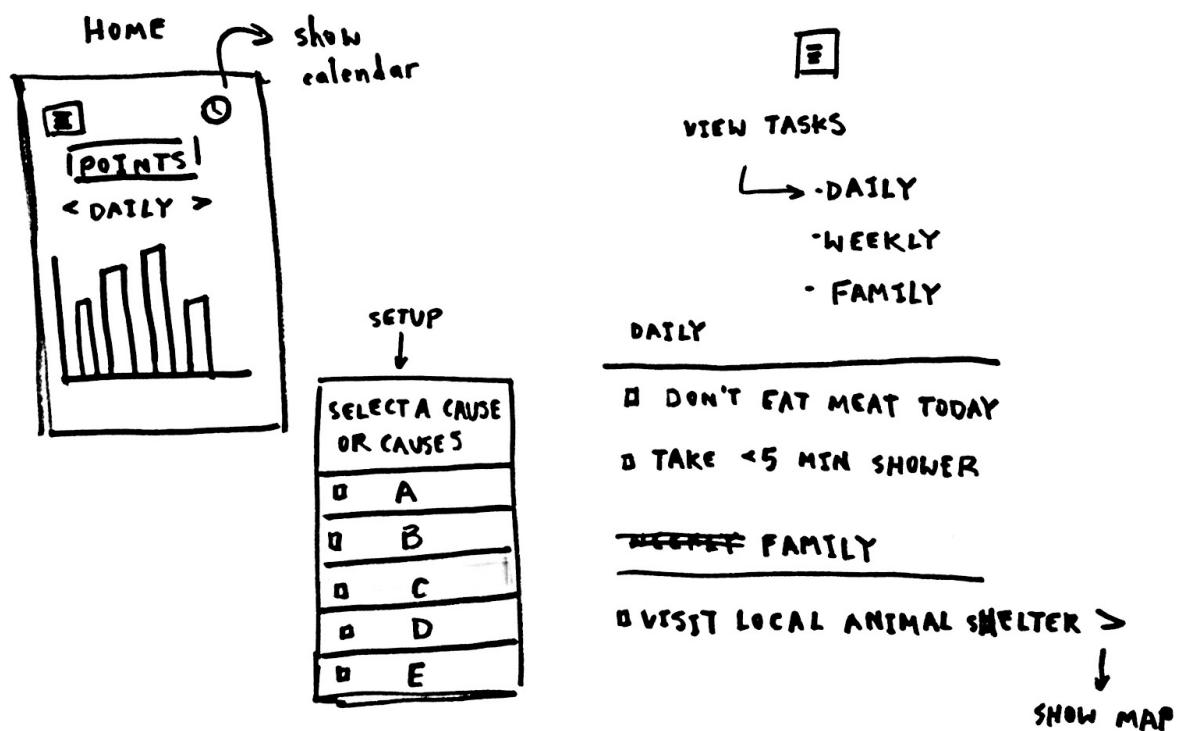


Diagram illustrating how a user might navigate through our product, from accumulating points to allocating them w/ family

We wanted to do some further thinking about a general workflow to help us organize our prototype—although this chart doesn't encompass the interaction flow of the app, it does give a general sense of the different stages of determining a charitable giving plan through this game.



HOW TO VIEW FAMILY TASKS



Initial interface sketches/ideation

On the following pages are details about the journey we took to get to our final design; they include sketches, previous prototypes, testing observations, and analyses gathered over Project 3.



P3.2

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USER FEEDBACK FROM NEEDFINDING WITH PROTOTYPES

This week, we tested three prototypes after considering what the emotional journey of donating as a family is like: after a family decides that they want to make a charitable contribution, how do they decide how to allocate the funds to a set of causes if different family members have different causes they care about?

We wanted to explore what we thought was a core emotion surrounding the donation process: passion. After hypothesizing that the core emotion driving charity is passion, we wanted to see how the decision making process could give more sway to people who show more passion for a cause. Passion about a charitable cause can come in many forms—some interesting markers of passion we wanted to explore are existing knowledge about a cause, willingness to spend time learning more about a cause, and exerting effort to actively contribute to a cause. Thus, our iteration for this week focused on exploring the different ways in which we can employ passion as a method for helping a family make decisions about donating.

Based on the studio feedback on our ideas from P3.1, we decided to focus in on the point-based game which gave users a way to quantify their passion as effort and use that to help them allocate donations. While the idea of empathy building through virtual reality or video chatting does have potential applications in encouraging people to donate, we felt from the critique that these ideas don't directly address the challenge of social decision making. Thus, after taking into account the studio critique and talking with our studio TA, we decided it would be more helpful for us to generate new ideas first and then test those with users instead of testing the VR and video chat prototypes from last week. We did a deep dive into our initial game idea and explored/flared on:

- What are other ways we can measure passion?
- What other styles of gameplay (ex. cooperative vs. competitive) can we use to aid the decision making process?

We brainstormed around these questions, sketched, and selected two ideas we wanted to explore further, and we also fleshed out and extensively iterated on our original point-based game idea from last week. After coming up with questions and risks surrounding each of our new ideas, we selected the most important ones for each idea and designed prototypes to test those questions. To see more about each new prototype, the other PDFs in this milestone lay out in more detail the ideas, questions, and prototyping methods surrounding each one. We've also attached some of our sketches from our flare brainstorming for this iteration, to give some context around how we arrived at these three new prototypes.

SKETCHES

To give an idea of how we iterated on our original gamification idea to incorporate our exploration of passion as an indicator of decision making power, the following pages contain a few of our sketches from our flare brainstorming session.



Allow family members to form teams with other families in their community according to common interests around a cause

- team up w/ other ppl. in the community
- link multiple family
- families can pool funds and vote (social activity)

SOCIAL MEDIA FOR DECISION MAKING

W

A social media feed with only the family members



TODD SMITH

I love charity!

LIKE DONATE \$ COMMENT

PETER PAN \$
donated \$2000.

AMY LOO
nice!

family community
FB w/ only family

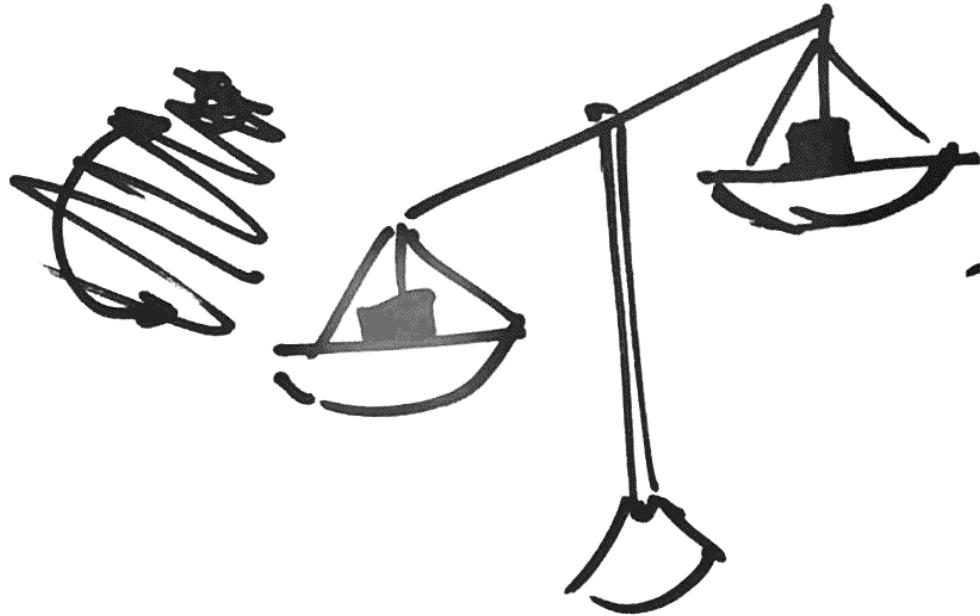
1	:
2	:
3	:
4	:

→ each member
picks a charity

Visualization idea



visualize donation
amounts w/ bars



A “balancing” game that helps families see the impact of donating to a single charity or multiple causes

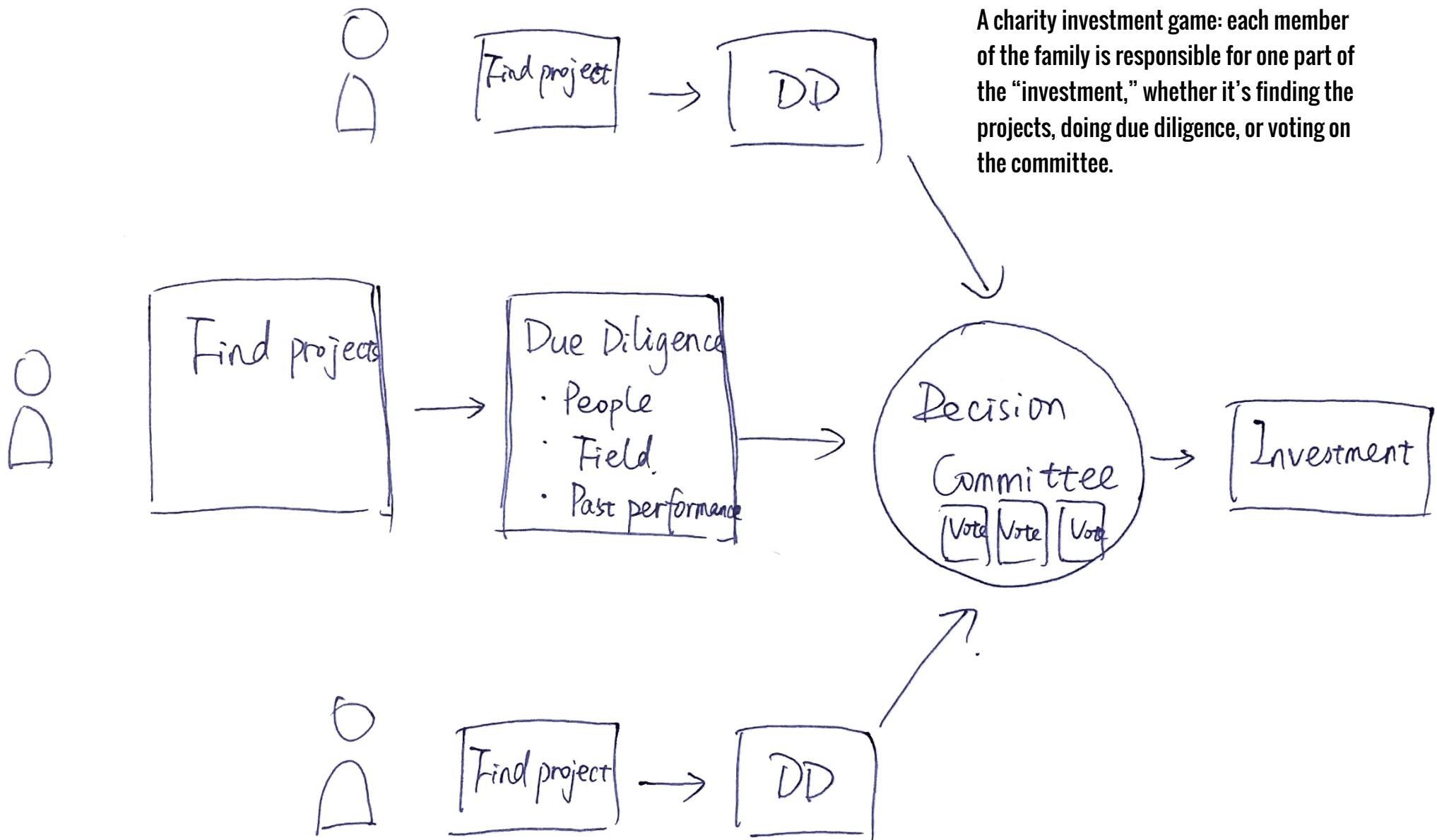
data visualization
app that weighs
pros & cons of
various charities

can mix and
match donation
amounts /
combinations



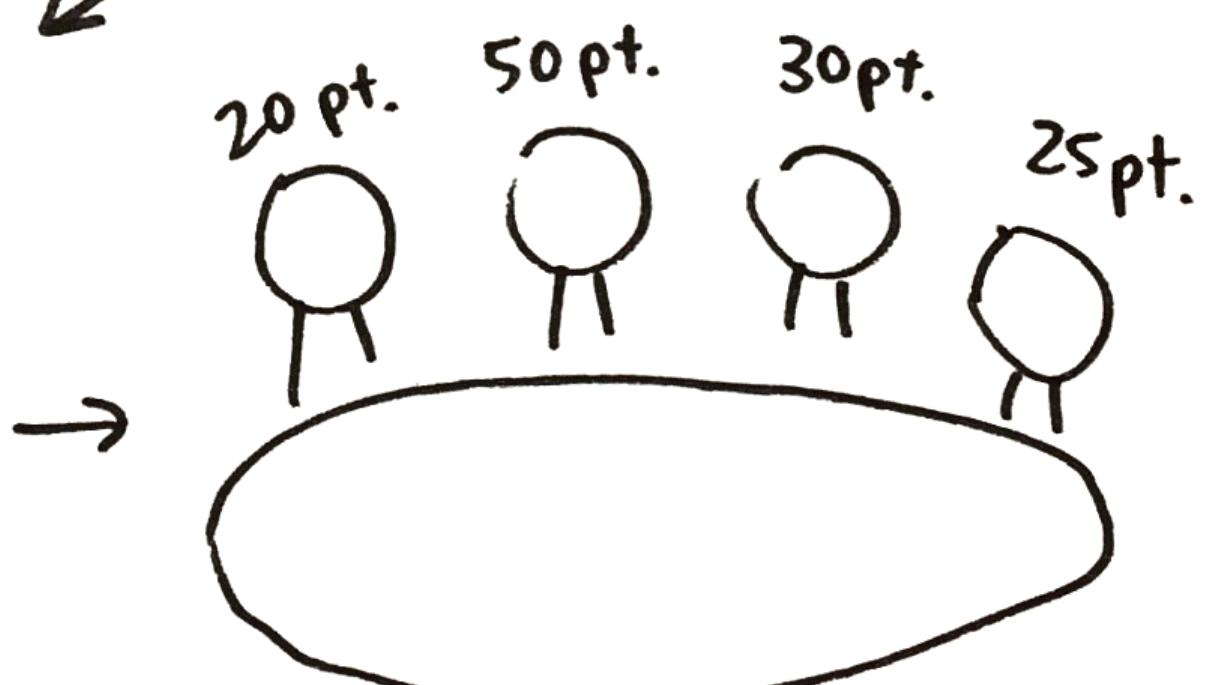
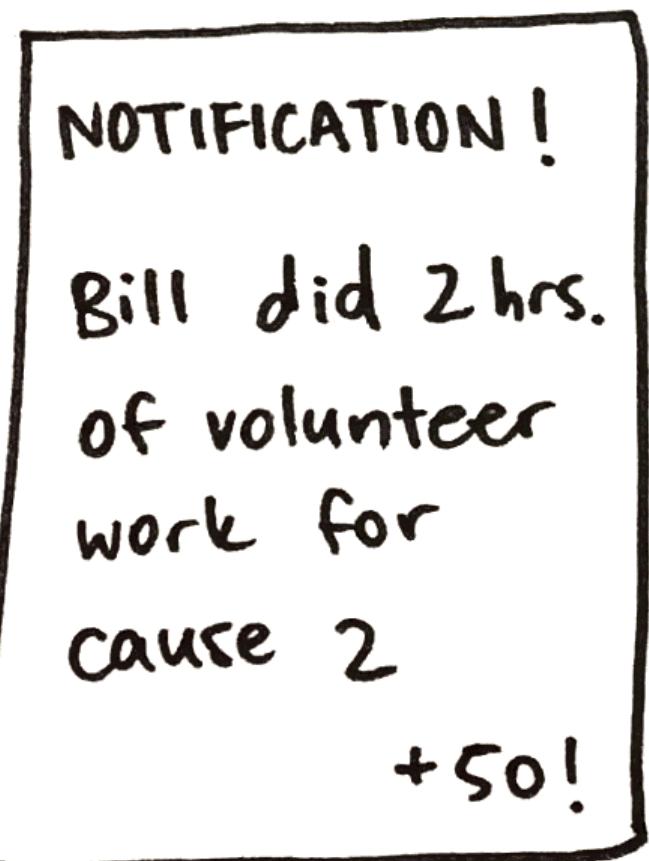
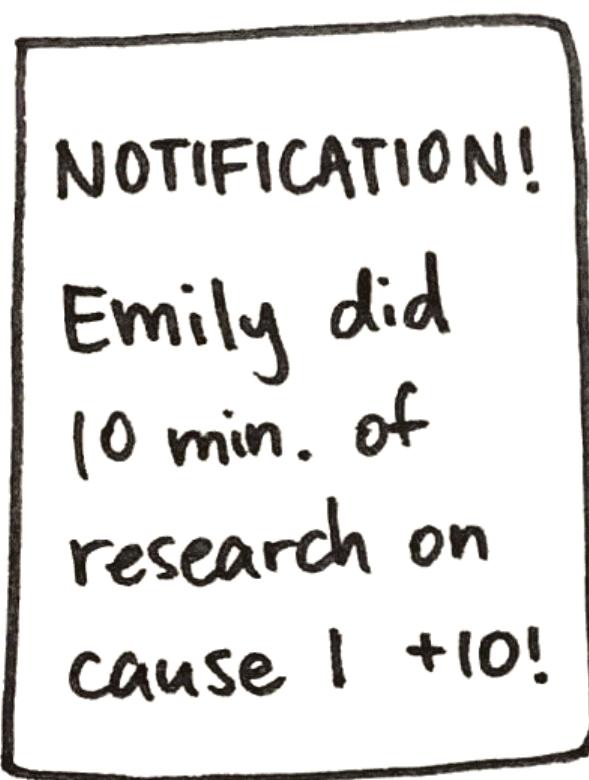
The four boxes on the bottom represent different causes: each cause has a tree which will either flourish or die depending on how much each family member contributes to the cause

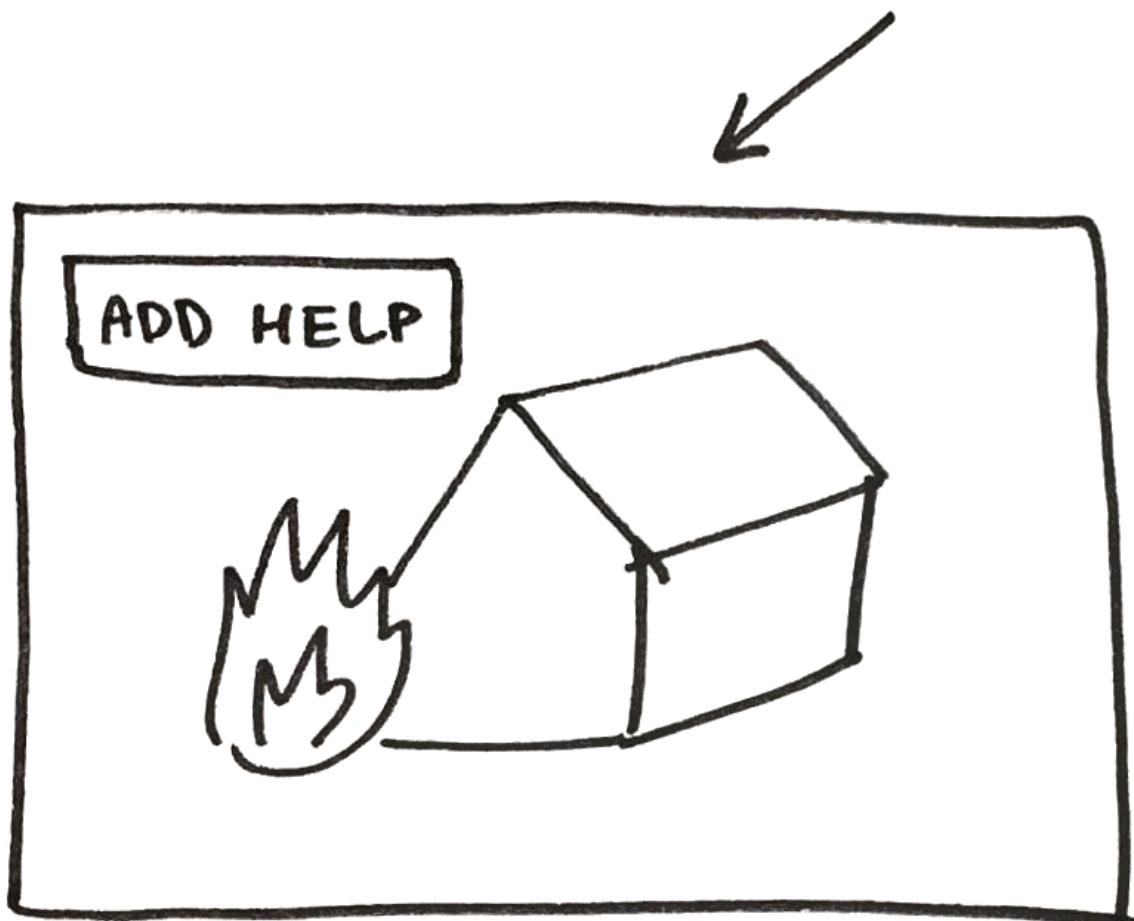
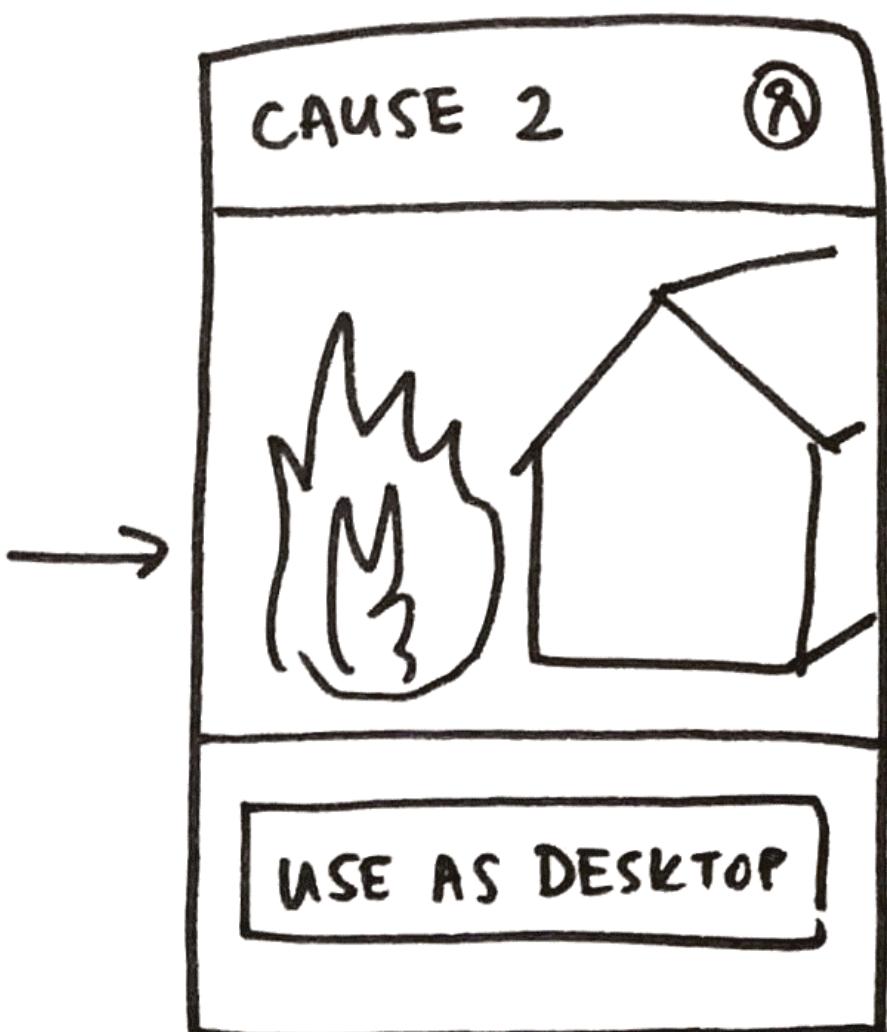
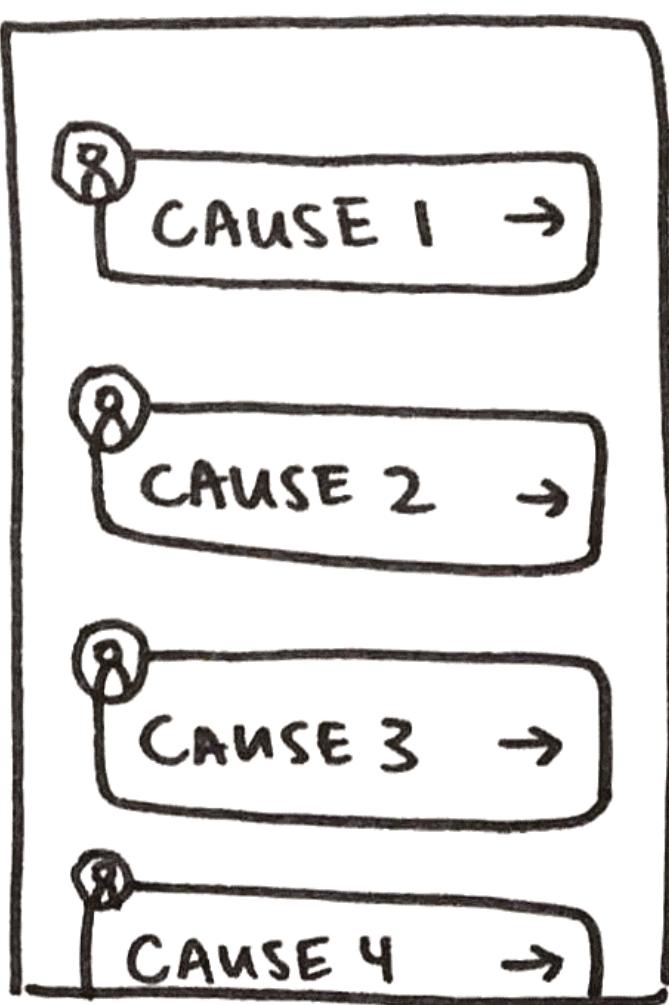
VC - like Investment Decision



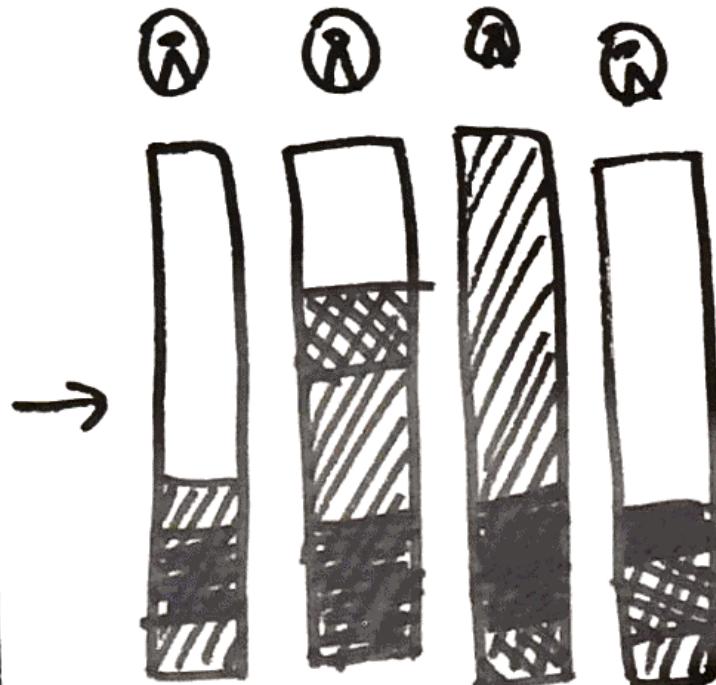
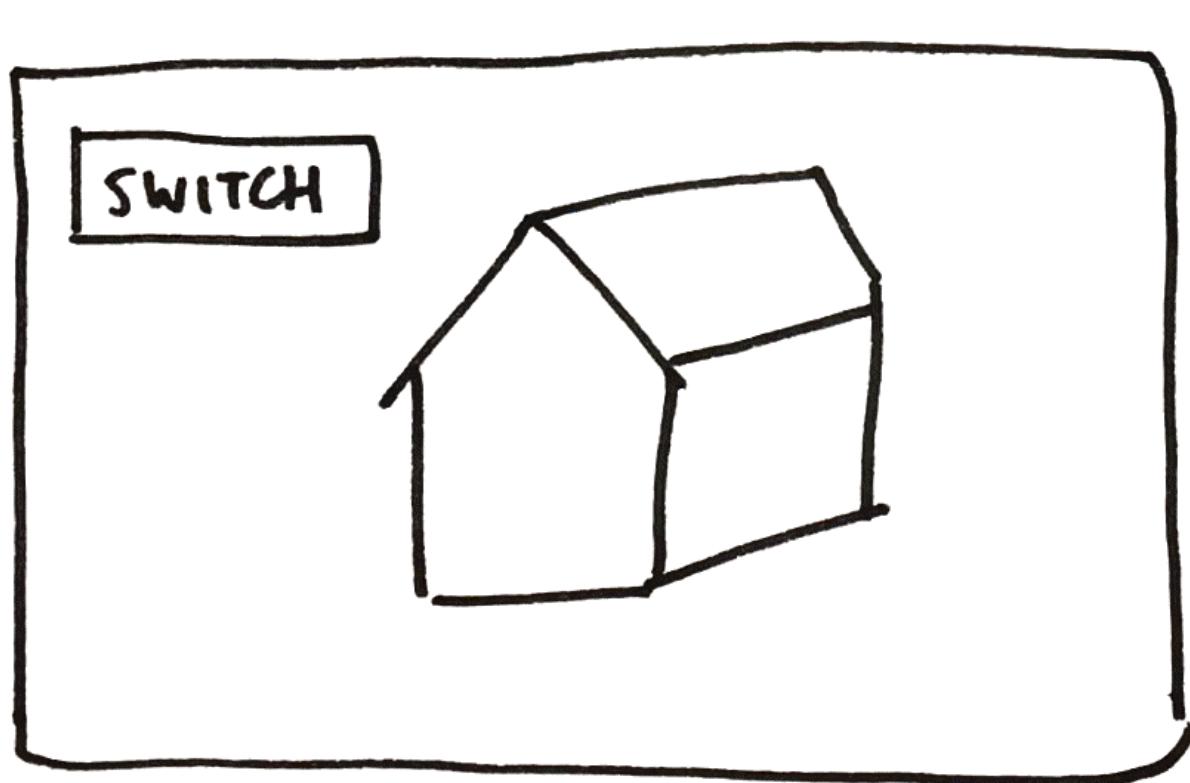


A little bit like 'The Amazing Race' - you watch an educational video, and you can choose whether or not to do the task presented to you. You get a varying amount of points for each achievement, which determines your "say" in the decision-making later.





A game that shows up whenever you open a new browser tab; you can choose to see a simulation of each person's causes, and your actions in each "game" determine how much gets allocated to that cause later.



4-BUTTON GAME

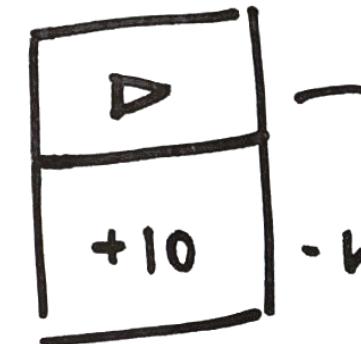
Kind of like a "swear jar," but with buttons for each cause- family members determine when you need to press the button, and on the spot you decide which one to press. The more presses on a particular cause, the more money gets allocated to that cause at the end.



4 buttons, 1 for each person

- everytime you do X task, ~~will~~ press the button for another family member

VIDEO - BASED CHARITY EDUCATION APP



- watch video

- chat w/ representative

- NETFLIX integration

↳ documentaries, etc.

Receive points based on watching videos or documentaries, and use those points later for more "say" during decision-making

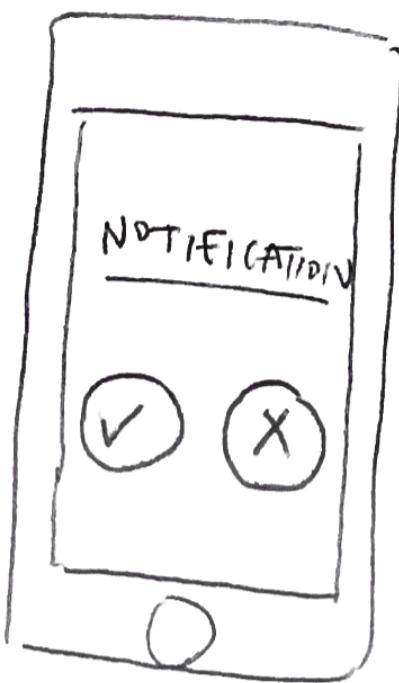
Compromise APP

Whenever you choose to give to a family member's cause, or you give up some decision-making power, you get to attain some future compromise with the person you just supported in the family (trading current power for future incentive)



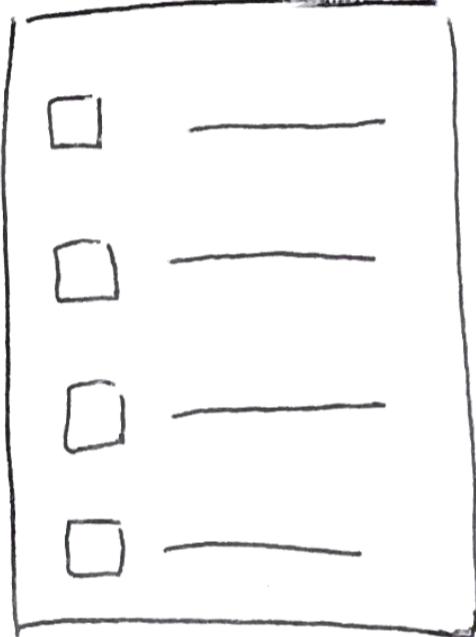
lays out
compromises
for each ~~app~~
family member

DING!



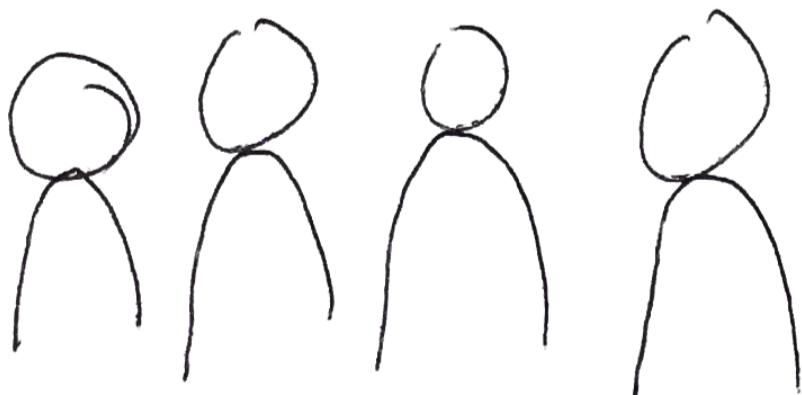
- regular/repeating notification relevant to cause
- or news from around the world?

TASKS



causes to research?

Everyone chooses a cause: when something happens in the world relating to that cause, everyone gets a notification about it. On the spot, given this information, each person has to make a choice to donate or not donate a sum of their money from the pool.



METHODS & PARTICIPANTS

In our testing, our goal was to present our three prototypes and test our most important question for each (more detail in each prototype). We also explored general questions and assumptions we had surrounding the concept of charitable giving as a family and how a group of people with an uneven power distribution could allocate a fixed resource. Although we ideally would have liked to test with an entire family to see how they would react as a group, due to the time constraints we were unable to find such a group to prototype with.

We did our first round of testing with a family (two parents) with a college aged child (not present) who we reached out to through a mutual contact. We chose this family in particular because they have participated in charitable giving in the past and we hoped that their experiences could add real context to the scenario. In our testing with parents, we wanted specifically to see how they would respond to the shift in power dynamic which is traditionally based on money.

We additionally tested our prototypes with another family of 3—the parents were from Korea, and the son was in high school. We thought that this would be an interesting group to talk to, since we could observe the dynamics between parents and child, and it might also reveal some insights about how people from other countries might perceive the prototypes. In addition to these two families, we tested our prototypes with two siblings (both out of college), two Stanford students, and one high school student—collecting feedback about all the prototypes from 10 individuals. Our participants ranged from people who regularly donate to the same organizations, to people who didn't have much experience with charitable giving at all.

First, it was important for us to verify that there was in fact a need amongst families to make collective decisions in the charity space, as opposed to just divvying money amongst family members and having them make independent decisions. We then began by explaining that we want learn about how to help families collectively decide on which charitable causes to donate to and wanted to get their feedback about some different ideas we came up with to facilitate this process.

We also explained the larger context and mechanism of each of our ideas and how the prototypes we were testing were only meant to address one aspect of the idea as a whole. As we presented our three prototypes, we collected direct feedback by asking our participants:

- Which of these ideas resonated most with you? Why?
- Could you see your family using this application?
- How would your behavior change based on whether you were deciding how to distribute your own money or someone else's money?
- How would your behavior change based on whether your effort was going towards your own cause versus one of your family members' causes?

We also collected as indirect feedback by observing:

- How participants interacted with each other in the scenarios/tests we presented
- How participants reacted emotionally
- What aspects of each idea they expressed most interested in (for example, what did they ask questions about?)

OBSERVATIONS

Prototype 1: Effort-to-points game

Question: Are points enough incentive to expend effort for other people's causes?

Observation: People feel that a points-based system is fair.

"That's a pretty good idea, it's fair."

"The score can truly confirm that you care about this cause."

Observation: People think that commitment should be correlated with weight in decision making.

"It should be this way. People who are more committed should have more weight in making the final call."

Observation: A lack of commitment might be a signal that someone doesn't care enough about a cause.

"If I'm not committed enough to do the tasks, then that means I just don't care enough about my cause—then I *should* have less say."

Observation: People might selectively do tasks depending on their personal values.

"Whether I'll do a task around someone else's cause really depends with how much I identify with that cause."

Observation: Points are not motivation enough if someone disagrees with a cause.
"If I'm opposed to another cause, even if I'll get points, I would have very little motivation to do anything related to it."

Prototype 2: Escape room

Question: Can a family make a group decision under time pressure?

Observation: Having a time limitation can force people to come to a decision—and some families make a decision really quickly (both families arrived at a decision under 20 seconds!).

"This would help avoid a lot of conflict that we might have had if we had more time to argue."

Observation: People can make time-pressured decisions as a group if they are given a sum of money to allocate.

"Since you're giving us the money, we feel compelled to make a decision as a group no matter the time limit, so the money goes *somewhere* good."

"With such limited time, the first cause that comes to my mind is probably the cause I want to donate to the most."

Observation: But they may want more time to make a rationalized decision if it's their own money.

"But if it's our own money... why would we want to rush our decision? That seems like a ridiculous constraint."

"The time is too short, and I might make the decision without previous information or research."

Observation: Discussions can lead to arguments, but they can also be productive.

"Having time to discuss might cause more argument, but they're productive discussions—discussing with my family can help us think of new ideas, and prompt new behaviors."

Observation: Kids might be more inclined to listen to their parents than to a sibling.
"If parents offered some choices, kids will probably agree; but if their brother or sister offered some choices, they'd probably have disagreements and argue about it."

Prototype 3: Charity Jeopardy

Question: Do people actually know about the causes they care about?

Observation: People can generally give some reasons, experiences, or factors for why they care about a charitable cause.

"Yeah, I can talk a little about why I feel strongly about this cause."

Observation: People may have some general knowledge of rankings and numbers associated with their cause.

"Well, the U.S. is ranked really low in terms of things like STEM education."

Observation: But even if they don't have any numbers, they have plenty of concrete examples and ideas around why their cause is important.

"I don't know about exact statistics, but I really think that the trend of urban sprawl is bad. There is more and more construction of bigger and bigger houses, and an excess of belongings. People just want convenience and luxury now, with all these delivery apps. But I saw some award-winning designs for neighborhood architecture—I think that redesigning neighborhoods so they're focused on smaller communities would be better for the environment."

Observation: People who know about someone else's cause will also cut in and contribute to answering questions.

"I want to add onto his answer, since I've done some reading about that particular cause as well."

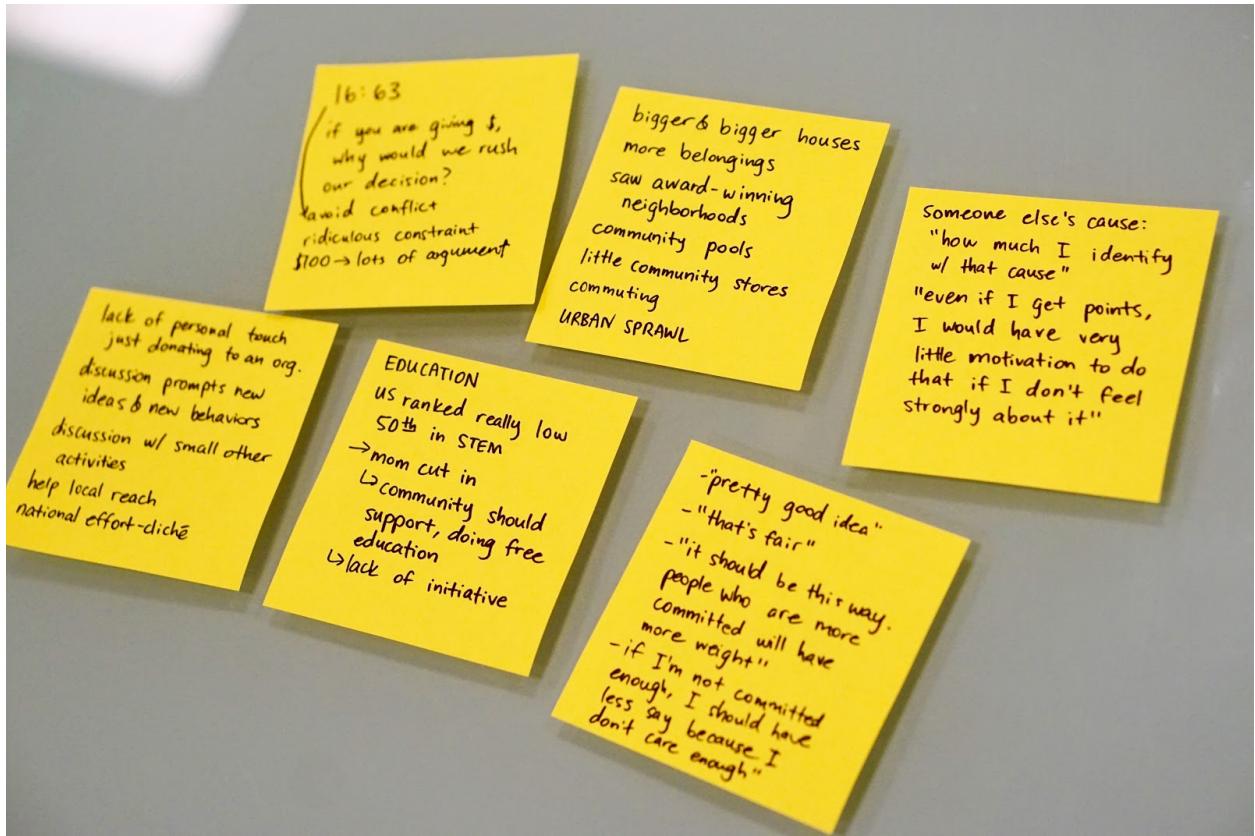


Image: Notes and observations from a user testing session.

INTERPRETATIONS & REFLECTIONS

After collecting our set of new observations for each prototype, we came up with interpretations for each point that we discerned. We also took another look at our original “biggest questions” for each prototype, to see whether we can come up with some initial intuitions about how the questions were answered through our testing sessions. After making our interpretations, it seemed like the answer to first question for the effort-to-points game (Are points enough incentive to expend effort for other people’s causes?) was yes, but only in certain cases—depending on the person’s sentiment toward their own cause and other people’s causes. The quotes from our observations section elaborate more on this phenomenon. For the question about the escape room prototype (Can a family make a group decision under time pressure?), we saw that the answer was yes, but again under a certain nuanced constraint or challenge: sometimes, a decision made under pressure might not feel satisfying—people might want more time to have a rational discussion before putting their money toward a cause. In terms of the third question for the charity jeopardy

prototype (Do people actually know about the causes they care about?), we found that this answer was yes. While people might not know about specific numbers or statistics, our participants had many stories, experiences, and examples to share to show their knowledge about their selected cause. One interesting finding is that many families actually had very little arguments when trying to decide on a cause; for three of our test groups, when given 2 minutes for the second prototype to discuss, they arrived at a conclusion within 30 seconds. Some of them explained this by saying that they had lived together for a long time and they knew each other so well (and cared about overlapping issues), it wasn't hard to find common ground between them.

Here are some of our other observations from the user testing sessions, accompanied by our group's interpretations.

Observation: People feel that a points-based system is fair.

Interpretation: Fairness is an important element in the game if it will determine how donations are allocated—people mentioned it even when we didn't bring it up.

Observation: People think that commitment should be correlated with weight in decision making.

Interpretation: People do have this core intuition that passion is connected to how "qualified" a person is to contribute to deciding the donation allocations.

Observation: A lack of commitment might be a signal that someone doesn't care enough about a cause.

Interpretation: If someone is not committed enough to a cause that they select, others (and the person himself/herself) may feel that it's okay if that person is given less say in the final decision.

Observation: People might selectively do tasks depending on their personal values.

Interpretation: Sticking to personal values and beliefs are more important than the prospect of earning points, even if the final points can go to a cause they personally care about (the ends do not justify the means).

Observation: Points are not motivation enough if someone disagrees with a cause.

Interpretation: While points may normally be a good enough incentive, that abstraction breaks down when people are presented with causes they are opposed to.

Observation: Having a time limitation can force people to come to a decision; people can make time-pressured decisions as a group if they are given a sum of money to allocate.

Interpretation: A time limitation is one way to effectively create a sense of pressure, which essentially forces people to come to a decision.

Observation: But they may want more time to make a rationalized decision if it's their own money.

Interpretation: A forced decision is not necessarily one that people will be happy with; people want their money to be distributed wisely, with a lot of thought put behind it.

Observation: Discussions can lead to arguments, but they can also be productive.

Interpretation: Since discussions can lead to new insights and productive idea-generation, there needs to be a balance between limiting time spent arguing and giving people the time to talk over a decision.

Observation: People can generally give some reasons, experiences, or factors for why they care about a charitable cause.

Interpretation: If asked to select a cause they care about, people don't just pick something nebulous that seems vaguely important—usually, they have a personal experience or reason to share about the cause they pick.

Observation: But even if they don't have any numbers, they have plenty of concrete examples and ideas around why their cause is important.

Interpretation: Knowing the numbers is not the ultimate measure of passion—people have lots of ways of showing how much they know about a cause.

Observation: People who know about someone else's cause will also cut in and contribute to answering questions.

Interpretation: People don't just care or know about their own cause—they're not selfish with their input if they can contribute to the conversation around another cause.



Image: Family members trying to come to a decision within a time limit.

REFLECTIONS ON NEEDS / HOW MIGHT WE'S

After conducting all of our user testing, we reflected on and re-evaluated the needs and questions we brainstormed last week. We took out some of the needs that seemed to be not as relevant, given our observations from the testing, and added some new needs that popped out to us after we transformed our observations into interpretations.

Need: Find a way to help everyone have a say in the decision

Our testing confirmed this need as people put a lot of value on fairness in the system. Participants also felt that donating as a family was valuable because the congregated effort is more rewarding than making individual donations, suggesting that the collaborative effort is an important factor.

Need: Have trust for the cause or project they donate to

We saw this need when we described the mechanism of the Jeopardy prototype as a whole. We found that people were hesitant to put their own money into this system because of the risk that it could go to a cause that they are unfamiliar with, suggesting that people need to be able to trust the causes their money will go towards.

Need: To feel control over where the money will be allocated if it's one's own money

We discovered this new need from our interpretations of the differences in how people behaved when they were trying to come to a decision about someone else's money versus their own money. Specifically, when we were testing our escape room prototype, we found that people felt pressured to come to a quick decision without much time to discuss the pros and cons thoroughly and saw this as an unnecessary constraint rather than a tool to help them make a decision.

Need: Educate other members about the causes they are not familiar with

This need was expressed indirectly by people expressing their need to feel a sense of trust before donating to a cause, but was complicated by our observation that the ways we tried to incentivize learning about the causes of other family members in our prototypes might not provide enough motivation. This could be a good need to further explore in future iterations.

Need: Come to a collective decision without having an argument

This need turned out not to be as important as we thought, as one of our participants pointed out that sometimes, productive idea-generation and new insights can come out of discussion and arguing.

Given last week's critique and feedback from our studio instructor and TA, we conducted the user testing on our new ideas after flaring out from our gamification idea from last week. Based on the feedback, we spliced some of the promising aspects of each idea together (for instance, embedding video education in a point-based game), and came up with lots of new iterations and amendments. We took some of the ideas around gamification to the extreme—either making the game more long-term over a period of time, or making it more based on instantaneous decision making. Now, after collecting and analyzing all these new experiences and insights, we have a lot of new ideas for making further iterations on these design solutions.

P3.2

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ITERATED PROTOTYPE 1: EFFORT-TO-POINTS GAME

Passion = effort

Competitive (family members compete against each other to individually gain more "say" when they decide how to allocate donations)

Idea: This idea involves a game where each family member picks a cause, and then the game distributes points based on the amount of effort each person puts into learning or doing activities around the causes. For this idea, we measured passion through effort. It's a little bit like "The Amazing Race," where you first watch an information video about the cause and then you receive a task (activities ranging from doing a period of research about a cause, or volunteering for a related organization)—and should you choose to accept it, you'll receive points upon completion. When you successfully finish the task, everyone else in the family will receive a notification: "Emily just did ten minutes of research about deforestation! She earned 10 points," or "Steve just volunteered for 2 hours with an organization for civil liberties! He earned 50 points." The videos at the start of each task help with building initial education around each cause, while the number of points correspond with the amount of effort each person is willing to put in to learn more about their own cause and their family members' causes. The family decides on the time period they want to play the game (a year, a month, a week), and at the end of the time period, the point distribution among the family members determines how much "say" each person gets in determining allocation of funds to different causes.

Questions (chosen question in bold):

- **Are points enough incentive to expend effort for other people's causes?**
- How much time are people willing to commit to doing research?
- Would people be willing to do more active activities (like volunteering) to earn more points?
- If someone wants to understand more about a cause, how active would they be willing to be—doing service activities, doing research, talking to other people about the cause, writing posts to create awareness, or just watching informational videos?

- What is more helpful for building understanding—informational materials, or hands-on activities?
- What happens if one family member is less invested in the game/not interested in playing the game?
- Would the notifications about other family members' accomplishments drive each person to try to do more, or would it be de-motivating?

Prototype: We'll create paper prototypes of the "app," using marbles to represent the points. After explaining the game and asking the participants to choose causes, we'll give each of them some brief background about a cause (simulating the video aspect), and then present each individual with a "task" for a certain number of points. Since it's quite hard to ask our participants to do service activities or research on the spot, we'll watch their reactions as a first test of how willing they are to expend that amount of effort to earn the points. If they get competitive and seem willing to get started, that's a positive indication that the points offer enough incentive—if not, that seems like an indication that people don't see the points as valuable enough representations to put more work into the task. We can also have them play the game with simpler exercises—for instance, giving a 1 minute spiel about the cause to someone else for a number of points—and seeing whether people get excited about earning points that way.



Image: Testing with family members—seeing how they respond to tasks and receiving points.

P3.2

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ITERATED PROTOTYPE 2: ESCAPE ROOM

Passion = knowledge + effort

Cooperative (family members work together to reach the success state: escaping, and having created a way to allocate different amounts to each cause)

Idea: This idea involves an escape room (or its digital equivalent) that compels a family to make decisions about how to distribute their funds amongst a set of causes. The rules: if the family manages to escape, the route they have taken through the rooms will determine the percentage of the funds given to each cause; if the family fails to escape, the funds will be distributed equally amongst all the causes. The family members must work together to escape each room, where the “key” is a question or activity which either requires knowledge to answer, or effort in terms of doing research to answer the question. All four family members will start in a room, where they must answer a question—the key—which opens the door. Then, after each door is opened, the family is presented with 4 choices of which room to enter next (each choice corresponds to a cause chosen by a family member—there could be fewer than 4 choices if someone in the family doesn’t have a preference for a cause). Under time pressure to escape, the family must come to a decision about which room to enter next. The route they take determines the final distribution if they do escape; for instance, if they enter the most rooms with the cause “deforestation” and they escape, a higher percentage of the funds will go to that cause. The family members may need to make compromises, and the path they take will eventually lead them to their final decision of how to allocate donations. The key question to opening each door is related to the cause of the room that they selected; thus, a family member who knows more about their cause or who has done more research can make a stronger case for choosing that room, since we want to investigate passion as existing knowledge and let passion weigh in on how donations are distributed.

Questions (chosen question in bold):

- **Can a family make a group decision under time pressure?**

- Is distributing equally to each cause a deterrent—is that “failure” option sufficiently a deterrent so that the family will actually want to make decisions and escape?
- Will people be satisfied with decisions made under time pressure, or will they regret them?
- Will people actually know enough to answer the questions?
- Will people be able to do on-the-spot research in order to answer the questions?
- Will people be willing to compromise on choosing a door for a cause if a family member knows more about that cause?
- Will people feel peer-pressured into agreeing with a particular choice by their family?
- Will people be interested in the game? What happens if one family member is less interested in playing the game?

Prototype: We'll ask each family member to give us a cause they care about and would want to donate to; for each cause, we'll write it down on a post-it note to make a “button.” Then, we give the family 2 minutes to collectively come up with a decision for which button to hit. We first tell them the rules: if they decide on a button within the 2 minutes, we'll donate \$4 to that cause. If they can't come to a decision within the time frame, the \$4 will be distributed equally amongst the causes. While this prototype is far from a real “escape room,” the fundamental idea of time pressure is critical to helping us understand whether this idea will help families reach decisions, or whether they will fail to compromise and instead will default to distributing the funds equally.



Image: Testing with a family—seeing if they reached a decision in 2 minutes (they did!)

P3.2

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ITERATED PROTOTYPE 3: CHARITY JEOPARDY

Passion = knowledge

Competitive (family members compete against each other to individually gain more "say" when they decide how to allocate donations)

Idea: This idea uses a Jeopardy style trivia game to help a family decide how much money each person gets to donate to the cause of their choice. As in our other ideas, those with more passion will have a greater "say"/cut of the family's total donation pool. In this case, passion will be measured as knowledge about your cause. The rules: family members propose causes that they are interested in donating to and we generate a Jeopardy board with 4 questions pertaining to each cause. They also have a shared "donation pool" - a fixed amount that they want to donate as a family. Then the family plays through the game, choosing questions from any category and accumulating money as they answer correctly. At the end of the game, the money that each family member has collected will be theirs to donate to whichever cause they choose. Any money from the donation pool that is not "won" by anyone will be split evenly amongst the proposed causes.

Questions (chosen question in bold):

- **Do people actually know about the causes they care about?**
- Will the difference in knowledge among different family members affect the game?
- Will people find it fair to distribute the money according to the outcome of the game?
- Will people still feel like they are donating as a family?
- Will people feel that they had a fair say in the decision making process?
- Will playing a trivia-style game lead to unfairness if some family members have, for instance, faster reflexes?
- Is the game Jeopardy too associated with TV—will it still feel like a charitable giving process?
- Will this game be less interesting or competitive when played among a family?

- If the questions in the game are from a question bank about charitable causes, will people feel like the questions are chosen unfairly?
- Will people be willing to contribute to the donation pool if the money they put in might go to another family member's cause?
- Since you don't have control over what causes your family members choose to donate to with the funds they get, will there be disputes if one family member is opposed to donating to one of the causes chosen by another member of the family?

Prototype: We'll ask each person to name a cause they care about (but we won't tell them that we're going to ask them questions about it later, so they won't go and do research right after). Then, on our end, we'll do some research about appropriate questions to ask—we'll use our judgment to think about aspects of the cause that someone might want to know about (or should know about) before making a decision to donate. Then, we'll come back and ask our users about the causes they have selected, and see whether they have knowledge about those areas. This question is critical because we had an intuition that one marker of passion for a cause is existing knowledge about that cause (not just effort put into researching)—we want to see whether this would actually be an effective marker to use.



Image: Asking family members about the causes they selected—they gave us a lot of examples and personal stories showing knowledge about the causes.

P3.1

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BRAINSTORMED IDEA SKETCHES & TOP TWO IDEA EXPLORATIONS

PROMPT

Imagine a technology service/site/app that a family could use together to determine a charitable giving plan. Imagine the family has four members: two parents, one high school aged child, and one college aged child. The goal is to create an interaction that supports a small group with an uneven distribution of power make a decision about how to allocate a fixed resource.

QUESTIONS

Following the activities in class, we came up with questions to help us brainstorm ways to approach the prompt and validate some of the things we were wondering about. Following are a few samples of the questions we started with—we started by writing down our own questions, and then coming together as a group, brainstorming and discussing.

- How do you mediate decisions between family members with conflicting viewpoints?
- How do you help everyone feel like they had a say in the decision?
- How can you effectively weigh the desires of each family member, and what factors should contribute to those weights?
- What are the benefits of donating to multiple causes versus donating to one?
- Do people feel like the impact to each cause is diluted if donating to multiple causes?
- Do people value not arguing over the amount of money going to the cause they personally support?
- How will the ages of the family members affect the decision making?

Will people care more about the cause they are giving to, regardless of the amount donated?

Will people still feel like they are giving as a family if everyone is donating to different causes?

How do family members educate each other about fields they don't know?

How do you decide who has more say in the decision making?

How do you make family members feel a sense of accomplishment for their donation?

When people have disagreements, how can we help them decide between splitting the money and deciding on one cause?

Will people be more willing to compromise if it meant they got more say in future decisions?

are people more inclined to compromise even if diluting impact for each individual cause?

is impact to each cause perceived as diluted if multiple causes?

do people value not arguing over the causes they personally support?

is getting the cause you want more important, or the amount of money donated?

how to create consensus in a group w/ very different beliefs?

would people still feel like it's a family giving plan if everyone is doing it individually?

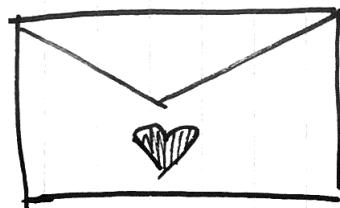
how can we make people invested in each others' causes?

Should people who make more money / save more have greater say in which/how many causes?

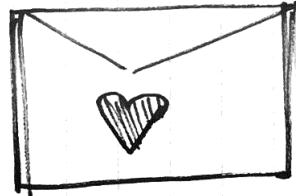
Would people be more willing to compromise if it meant they got more say in future decisions?

When people have disagreements, how to help them decide b/w splitting money and choosing one of the two to donate all to?

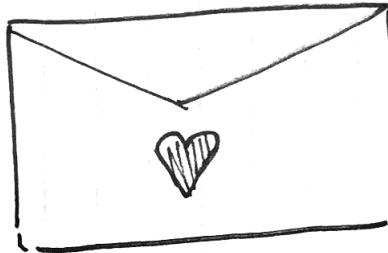
How do we help people feel like they contributed to/ take ownership over group decisions?



help 3 families

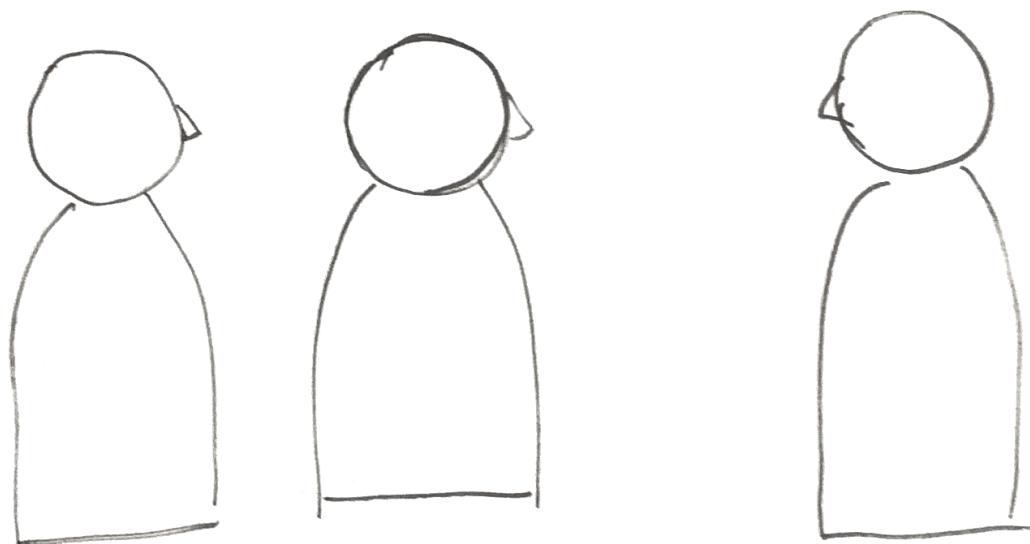
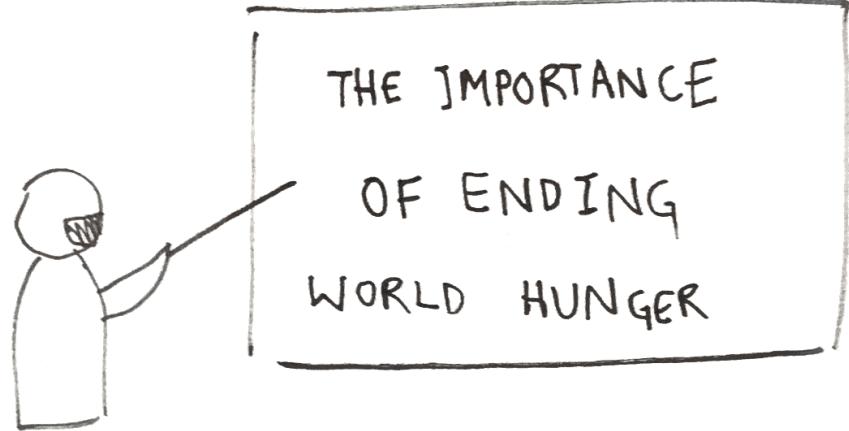


help 5 schools

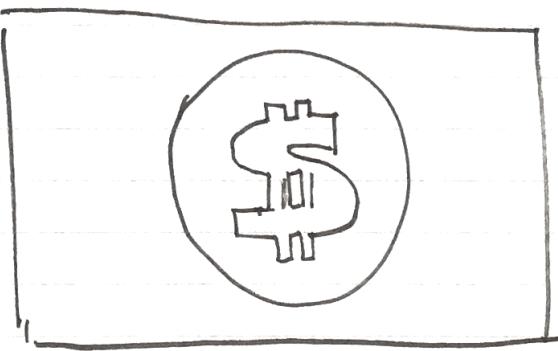
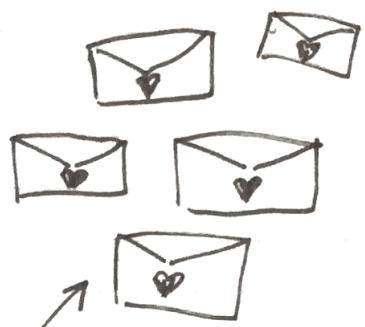
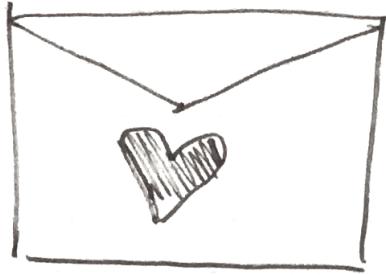


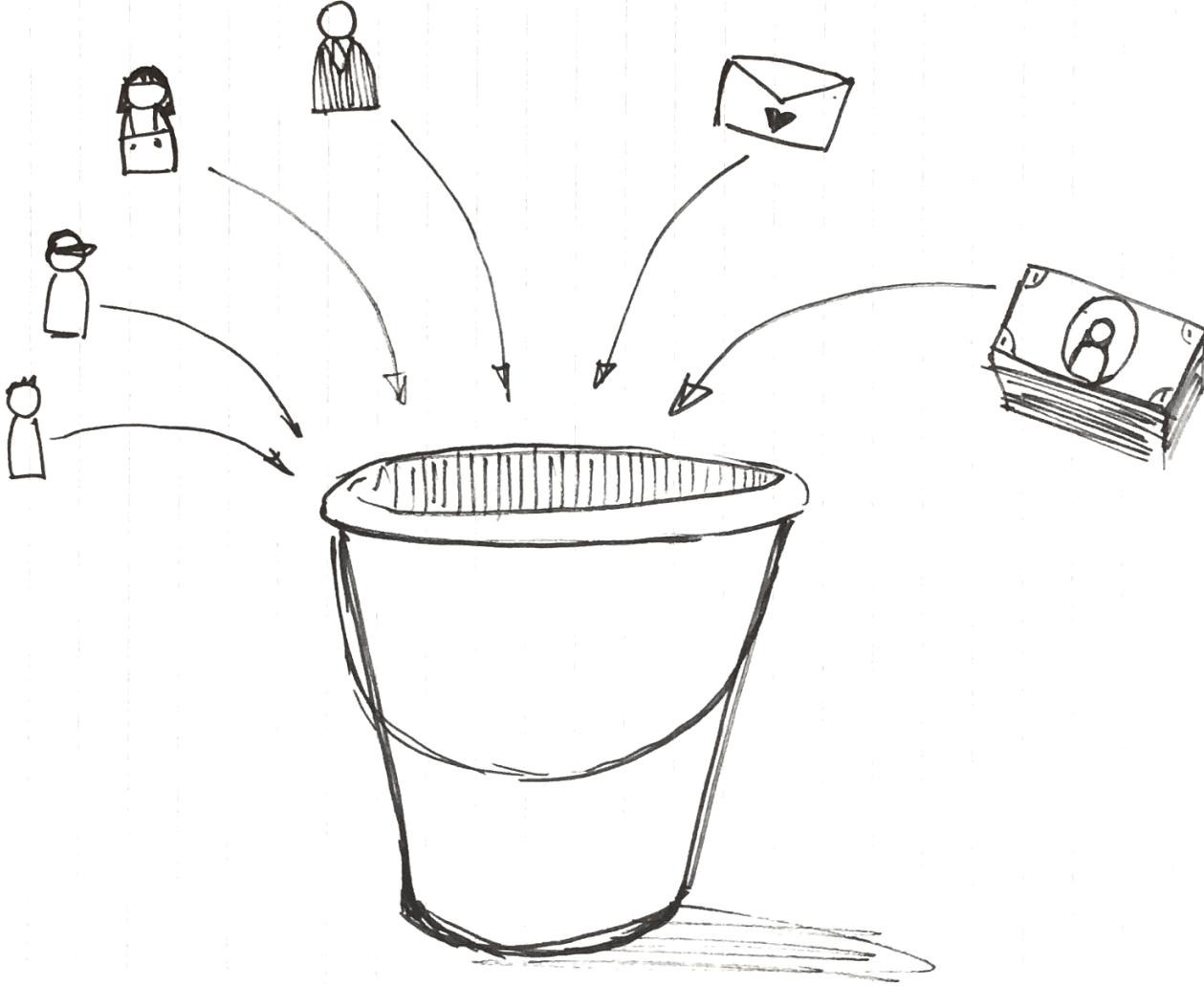
help 30 students



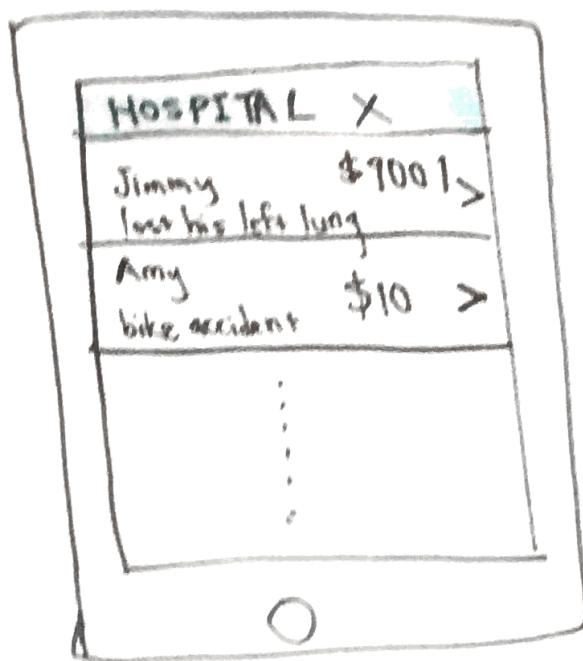








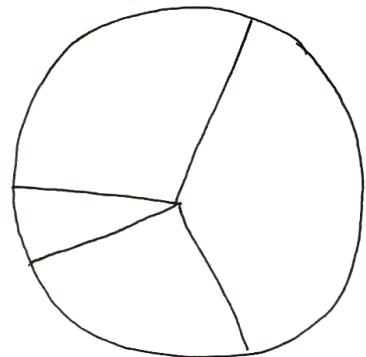
GIVING ME / DONATING TO PPL W/ DISEASES / HOSPITALIZED



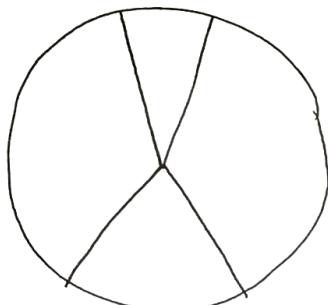
OUR FAMILY

CAUSES WE CONTRIBUTED TO:

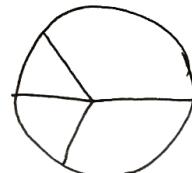
HUNGER



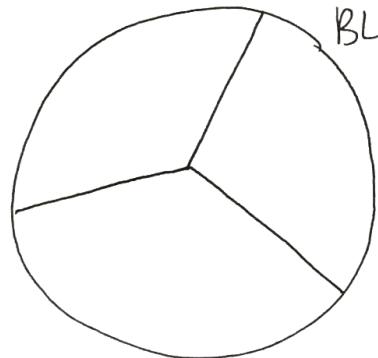
CIVIL LIBERTIES



ENVIRONMENT



BLM



charities/causes contributed to by the community

CIVIL LIBERTIES

\$10,000

500
votes
^
v

HUNGER

\$8,000

100
votes
^
v

ENVIRONMENT

\$2,000

80
votes
^
v

cause

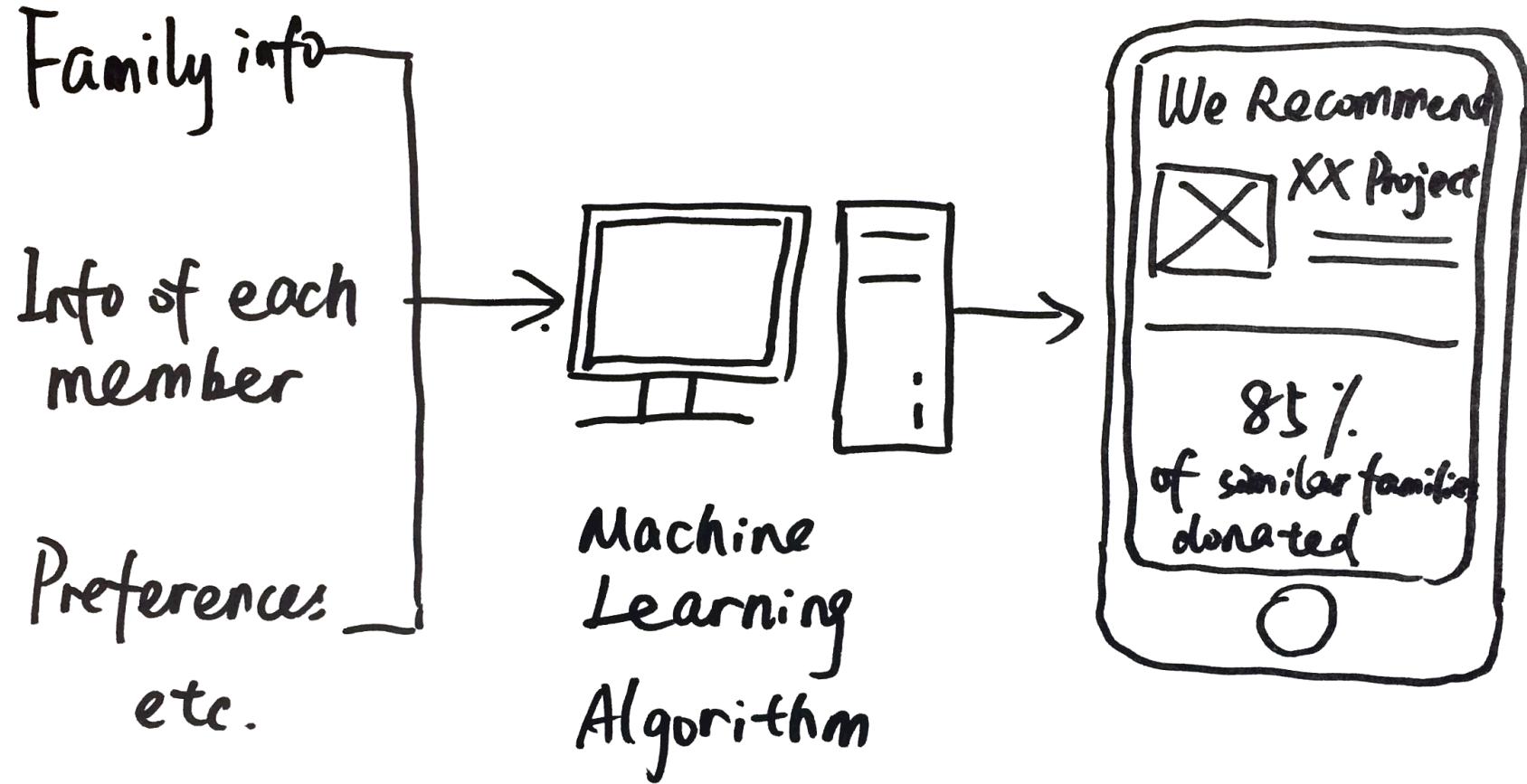
\$400

20
votes
^
v

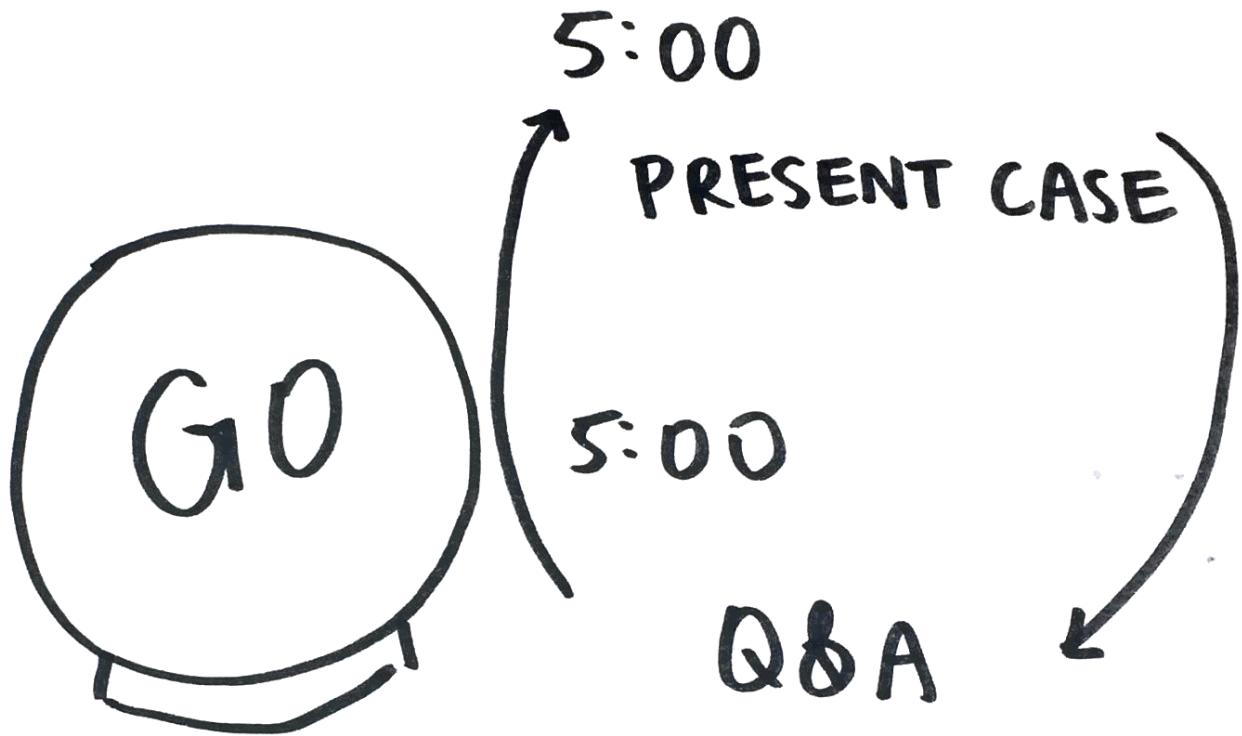
cause

\$300

15
votes
^
v



VIEWPOINT 1	VIEWPOINT 2
+	—
+	—
+	—
+	—
-	—
-	—
-	—
-	—



January	
John	\$10>
Mary	\$8>
Billy	\$100>
Michelle	\$1>



February	
John	\$20>
Mary	\$30>
Billy	\$60>
Michelle	\$9>

Enter a cause...

+

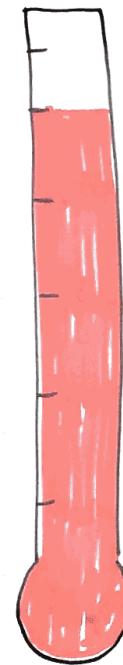
CAUSE 1

CAUSE 2

CAUSE 3



URGENCY



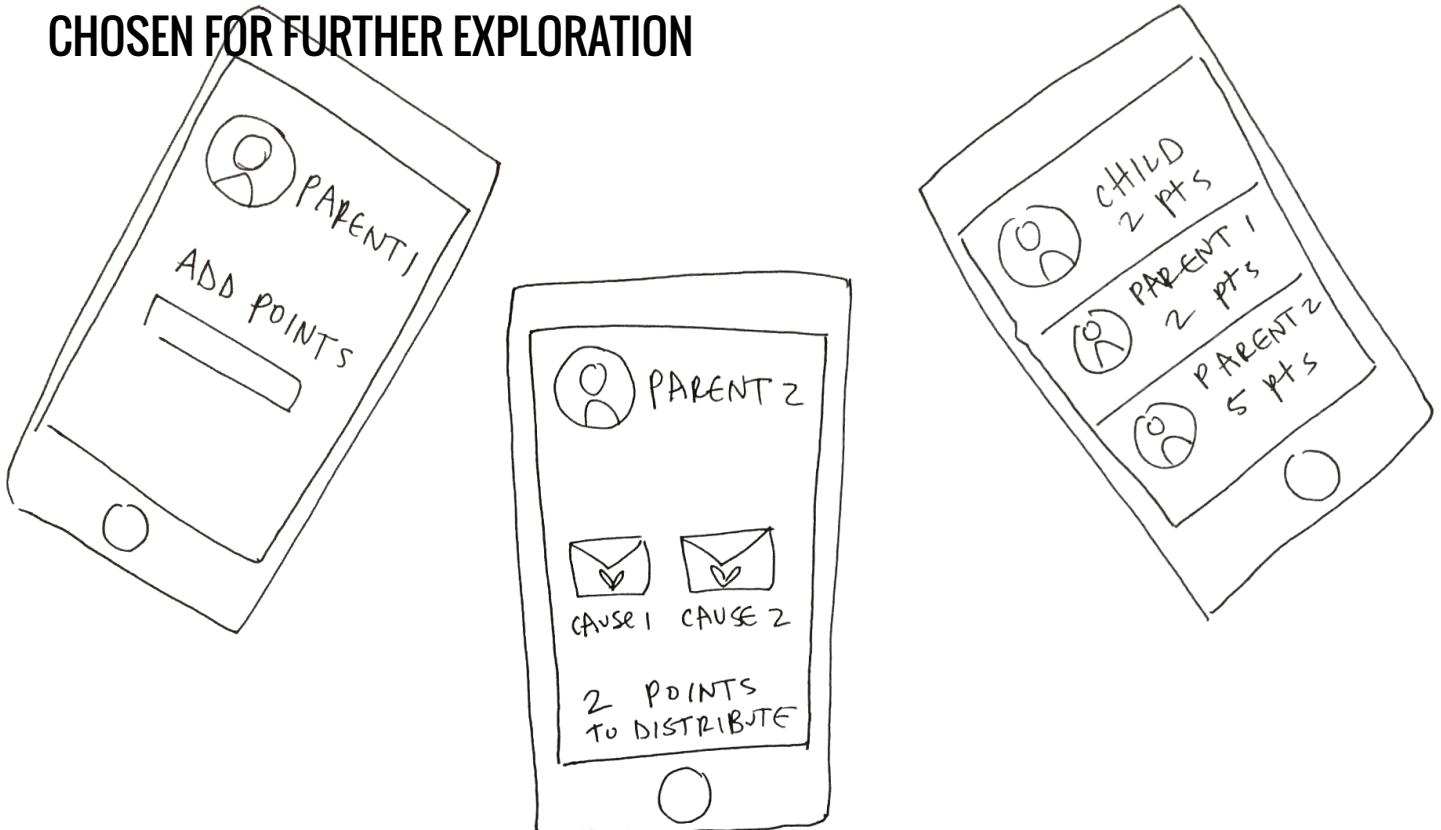
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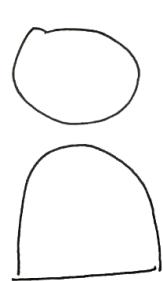
URGENCY



CHOOSEN FOR FURTHER EXPLORATION

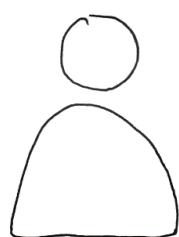


influence/say quantified in points

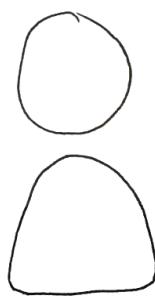


PARENT 1
5 points

committed \$50
to donation
+ 5 points



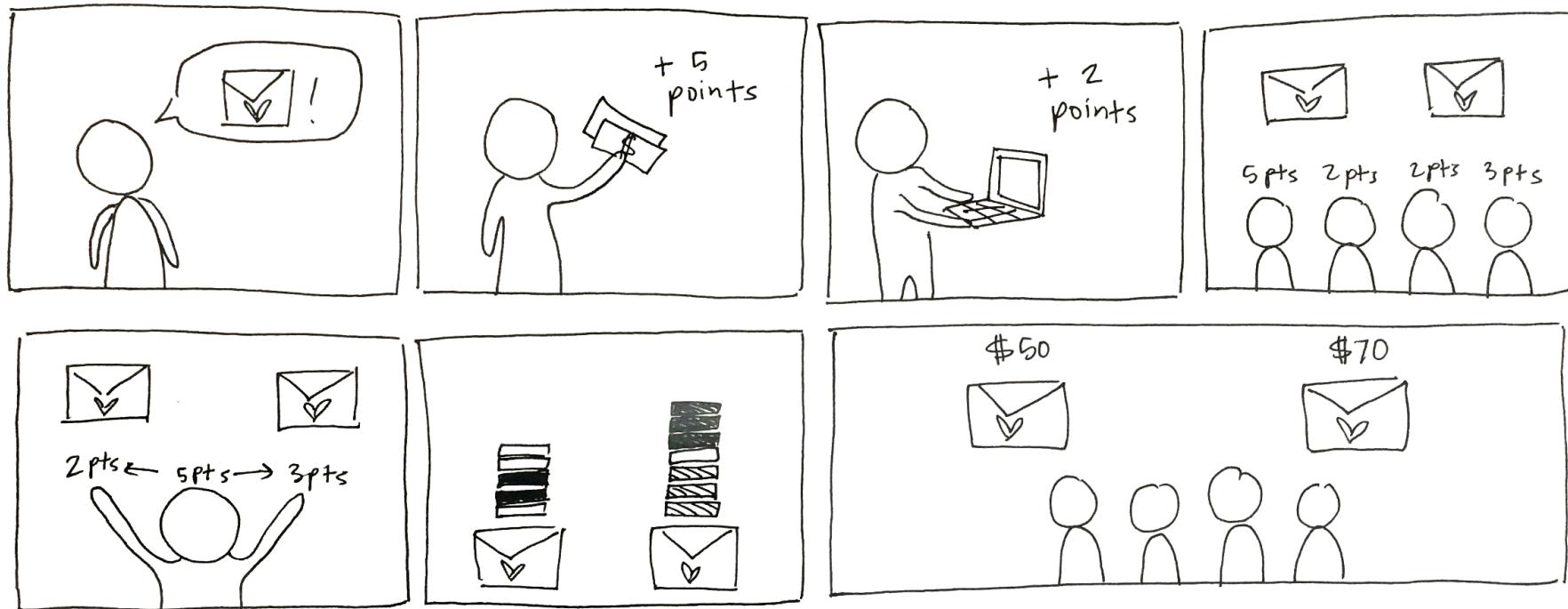
PARENT 2
2 points



CHILD
2 points

did 2 hours of
research
+ 2 points

at time to donate, everyone puts their points towards the cause(s) they want, and then pooled money is split accordingly



BROADER INTERACTION CONTEXT

FURTHER EXPLORATION: IDEA 1

Big idea

This idea turns the family decision-making process into a simple charity game, where point-tracking is done on the phone or computer. Points are distributed based on the amount of research each family member has done about their respective causes and how well they can persuade the other members about the importance of their cause. Each person is given a chance to “present their case,” and at the end of everyone’s presentations, every person has a collection of points which determine their “say” in where the money will go. They can use the points toward the cause they originally started with, or if another family member has made a particularly compelling case for a different cause, they can use the points toward that as well. This idea will help inform each family member about the reasons behind supporting each cause, and go toward building a fair and educated consensus about how to distribute money between causes (or whether all the money should go to one cause, depending on how persuasive that presentation was!).

Users and major needs

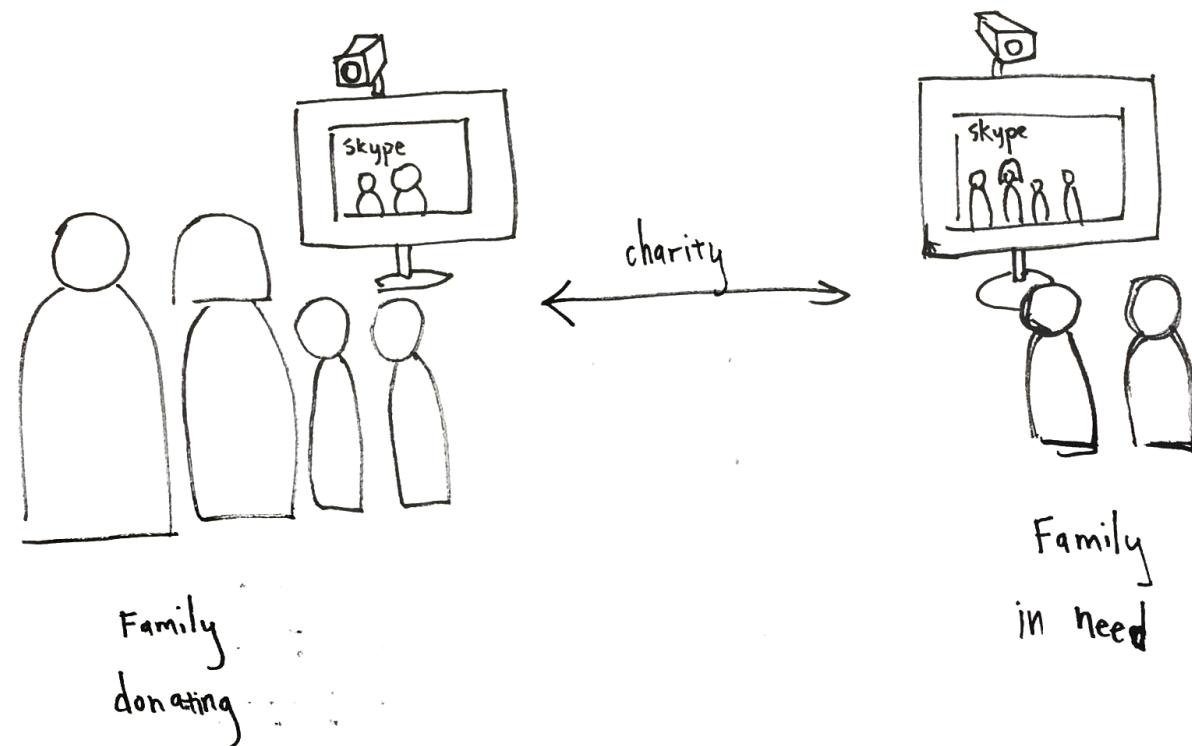
The users of this idea would be the family of four (this could be expanded, and could work for a broader group beyond the family as well). Their needs might include:

- Need to engage other people in the things you care about
- Need to have more information (qualitative and quantitative) about different causes before donating
- Need to trust the cause or project they’re donating to
- Need to create consensus among conflicting viewpoints and beliefs
- Need to educate other members about causes they are not familiar with
- Need to feel a sense of accomplishment for their donation
- Need to find a way to help everyone have a say in the decision
- Need to fairly distribute money to different causes

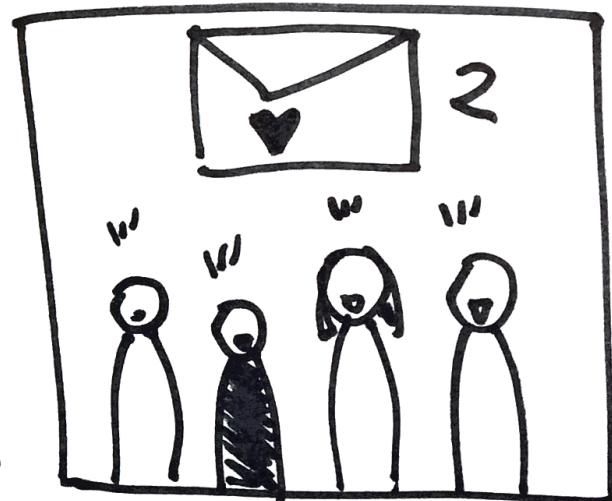
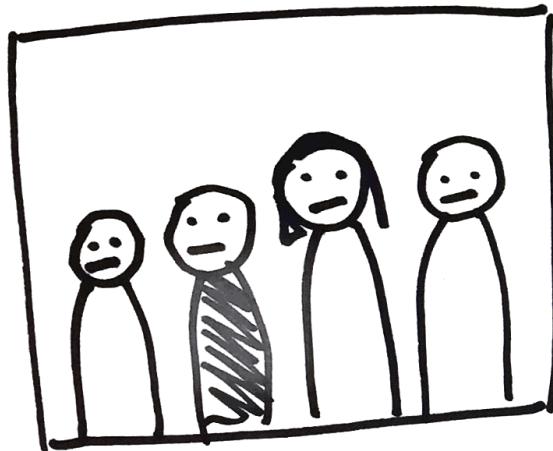
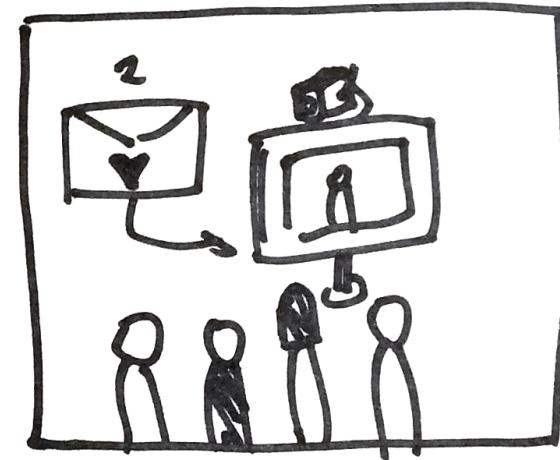
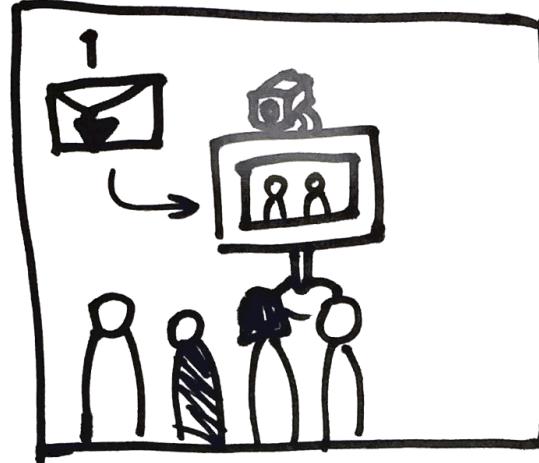
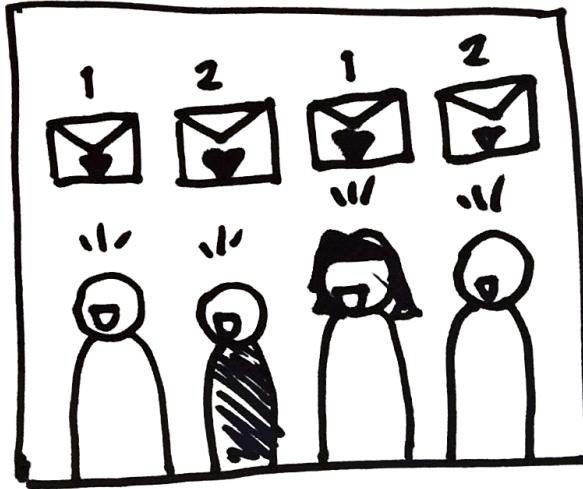
Design solution

Our design solution addresses the needs above by creating an environment in which family members can both inform and be educated about each other’s causes, and where each person has the flexibility to change their decisions after hearing each other’s cases. Instead of arbitrarily distributing decision-making weight amongst a family, those who do more research and demonstrate a stronger urgency for their cause can impact the final decision of which causes to donate to. All family members will walk away with a better sense of why their contributions were important.

CHOSEN FOR FURTHER EXPLORATION



-build empathy for
different groups



VIDEO
CALLING
RECIPIENTS OF
DONATIONS

BROADER INTERACTION CONTEXT

FURTHER EXPLORATION: IDEA 2

Big idea

This idea involves building empathy through directly connecting the family members with the recipients of their donations or people who can help inform the members about each specific cause. There is a focus on the cause over the particular charity—for instance, if one of the children is really passionate about upholding civil liberties, this design solution would connect and schedule a time for the family members to video chat with an “expert” in this area (perhaps a representative or volunteer from ACLU, or someone with a personal story to share). This would encourage all family members to engage and really learn about each cause through a more human lens before making a decision.

Users and major needs

The users of this idea would be the family of four (this could be expanded, and could work for a broader group beyond the family as well). Their needs might include:

- Need to understand the amount of impact created through the donation
- Need to engage other people in the things you care about
- Need to have more information (qualitative and quantitative) about different causes before donating
- Need to trust the cause or project they’re donating to
- Need to create consensus among conflicting viewpoints and beliefs
- Need to educate other members about causes they are not familiar with
- Need to find a way to help everyone have a say in the decision

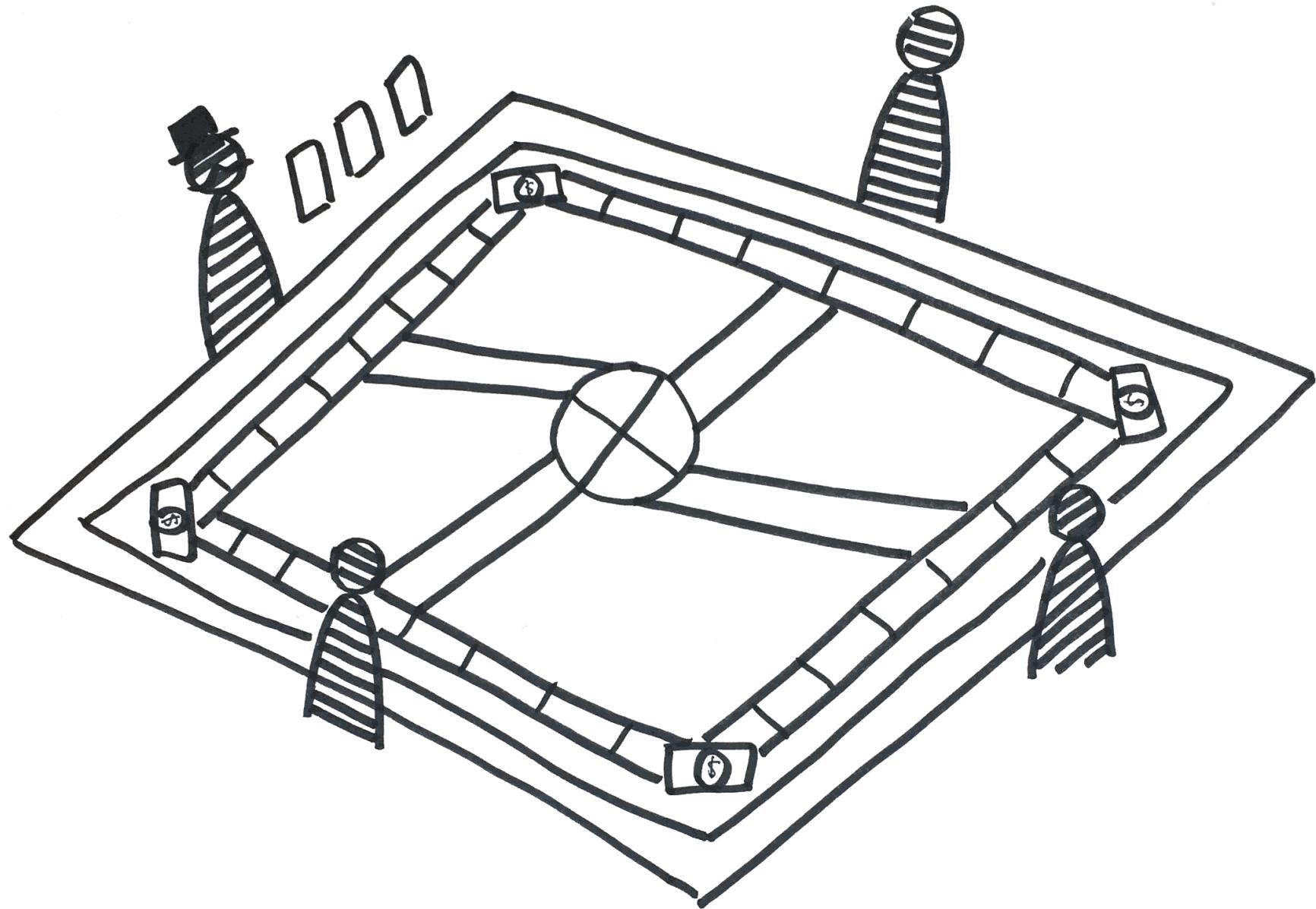
Design solution

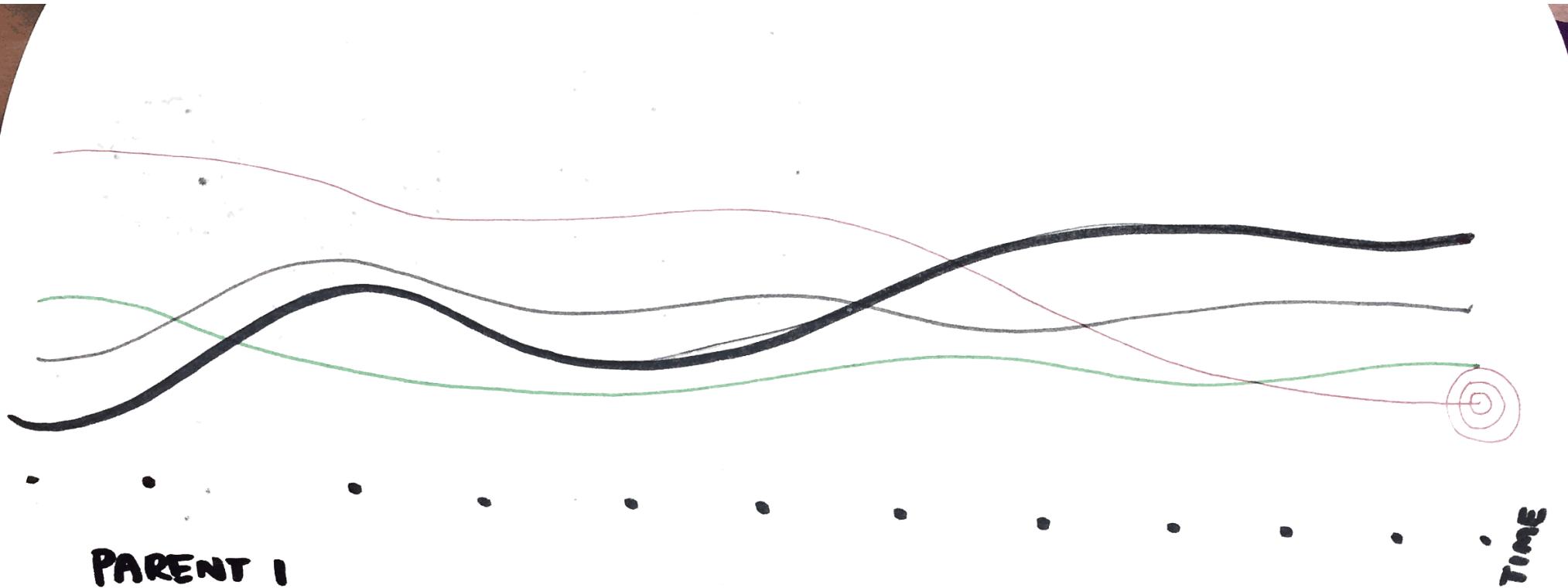
Our design solutions addresses the needs above by bringing the family members together to build empathy and trust around each other’s causes by consulting people who have had personal experiences and have been impacted by donations to these causes. Rather than asking each family member to confront the others by pitching their cause, we bring the focus to an outside expert who may be able to better define the importance of the cause. This would help educate each person, while also reducing conflict within the family and helping people decide which cause seems the most urgent after hearing multiple personal stories.

P3.1

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BRAINSTORMED DARK HORSE IDEA SKETCHES & CHOSEN DARK HORSE IDEA





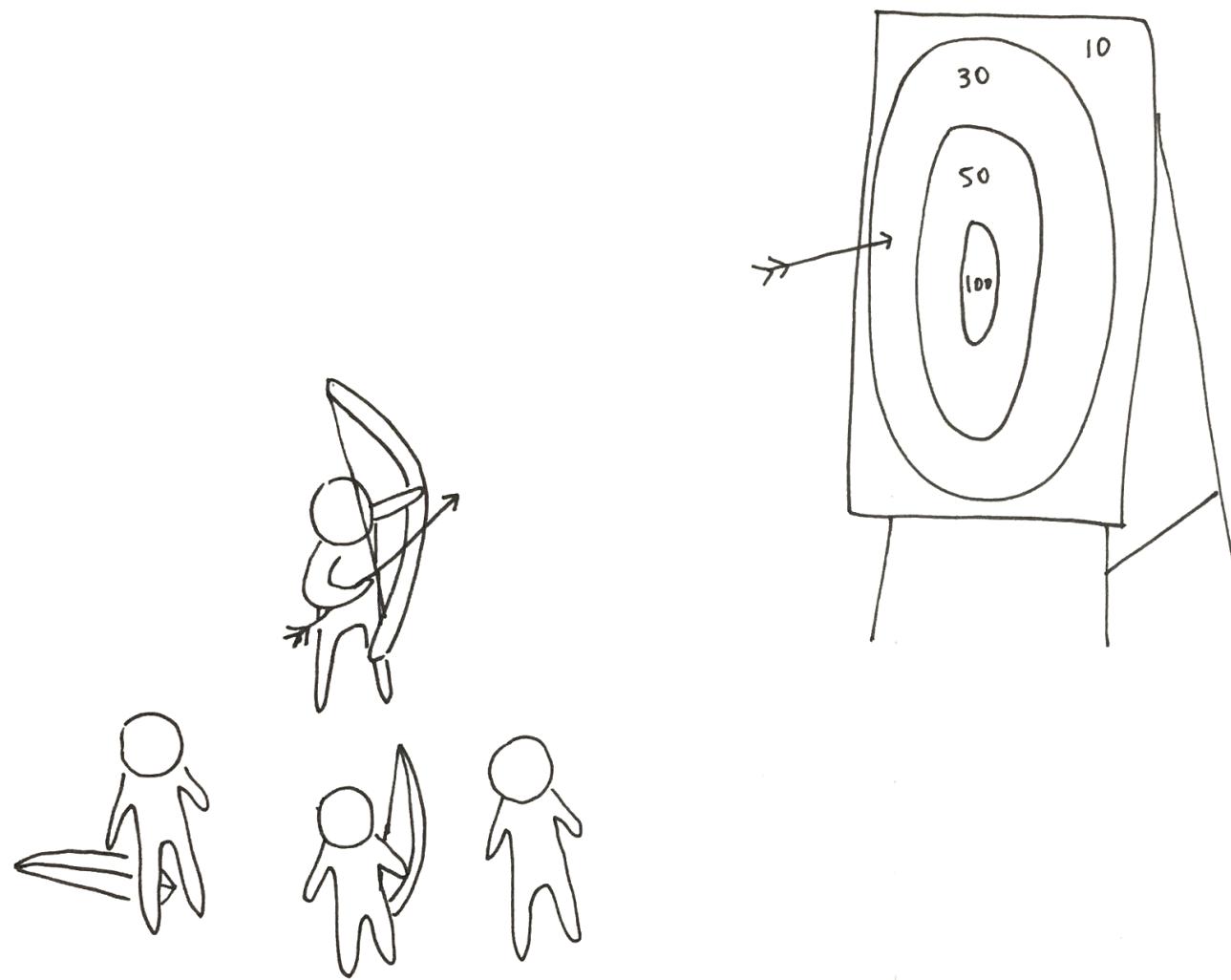
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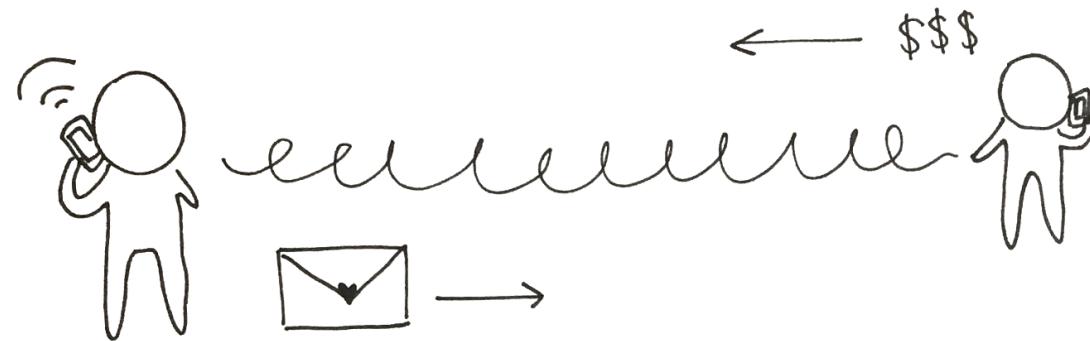
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CHILD 1

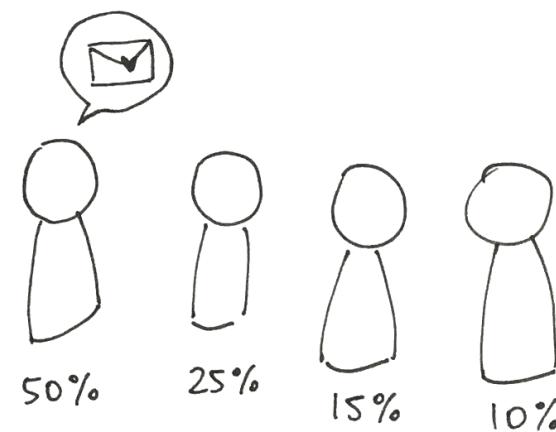
CHILD 2

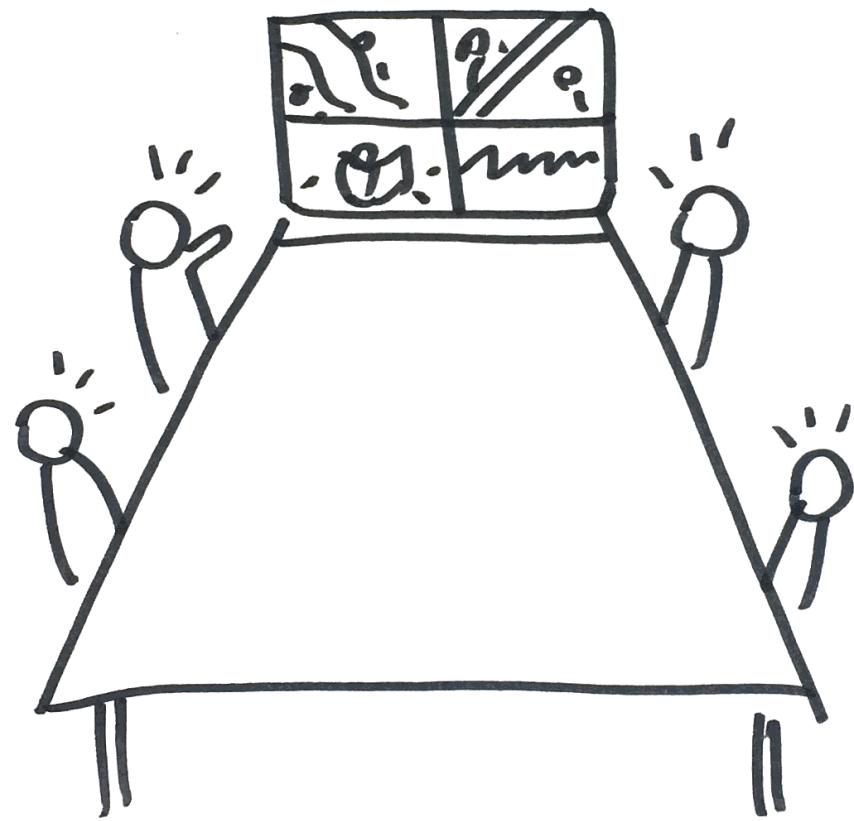
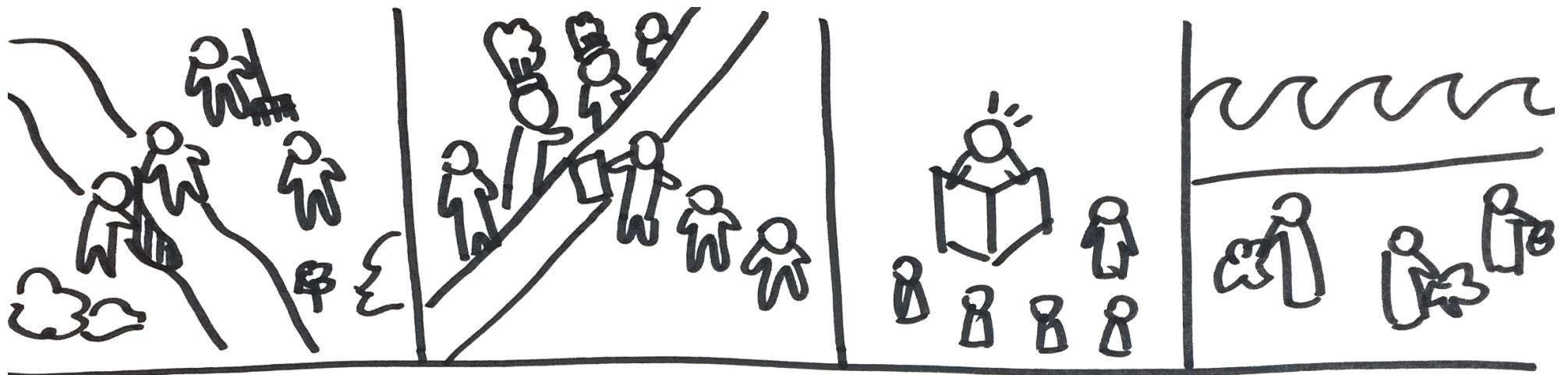
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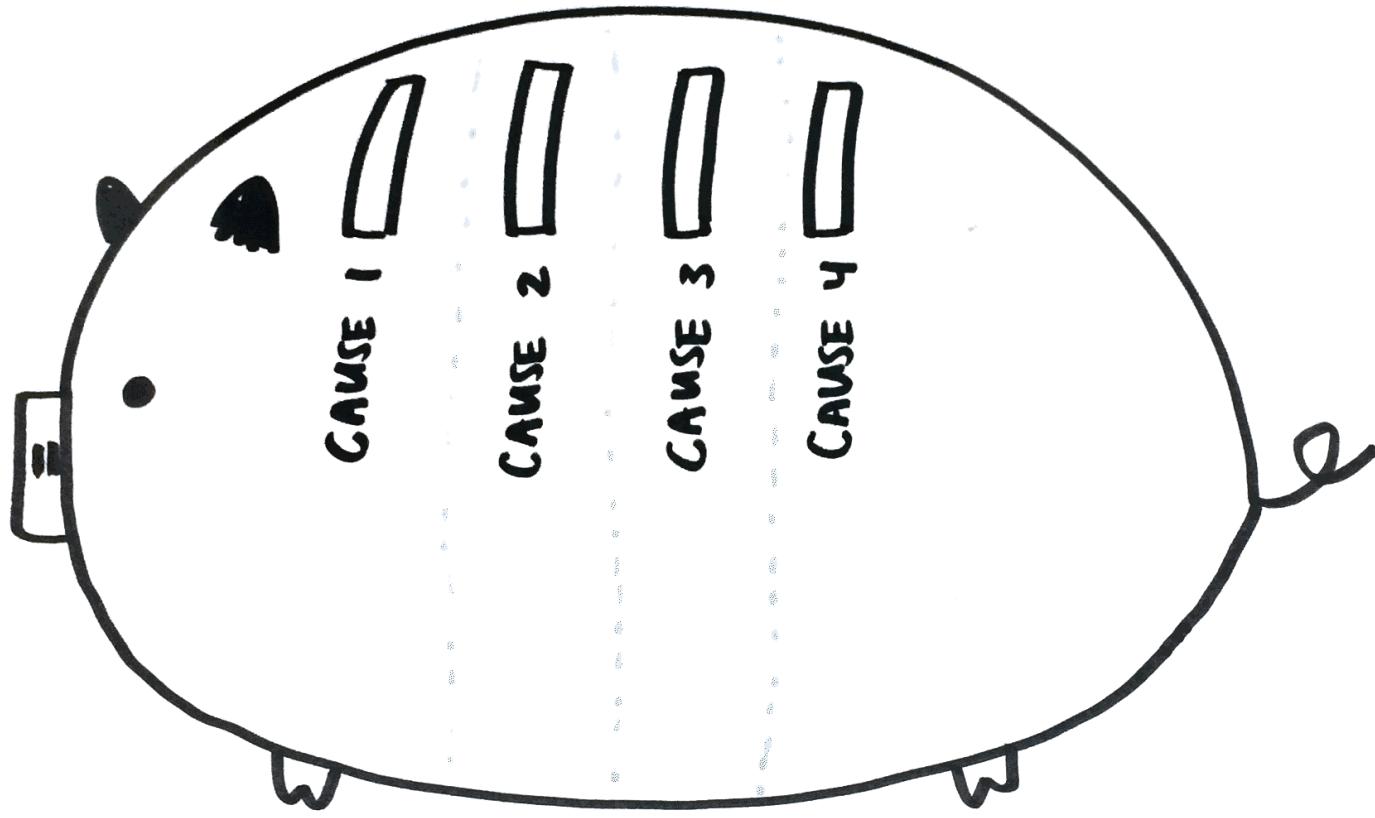


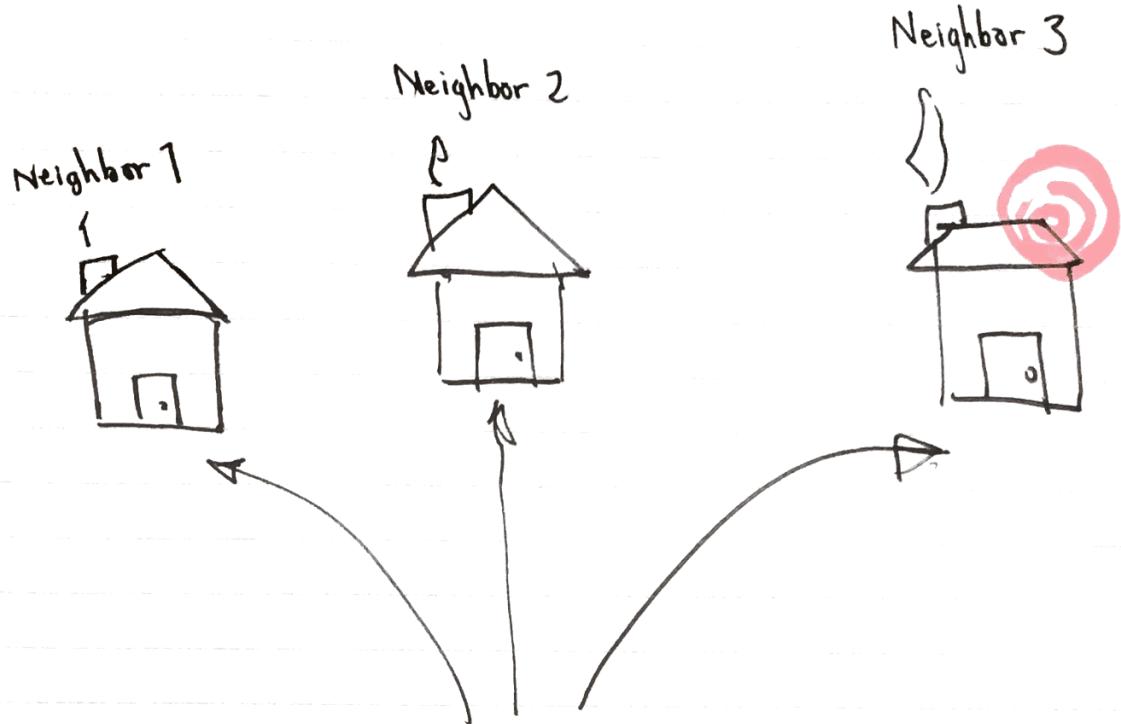


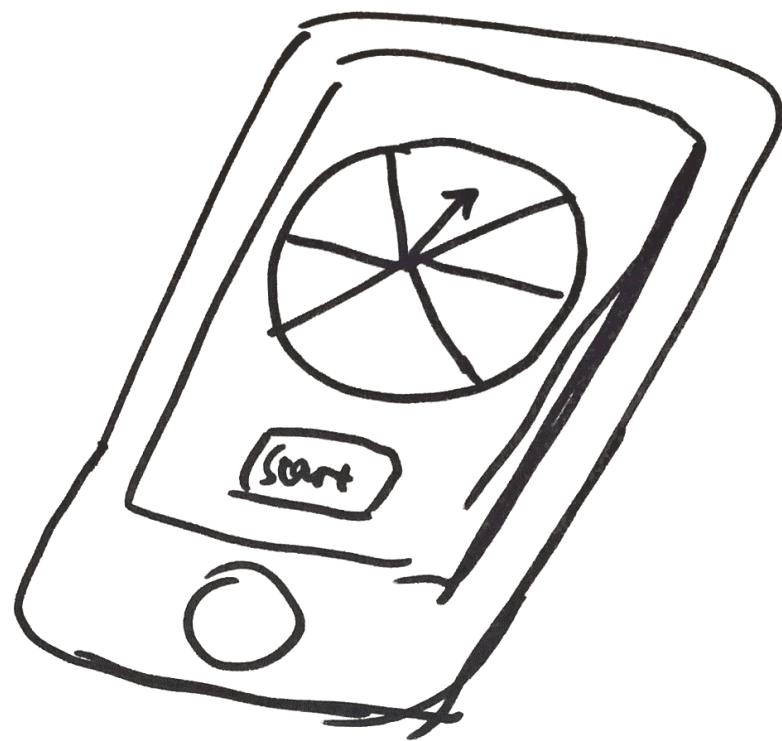
LEADERBOARD		
①	8	\$ 3000
②	8	\$ 1700
③	8	\$ 200
④	8	\$ 0





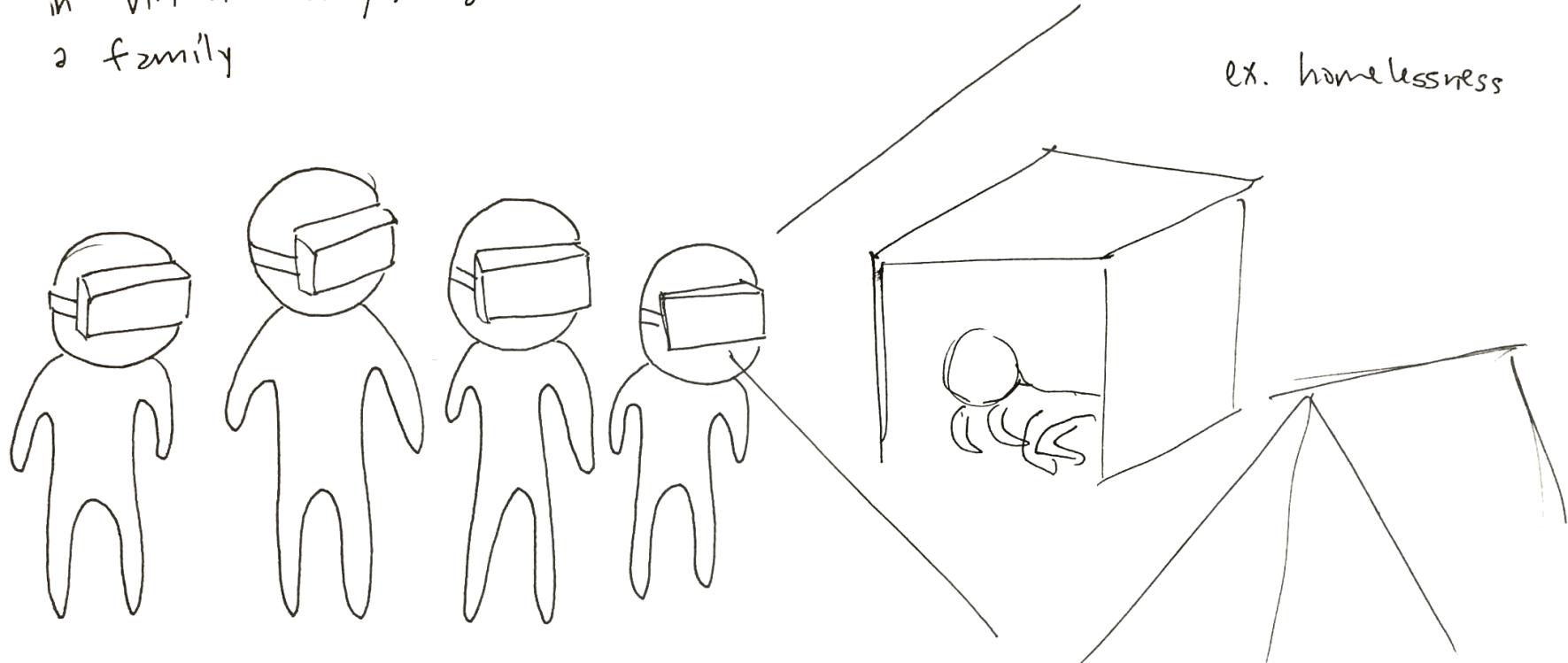




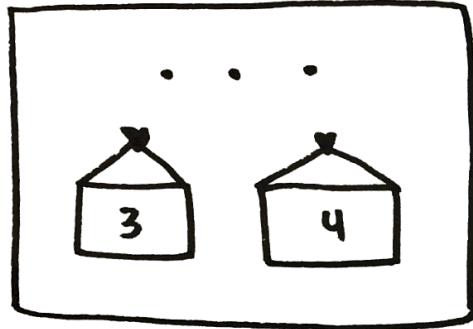
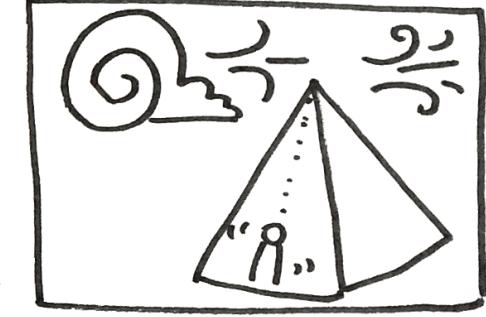
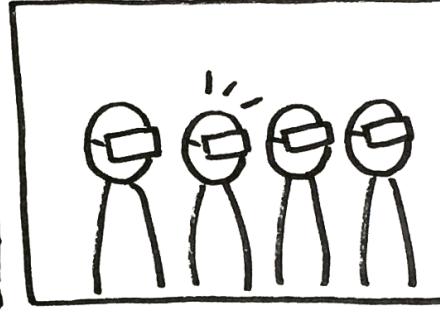
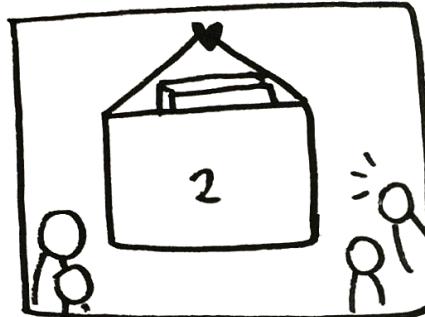
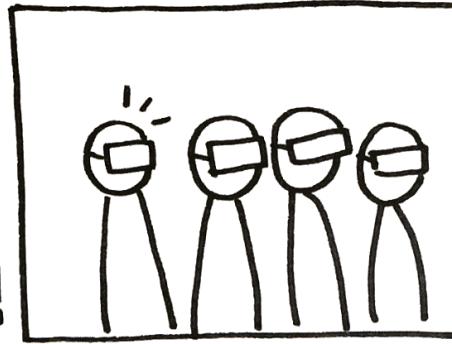
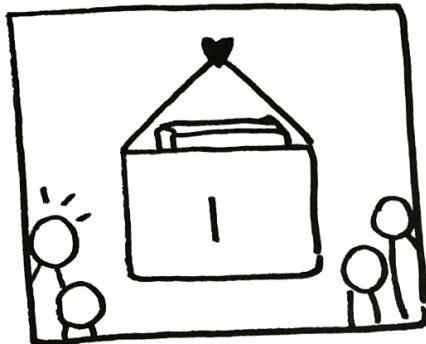
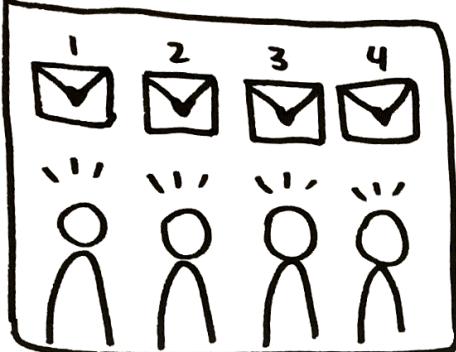


experience various causes
in Virtual reality, together as
a family

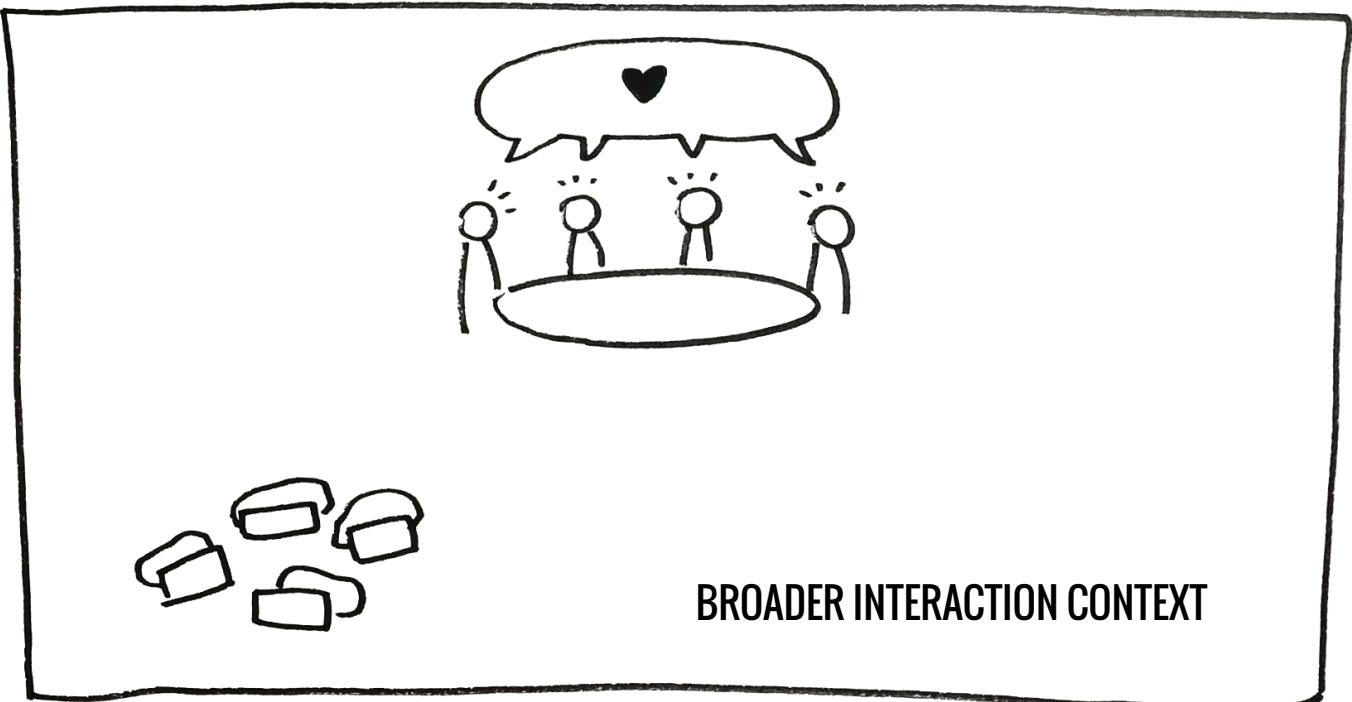
ex. homelessness



CHOSEN FOR FURTHER EXPLORATION



DARK HORSE
PROTOTYPE
VR EMPATHY BUILDING



FURTHER EXPLORATION: DARK HORSE

Big idea

This idea involves helping the family members build “direct” empathy for the importance of each other’s causes through virtual reality explorations. The focus here is on causes—our design solution would provide different VR explorations of a variety of causes. The family members could walk through each exploration together and experience the critical needs of each cause in a more visceral, direct way. We thought about having families do volunteer activities centered around each cause, but for many causes (especially those that have impact in geographically distant areas), it is hard to feel the direct impact—the same problem occurs for simply watching videos about a cause. Thus, we want to bring a more realistic experience to life that pulls the family members into each scenario and helps them build a stronger sense of empathy and understanding before making a decision about where to donate.

Users and major needs

The users of this idea would be the family of four (this could be expanded, and could work for a broader group beyond the family as well). Their needs might include:

- Need to understand the amount of impact created through the donation
- Need to engage other people in the things you care about
- Need to have more information (qualitative and quantitative) about different causes before donating
- Need to trust the cause or project they’re donating to
- Need to create consensus among conflicting viewpoints and beliefs
- Need to educate other members about causes they are not familiar with
- Need to find a way to help everyone have a say in the decision
- Need to feel a sense of accomplishment for their donation
- Need to fairly distribute money to different causes

Design solution

Our design solutions addresses the above needs of the family by helping each member of the family build a more concrete understanding of what kind of impact their donations could have, and can educate through a visceral experience about the importance of each cause. These VR explorations, while traditionally used for things like gaming, can play a huge role in starting more productive, empathetic conversations between the family members as they decide how to split their donations to create the most impact.

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PROTOTYPES

PROTOTYPE 1: Decision making through a charity game

PROTOTYPE 2: Education through video chats

PROTOTYPE 3 (DARK HORSE): Empathy building through VR explorations

QUESTIONS

Here are a few of the questions we aimed to address through these prototypes (the primary questions each prototype is trying to answer are in bold, although each prototype also addresses other overlapping questions):

How do you decide who has more say in the decision making? (Prototype 1)

How do family members educate each other about fields they don't know about? (Prototype 2)

How can we help family members build empathy about each other's choice of cause? (Prototype 3)

How do you mediate decisions between family members with conflicting viewpoints?

How do you help everyone feel like they had a say in the decision?

How can you effectively weigh the desires of each family member, and what factors should contribute to those weights?

What are the benefits of donating to multiple causes versus donating to one?

Do people feel like the impact to each cause is diluted if donating to multiple causes?

Do people value not arguing over the amount of money going to the cause they personally support?

Will people care more about the cause they are giving to, regardless of the amount donated?

Will people still feel like they are giving as a family if everyone is donating to different causes?

How do you make family members feel a sense of accomplishment for their donation?

When people have disagreements, how can we help them decide between splitting the money and deciding on one cause?

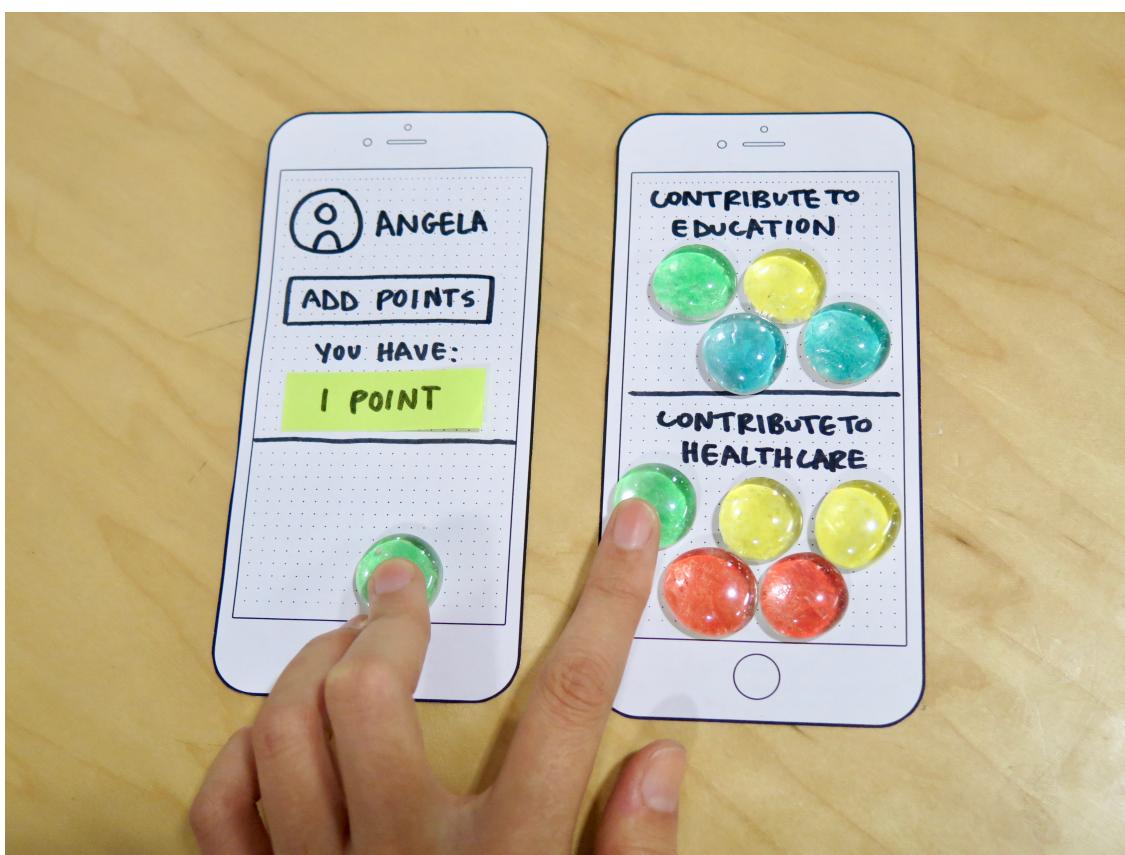
Will people be more willing to compromise if it meant they got more say in future decisions?

PROTOTYPE 1: DECISION MAKING THROUGH A CHARITY GAME

We wanted to create a simple way to see how people would respond to playing an educational “game” with their family members to learn more about each person’s chosen cause while reaching a consensus about where to donate as a family. We created simple paper prototypes with marbles as the “points”—not so much of an interface as a straightforward experience that we could walk through with users. The idea of the game is that each family member has a set amount of time to “pitch” their cause, and depending on the amount of research they’ve done to understand their cause, they will receive points. Family members can decide how urgent the need for each cause seems to be after learning about each one, and points are thus distributed. At the end of the game, each person can choose to send their points to the causes they felt most strongly about—thus, each cause ceases to be “owned” by each person, but the donation decision is reached through a more collaborative process that encourages family members to discuss and educate each other.

Question: How do you decide who has more say in the decision making?





PROTOTYPE 2: EDUCATION THROUGH VIDEO CHATS

We prototyped an idea where family members would be able to do a video call with someone affiliated with a cause that another family member was passionate about—this might be a more direct and informative way of educating each family member about the impact of each cause. We imagined that the video chats would be held with either representatives from organizations aligning with each cause, or with people who had benefited from support for the cause in the past. These personal stories could open up new narratives and channels for education for the family members to learn about each cause before deciding where to donate.

Question: How do family members educate each other about fields they don't know about?



PROTOTYPE 3: EMPATHY BUILDING THROUGH VR EXPLORATIONS

We imagined creating a set of “explorations,” or experiences, centered around different causes so that a family could walk through the exploration together to build empathy and create a deeper understanding of the needs of each cause. VR is usually used in gaming, but we thought that there was a lot of potential here to build a more comprehensive and visceral experience that could be used to help people more deeply relate to the causes they eventually decide to donate to. If family members really feel a strong connection to the cause through the VR exploration, this will help them make a decision about where they want their donations to go, regardless of what cause they originally proposed.

Question: How can we help family members build empathy about each other's choice of cause?



