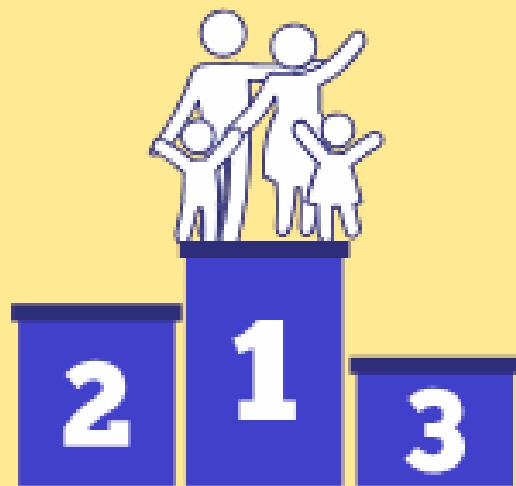


SCREENKEY



BROUGHT TO YOU BY

**NUMBER NEIGHBOR
INC.**

Meet the Team



YuYu Madigan

- ❑ Incoming Sophomore
- 🎓 Intended Informatics
- 💼 Editor + Developer
- ⦿ Bainbridge Island, WA



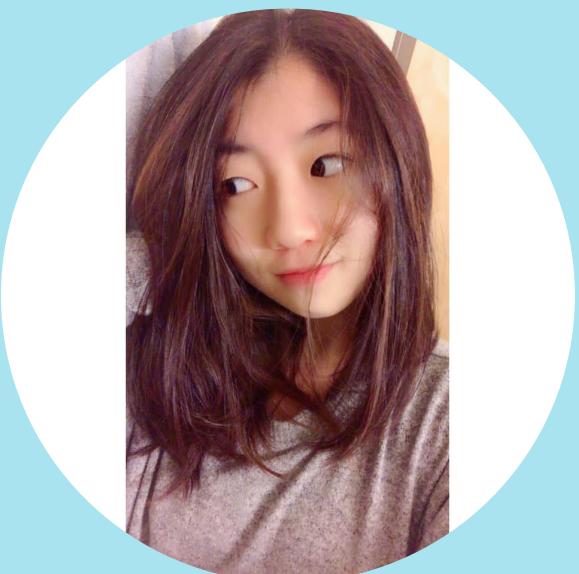
Saatvik Arya

- ❑ Incoming Sophomore
- 🎓 Intended Informatics
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- ❑ Incoming Sophomore
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Introduction



WHO WE ARE *and what we do*

Number Neighbor Inc. seeks to find a way to reduce the dependency on screen time and promote healthy behaviors and habits in children and adults alike. We identified children to the focus group as we found that there are many developmental and health risks to the increased screen time. Through user research conducted over the past few weeks, we learned that the number one priority is maintaining trust within the family. We also learned that many families wish they had a better way to monitor and open a dialogue for between them and their child.

- User Persona -

Karen Johnson - Working Mother of 2



"When life gives you lemons, make lemon cake!"

Age: 43

Work: Owns Buttercup Bakery

Family: Married,

Children: Girl (7 yrs), Boy (13 yrs)

Location: Issaquah, WA

Bio

Karen is a mom of a 7 year old girl and 13 year old boy. She is also the owner of Buttercup Bakery, voted the best bakery in Issaquah for 3 years in a row. She is concerned about her son's increasing use of smartphone. She wants an easy non intrusive parental control app that she can use for both her son and her daughter. She likes minimal and functional apps like square which she uses at her bakery. She spends most of her weekdays at the bakery and allows her kids to watch Youtube videos on the tablet. She wants to stay in the loop about what/who her kids watch and to be notified if they watch anything inappropriate.

Habits

- Doing yoga
- Baking
- Cooking
- Watching movie
- Reading magazines

Goals

- Wants to connect with her children and be able to parent them while at the shop
- Know what her kids are up to on their devices without breaking their trust

Frustrations

- Works at the bakery 6 days a week and doesn't have time to care for children
- Has a frequent babysitter and lots of technology to keep children entertained
- Cannot manage current apps while away and busy
- Is guilty of her excessive use of technology to manage

Tasks and Behavior

- Mother
- Worker
- Wife

Capabilities

- Baking
- Good communication skills with customers

User Needs

- The app can help her control the screen time for kids.
- The idea of how to make children stay away devices and decrease the time of spending on screen

Family Style

- Willing to communicate with her children about anything
- Husband is also busy on the job
- Lack of family time sometimes due to both parents' busy work

Devices that children usually use:



Motivation

Incentive



Fear



Growth



Power



Social



Daily Routine

- Weekdays + Saturday
 - Waking children up in the morning.
 - Sending children to the babysitter
 - Go to work
 - Take the children back
 - Buying the dinner
 - Sleep
- Sunday
 - Let the children sleep until they wake up
 - Doing yoga
 - Cook for each meal
 - Play with kids

- User Persona -



Shu Fen Chen - Babysitter of 3 children



"It takes a big heart to help shape little minds."

Age: 55

Work: Babysitter in a family of three children

Family: Married and have kids

Location: Taipei, Taiwan

Bio

Shu Fen Chen is a babysitter and also a mother in Taiwan. She has done babysitting for 6 years and she really loves children. Her goal is to become a good babysitter and make her best to take care of every child.

Habits

- Doing yoga
- Playing the piano
- Dancing
- Singing

Family Style

- Having her own children
 - Already adults
- Married
- Small family

Goals

- Easy way to decrease children's use of devices without increasing tantrums or argument
- Incentivizing activities not involving devices

Frustrations

- Sometimes it is hard to take care of three children at the same time.
- She would like to take the kids outside sometimes but children reject her and instead, they ask for using technology devices.
- Children might argue about the limited time of using technology devices or use them secretly. It is hard to control all of them.
- The app that Shu Fen uses to monitor children's use of screen time often shows errors, and the user interface of the app is hard to understand and follow.

User Needs

- The app that is easy to use and can help her control the screen time for multiple kids at the same time.
- The idea of how to make children stay away from devices and decrease the time of spending on screen

Capabilities

- Taking care of children
- Cooking
- Good communication skills with both parents and children

Tasks and Behavior

- Mother
- Grandmother
- Babysitter
- Wife

Devices that children usually use:



Motivation

Incentive

Growth

Power

Social

Daily Routine

- Weekdays
 - Buying food in the traditional market in Taipei in the early morning.
 - Doing yoga
 - Picking up the kids from their parents after doing yoga
 - Taking care of children
- Weekends
 - Cook for each meal
 - Buying food in the traditional market in Taipei in the morning.
 - Doing yoga
 - Go out and dance with her neighbors
 - Go out with her husband and have fun
 - Go picnic or shopping

- User Persona -



"Adults are just outdated children."

Frustrations

- He loves to play phone games with his brother, but his mom doesn't let him play.
- He wonders why his parents can play phone games but he can't
- He feels what his parents do is unfair
- He doesn't like to play outside

Goals

- To make Brian feel what his parents do is fair
- To have the screen time rule that would not just restrict children, but also adults, try to make it fair
- Encourage Brian to play outside with his friends

User Needs

- The thing that can make him feel the restriction that his parents set is fair

Capabilities

- Washing dishes
- logical thinking
- Good communication skill with parents and friends
- Would argue for the thing that he feels unfair

Family Style

- Small family
- One older brother
- Live with parents who are sometimes busy and need to hire the babysitter

Brian Smith

Age 8 • Student

Family: Parents, one sibling

Location: Seattle

Bio

Brian is an elementary school student in U.S. He is in first grade now. He loves to play phone game with his brother after school.

Habits

- Playing phone games
- Riding bike
- Singing

Devices that he usually uses



Daily Routine

Weekdays

- Wake up early and go to school
- Going back from school and play with friends
- Doing homework
- Go to sleep

Weekend

- Wake up late and eat lunch with family
- Doing homework
- Play with his brother
- Having dinner with his family
- Go to sleep

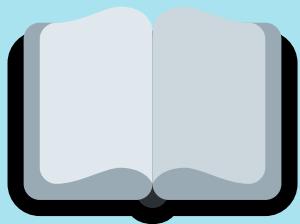
Tasks and Behavior

- Son
- Brother
- Student

Motivation



Solutions Considered

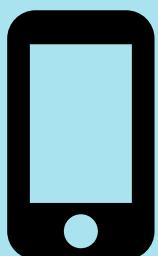


INTERACTIVE PARENTING BOOK

Helps to open a dialogue regarding appropriate screen time by providing a concrete basis for why the parents are setting rules. This book would help to keep the trust between the child and the parent since it becomes a tool for education rather than an imposing rule.

Adv: Promotes dialogue to build trust, no screens involved, fun way to engage the family

Disadv: Hard to update, hard to enforce, merely a tool without follow through, larger initial cost to family



FAMILY COMPETITION APP

This app compares family usage and encourages them to collaborate on screen time instead of putting all the emphasis on the child. Fun for the whole family the app promotes responsibility for all members of the family to work together as a team and encourages this collaboration through a reward and point system. By achieving various milestones as a group, the positive reinforcers will motivate them to limit their usage.

Adv: Encourages a team effort so that parents are not hypocritical to screen time usage, allows one to understand usage without employing negative feedback, affords many freedoms to the family

Disadv: Could cause competitive drama, parents seek downtime and don't want to be held accountable

Solutions Considered

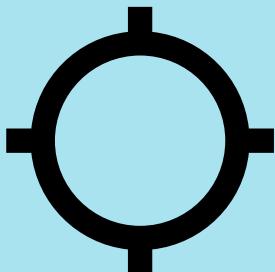


PEN PAL APP

Reward kids who use less screen time than the maximum set by the parents with points redeemable for postage. Based on the child's profile, the app connects them with a pen pal of a similar age around the world. Encourages reduced screen time and new friends

Adv: Encourages global communication and the art of handwriting

Disadv: Lack of self control, safety concerns



PLUSH TOY

This toy encourages the child to go outside as it is equipped with sensors and GPS trackers that connect to an app the parent monitors. As the toy is brought outside, the child earns additional points and can engage the toy to create more memories and experiences in their childhood away from screens.

Adv: Easy to use, encourages outside time, easy way for parents to track younger children without being overbearing

Disadv: Kids might lose the toy, expensive to create, privacy concerns

CHOSEN SOLUTION



Our survey made one thing clear: trust was the critical flaw in having monitoring apps. The Family Competition app was favored since it incorporates the whole family in which they all share responsibility rather than keeping the parents on a metaphorical pedestal and instead they can act as role models. The disadvantages to this solution seemed more manageable over others as well as it is clear that a family must know themselves to understand if it would work for them. It doesn't use negative reinforces but rather positive ones so that it becomes a fun family process rather than a punishing one and we found this to be an important component to a solution. This stood out as the best solutions due to its unique nature and ability to add features and new components. One key advantage is the flexibility and freedoms the apps affords to each family and parenting style as one model does not fit all solutions. Based on an exploratory study, Iurchenko concluded that "there are some promising links between gamification principles and health behavior change" (2017). Based on this insight, we decided to create an app for the whole family to monitor and track screen usage on key apps.

Solution Description

Parents can create a 'family' through the app and add their family members to it. Once they have created the family, they can set settings such as: period to reset, apps to track, and more and the app does the rest. The app tracks and reports each members usage on the period they indicated as they seek to fall below the threshold set by the primary user. We understand that each family has different restrictions on screen time and therefore we made sure almost all of the restrictions set in the app are customizable by the primary user. The primary user can adjust the hours of screen time as well as exclude apps from the screen restriction. Together the family earns points and unlock achievements in an effort to reduce their own screen time usage. Additionally, the family can opt in to compete against other families on the app. This further encourages team effort and they can earn even more points to reach the goals the primary user sets. Finally, the family is able to engage in mini challenges set by any of the members for more points. These could include lack of phone usage over a duration of time, reducing the frequency of unlocks, reducing the number of texts sent, and more.

Initial Ideation

Family Competition App

- Each family creates a profile
- All members of the family download this app
- the primary user adds the members to their "house"
- primary user indicates which apps should be trackers
 - social media
 - videos
 - etc
- app tracks how much each member uses their device and displays it on the group home screen
- primary user can set a maximum number of hours for the family
- family can set own reward system i.e., points are rewarded for being the lowest or most improved and the parents can promise that once the family achieves a certain point threshold they will reward the family with a certain meal or toy the child/children are vying for
- encourages dialogue as this is a team effort
- family's can join communities with similar initial usages
 - create community competitions
 - families with lower usages are rewarded
- each member is allowed on the app a maximum of 15 minutes a day to check for score
- holds all family accountable
- version for laptop
- gps tracker so if all devices are together and outside then more points are earned

Product Features



- Family profiles
- Family leader board
- Join a community
- Reward points
- Choose apps to track
- Maximum number of hours per period
- Different tracking modes for different parenting styles
- Limited access to application
- Flexibility

Primary Features

1

Family Leaderboard

Compare statistics of each family member and see trends over different time periods.

This app is accessible for a maximum of 15 minutes a day which encourages the family to limit its usage to brief check-ins.

Members can understand where they fall on the leaderboard and how they can decrease their own usage

2

Reward Points

Earn points for meetings goals set by primary user. Primary user sets a point goal with a certain prize that they will fulfill once their family achieves it. Points can be earned through decreasing average screen time per use over a designated period, by having the lowest score in the period, and by using the device under the nationally recommended time.

Secondary Features

1

Community Competition

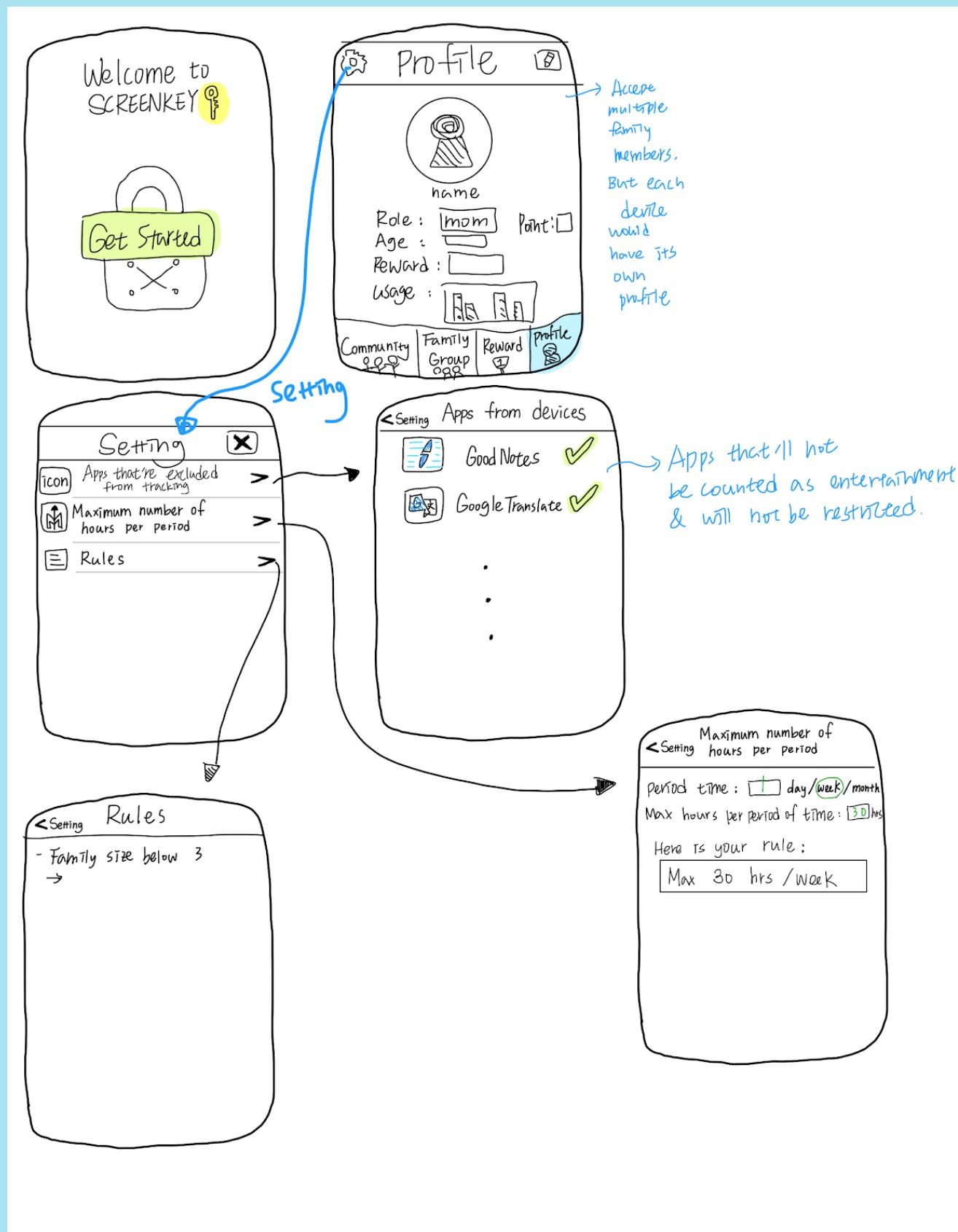
Families can choose to participate in community wide competitions in which they are grouped with other families with the same initial usage scores in efforts to decrease their own usages. Families can earn additional points for this.

2

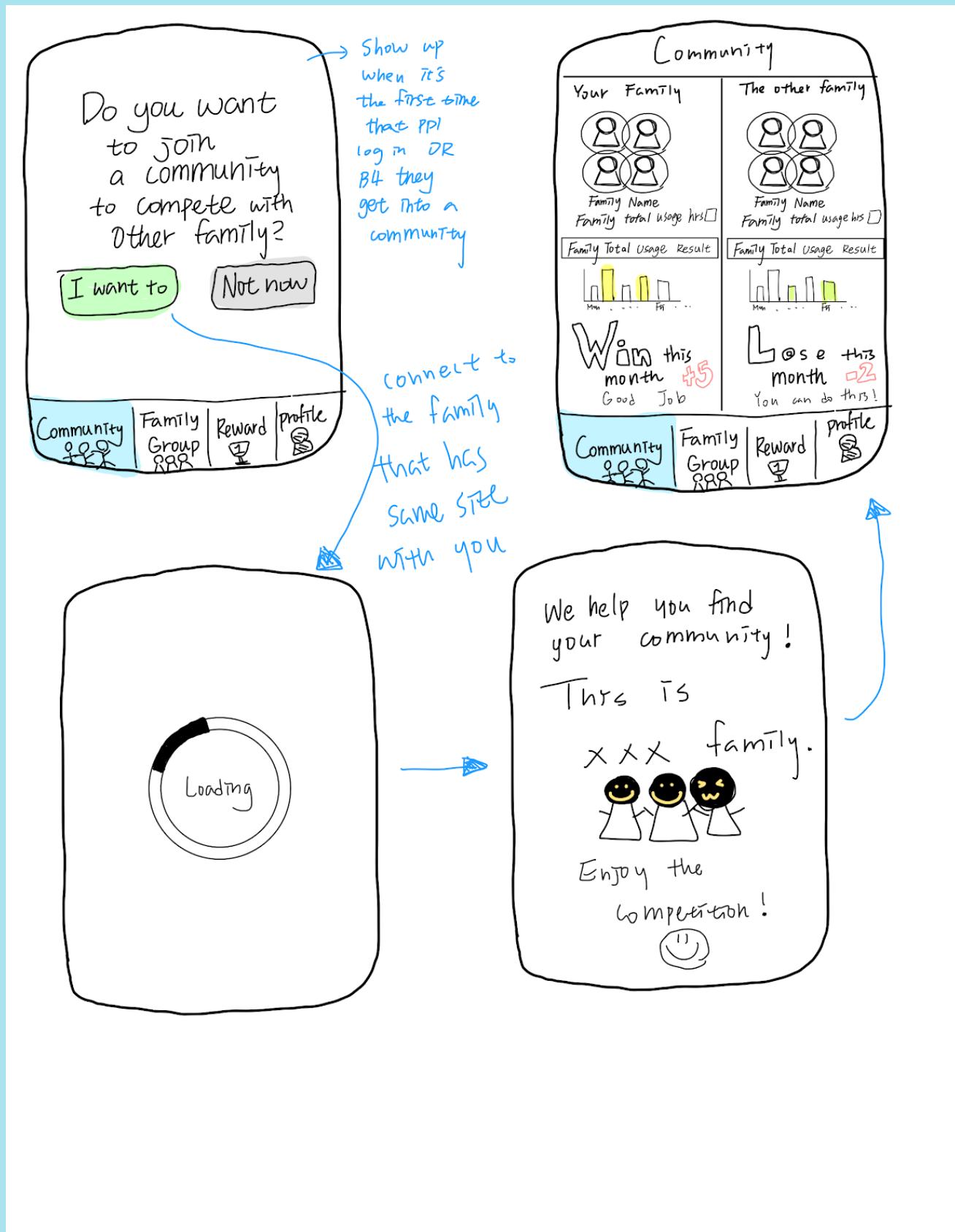
Mini Family Games

Mini family competitions allow any user to set challenges for their family in brief time gaps such as absolutely no phone usage for x amount of time. These challenges can be enforced during family game nights in efforts to keep everyone off screens and engaged in the activity. The user who sets the challenge can employ various positive or negative reinforces for whoever can win or lose the challenge.

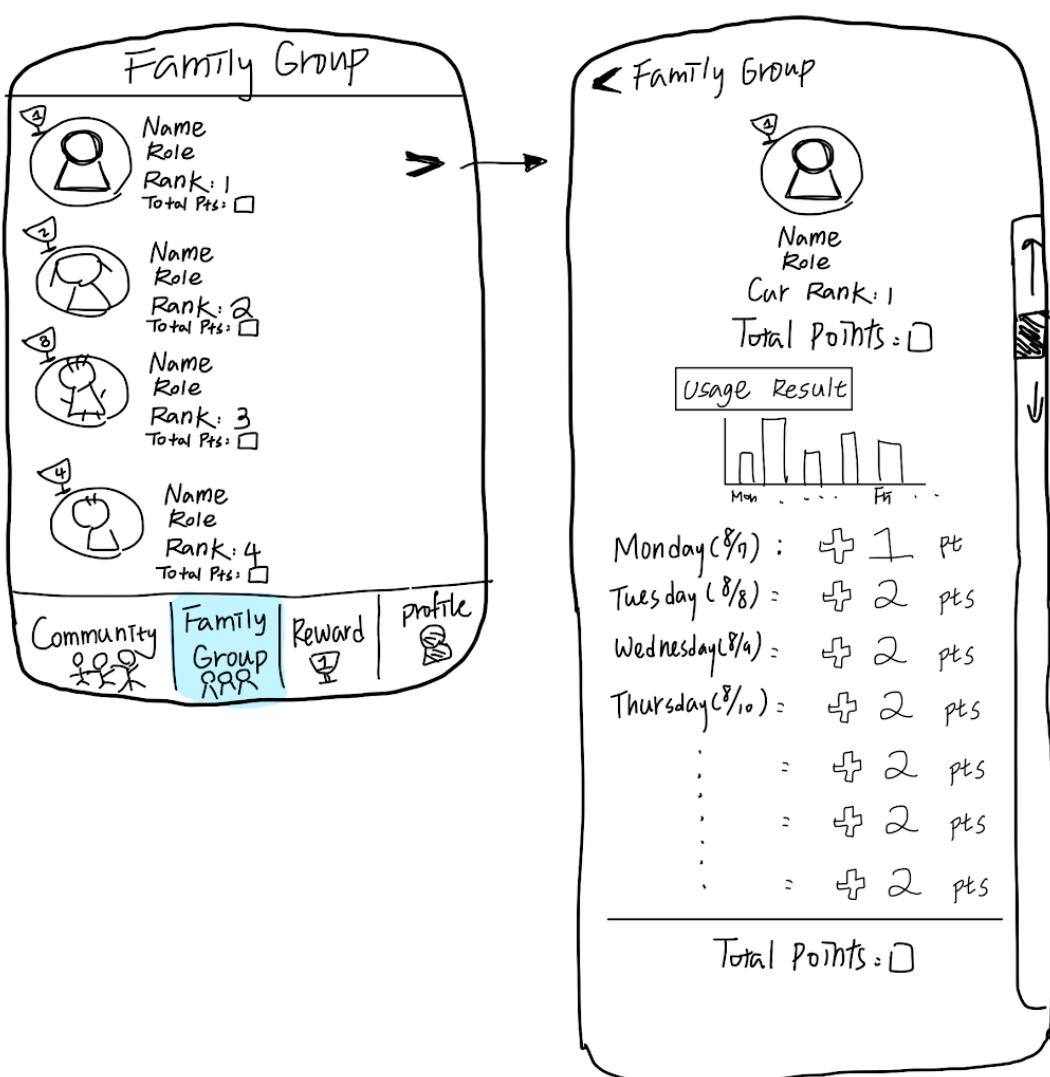
Low Wire Frames



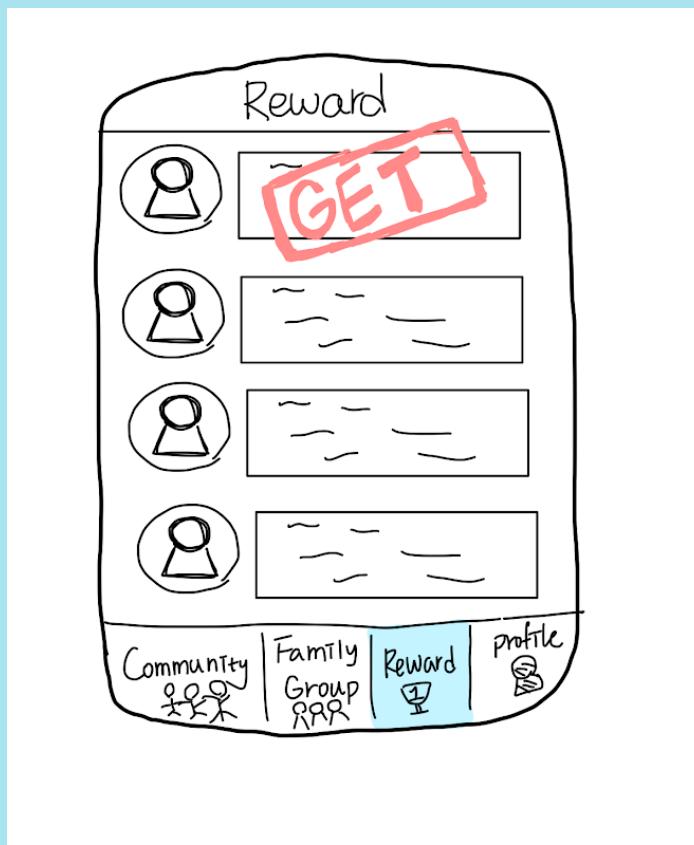
Low Wire Frames



Low Wire Frames



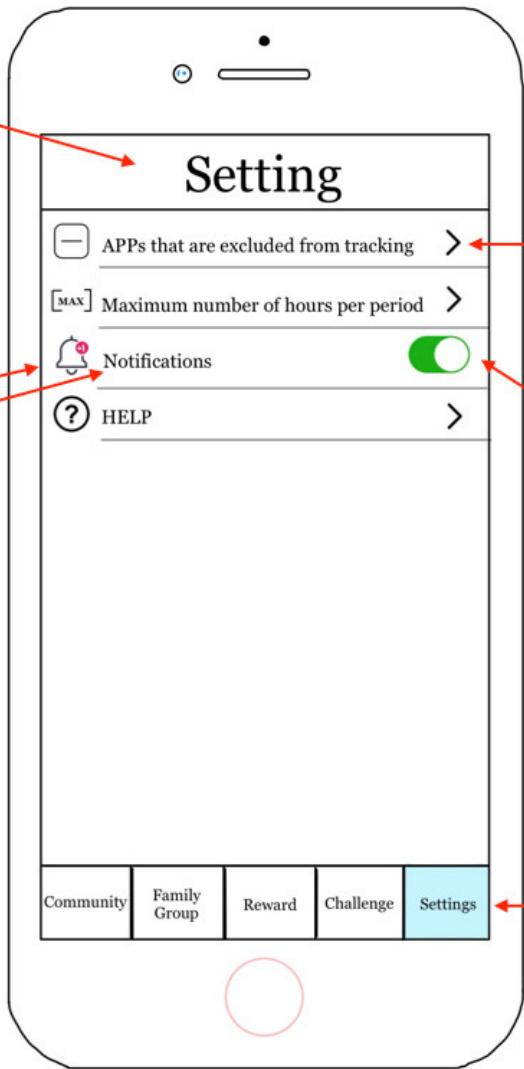
Low Wire Frames



Final Low Wire Frames



Settings



This is the Settings page.

Here are some functions that people can set up by themselves.

We use both icons and words to guide people. Because most of people can recognize the icons of notifications and help.

This icon would lead users to the next page. We use the picture of arrow to represent the icon of next page, because people usually use arrow to point to something, which makes users know they need to click on it then it will lead them to the thing that we point.

This is the Notification switch.
Green -> Open
Gray -> Close

The icon of Settings would become blue when user click it and go into the page. It is a **feedback** for the users.

This is the Settings page. Here are some functions that people can set up by themselves. The first function that users are allowed to set up is the maximum number of hours per period. They can set up how long the period they want it to be and also the maximum hours on screen. Then their usage time cannot go beyond the maximum hours in the period of time that they set. The second function is to allow users to choose the APPs that they want to exclude from tracking. For instance, people can make the educational apps to be excluded from tracking, and it will not be counted in the use of screen time. And other functions in this page is notifications and help. People can find some helpful FAQs in the page of help and choose

Settings

We come to this page from the Settings

Users can go back to the page of Settings by clicking this icon. We use both words and icons to make people easily see it and know the function of it.

This shows the rule they set. It is just the clarification which makes users to be able to easily see the rule.

Maximum number of hours per period

Period time : day/week/month

Max hours per period of time : hrs

Here is your rule :

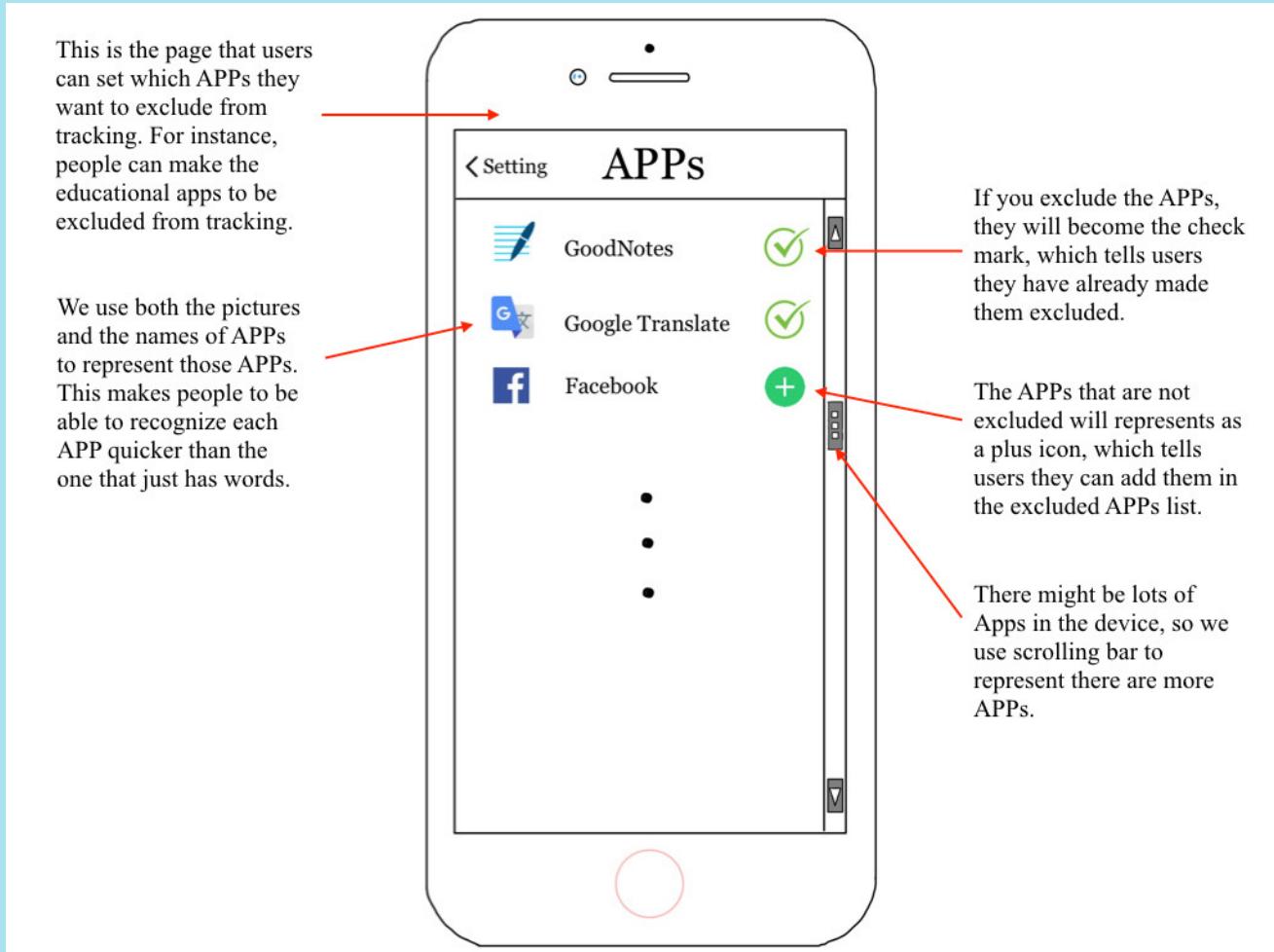
Max hrs / week

Setting

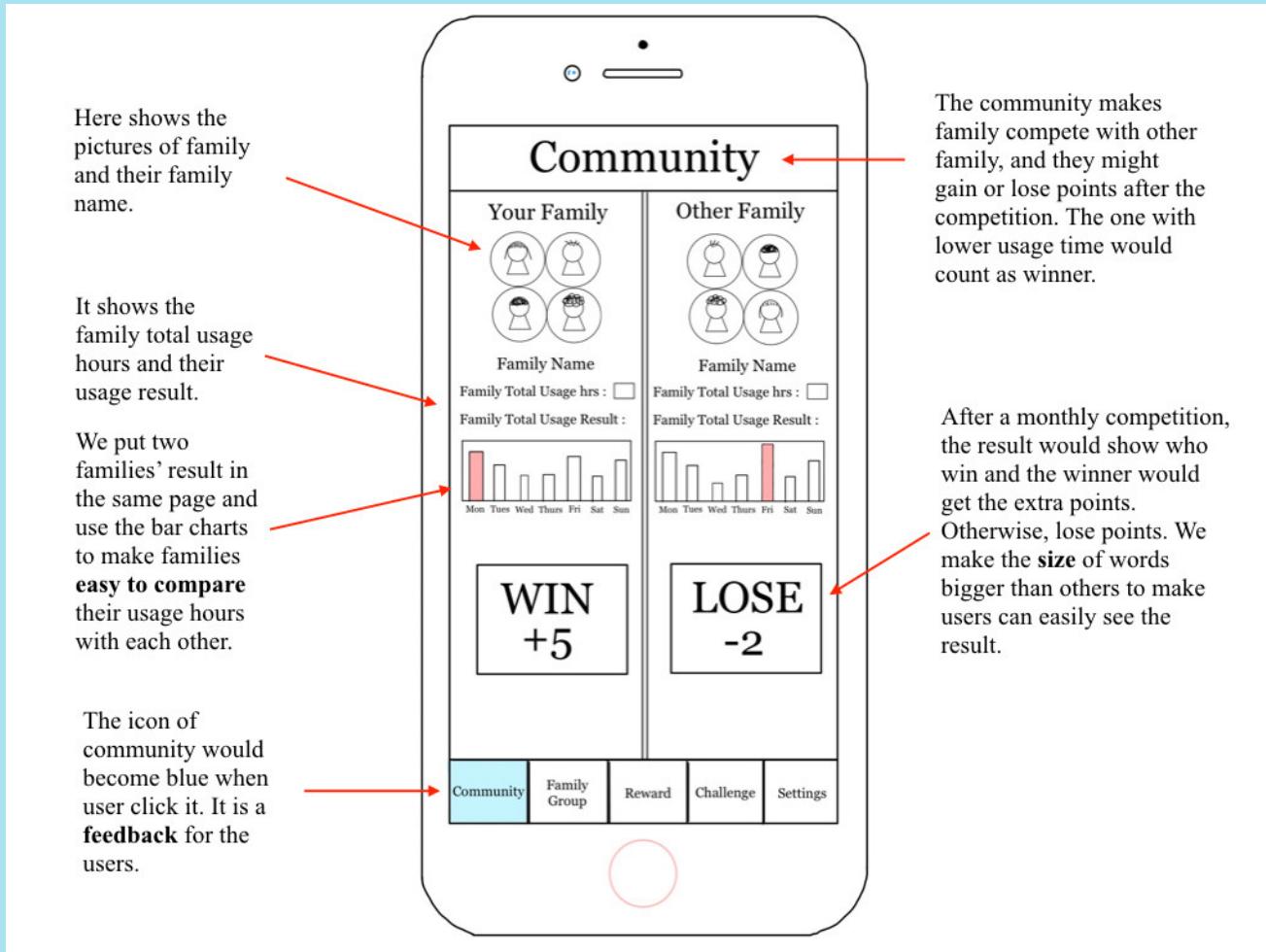
They can set up how long the period they want it to be and also the maximum hours on screen.

People can set up their own maximum number of hours per period in this page. Then, their usage time cannot go beyond the maximum hours in the period of time that they set.

Settings



Community



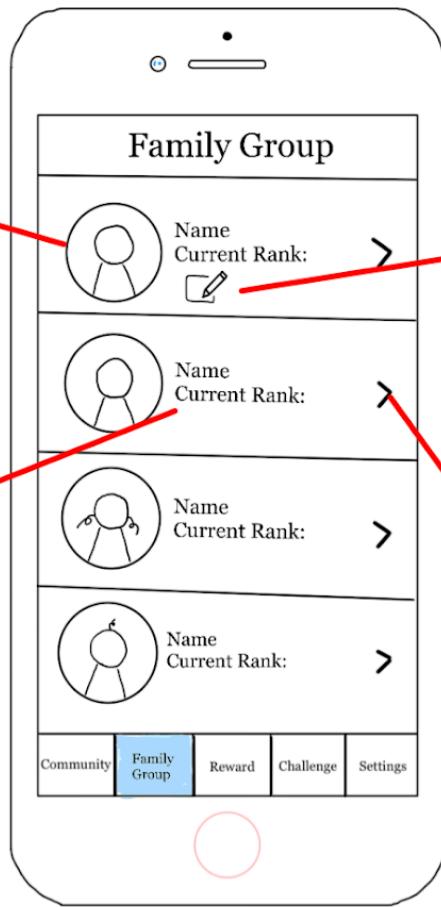
The community page makes family to be able to compete with other family, and they might gain or lose points during the competition. The one with lower usage time would count as winner. We put two families' result in the same page and use the bar charts to make families easily compare their usage hours with each other.

Family Group



It shows a picture of the user

It only shows the name and the rank because we think the users will care about those more. If they want more detail, they can see it by clicking the arrow icon



The family group page shows the user the ranks of each family members. They also can edit the profile and see more detail about the screen time usage by clicking the icons in this page.

Each member can edit their own profile by clicking this icon. They only allow to edit their own profile, not other members'.

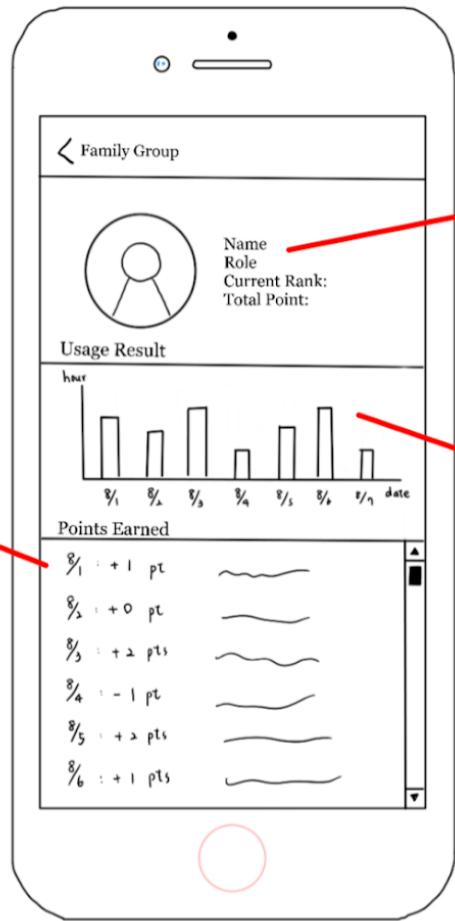
This arrow icon will link the user to a page that can show more detailed information, such as the total points, the screen usage result, the detail of points that the person earned each day (the linked page shows in the next wireframe).

In the family group screen, users can see the ranking of each family members. This page includes the function of editing profiles, see more details about their screen time usage. The editing profile icon will only show on their own section which means that they can only edit their own profile, not other family members'. On this page, we only show the picture of the family members, their name and current ranking because these might be the information that users care more. Additionally, the arrow icon shows users that if they want more information, they can see it by clicking on the icon.

Family Group

This page is linked from the family group page. The user can see the information about the points (total and when did they eared it) and the screen usage in a period of time.

This section shows the detailed information of how many points the person earns each day. The users can scroll down to see all the earning history.

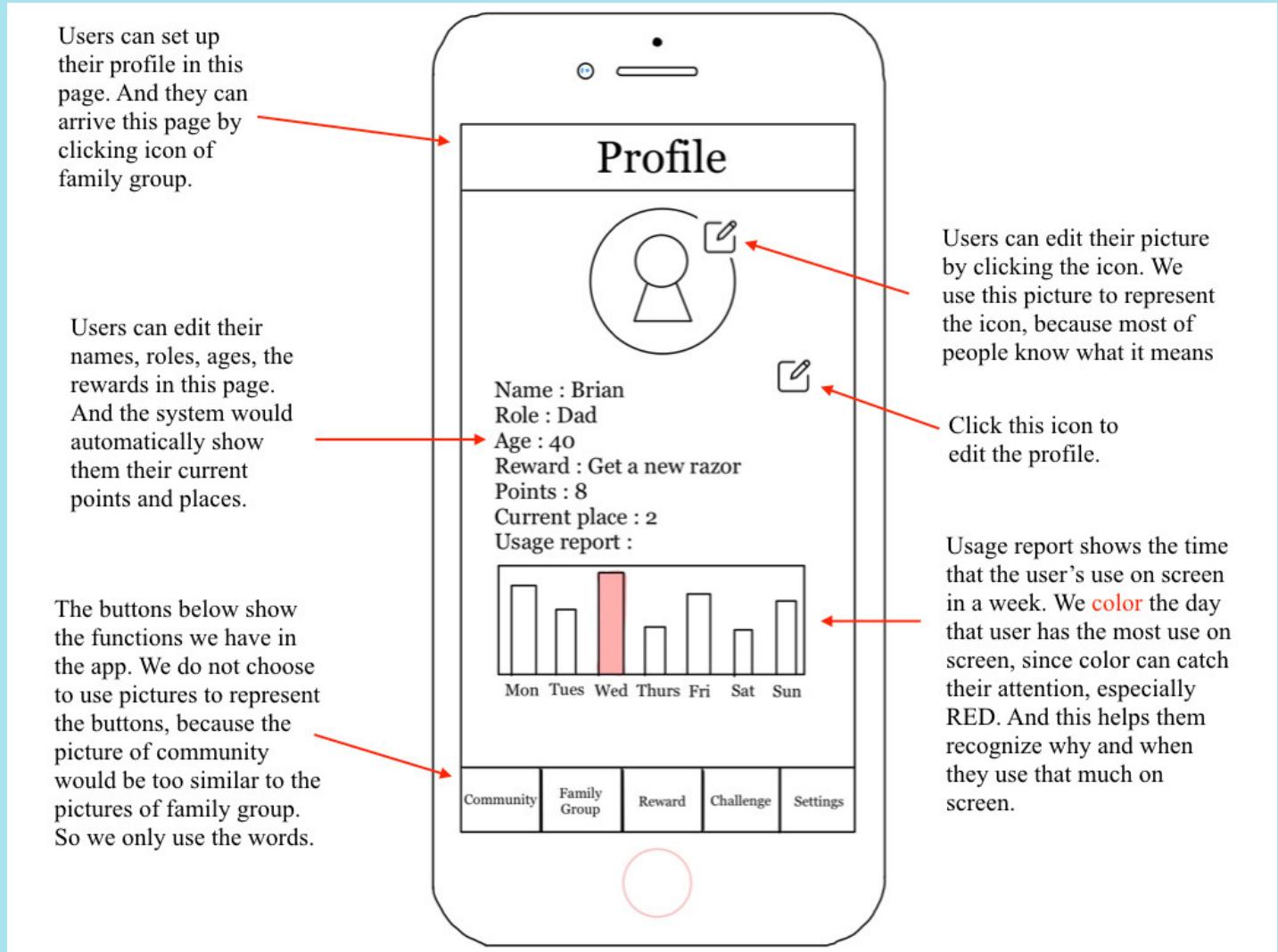


This section shows the person's picture, name, role in the family, current rank, and the total points he/she earned.

This section shows the person's screen time for each day in a period of time.

By clicking on the arrow icon on the previous family group screen, users will be linked to this page. The user can see the information of the total points, how many points they earn or lose on different days, and the screen usage in a period of time. We have a scroll bar for the earning history because there might be more information showing in that section.

Family Group



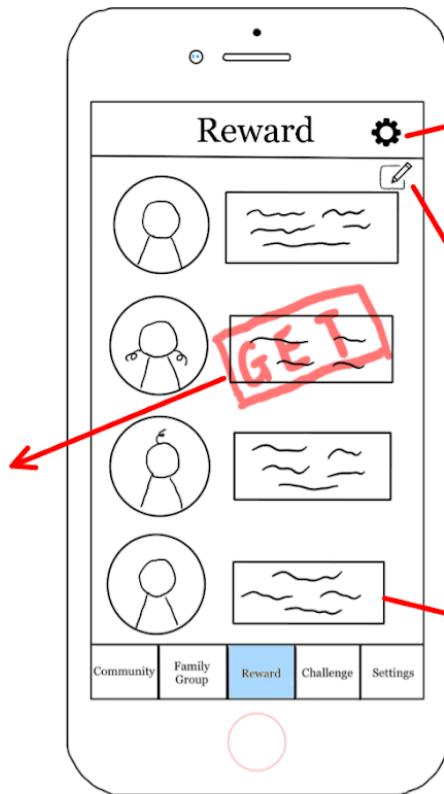
People can arrive at the page of profile by clicking the community icon. The profile page allows users to edit their names, roles, ages, the rewards in this page. And the system would automatically show them their current points and places. The Usage report on this page shows the time that the user's use on screen in a week. We color the day that user has the most use on screen, since color can catch their attention, especially RED. And this helps them recognize why and when they use that much on screen.

Rewards



This reward page allows user to see the reward that each family members want and edit the competition time.

When the person gets the reward, the app will show a mark on the description to reminds the person that he/she should edit a new reward that he/she wants



When users click on the icon, it will link users to a page that can set up how long they want the competition period to be. We put it here because after the time period, the winner can get the reward (the linked page shows in the next wireframe).

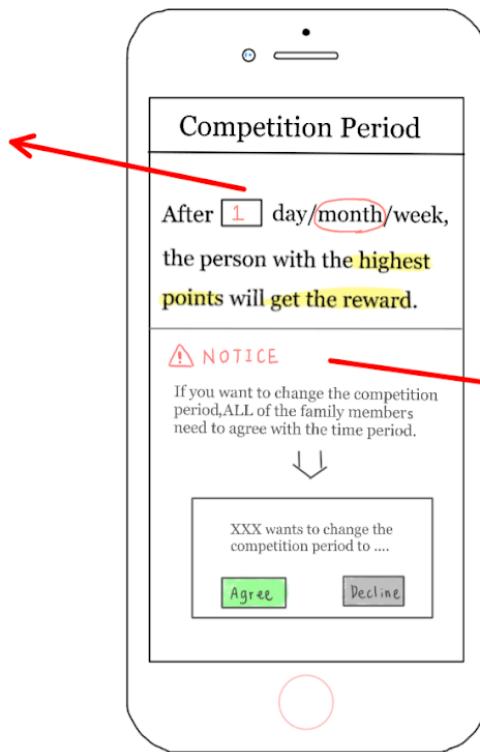
Users can edit the reward they want by clicking this icon. They can only change their own reward, not other family members' reward.

A description of the reward the user wants. Every family members can see the rewards that other members want.

The rewards screen allows the user to see the leaderboard consisting of each family member's screen usage. It allows the user to see progress for the reward or claim any existing reward. The rewards section also allows access to the Competition settings page by tapping the gear icon on the top right of the screen.

Rewards

The users can edit how long they want the competition period to be. The users need to fill in the number and select either days, months, or weeks.



This competition period page is to set up the competition period and it is linked from the reward page.

This section is to remind users that if they want to change the competition period, we will send a notification to all the family members' devices. Only after all the member agree with the change, we will change the time period

By clicking on the setting icon on the previous page, users are linked to this competition period page. Users can edit how long they want the competition period to be by filling in the time and select either days, months, or weeks. We also require all family members to agree with any change in the competition period. In that case, we will send a notification to all the family members' devices when any users want to change the time period. We use green color for the agree button and highlight for some words, so that they can easily attract users' attention.

Usage Scenario #1

Family Members can view the screen usage for other family members by going to the “Family Group Tab”. They can view their rank amongst other family members which would motivate them to decrease their usage for restricted apps. Keeping track of screen usage for all family members would keep all members accountable. Karen Johnson would create a family group by assigning herself as the primary user (“Mom”) in the Profile section under “Role”. She can also view her own usage for restricted apps in the profile section. If she feels like her current rules for screen usage is too high or too low, she can modify the rules for allocated hours for a time period by going to the Setting tab and selecting the “Maximum number of hours per period” menu item. From our user research we found out that children spend a significant amount of time on their devices for schoolwork. As a result, we “Apps that are excluded from tracking” in the settings menu which can allow Karen to add apps that are not included in the usage restrictions. Karen also wants to reward her family for decreasing usage and promises that once they gain 150 points, they can have a family meal at Olive Garden. She appreciates the motivation and the concrete analysis this app provides and finds it helps engage the full family.

Usage Scenario #2

Children are often more motivated by competing with their peers. We used this insight to guide the design for ScreenKey. Brian Smith can compete with not only his brother but also with his peer's family. Brian can ask his parents or the primary user to opt in to the Community Competition by selecting the community tab and selecting "I want to compete". ScreenKey will then use location, usage rules, and unrestricted apps to assign an appropriate Family to compete with. Also, the primary user can search for a preferred family to compete with such as Brian's friend's family. Families can also opt to get assigned a new family at the end of the week. Brian also likes to check how he is doing against his brother frequently but luckily the app locks him out so he is unable to worry and check. One of Brian's other favorite features is the mini family competitions. He often sees his parents playing solitaire or browsing through Facebook when trying to enjoy a family movie and so he tries to curb their usage by employing this feature. During movie nights he sets a challenge that no one can use their device for 2 hours and if they do, then they will be deducted points. Brian knows his family is close to redeeming enough points to go to a family movie outside of the house and does not want them to be deducted since he can't wait for the next Spiderman movie. As a result, they all put away their phones for the movie and were able to gain the additional 10 points that allowed them to meet their goal.

Design Details



Color Scheme



R: 231

G: 188

B: 122



R: 46

G: 45

B: 122

THANK



YOU!