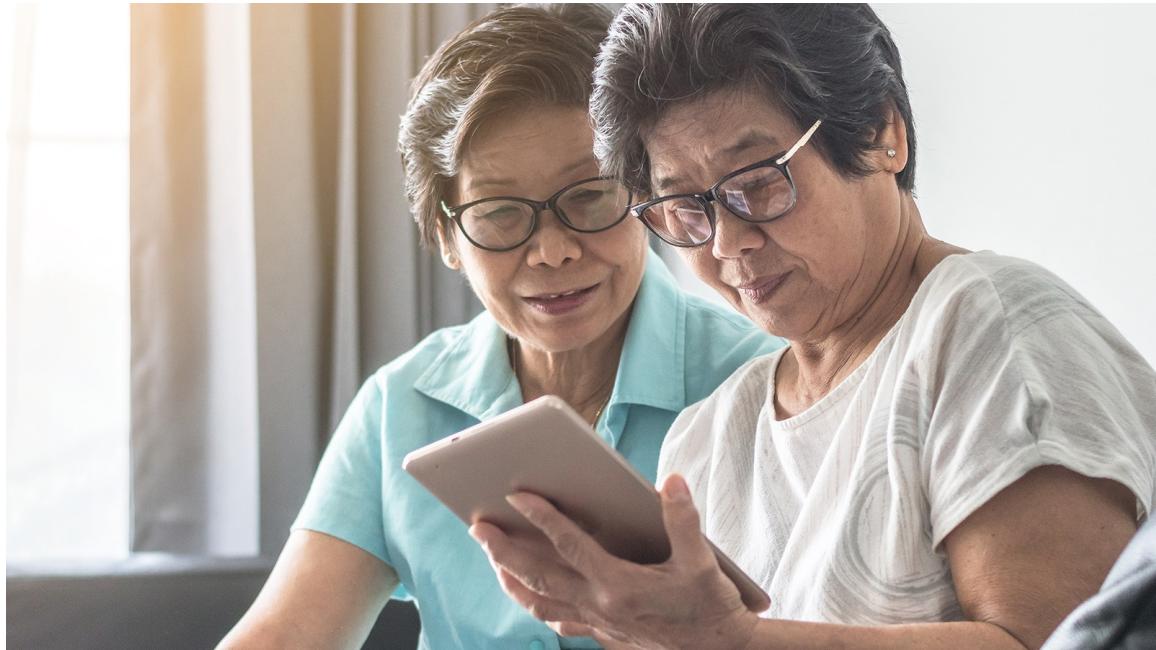


Transdisciplinary Innovation Project (TIP)

Design Sprint: Digital inclusion and the elderly in Singapore

Team McGriddles



Project Description

Executed under the elective Transdisciplinary Innovation Project (TIP), this Design Sprint project aims to solve complex real-world problems brought in by industry partners. Partnering with MOH Office for Healthcare Transformation (MOHT), the goal of our design Sprint is to find solutions to:

- Empower elderly with chronic diseases to better manage their condition.
- Better enable access to information on how to lead a healthier lifestyle.
- Improve socialisation and a sense of community amongst the elderly in communities.
- Support the mental health and wellness needs of the elderly.

“How might we ensure that our elderly population are not left behind in our digital push?”



Figure 1: A picture of the team members

The members of our team include (Left to right):

Teh Han Yi, from Diploma in Computer Engineering,

Letitia Yeo Min, from Diploma in Experience and Communication Design,

Lo Ho Tin, from Diploma in Chemical Engineering

Lim Jian Xiong, Jacky, from Diploma in Electrical and Electronics Engineering.

Let's quickly run through what happened these 2 weeks.

Day 1: Map & Target

On Day 1, we started to understand our project brief in the SPRINT.

Step 1: Ask the Experts [Interviewing experts from our industry partners]

To kick off “Start the Stage” while digesting the project brief, we came up with questions in preparation for the interviews with the industry experts from MOHT. We interviewed 3 MOHT staff and professionals, as well as an elderly residing there. It was interesting learning about the perspectives of the elderly when they use these digital devices, and finding out about the pros and cons of healthcare apps that have been used in the past (and still use currently). It offered us a deeper insight into the problems these elderly might face when handling technology, and dove into the impact of mental health issues they have faced or still facing in the midst of the Covid-19 pandemic. Our insights from the interview would give us a better understanding from the perspective of the elderly moving forward.



Figure 2: Virtual interview with experts

We came up with questions to ask the experts themselves, revolving around the elderly's experiences when using technology such as apps like Healthy 365 or questions on how we as a society can improve their mental health. Their answers helped us realise information about our local elderly that we may have neglected in the rapid pace of our ever-changing society. Realising that the simplest tasks to us may deem difficult to the elderly, we factored in these insights as important pointers to remember in the planning process.

Some of the questions we asked were:

- "What are the most common problems that the elderly or what have the experts have faced when dealing with elderly?"
- "What do you think about the mental health of the elderly in Singapore? Is it something important to think about?"

Step 2: Mapping of ideas and Coming up with How Might We (HMW) statements

Some key points that the interviewees brought up includes:

- The app needs to be not complicated and must be simple to use.
- Problems faced: Nobody to explain the app functionality & language barrier when using the app (spoken/written).
- Some of the elderly have limited social support, and may need help to have more interaction.
- There's issues to consider about the app interface if doing a digital product: The elderly must be able to click on the buttons with ease (Issue of it being too small/big).
- Interactive groups such as facebook groups can be more interesting for elderly.
- Privacy issues with technology; Some don't trust putting in their personal information.
- There's too many apps on the market.

Other points brought up by the interviewees included not being open in sharing that they have mental illness, using a simpler platform that they are comfortable with and ensure that the product is what the elderly needs.

Issues dealt / Notes from interview:	Loneliness, self-isolation.	- Advocate the use of technology. - Reach out to elderly to join the "community".	Trust, benefits.	<mindline.sg> Helps elderly as they can talk about mental issues anonymously.	Elderly might not be open in sharing that they have mental illness, elderly might be more comfortable with human interaction instead of through technology. They might not have adequate knowledge on mental health.
Zoom/Skype are more complicated, WhatsApp is more convenient & common. Support mass communication.	Nobody explaining the app functionality & don't know how to read/understand languages (May know how to listen Chinese but don't know how to read/recognize Chinese word).	Too many applications.	Financial issues; hard to access.	Come up with other technology that are elderly friendly to help them with their mental health.	Apps that navigate health services might be challenging to elderly.
Family members are impatient when teaching elderly. Social services lack genuineness.	Answer: Low mood, strained relationship. One common issue is no mood and limited social support. Need to see how it can be addressed better. My interaction with elderly, they see it as not being genuine (e.g. only 5mins sessions).	Can we ensure that this are the things they really need?	Handphones are the key things they use these days.	By nature, they will reach out to a digital platform to share their issues.	Coming up with a very simple website that would help elderly with loneliness, can have other digital means to help elderly with mental health issues.
Mental barrier for elderly knowing that there will be no physical human reaction.	Primary tech and enhance care: Blood pressure measure, results go to app and polyclinic.	The older they get, the more averse they are to using it.	Adding a personal touch is crucial to these elderly.	Interactive groups such as Facebook groups can be more interesting for elderly.	Make sure it is not complicated, simple app simple life.

Figure 3: Notes taken from the interview

Using miro.com, we have collated all the information that we collected from the interviews and came up with “How Might We” statements based on the information discussed, allowing us to determine the areas that we might improve to ensure the elderly would use technology. The purpose of doing HMW is to get us to look at another perspective and get us thinking of the different ways and areas that we can help to improve the problems that the elderly face when trying to adopt a new technology. We would then categorise the different HMW under a few common groups.

Step 2.1: Voting of HMW statements

Everyone in the group is given 2 red dots and each decider (lecturers) gets 4 green dots to represent their votes for choosing which HMW statements that they like and want to tackle the problem the most.

After the voting has been carried out, the HMW statements with votes are picked out and placed in the order of votes from the highest number of votes to the lowest. It was observed that the top 3 HMW statements were:

1. Deal elderly with sensitivity and tactfulness

Making sure that we're sensitive to their feelings and not being quick to judge (e.g. saying they have mental illness or other judgemental opinions)

2. Ensuring the elderly feel comfortable using technology

Since not many elderly are comfortable with using digital devices nowadays, it'll be a crucial step to take and consider since our solution would most likely include a digital product/device for them to use.

3. Using different languages and dialects to overcome language barriers.

To cater to all elderly audiences, and to not limit to one language only- so as to empathise with them more and appeal to the elderly.

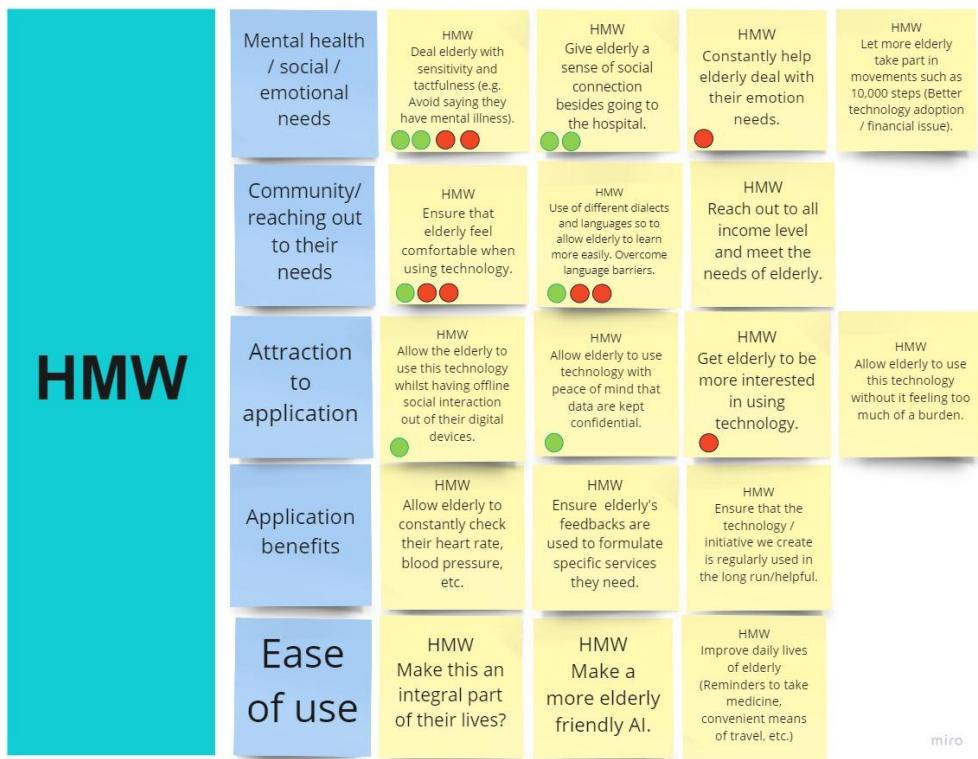


Figure 4: HMW statements

Step 3: Coming up with Long Term Goal and Sprint Questions

After coming up with the HMW statements, we came up with the long term goal that the term aspires to accomplish in 2 years time. The goal should be very optimistic and each member came up with 1 long term goal. We then started the voting of the long term goal where each person in the team will have 1 red dot and 1 green dot for the decider. The most voted long term goal was:

“Our product would be a simplified social media app for elderly to interact with their community (like facebook) with functions to check their local polyclinic appointments, the nearest events (like mahjong games, tai chi etc.) in their neighbourhood and communicate with their doctors who will actively remind them to do certain tasks for their general health. Their doctors/caretaker can keep track of their personal health/intake/allergies.”

We then simplified it to:

“For the elderly to interact with their community more, and have a more enhanced healthcare experience overall (more convenient and flexible) in the form of a digital device”. We decided to focus on the 2 crucial aspects of this goal: Social Interaction and a more convenient healthcare experience.

IN 2 YEARS TIME...

Our product would be a simplified social media app for elderly to interact with their community (like facebook) with functions to check their local polyclinic appointments, the nearest events (like mahjong games, tai chi etc.) in their neighbourhood and communicate with their doctors who will actively remind them to do certain tasks for their general health. Their doctors/caretaker can keep track of their personal health/intake/allergies.



Our product would make the elderly to be comfortable with technology and is simple to use to access the information/services they require



Our product would become a comfortable and safe space for the elderly to take refuge in whenever they feel social loneliness.

Our product will be many elderly's go to app as it caters to their needs, and make them feel cared for

Figure 5: 2 year goals

After coming up with the long term goal, we came up with the sprint questions to ask ourselves on what things could stop us from achieving the 2 year goal. The 1 to 3 questions should be negative to bring out concerns in a constructive way. This would allow us to take note of the possible problems that we have to tackle when coming up with the solution. Each member came up with a sprint question and we voted using a red dot for each member and a green dot for the decider.

SPRINT QUESTIONS

- What if the elderly prefers real life interactions and refuses to go digital?
- If the app/product holds a great deal of info, it'll be disastrous if privacy is not guaranteed & uncomfortable with revealing private info
- Unsure of basic mobile usage, could take them quite a while to get used to it
- Could potentially make them lose touch with the real world <3



- Too complicated functions
- Elderly will always be skeptic about technology
- Elderly refused to own mobile devices
- Similar apps in the market already (too many apps out there)
- Having the entire population to adopt
- Collaboration with local polyclinics and doctors/caretaker to encourage & teach elderly to use this app
- Rather use whatapps to communicate



- Not all the elderly would have the same perspective of what is easy to use and comfortable
- May not be able to find what they need such as specific help
- May not be able to encourage the elderly to pick up the app and use it everyday

- Difficult to identify problems that elderly face (especially emotional and mental issues) as well as finding a solution that technology is capable of
- Elderly might not understand products with complicated features, they will forget how the features work
- We might fail to encourage elderly to constantly use the app as some may not prefer looking at a screen or using smart devices

Figure 6: Sprint Questions

Step 4: Map & Target

After deciding on the Long term goal and sprint questions, we mapped out a flowchart to show how the customers and stakeholders interact with the product/service. This would allow us to narrow down the area to a specific area to focus on. The map should have a beginning, middle and an end. The beginning would be the stakeholders, the middle is the steps and the end should be the long term goal. The steps should be 5 to 15 steps as more than that would make the map to be too complicated. We then placed the HMW statements into the areas in the map where the statements can be tackled.

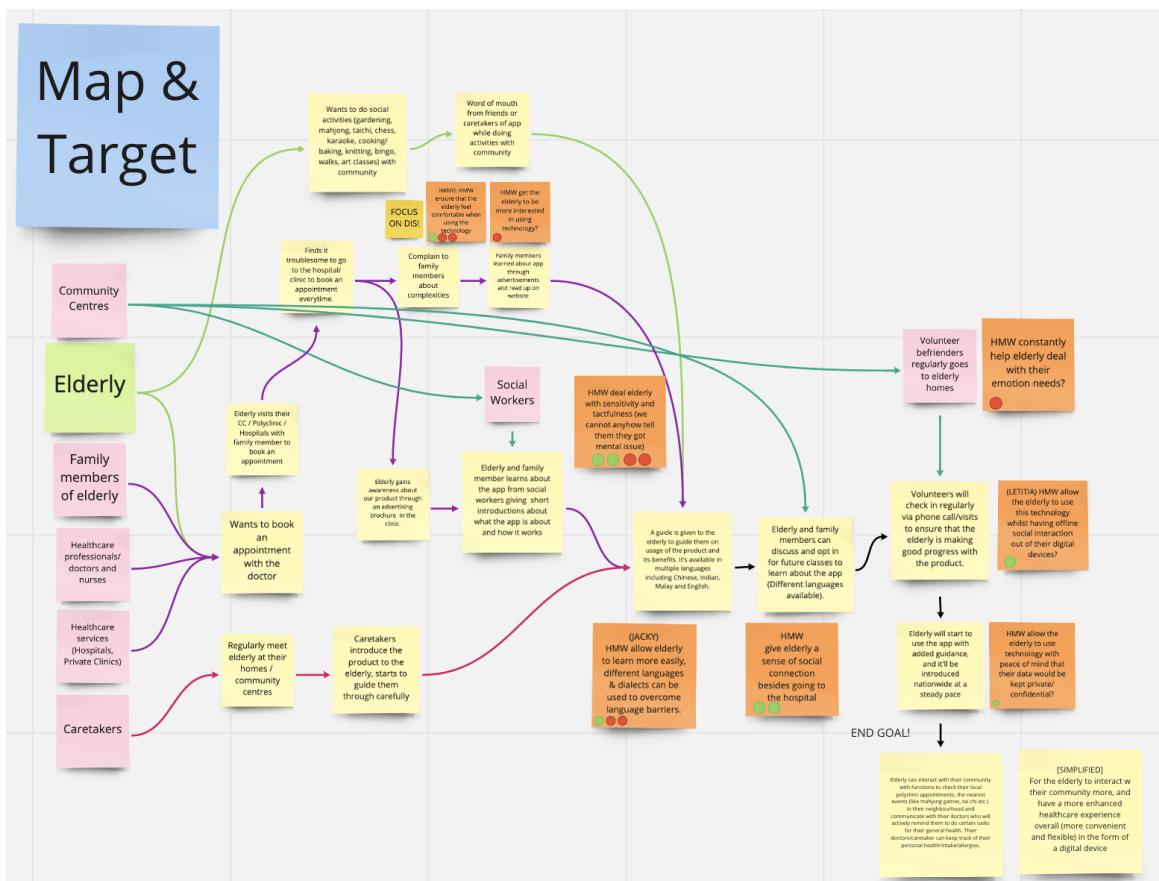


Figure 7A: Map and Target done on Miro, explaining the process of an elderly user using our product, from finding out about it to using it

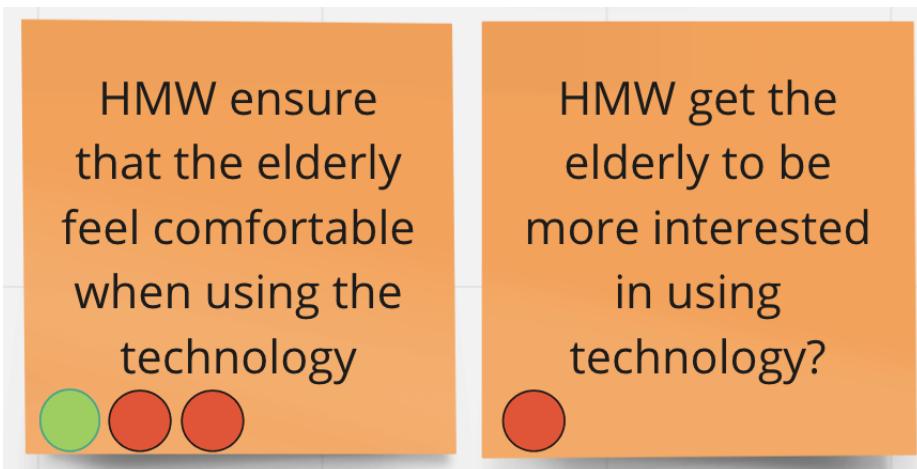


Figure 7B: The HMW Statements used

To narrow down our target issues for us to better focus on, we incorporated the HMW Statements into the map, boiling it down to 2 main touchpoints. Afterwards, we realised that our main areas of focus for our final solution would revolve around the elderly's experience when using technology, and how we can get them to be interested in using it. This touches on 2 points: an overall comfortable experience, and enticing them to use this technology (Marketing).

Step 5: Remix and Improve

By using Remix and Improve, we would be able to think up existing ideas and features to include into our solution. Each member is to think of 3 products that they like and list down the features that they like about the product/ service. The product/ service do not need to be from healthcare as it will limit the benefits from doing this. This would help us to think on how to make our solution more feasible. We went back to brainstorm and research on some features to present to the group the next day.



Figure 8: Screenshot of our Remix and Improve done on Miro

Day 1 Reflection



Figure 9: Day 1 of Meeting

To sum up the end of day 1, it was an unknown yet new experience. We met our teammates from different courses and backgrounds, and the thought of having to put together a final product by the end of 2 weeks was hard to digest. However, after warming up to each other and going through the tasks together, we were able to work efficiently with a clear concept and steps in mind. We were able to solidify the long term goals we wanted, and plan out the steps ahead in the long run.

From the interviews and How Might We statements, we were able to grasp a picture of how we can proceed in the process of thinking up a solution. It was intense, with so many activities packed in one day but certainly thrilling. We definitely look forward to the sketching and ideation process the following day, and the days that are to come.

Day 2: Lightning Demos & 4 Step-Sketch

On Day 2, we created several potential solutions to our challenge. At the start of the day, we were to present our Map & Target to the class. After presenting to the class, we received feedback on things to take note of. We then would focus on an area in the Map to improve on where HMW are located at.

Step 1: Lightning Demos

For the Lightning Demos, each member took turns to share about the products they have selected from the Remix and Improve. Our facilitator would take down the key points of the features that the members have presented. This would be something to think about when thinking of our solution. Everyone's chosen products ranged from apps to physical objects like the Swiss pocket knife.

1. Digital apps - Forest

Forest is a concentration app that helps users stay focused by getting them to plant “trees” in the app itself while doing a task. Serving as a productive work and study timer, it allows the user to set aside distractions, and successfully plant a tree with every set timing they manage to concentrate on.

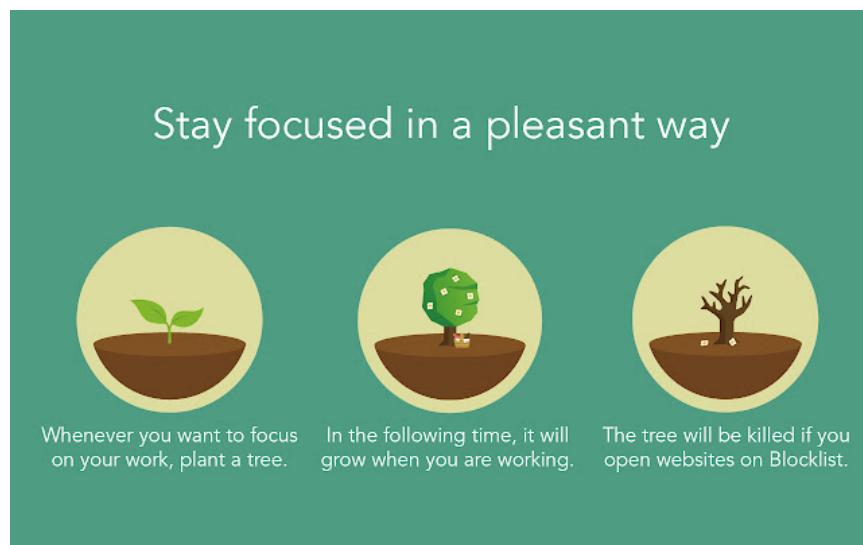


Figure 10A: Summary of what the app does

2. Telegram Bot - Scratchbac SG

Serving as a telegram bot for Singaporean residents to request or offer help to their neighbours, it's a simple feature that allows for Singaporeans to help each other whenever in need. They will be able to see requests for help near their postal codes, and lend help to their neighbours.

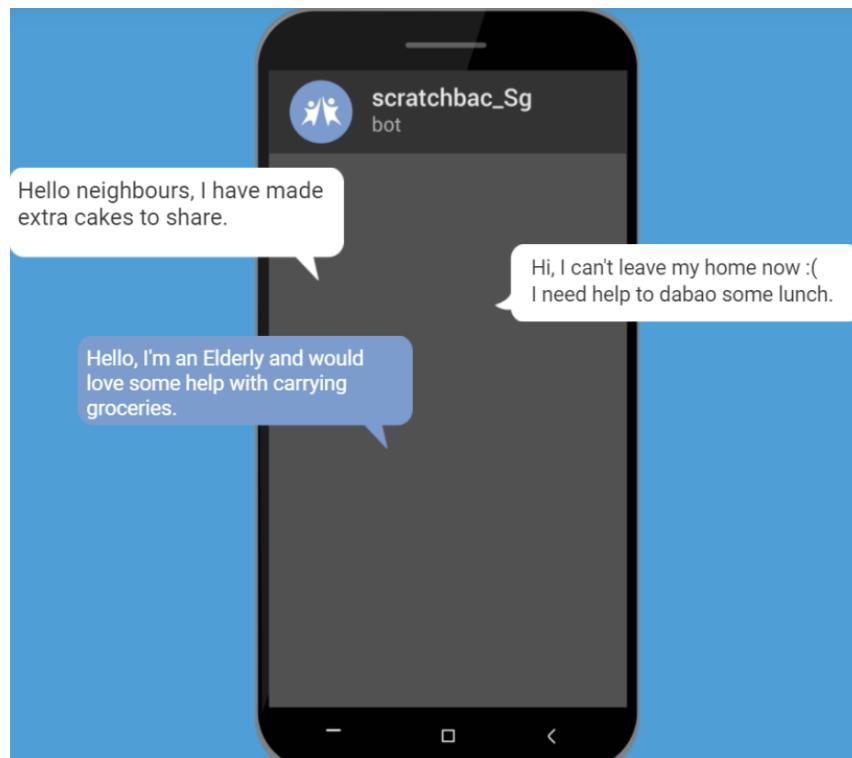


Figure 10B: Example of how Scratchbac works

3. Swiss Pocket Knife

Something that's non-digital, the Swiss pocket knife is multi-functional, encompassing many features like scissors and knife blades of different sizes. It's small and compact, making it a lightweight object to carry around conveniently.



Figure 10C: An example of what the Swiss pocket knife looks like

The above examples were the products that were the most interesting to us. From this, we were able to take inspiration from different products and their many features. It would come in handy when crafting a solution for our selected issue, especially when coming up with ideas.

<p>Notes:</p> <ul style="list-style-type: none"> <<swiss pocket knife>> - small compact, alot of feature/uses - convenient <<paynow>> - convenience - used anywhere <<digital whiteboard>> - easy to use - stains on traditional white board 	<p>Notes:</p> <ul style="list-style-type: none"> <<healthy365>> - encourages people to work out - tracks activity - reward users <<apple watch>> - has various sensors and features - allow elderly to track heart rate and etc <<grab>> - app interface is fairly simple - rewards users for using - different uses (food, transport) - when booking for family members, we can know where they are at any point of time
<p>Notes:</p> <ul style="list-style-type: none"> <<pinterest>> - safe space - straight forward layout <<forest>> - app to be more productive and have no distractions <<headspace>> - nice design - helps meditate 	<p>Notes:</p> <ul style="list-style-type: none"> <<scratchbac>> - a bot - shows chats available near your neighborhood - good with requesting and providing help - socialize with neighbors <<carousell>> - sell products - good community <<ethereum>> - new currency

Figure 10D: Lightning Demo Key Points and summary of each app

Step 2: 4-Step Sketch

Next, we will be utilising the 4-step Sketch to come up with our solution. This would allow us to think of many ideas and figure out how it looks. This would let us be creative with our ideas for our solution and think of as many ideas as possible. Each member would do this individually.

Step 2.1: Taking down notes

We copied down long term goals, the sprint questions, lightning demo product ideas that we like the most. We would then based on the information that we copied down write down as many ideas as possible for the solution for our selected HMW statements. The ideas are abstract ideas and to be completed within 10mins. This gave us a better understanding of the issue we were handling, and helped refine our end goal in mind to take note for the long run. Small key pointers were helpful in summarising our issue down to a few sentences, which made it easier to look through and brainstorm for.

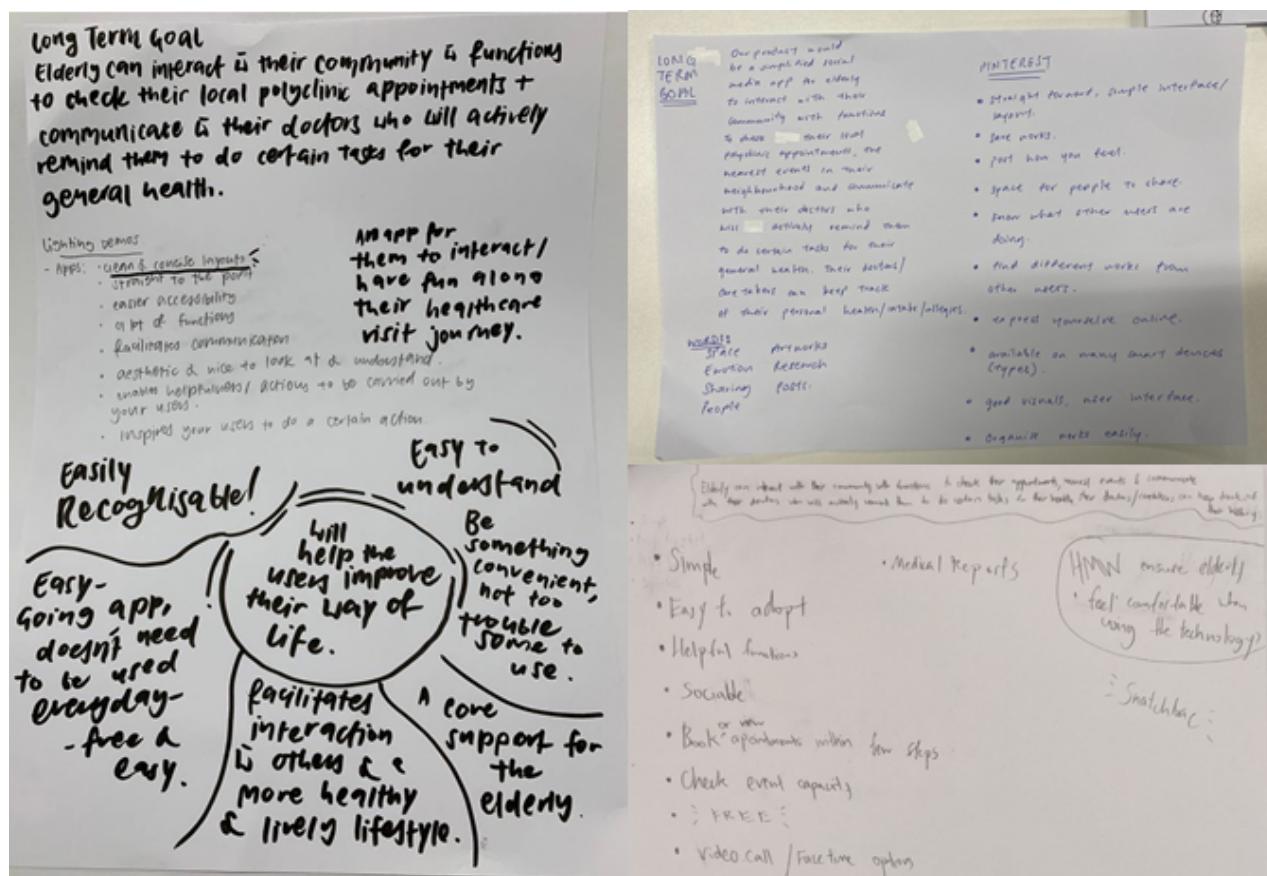


Figure 11: Notes of 4-step sketch

Step 2.2: Drawing out ideas

After that, we would draw out the ideas from the previous part in our notes that we felt was relevant and feasible. This would give us a better understanding of how the selected idea and solution may look like. This would take 20 mins to visualise on how the solution will look like.

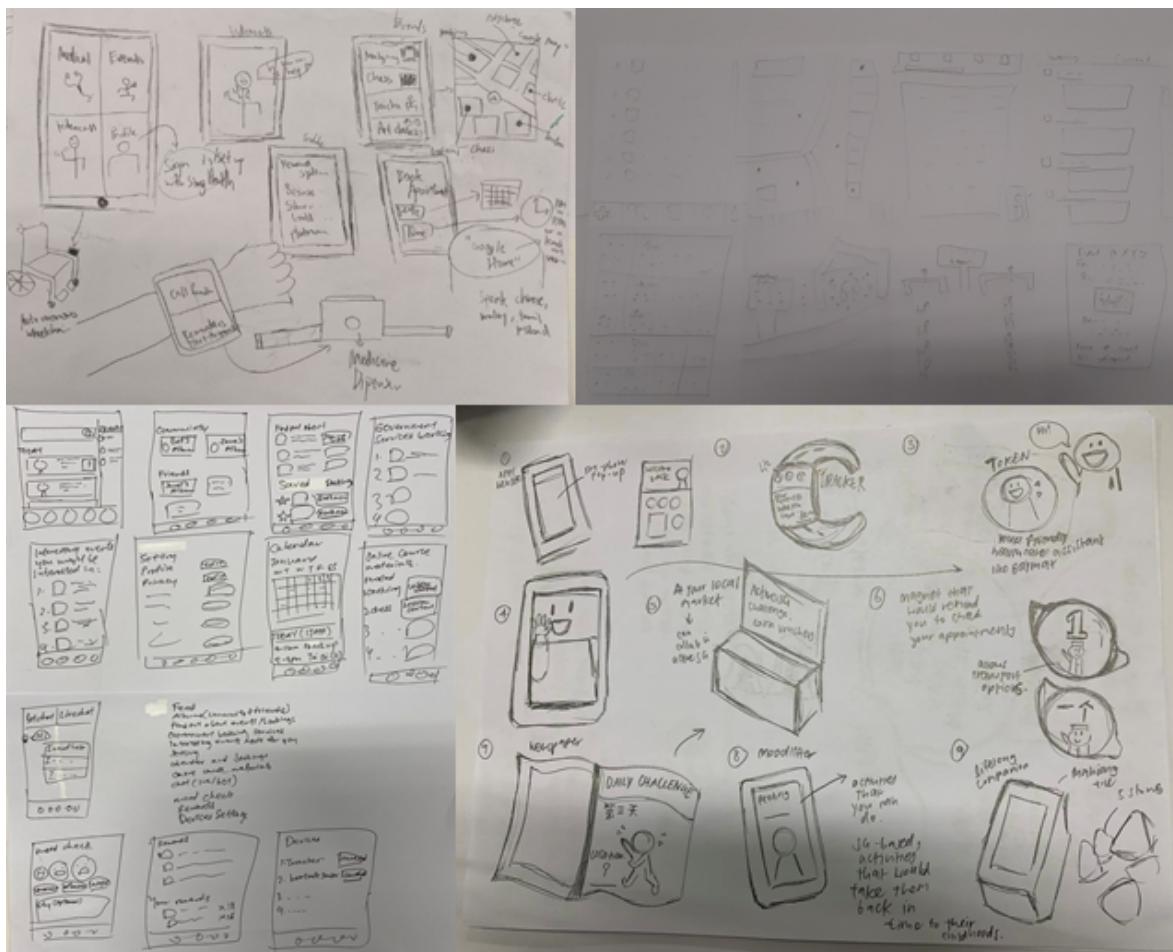


Figure 12: Doodles of ideas

It was intense and it felt like we were rushing for time, churning out ideas that we felt were lousy because of how flippant and crazy they were. The activity helped us set aside all worries, coming up with the craziest of ideas within a short period of time. We were able to realise and think up ideas within minutes. Despite the ideas being unfinished and a little weird, it helped us to sit down and realise the beauty in our crazy ideation. Through this, we were able to dumb down our thinking to simple ideas, which prevented us from setting aside idea that didn't make sense due to worries that it might not work.

Step 2.3 Drawing Crazy 8s

Next, we did an exercise called “Crazy 8s”. This exercise requires us to come up with 8 different designs of a solution in a short amount of time, allowing and forcing us to focus on the main ideas and features of the idea and not the details. We folded an A4 and A3 pieces of paper into 8 parts. We were only given 1 minute for each design, hence we had to concentrate and come up quickly with different designs for the solutions.

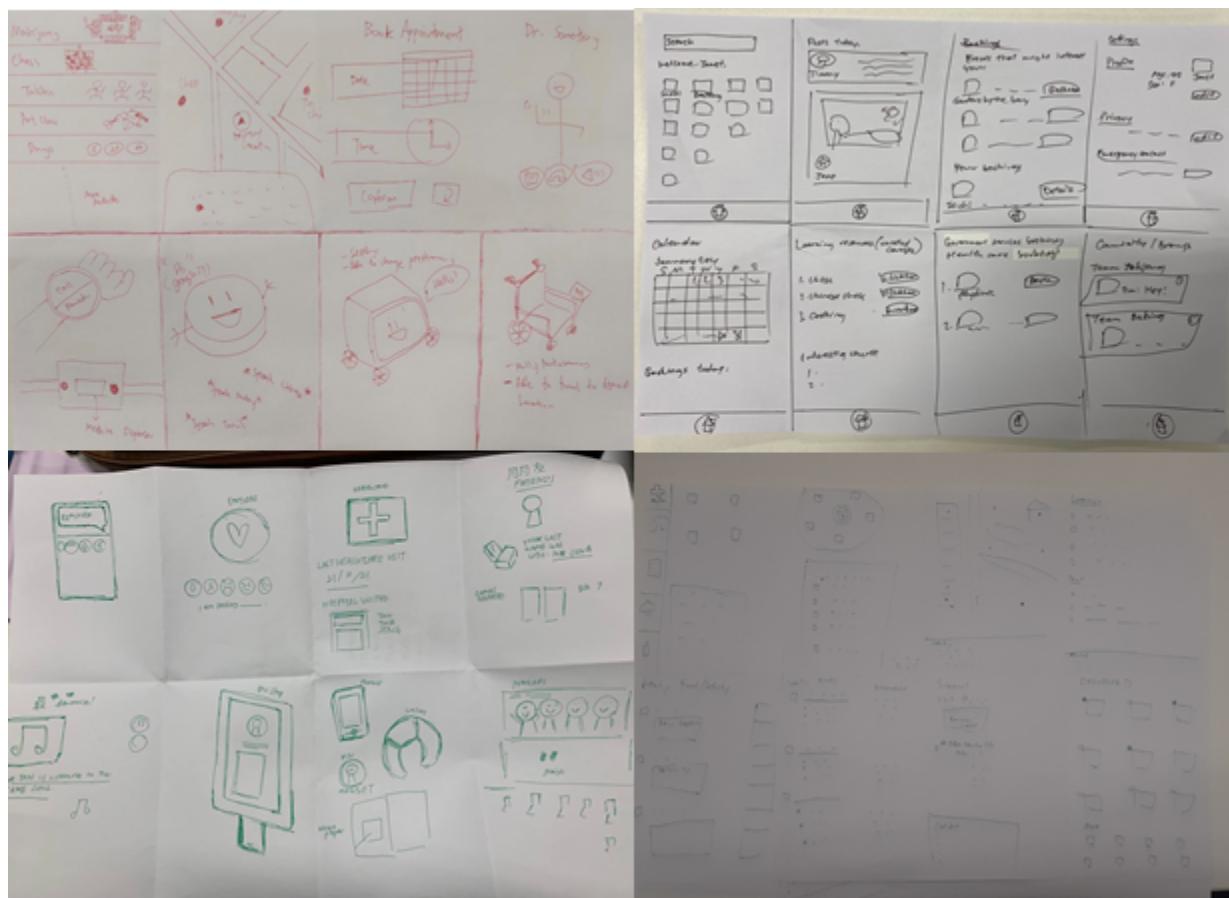


Figure 13: Crazy 8s of the team members

Once again, it was a test against time as we tried to come up with as many ideas as we could against the time limit. It helped us let loose and think of the craziest of ideas, especially since there was no time for us to pause and worry about its complications. The activity was a fast-paced one, and it definitely tested our creativity to come up with ideas within a short period of time.

Step 2.4: Drawing Solution Sketch

After we had done the “Crazy 8s” exercise, we had some ideas on what solution we wanted and the design of it. We then collated and put together the different designs from the “Crazy 8s” into a solution sketch where we would be drawing out the design of the solution on an A3 paper as well as annotating with post-its to provide further explanation. Each member would come up with a solution sketch to address our long term goal and sprint questions.

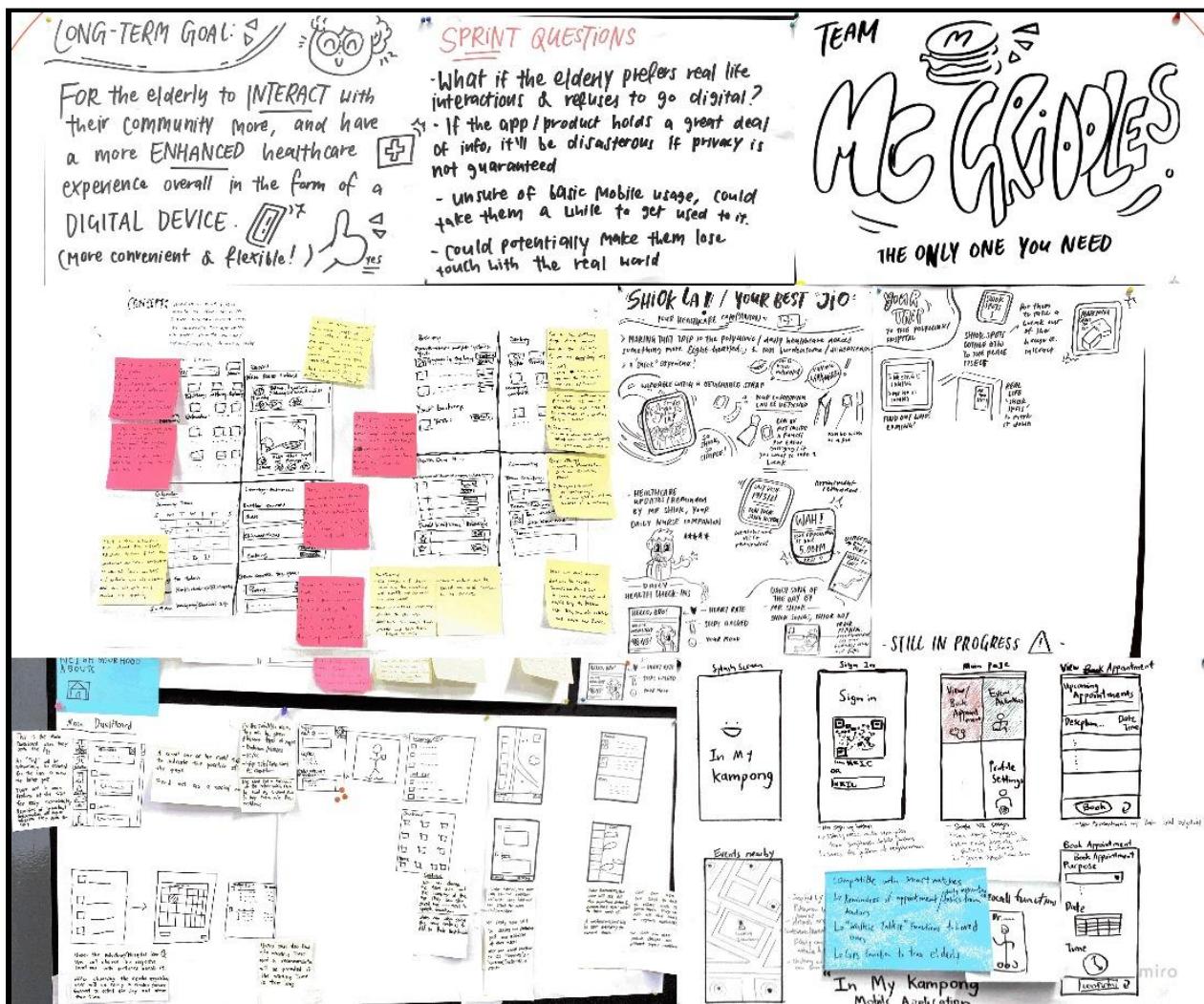


Figure 14: Solution sketch of team members

Some of us have similar ideas such as having apps and adding new features that will add convenience and promote social interaction among elderly. This shows that the team has similar ideas and goals of how to go about for the solution. There were some other ideas which were also interesting such as the “SHIOK LA” which is a companion watch. We then placed up the solution sketches on a board for easier viewing.

Day 2 Reflection

Day 2 was an exhausting day filled with activities that required many mental simulations. It challenged us to think outside of the box and to draw out our ideas within minutes, preventing us from overthinking our idea and to rediscover the creativity within all of us. We ended the day feeling restless but with clarity of how our end product would look like and the direction of where the team is heading. From this day, we knew what we are about to go through for the next 8 days.

Day 3: The Sticky Decision

On Day 3, we spent time reviewing and voting on the great concept solutions we all created and made decisions on which ideas and concepts we want to experiment with to solve our challenge.

Step 1: Art Museum and Heat Map

At the start of the day, we prepared a "Art Museum". We placed up our team name, the long term goal and the sprint questions. We then would look at each other's concepts and vote on the features of the ideas that we liked most. We were each given 3 red dots for the voting by placing the red dot on the idea. The ideas with a higher frequency of dots were more popular. This would give us a rough idea of what we should include in the final solution.



Figure 15: Heat Map of Solution Sketches



Figure 16: The team gathers together to study and vote other sketches

The dots were spread out evenly among all 4 of our concepts. However, there were some ideas that had more votes. Since most of our ideas are similar, we decided to vote on the ones that were explained in depth.

Step 2: Speed Critique

Next, the group facilitator went through each member's solution. This allows us to clarify our work and would provide feedback from the rest of the team to improve the idea or things to take note of, allowing honest feedback which was beneficial to improving the idea. After the voting, we could foresee how we might include specific features from each concept to the final solution.

Ho Tin
<ul style="list-style-type: none">- ✓ Elderly can approach online support for help.- ✓ Different languages to support a wider group of elderly.
Jacky
<ul style="list-style-type: none">- Elderly might have difficulties navigating around the social media app interface as it has complicated features: Picture, like, comment, forward.- ✓ Specific courses and recommendations to the elderly.- Privacy issues. Elderly might feel that the app is collecting their information.- ✓ Settings allow them to input their interests for more personalised recommendations.- App layout needs to improve.- ✓ Chat function to allow communicate between elderly of the same course.- What about elderly who cannot type?- What happens if the chats are not active?- Suggestion to include location sharing so elderly can share their current location among their group chats.
Letitia
<ul style="list-style-type: none">- Voice detection: Cannot detect messages as elderly's voice might be rough.- Screen too small.- Financial issues.- How do they hear from the smart watch, volume issues.- ✓ Daily check in on mood.- ✓ Different sensors available (e.g. Heart rate sensor).- Add more functions but keep it simple.
Han Yi
<ul style="list-style-type: none">- ✓ Straightforward.- ✓ Easy to use.- ✓ Convenient.- ✓ A lot of visuals instead of words.- Suggestion to be able to view details through scanning.- What happens if the elderly do not know how to scan.- Location privacy.

Figure 17: Notes from Speed Critique

Step 3: Straw Polls

After the clarification from the team of their own ideas, we were to vote again for the best ideas after being clearer and more informed on what the ideas are about. We used 3 blue dots for the new votes to differentiate from the votes before the speed critique.

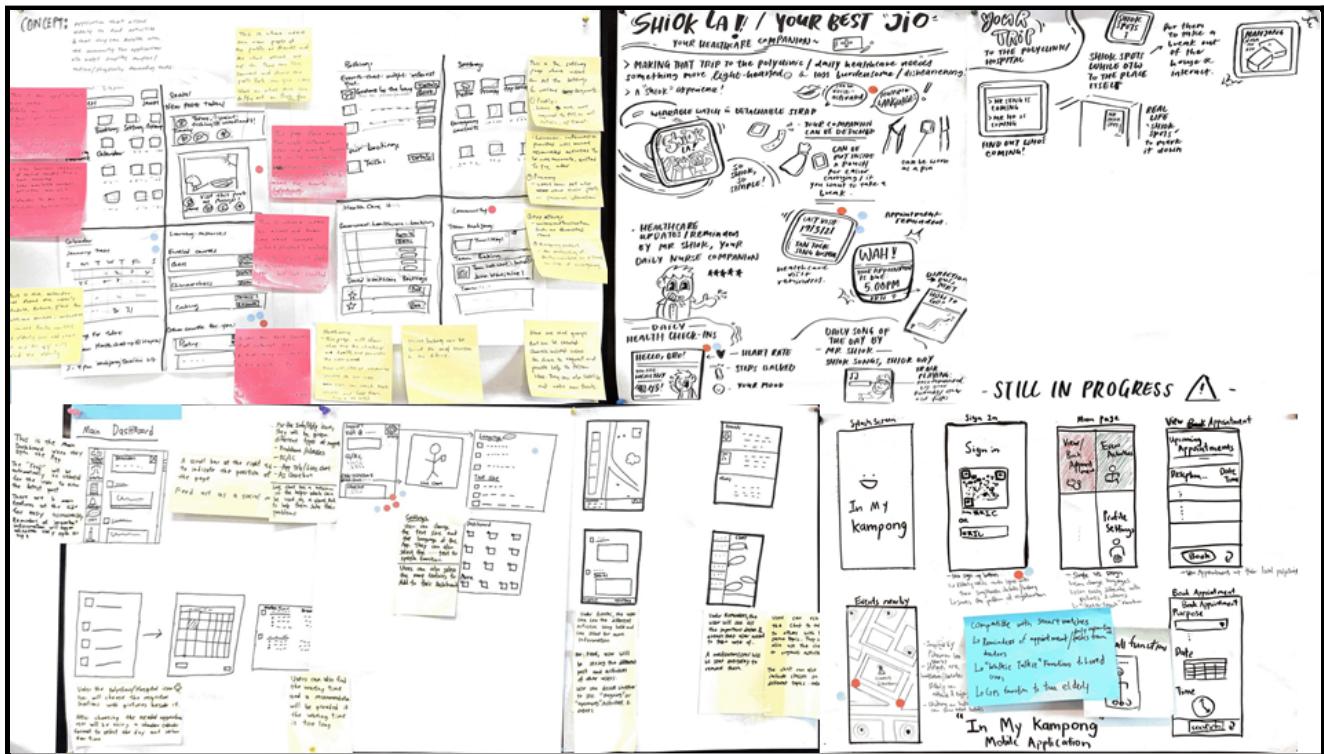


Figure 18: Straw Polls of Solution Sketches

Even after speed critique, most of the new votes were still on the same ideas as before. This shows that the sketch solutions were clear enough with enough explanation and did not affect the judgement and decision by too much.

Step 4: Supervotes

The industry partners came over and we presented our concepts to them. They would then take turns to vote on the best ideas that they liked the most using 6 big green dots. This would be very important as they would know what the elderly needs the most and which features would be the most beneficial to continue. They would also give feedback on the things we need to take note of and answer when coming up with the final solution for prototyping and testing.

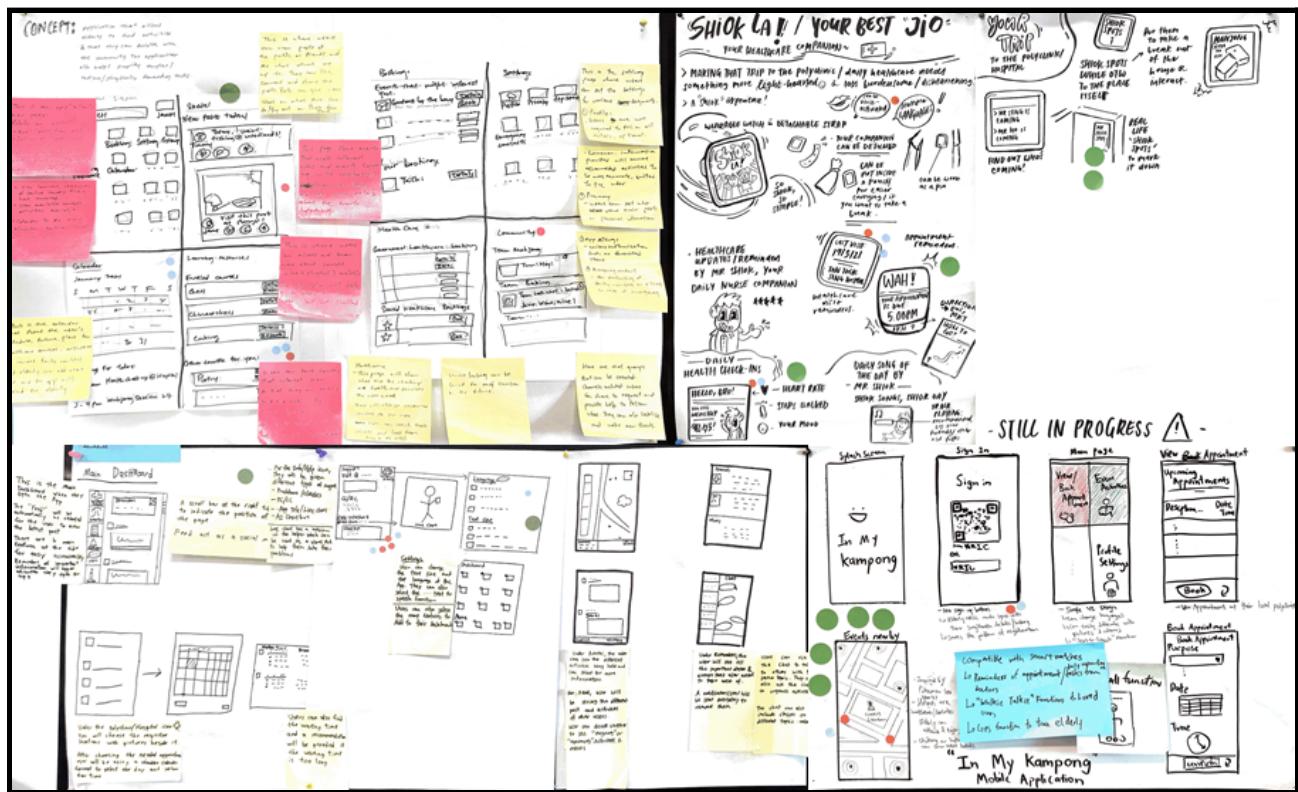


Figure 19: Supervoting using green dots



Figure 20: Industry Partners supervoting the team concepts

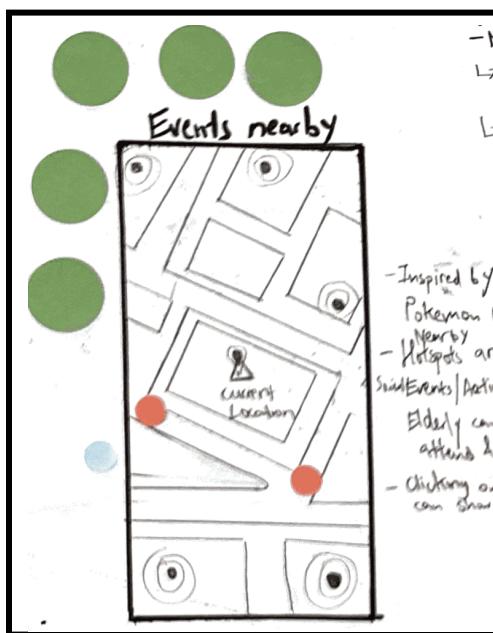


Figure 21: Hanyi's "In my Kampung" Idea, inspired by Pokemon Go

After the supervoting, we observed that Hanyi's idea of "In My Kampung" won the most votes, with many of us (and the industry partners) liking her idea of Pokemon Go as an inspiration for bringing the elderly together through a series of activities. We decided to incorporate her idea as one of the main features to gamify our product, as it fulfilled one of the factors of our long term goal, which was to facilitate social interaction between elderly in Singapore. The industry partners also remarked that our main solution can take the form of all our ideas combined together to form one main product with many features.

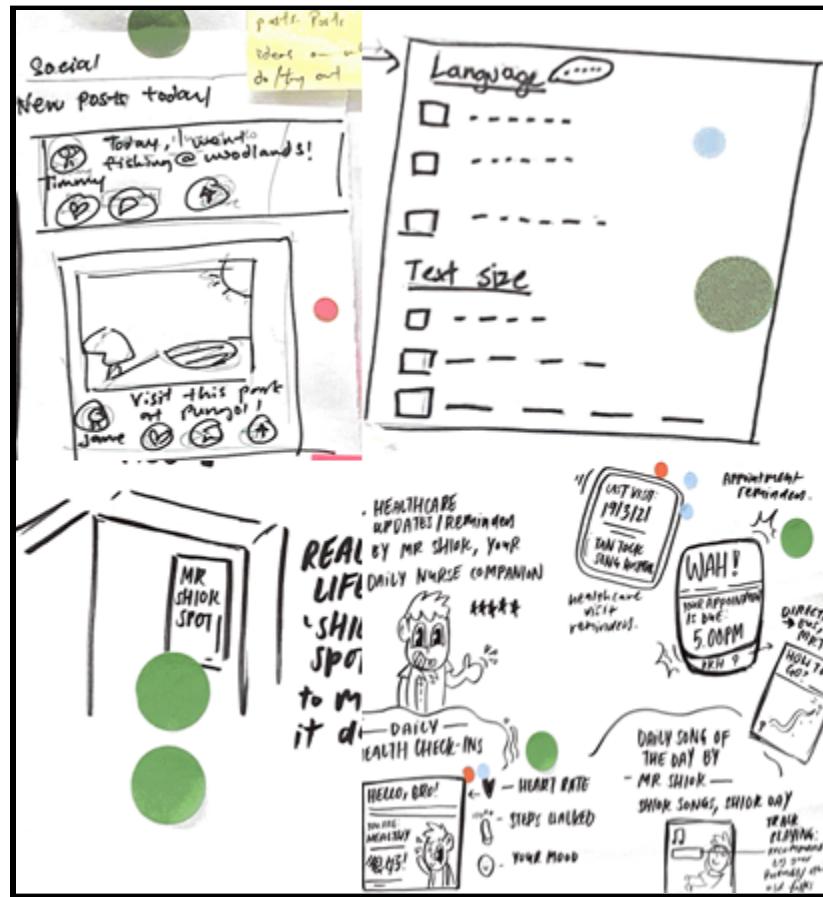


Figure 22: Supervoted ideas by the other team members

Other ideas that were supervoted were:

- Jacky's idea of social media (e.g. Facebook, Instagram) being incorporated inside the app
- Ho Tin's idea of being able to adjust the font size and language settings
- Letitia's idea of having real-life "Shiok Spots" which will tie in with Hanyi's idea of Pokemon Go-inspired social interaction spots

Day 3 Reflection

To summarize day 3, it was a day of suspense awaiting to see how the industry partners would react to our solution sketches and ideas. We feared that our ideas would get rejected, since its just minimal ideas thought of within a few hours. However, we were proved wrong as the industry partners were very impressed by our ideas. It came as a surprise, as we didn't know what to expect from just a few hours of ideation. Their insights and feedback were beneficial in paving a path and direction for us to follow. The supervoting helped us narrow down the main ideas we wanted to incorporate for our final solution.

We look forward to piercing together all our ideas the following day, and start making our first prototype to see how our solution would look like in the days to come!



Figure 23: Class Picture with MOHT Industry Partners



Figure 24: Team picture with Our Ideas & Sketches

Day 4: User Flow, Storyboarding and Prototyping

On Day 4, we created a detailed storyboard for the prototype and started working on the prototype.

Step 1: User Test Flow

We looked back at our solution sketch that we had done yesterday. We had to come up with a user flow of the solution that was super-voted the most using only 6 post-it notes. Each post-it note represents a story step that is a good way to guide the user through the product. It should start with a realistic start and an ideal end in which the user uses our solution as intended. The team had similar points on how the user should be using the solution

We would then vote for the user flow which is the cleanest story and addresses the problem the team is trying to solve using 1 red dot and 1 green dot for the decider. The decider can also vote for an action step from another user flow to include to the final user flow. After the voting, we decided to choose Jacky's user flow along with Han Yi's story step of "Uncle Bob found his friends/ kakis in the app".

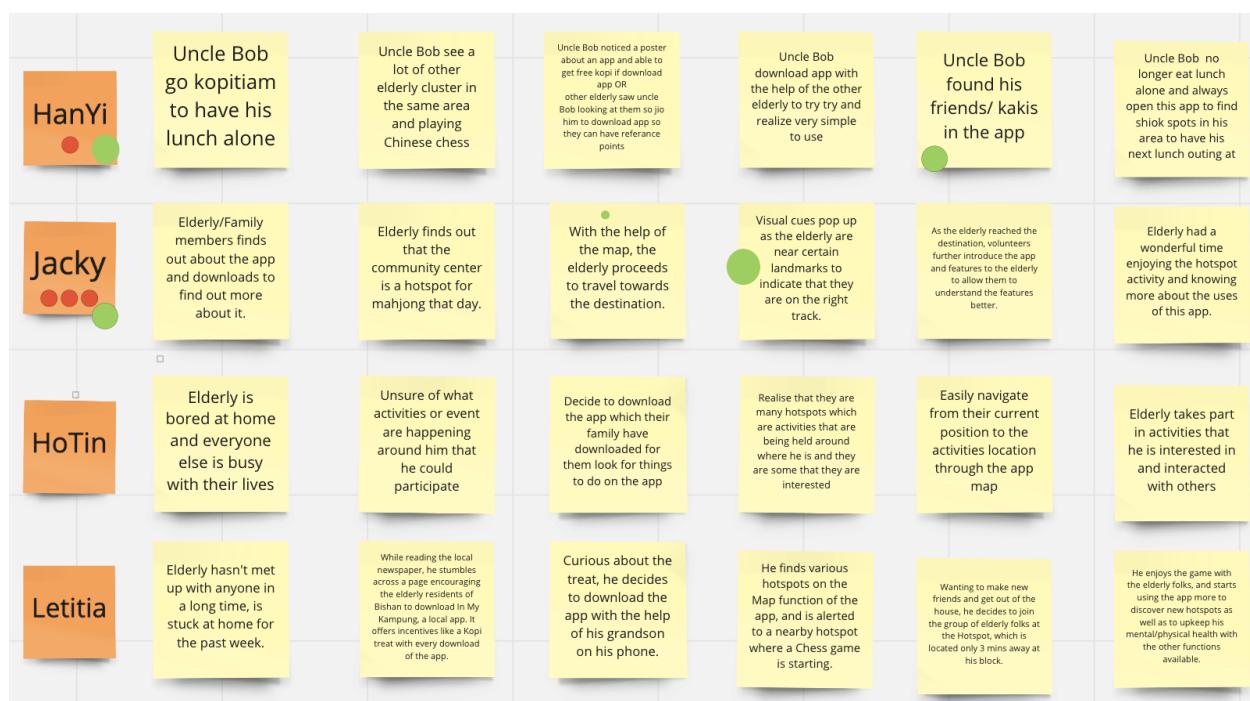


Figure 25: 6 Step User test flow

Step 2: StoryBoard

Next, we did a storyboard depiction of our selected flow, adding more more story steps including more of our long term goal. This allowed us to be able to depict and have a clear image of how the solution is going to look like and also the features that we would need for the app flow as we go towards prototyping it out for the coming user testings. We would be extending from 6 steps to 15 steps with pictures to strengthen the explanation.

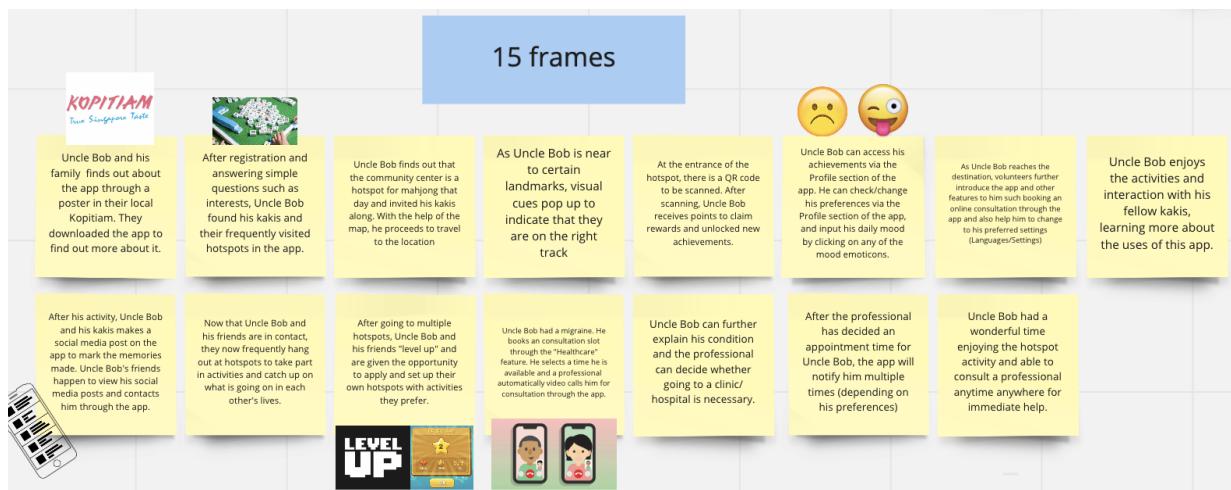


Figure 26A: 15 frames StoryBoard

To better simplify the storyboard without text, we drew out a summary of the storyboard in the form of 15 drawings. This helped us view the storyboard in a visual way.

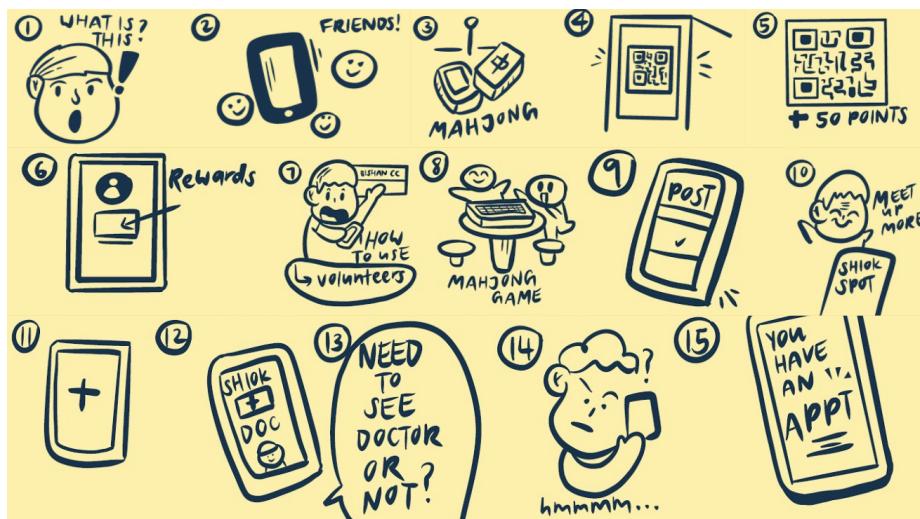


Figure 26B: 15 frames Storyboard, in sketch form

Step 3: Prototyping

Step 3.1: Picking the right tools

We started to work on the prototyping by creating the application using figma.com and Android Studio, the user manual was made using Adobe illustrator and the posters were made with Canva. These tools would allow us to create a prototype with a goldilocks quality within a short amount of time.

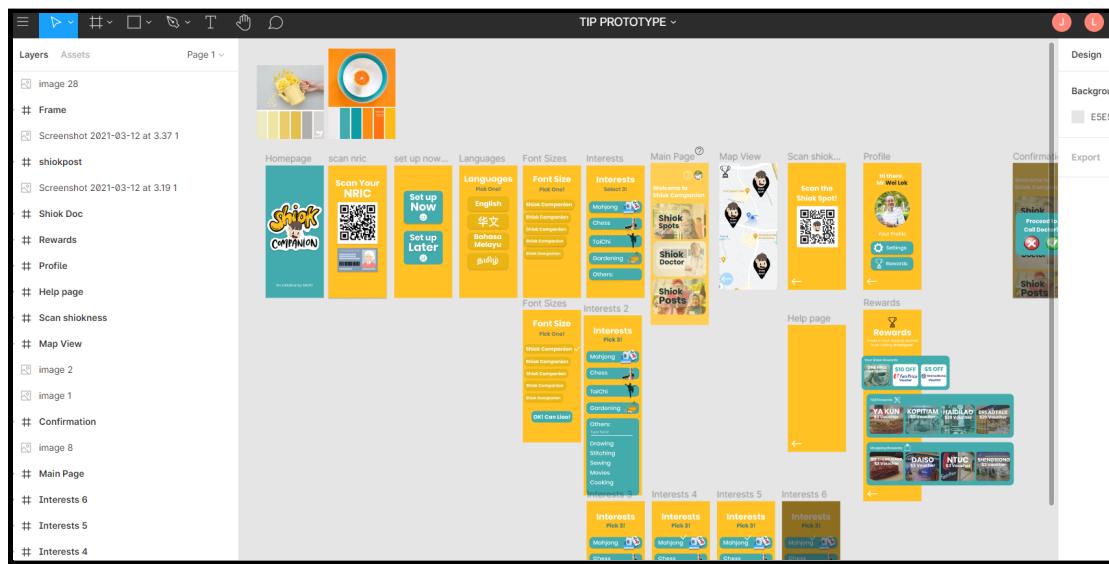


Figure 27: Using figma.com to make the application layout

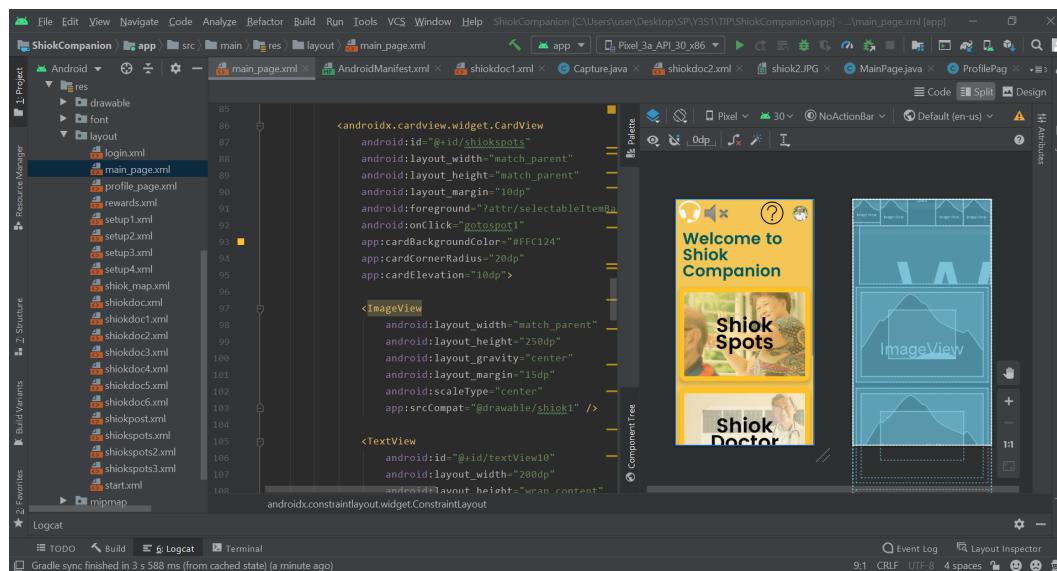


Figure 28: Using Android Studio to develop application

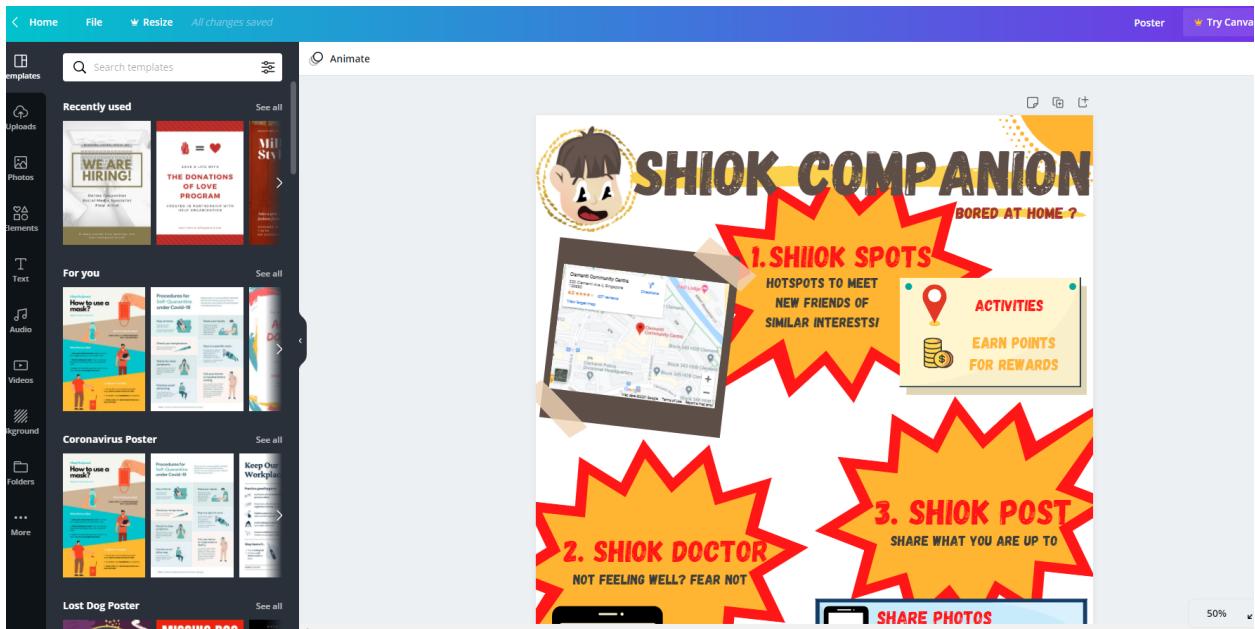


Figure 29: Using Canva to make the poster

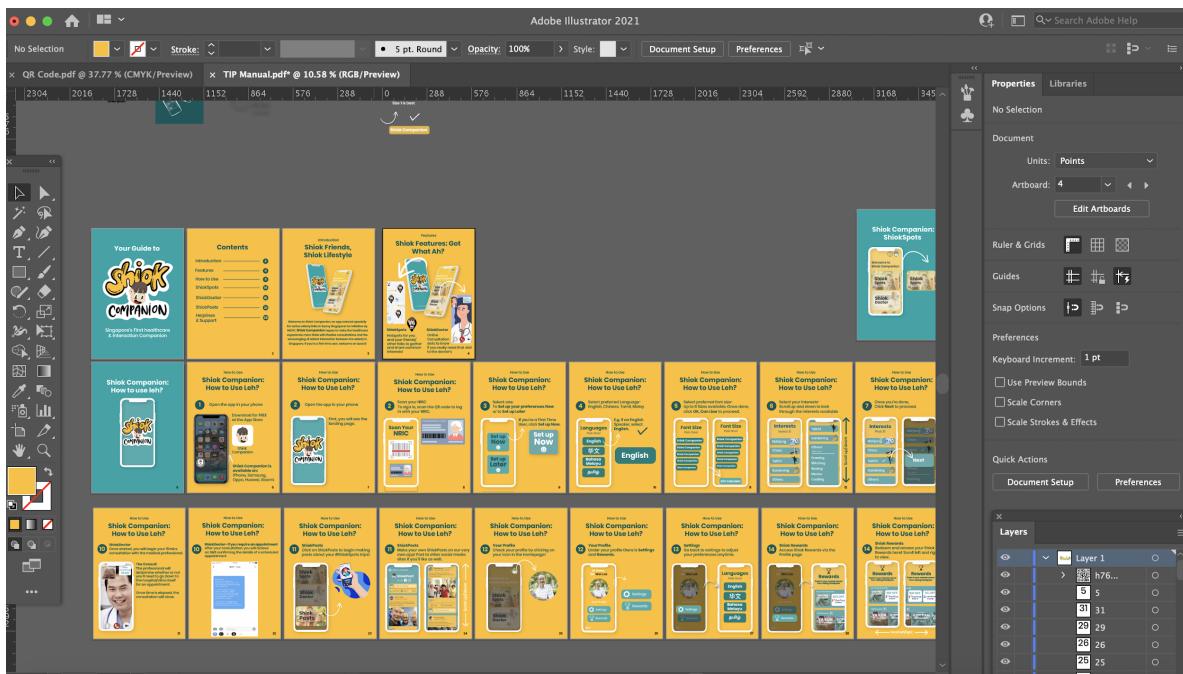


Figure 30: Using Adobe Illustrator to put together the Shiok Companion Manual

Step 3.2: Dividing and Conquering

To ensure that the prototype can be done efficiently, the group facilitator assigned roles for the team members. We would help each other when we are done with our parts such as the making of the prototype since we have 3 parts to make. Splitting the roles to ensure that everyone has an equal workload, we made sure to split the roles according to the parts we had knowledge or confidence in doing.

Table 1: Roles of team members

Roles	Team members
Facilitator	Jacky
Maker	Han Yi
Stitcher	Letitia
Asset Collector	Ho Tin
Writer	Jacky
Interviewer	Han Yi

As we all had different skill sets, some of us took charge of the coding and designing parts while the others took charge of the admin aspects, such as coming up with interviewee questions in preparation for user testing the coming Monday. We would then proceed to construct our first prototype more efficiently the next day and over the weekend.

Step 3.3: Stitching it together

After completing each part of the prototype, we ensured that we have made everything correctly and did not miss any important part that we need to make. The prototype was not complete by the end of the day and would be continued the next day. We would also make use of the night to relook at the prototype that we made.

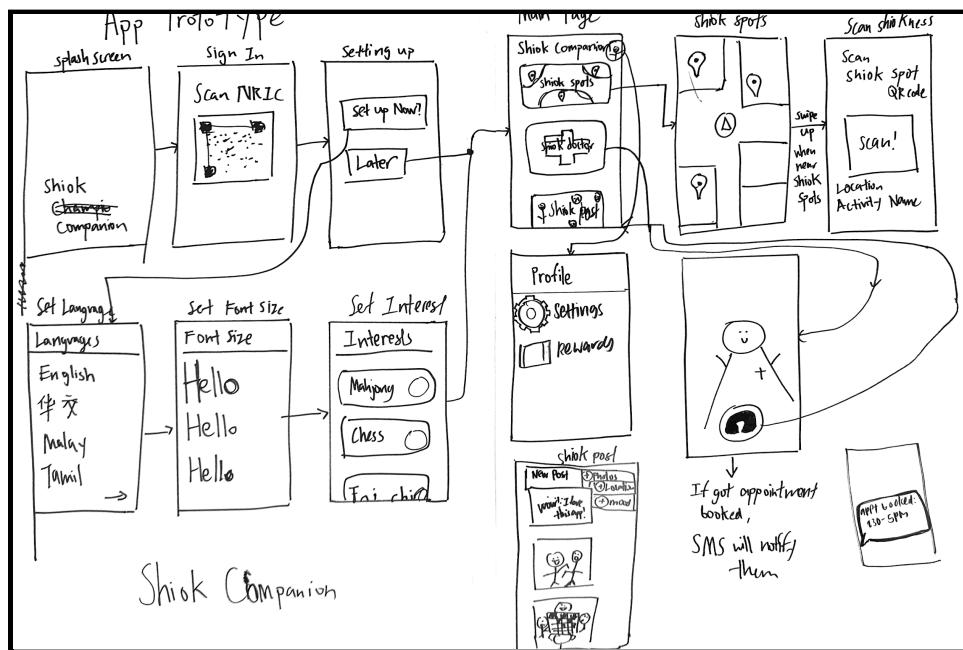


Figure 31: Prototype sketches and wireframes of app

To ensure that we knew a rough layout of the app, we got together to discuss the features we wanted in the app and sketched out simple wireframes to give us an idea of what it would look like. We would then proceed to do up the actual app layout on Figma, and code it in Android Studio.

We boiled it down to the following features:

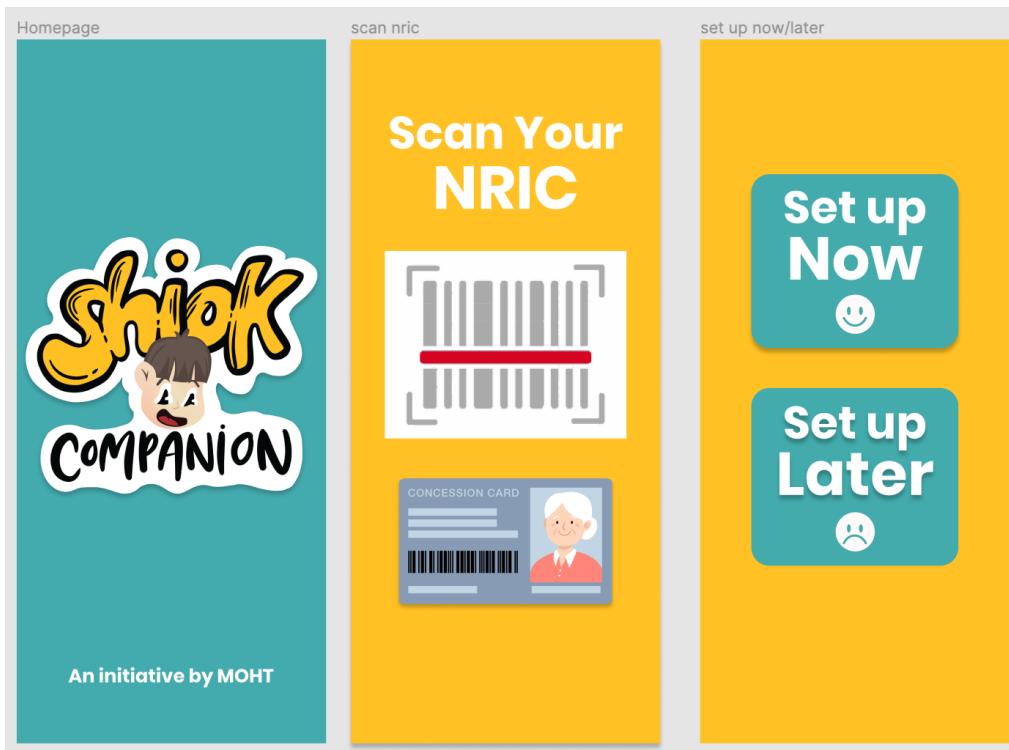


Figure 32A: Homepage screens of app: Sign in and Set up page

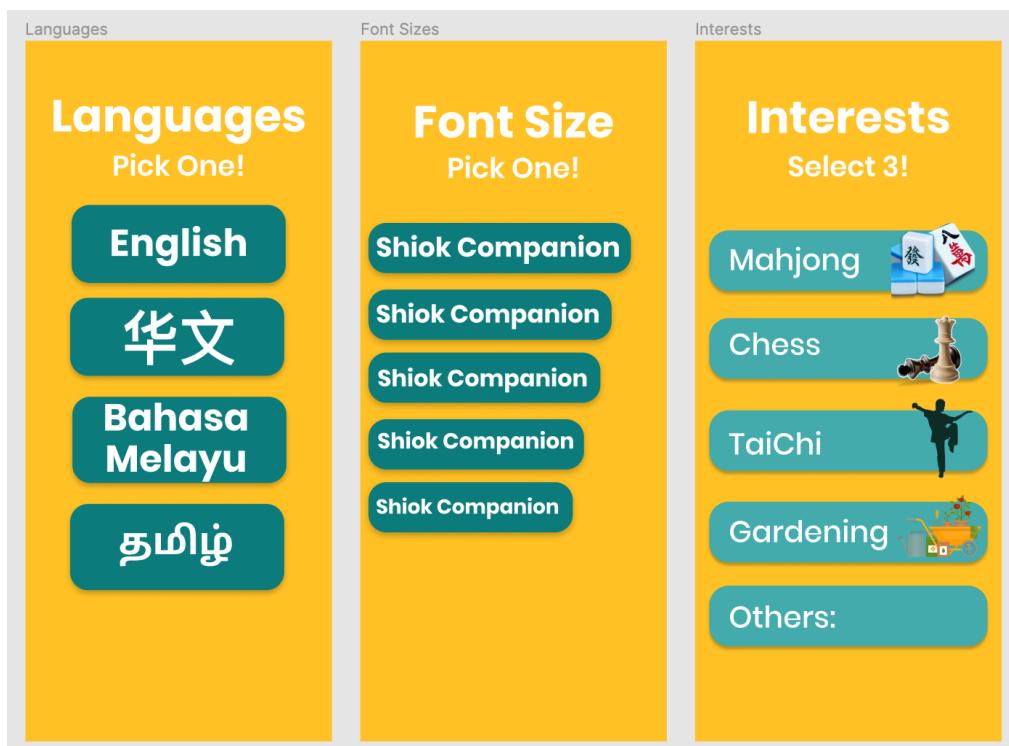


Figure 32B: Languages, font size and interest screens

ShiokSpots

Inspired by Pokemon Go, Shiok Spots are spots placed near the elderly users' homes for them to go to and play activities based on their chosen interests. They would be able to obtain rewards after going to each Shiok Spot.

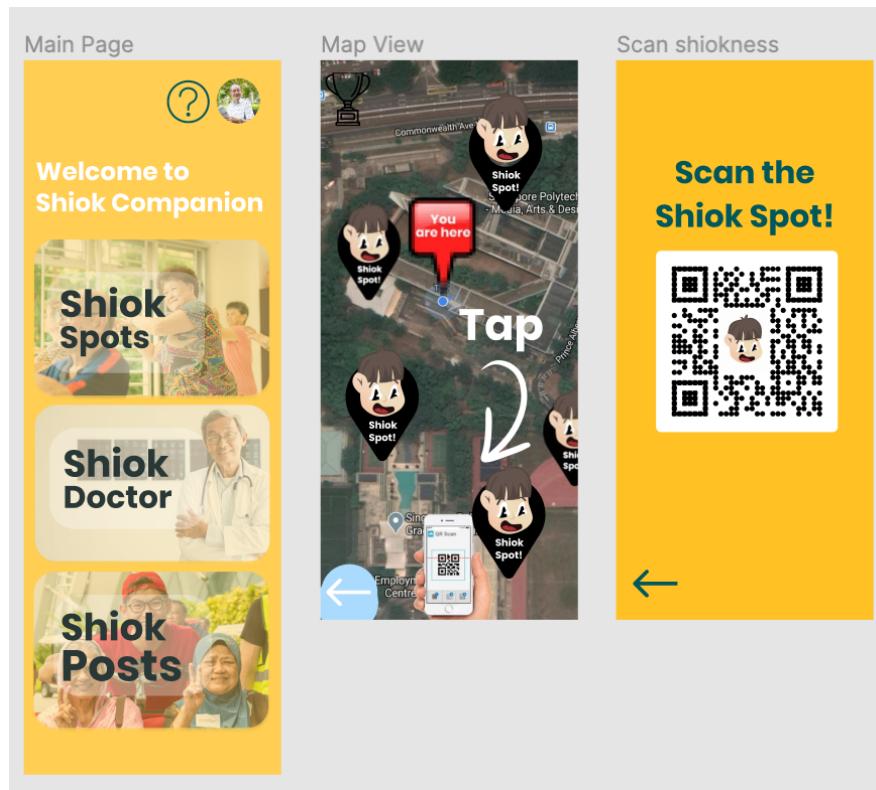


Figure 32C: Main page screens and ShiokSpot screens

ShiokDoctor

An online consultation call for elderly users to check in with medical professionals on any symptoms they may be facing, so that they can decide whether or not they'll need to head down to the doctor's.

ShiokPosts

A mini version of Facebook except inside the app itself, it has lesser features and is simplified so that it wouldn't be too complicated for the users to use. It allows the elderly to post their interactions at the Shiok Spots available.

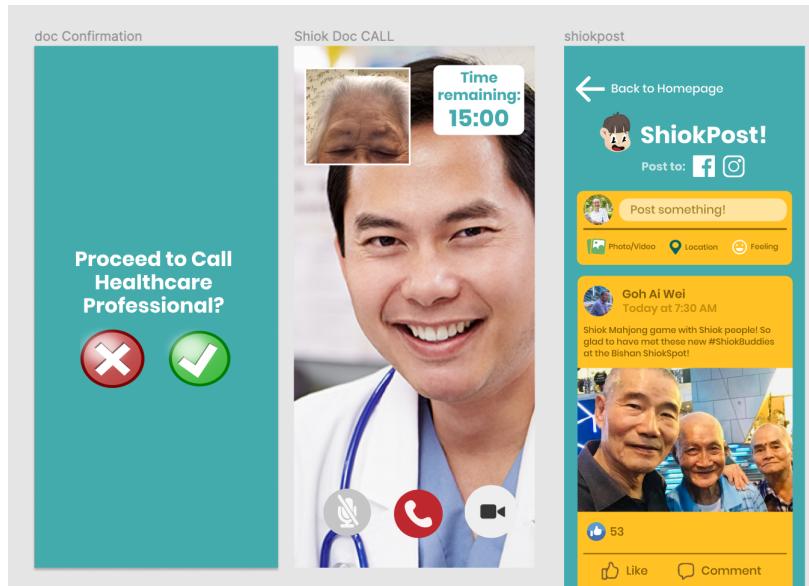


Figure 32D: ShiokDoctor screens and ShiokPost screen

ShiokRewards

A rewards page for the elderly users to cash in their Shiok points earned from visiting ShiokSpots to redeem vouchers. We use incentives to encourage the continuity of the app.

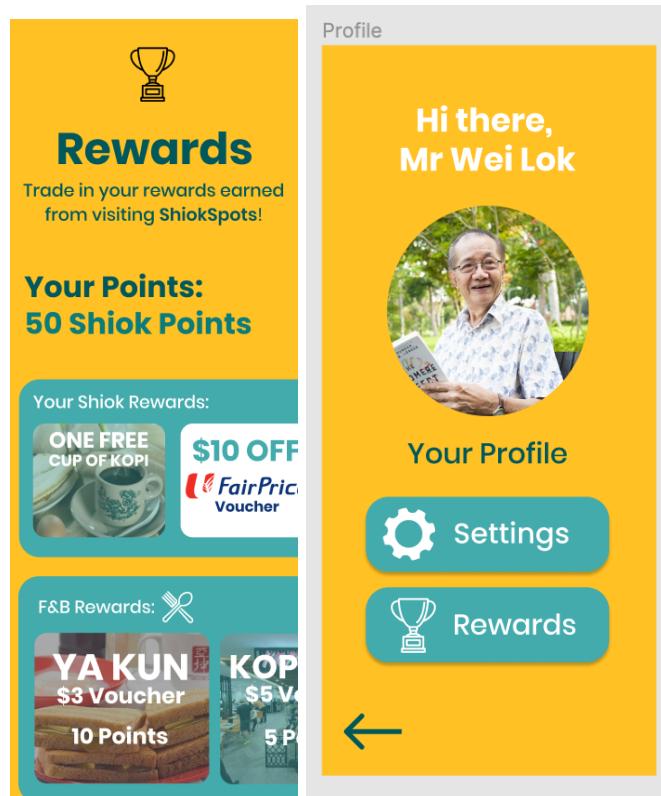


Figure 32E: Rewards Screen

Day 4 Reflection

It was a cool experience to see our ideas turned into reality in the midst of the making of our prototype. As it was just a prototype, we decided to focus on the most straightforward of details, only including the features we wanted and ensured that it was not too complicated lest we got confused. Although it was a confusing process as we needed to piece all our ideas together, we were able to simplify it down to the most crucial features without complicating it too much. It tested our ability to pick out the most important information needed that was suitable for our target audience.

After much discussion and debating, we were able to concentrate only on the aspects that would be essential in solving the issues of our target audience (Persona 3). We had to look back and focus on our long term goal and sprint questions to ensure that we did not go off track and focus on the wrong things. It was a tough process as we wanted to include almost everything in but we managed to simplify it to only 4 main features: social media, doctor consultation, social interaction spots and being able to change the language and font size settings. We look forward to seeing our prototype take shape over the next few days.

Day 5: Testing

On Day 5, we bent time and space to create a high fidelity prototype and carried out a user test trial. In the morning, we continued to work on the prototype that we have left off from yesterday. We would need to complete as much as possible as we would have the user test trial in the afternoon.

User Test Trial

To prepare for the user test trial, we put together everything that we have done including the prototypes (app, poster and instruction manual). We checked and did a test run among ourselves to see if the prototype works. The user test trial would allow us to determine the best way to interview and get results on the user experience and their concerns from a raw and first-person perspective.



Figure 33: User Test Trial

We then had a trial of our app, with some questions to ask the testee, to simulate the flow of how the actual user testing will be and sort out some problems that we may face during the actual user testing. We took a video of the user testing to get the reactions of the testee when using the solution and we had [name] to take down the notes for the interview.

We realised that we should have a solid plan on the day of the testing as we did not prepare the interview plan as well as we wanted to. The interview was choppy and the testee kept going off the track from using the solution. While it was just a test run, some suggestions were noteworthy, including some points that we took into consideration, making the important changes to our prototype ahead of the actual user testing.

The testee made some good points:

- The font size is a little small
- What if the elderly doesn't want to use the app?
- Will there be people/helping guidelines to guide the elderly while using the app?

Interview plan

To prepare for the interview, we made use of the Five- Act Interview to come up with the script for the interview questions. To ensure that the reactions and answers are honest, we had to ensure that the interviewee feels comfortable and does not feel like they are being tested. This is important as we do not want the interviewee to have any biases towards the solution.

Greetings	Introduce the App	Tasks and Nudges
<p>Hi, I'm Han Yi and my team is McGrides. We are made out of 4 people, Jacky, Hanyi, Letitia and Ho Tin. Thank you for doing this user testing with us today, we really appreciate you coming all the way down to help us!</p> <p>Before we start, I would like to remind you that there are no right or wrong questions and the purpose of this is to understand how you feel as you try our product prototype.</p>	<p>Introduce the App</p> <p>Our solution consists of 3 parts, the poster for encouraging the elderly to download a app, the app itself, and an instruction manual to teach the elderly how to use the app. [pause for a while]</p> <p>The app is called 'Shiok Companion' which is a multi-functional app with different features. The app is meant to make it more convenient and easier to use compared to the traditional means. The app itself is not fully functional and we want you to try out our app. You can give us any feedback and let us know how you feel about this app. We will let you explore the app first and let us know if you face any problems.</p> <p>Do you have any questions before we start?</p>	<p>Tasks and Nudges</p> <p>Now, I would need you to help me do some tasks and you try if you can do or not. <u>[ask them how they feel about the experience after doing each task]</u></p>
<p>Personal Questions</p> <p>How are you feeling today? What is your age? Do you move around often? Tell me more about yourself, what do you do? Describe a day in your daily life; what do you usually do these days?</p>	<p>[give them poster]</p> <p>This is the poster that you will see. You will see this at the HDBs or community centres. [give them time to read and understand, after reading through can ask qns.]</p> <p>For the poster, was it easy to understand?</p> <p>For the poster, where do you think it should be placed up?</p> <p>Would you be interested to download the app?</p>	<p>Imagine that you are bored at home and want to take part in nearby activities around you and earn points for it, how will you use the app to do it?</p>
<p>Context Questions</p> <p>What did you do before this? Do you use any app? Do you use any social media?</p> <p>What types of apps do you use? Who do you usually spend time with? Any hobbies?</p> <p>Do you usually struggle with using apps or technology? -> If yes, why do you struggle with it? -> If no, why do you think you do not struggle to use, is it easy or simple to use?</p> <p>Do you use any healthcare technology like a health watch -> If yes, what kind and why do you use it -> If no, why not esp with the many options like the step tracker given by the government?</p> <p>Do you usually go for check ups or appointments -> If yes, ask them how do they book the appointment</p>	<p>[show them app]</p> <p>This is the app after downloading it. Remember that it may not be fully functional and we would like to receive feedback from you.</p> <p>[give time for them to explore]</p>	<p>Next, imagine that you have gone to multiple Shiok Spot activities, you want to check at how many points you have and redeem some rewards, where will you go in the app?</p> <p>If you want to let others know what you done or see what others are doing, where will you go to see in the app?</p> <p>Touchwood, If you are not feeling well, but you don't know if its serious or not, where do you go in the app? <u>(at the calling page, can explain the person help the elderly and stuff and the sms)</u></p> <p>You know just now at the start, u entered your language, the size of the words and your interests, if u want to change it, where will you change it</p> <p>If you want to know more about this app or need more help, where will you go in this app? <u>[show them the manual after they get to the help page]</u></p> <p>For the manual: Was it easy to follow and understand? Was there enough information to understand the different steps and functions? Where do you think we should have the instruction manual</p> <p>Debrief</p> <p>How easy is it to use How did you feel when you learnt how this app works and how to use it Is there anything we should take note of? Is there anything we can improve? Would you recommend the app to your friends?</p>

Figure 34: Interview Script

Day 5 Reflection



Figure 35: A glimpse of our user test trial: Hanyi explaining the uses of our app while the rest take down feedback and record

It was a tiring process putting together our first prototype within a few hours before the first user testing. It definitely wasn't perfect since it was put together in a short period of time and undone. However, it was useful to obtain some feedback from the first user testing so that we would know how to proceed or tweak any things from there on. Our testee provided us with useful insights that would be beneficial in helping us rethink things or changing the flow of the app. From here onwards, we had a more solidified idea of what things we wanted in our app and what can be changed or improved. We're all set to get the engine running and using the weekend to put together a well done prototype in preparation for the industry partners' feedback the next Monday!

Day 6: Interview and Testing

On Day 6, we tested the prototype with 4 groups of potential users and received feedback from them.

We finally reached the day that we were to test our prototype with the industry partners (MOHT) and some elderly. We had the chance to interview 4 groups of users, 2 of which are from MOHT while the other 2 are elderly. This would allow us to get actual feedback for the app in the perspective of the elderly. It would allow us to receive feedback from them and know what works and doesn't work. This would also allow us to improve our prototype based on the feedback before the next user feedback 2 days later.



Figure 36: Interviewing of industry partners and elderly

Our elderly users and industry partners gave us valuable insights and feedback regarding the features of the app. We took note of the following crucial pointers made:

- Contrast of colors are not enough: Yellow against white, not a good color choice.
- ShiokDoctor feature is too scary and there's not much information telling them about the background of the doctors themselves.
- ShiokSpots feature: What if the users try to cheat the system and scan the QR Code without doing the activity? Will there be measures put in place?

Day 6 Reflection

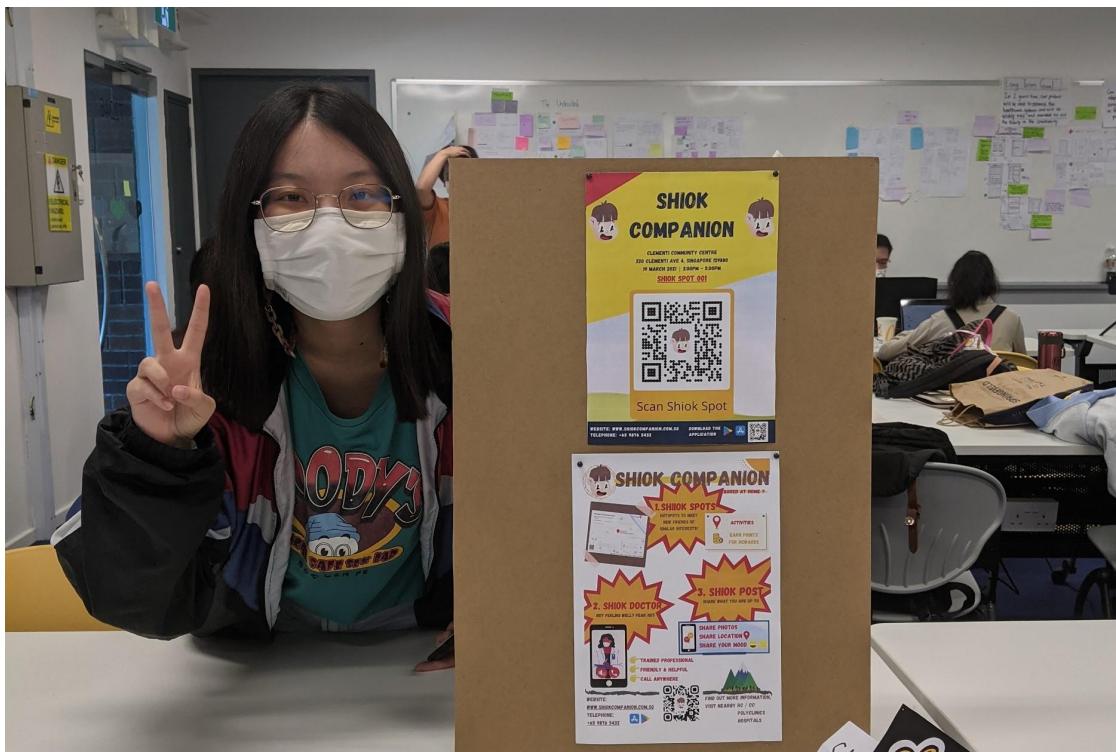


Figure 37: Letitia posing with the posters

The interviews were extremely useful to us as their feedback was essential to further improvement of the prototype as we would be getting actual feedback of possible users of the solution. It gave us a better insight of some part of the app we have not thought about before such as the font size, the contrast and other minor details. The points that the testers brought up were things we did not think about, which is the purpose of the user tests. As designers of the prototype, we will be looking at one perspective and fail to see some issues that our potential users would see.

We would consider all the test users' feedback both positive and negative, collating them in a single document. The best part was that our concept was largely well received by them, with its features being understood easily. The testers liked the idea of the design of the posters, app and the manual, which were heartwarming to know. We'll be improving our prototype further in preparation for the final presentation on Day 10.

Day 7: LEARN

Step 1: Learn from feedback

After receiving all the feedback from yesterday, we transferred the feedback from the interviews into sticky notes into miro.com and spilt the feedback into 4 main parts, the poster (download app and Shiok Spot), the app prototype, the user manual and the overall experience. After the feedbacks were colour coded into red (Negative), green (Positive) and blue (Suggestions), we can easily determine the different types of feedback.

Team McGriddles	Andrew & Pradyna	Hwee Ting & Sharm	Mr Leong	Mr Aw
Posters (Download App & Shiok Spot)	<ul style="list-style-type: none"> Language used is very local, simple The download app poster is good, clear and easy to understand. Shiok spot poster is good, clear and easy to understand. Get more store & download poster! 	<ul style="list-style-type: none"> It is better if there is a video of the poster. Shiok spot poster is good, clear and easy to understand. Get more store & download poster! It is better if there is a video of the poster. 	<ul style="list-style-type: none"> It is better if there is a video of the poster. Shiok spot poster is good, clear and easy to understand. Get more store & download poster! It is better if there is a video of the poster. 	<ul style="list-style-type: none"> Tips of SHOKO poster is good. Well designed user for the application. Design: Application can be efficient and effective. The interface is intuitive and needs to be simple and clean.
App Prototype	<ul style="list-style-type: none"> App Audio is good Language use of Singlish, local, simple Font looks good, generates more user interaction It is better if there is a video of the poster. 	<ul style="list-style-type: none"> It is better if there is a video of the poster. Language use of Singlish, local, simple Font looks good, generates more user interaction It is better if there is a video of the poster. 	<ul style="list-style-type: none"> It is better if there is a video of the poster. Language use of Singlish, local, simple Font looks good, generates more user interaction It is better if there is a video of the poster. 	<ul style="list-style-type: none"> It is better if there is a video of the poster. Language use of Singlish, local, simple Font looks good, generates more user interaction It is better if there is a video of the poster.
User Manual	<ul style="list-style-type: none"> Well-done, nice and bright. Easy to read, Singlish was used, gives local vibe Provision of the key points necessary for the user manual. Small font size. Available in different languages. Font size for easier reading and distribution. 	<ul style="list-style-type: none"> Color and layout is good, makes it easy to understand what to do. Manual is good and provides a lot of pictures. 	<ul style="list-style-type: none"> Manual is good. 	<ul style="list-style-type: none"> Good may share are very useful, which posts are? Color is nice, need more contrast. Confused at the beginning. Need to have more types of accounts. Add "helping" to the list of interests.
Overall experience?	<ul style="list-style-type: none"> Overall thing good, but need to add more information about the app. Overall good. 	<ul style="list-style-type: none"> Good communication will use. Overall well done WOOD! 	<ul style="list-style-type: none"> Learning process is easy. Use of Singlish attracts attention. Helps to understand the target audience. Maintaining its originality to persuade and attract users. It will be good if the user manual is more detailed and accurate. 	<ul style="list-style-type: none"> What are the major areas you can improve in your approach and change to make it better? How are you going to make sure knowledge to be shared? It is a great idea but I think there needs to be more information about the app.

Figure 38: Summarized feedback

Step 2: Looking for patterns

After listing down all the feedback from the user testing, we looked for patterns of feedback that came up for multiple interviewees. We took those feedback out and placed them somewhere else where it is categorised under “positive”, “negative” and “neutral” feedback. These feedback are very important as multiple users feel the same way. This way, we would know what works and what did not and what we should improve before the next user testing.

Patterns		
Positive	Negative	Neutral
Audio is a good feature to have	Cannot see words well in the app, too little contrast	Attract users, persuade other elderly to download.
Functionality is good	Confusing at the beginning, need more explanation	Incentives to motivate/attract users.
Use of local words are good to attract people	Shiokdoctor: Too sudden, hard to trust. Need more explanation and steps in front to guide them	Simple and easy to use.
User friendly and motivates users to use	Cannot assume that they have basic knowledge of scanning QR code, swiping etc.	How do you ensure that the ShiokSpot QR codes are scanned with integrity? And that they actually do the activities before redeeming it.

Figure 39: Feedback that were repeated by different interviewee

Step 2.1: Patterns uncovered from the interviews:

Positive patterns:

- Audio feature is a good feature to have for individuals who cannot read
- Functional and user-friendly
- Manual is detail-oriented and well done
- Local words are good to use and would appeal to the elderly more

Negative patterns:

- Contrast between colors not good enough, yellow against white not a good choice
- Font size not big enough
- ShiokSpots: What if the users try to cheat the system? (**Repeatedly mentioned**)
- ShiokDoctor: Not enough background and clarity to the medical professionals the elderly users will be consulting with (**Repeatedly mentioned**)
- QR Code: Cannot assume that elderly have basic literacy of scanning it

Neutral patterns:

- ShiokPosts: Can have the option to post to other social media sites
- Marketing can be improved to entice users to download the app

After coming together to discuss again, we decided to make a few more changes to the app taking into consideration the feedback made by the users. This would include changing the font size and color of the screens, and making adjustments to the ShiokSpots and ShiokDoctor features.



Figure 40A: Adjusted colors and font size

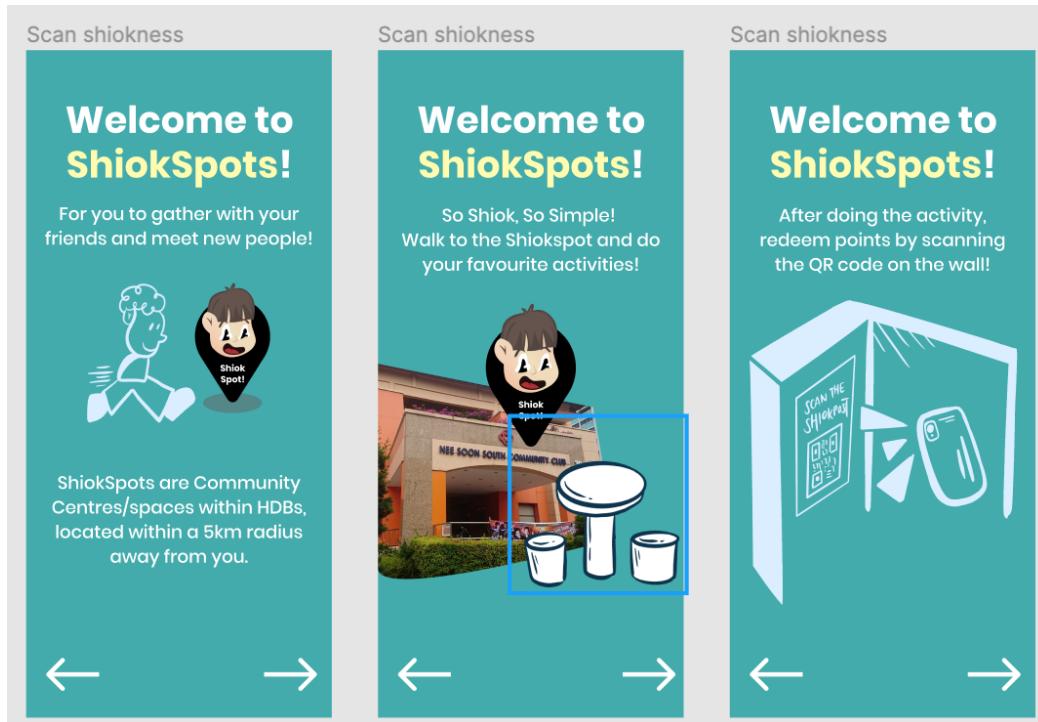


Figure 40B: Adjusted ShiokSpot screens



Figure 40C: Adjusted ShiokDoctor Screens

Day 7 Reflection

Overall, the group knew what could be improved over the last few days and started to work on it, looking at all the major feedback that was given, showing us how our prototype has developed just from a mere concept to an actual usable prototype as the amount of positive feedback becomes more than that of negative ones . We felt that the suggestions benefited and would improve the prototype to make it closer to perfection and we will eager to hear what the next round of testers would think of our improved prototype.

Day 8: LEARN, Part 2

Improvements were made based on the feedback from the first round of user testing. We carried out the second round of user testing with 2 user testers. This would allow us to receive feedback on the improvements that we had made and how they feel on the new changes. This will help to determine if the changes made were useful and new feedback were given to further improve our prototype. One of the user testers was new to our prototype and we got to receive feedback from a completely new perspective.



Figure 41: 2 Users testing our updated prototype

Day 8 Reflection

It was refreshing to hear the point of views from the new interviewee as we finalised the prototype, especially since he brought up a few points that were not mentioned before by the other testers. More importantly, they seemed to have a more positive feedback on the prototype and concept. The suggestions for improvements were not drastic and only minor changes or things to take note of meaning the prototype is a feasible solution. We definitely look forward to presenting the solution to our MOHT partners in the upcoming days to see their opinions on the final prototype.



Figure 42: Mr Yi Fang giving his opinions to the class

Day 9: Final Refinement of Prototype & Putting together of slides

Preparation of presentation and show and tell

To prepare for the final presentation on Day 10, we had to start putting together our presentation slides and setting up our final prototype for the Show & Tell. Our presentation slides would boil down to our main solution, addressing the problems, goals and sprint questions we thought of throughout this 2-week run. It would be a summary of our app (Shiok Companion) as well as the deliverables that come along with it, to give the industry partners a glimpse of our idea and to propose a final solution to them. We then had a rehearsal with the lectures to stimulate the actual presentation to give us an idea of what it will feel like.

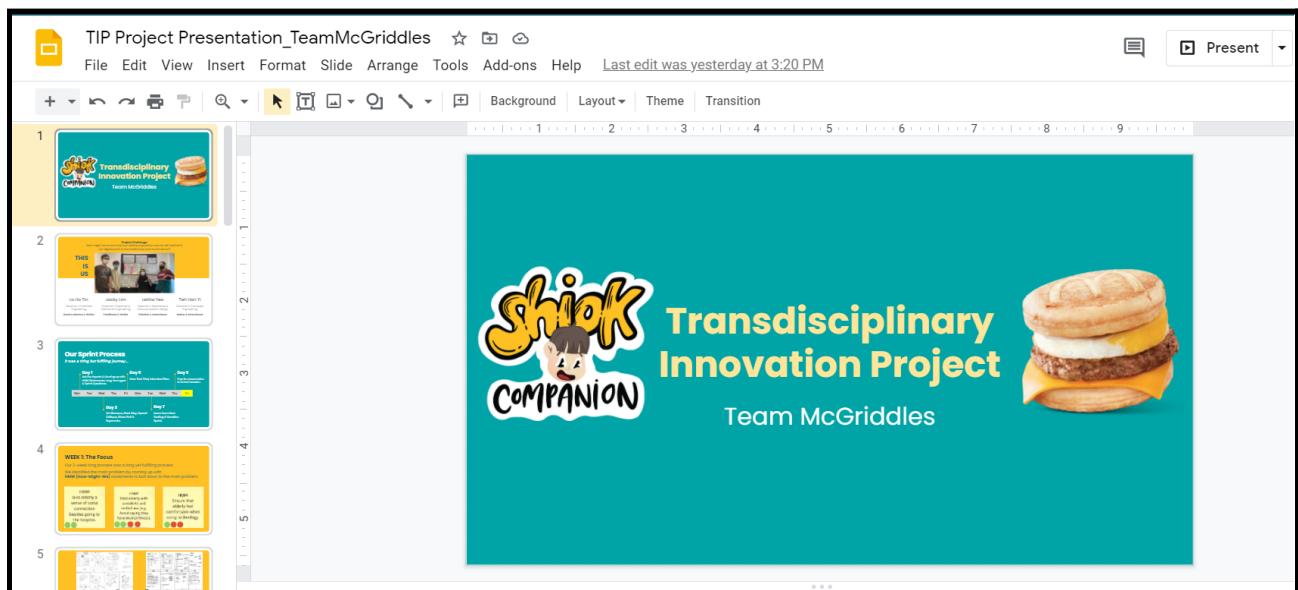


Figure 43: Presentation Slides

Day 9 Reflection

It was a rather hectic day as there were a lot of things to do and prepare for the upcoming pitch presentation and show and tell. We had to prepare ourselves both physically and mentally for the presentation the next day. It was rather nice seeing everything being put together, especially when laying out all the deliverables out on the table in preparation for the Show & Tell. We were definitely glad to see our two weeks of hard work being prepped up for the next day, and it assured us that our effort has certainly paid off.



Figure 44: All teams finalising prototype and preparing for presentation the following day

Day 10: Final Pitch Presentation and Show & Tell (D-Day)

It was finally the day to present what we have done over the last 2 weeks to the industry partners. We first had the presentation in the lecture theatre and then the show and tell afterwards for them to know more about our solution. We were also able to look at other students' works and what they have done.

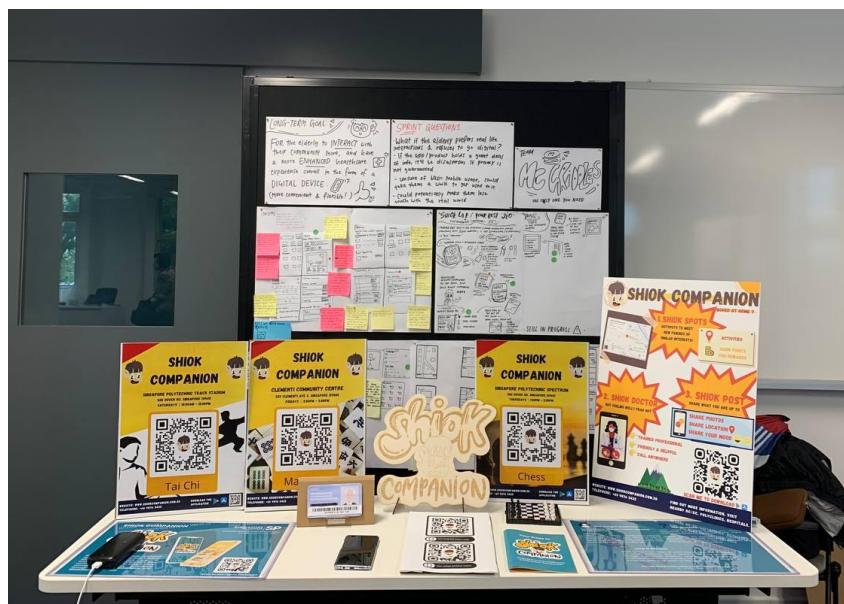


Figure 45: Show and Tell Set-up



Figure 46: Zoomed in of Show and Tell Set-up

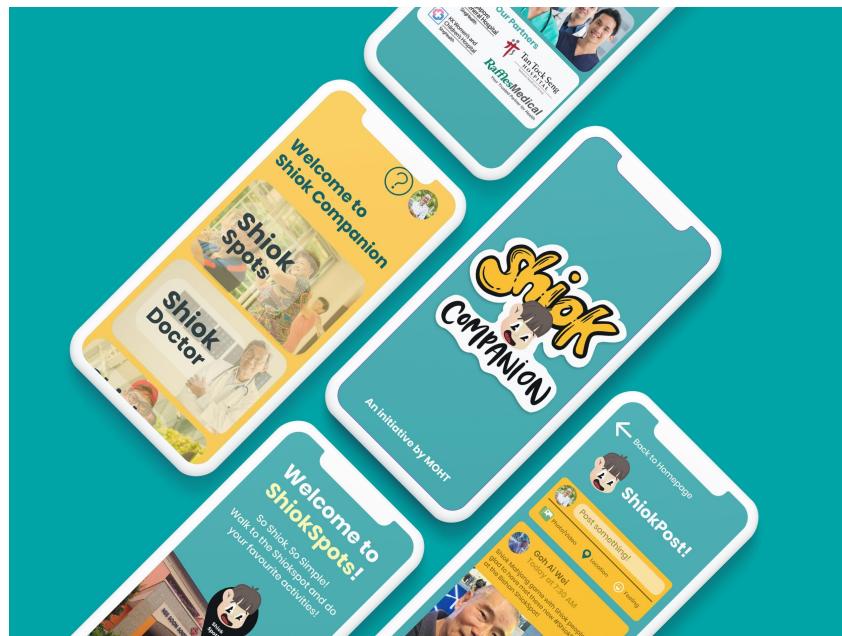


Figure 47: App Design

You can check out the prototype here: ([View through Figma](#))

<https://www.figma.com/proto/tFQnPYrh50kqOY56N7XYBI/TIP-PROTOTYPE?node-id=1%3A3&viewport=-3783%2C419%2C0.45386844873428345&scaling=scale-down>



Figure 48: User Manual Design

The Manual Link:

<https://drive.google.com/file/d/1V71sO0jPFlvHgi-l2IWZbEk3O5d7M0TV/view?usp=sharing>

Day 10 Reflection

It felt great to finally conclude the end of the 2 week TIP SPRINT. As this is the final day, it gave us a platform to think about what we have done over the past 2 weeks and reflect on yourselves. We reflected on what new skills and knowledge we have learnt and how we have worked as a team together effectively even though we were down 1 member. We were nervous for the presentation as we would be presenting everything that we have done for the past 2 weeks to the industry partners. We also had the opportunity to look at other students' work from other industries allowing us to broaden our ideas and perspective.

Overall, the industry partners were satisfied with our final outcome, and told us that it was impressive seeing how everyone's work has changed since the first supervoting. It was definitely enlightening and heartwarming hearing it from them, and we left the stage feeling happy that we managed to pull off this project within such a short period of time.

Key Takeaways

The overall concept was very well received by the interviewees, with many of them saying that they would actually download the app and use the features. The elderly would interact with others outside of their home and they feel this is an important point that the app should include to help the elderly to socialise. Besides that, they seemed to really like the concept as they also mentioned how the features can even be useful and improved to make the app smoother. The concept of having the poster and the manual and not just the app was welcomed by testers as it included the process alongside with the app such as attracting the elderly to download and when they need help. The use of local words such as "Shiok" were also the main attraction as it provides comfort to the elderly and the text to speech function as not all the elderly are able to read.

What worked:

- The prototype (poster, app and manual) were easy to use and read for the elderly. The words were simple and big enough and the colour choice had enough contrast to read with ease
- The ShiokSpot feature were commended by the testers as they felt that the elderly would be attracted to this feature and would actually go out of their home and interact with others
- For ShiokPost, the testers liked the use of a similar and simplified social media that the elderly currently use such as Facebook would allow an easier time to use that feature.

Challenges

- Some were concerned about the marketing aspect. The elderly may still not download the app to use even with the help of the post which was simple and attractive
- Some felt that they may cheat for the scanning of QR codes to take advantage of the rewards and not actually taking part in the activities
- Some felt that the prototyped assumed that the elderly has some kind of basic digital knowledge such as scanning of QR code and swiping of the phone

Let's quickly look at our initial long term goal and sprint questions.

Long Term Goal

Our long term goal in 2 years time is for the elderly to interact with their community more, and have a more enhanced healthcare experience overall in the form of a digital device.

Sprint Questions

1. What if the elderly prefers real life interactions and refuses to go digital?

This is something that the team has taken into account while developing the solution.

- Everyone would take varying amounts of time to get used to technology. As different elderly are exposed to different levels of technology, they would have different levels of help to encourage them to use technology.
- Solution should cater to all ranges of elderly and integrate into real life as much as possible, from the digital illiterate to digital literate. It should be simple, easy to use, and have options to choose to their liking.
- Help should not only come from external, but from around the elderly as well. Family members, friends and caretakers should help to encourage the elderly to use technology. They would need to be patient with them as it might be something alien to them.

Next Steps & Recommendations

Even though we are technically done with our prototype of the solution, there are many parts of the solution that needs to be improved that would take a much longer time than 2 weeks. These improvements can be as major as adding new features or as small as changing small details. These would ensure that the solution remains effective in serving its purpose after a long period of time.

There are also other things that should be considered that should be done alongside with the solution. There are many logistical issues that need to be taken into account before going ahead with the release of the app to the public. These issues must be taken care of as the app would not be able to function as intended.

Our solution would be one of the many ways of tackling the issue and MOHT should change the solution to their needs where deemed feasible. The solution is not perfect and more time and effort should be taken to perfect the solution. A similar concept of the idea could be used to tackle more issues that MOHT may be currently tackling with.



Figure 49: Permanent Community Activities

After finishing the sprint, MOHT can partner with community centres to organize more permanent community activities especially for the elderly at different locations such as RC and CC. This would build up the popularity of the spots as elderly would know where activities are held for them. It would slowly become a conscious mindset to go to the locations when they are bored, looking for things to do or just socialising with others. The elderly would also be familiar with the locations and would not have a problem to arrive at the designated areas. Therefore, when the app and Shiok spot locations are released, the elderly would already be familiar and would be more acceptable to the app as it is already part of their daily routine.



Figure 50: Posters and Flyers

MOHT could also partner with other ministries such as MIC, HDB and community centres to design, develop and distribute posters and flyers about the upcoming launch of the app. The posters can be placed up at numerous places such as HDB noticeboards, bus stops, advertisements and community centres. Flyers could also be distributed to aging towns with homes with a high density of elderly living in the area. This would increase the popularity and recognition of the app, making it more aware to the elderly or even their caretakers. This would encourage more elders to download the app when the app is launched.



Figure 51: Volunteers helping the elderly

MOHT can also partner with volunteer organisations and other insuitations to organise training of volunteers to introduce and teach the app and its features to the elderly. The volunteers can hold talks and events such as roadshows for mass teaching to the elderly. This allows the elderly to have an ease of mind and not to worry that no one would help them to teach them on how to use the app as most elderly may not have the digital literacy to do so.

Here are some recommendations that would require more time and resources...

Recommendation 1: Improve on the scanning of QR code



Figure 52: Scanning of ShiokSpot QR code

The system for the scanning of the QR code is not perfect. Although it is relatively easy, there are some other considerations that need to be taken into account since there is a reward system. A system for the scanning of QR code could be developed to prevent multiple scans of the same user or not staying throughout the activity. This would prevent people from taking advantage of the reward system and defeats the purpose of the app. Therefore, the system should allow for a balance between ease of use and discourage users to cheat the system.

Recommendation 2:



Figure 53: Manpower to develop the app

As a fully developed app would require more time and manpower, MOHT could source for manpower to design and code the app to make the app more robust and user friendly. More features could be added along the way to make the app comprehensive and keep up with updates according to the feedback received from the users to ensure the app is up to date. A marketing team could be sourced for to make the app have a stronger identity, making it more recognisable to the public especially to the elderly, encouraging them to download and use the app.

Recommendation 3:

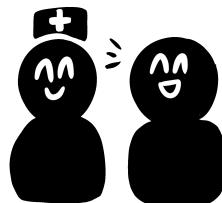


Figure 54: Consultation with familiar doctor

Lastly, MOHT can partner with medical institutions to develop a system to link up the elderly familiar doctors to the app. Medical professionals would be able to help the elderly but a familiar doctor that the elderly consults regularly would be better. The familiar doctor would know the conditions of the elderly and would be able to diagnose and treat the elderly better. The elderly would also be more comfortable to consult over a screen as they know that they are in good hands and trust their doctors.

Retrospective Reflection

So that wraps up the sprint. It's probably the most exciting project we had this year! We are thankful for this opportunity that has given us more confidence to do similar projects in the near future.

Jacky:

After going through this 2 week intensive programme, I felt that I have grown a lot from the amount of stress and pressure we were put under. As the facilitator of the team, I played a role of bigger responsibility and ensured that the team followed the teachers' instructions and the SPRINT timeline. These short outbursts of energy have definitely got me out of my comfort zone but also allowed me to explore my hidden potential to lead and the creative side of me. The experiences I have gained through this module opened my eyes to the importance of teamwork, communication and discipline. It has also allowed me to realise how little I know about the community I live in, its issues and what I can do to help. It has taught me to practise sympathy, look at things from different perspectives and understand what others are going through. I am thankful for the opportunity to participate in this programme as the skills and experiences gained are unique in this programme.

Letitia:

It has been an intense yet fulfilling 2 weeks tackling this module and the project brief. It's not an everything thing where one would get to focus on only one module for 2 weeks, and although it was tiring and extremely fast-paced, I'm glad to say that it has pushed me to the limits to come up with creative ideas that I would have never had the chance to in such a short period of time. Usually I'm given a whole semester to tackle a project brief in my course along with other modules, hence it was an eye-opener being exposed to a new pace of workstyle in TIP. The SPRINT has given me a deeper insight into the healthcare industry, giving me the chance to work with industry partners face-to-face and receiving raw user feedback. Working with group mates from different courses was something of a feat itself, especially with the tight timeline, but I'm glad to say that we did it, and ended it well. Through this, I am able to see how the unifying of different courses can result in a successful end product when different skill sets are combined together. Overall, I've gained a lot of knowledge and insights about handling a project brief with clients, and certainly earned some new friends after a fruitful 2 weeks of working together. I'm grateful for the chance to take part in and contribute to this project.

Han Yi:

Despite the fact that it was supposed to be a self-taught module with no notes or exams to study for, I would dare to say this is the most saturated 2 weeks I have in my life. SPRINT taught me the importance of empathy and unwavering focus, having to personally interview and go through user-testing with the seniors and industry partners has widened my perspective to bigger problems faced in the corporate world. As my team and I began to create our prototype and go through many iterations, I learned so much more from my teammates' expertise and learned lots of skills and tips to create a quality product that I personally no longer view as just a 'school project' but a product that would actually benefit the interviewees. Overall I am humbled and grateful to have this experience that recreates what is happening in the worlding world and learned many skills along the way.

Ho Tin:

For the past 2 weeks, this has been a fulfilling and eye opening experience for me. This has been one of the few most productive and exhaustive days that I had so far. SPRINT is a new concept to me and taught me the importance of some steps in the SPRINT process. Working with others from different backgrounds and on a real life problem stimulates the experience of working with others in the workplace and different working styles coming from others which is something that schools do not usually offer and prepare you. From the designing to the prototyping to the improvement, I learned alot about the process of developing a solution from both the process and from the teammates. Being from a science course, I was not really able to use my science knowledge to help to the prototyping of the solution as the solution did not involve anything that requires the knowledge and skills from a science course. However, I was able to use my other expertise to help in other prototyping. The problem that we were handling had made me think about other issues that are present in Singapore but not widely known to the public. Overall, I have learnt many skills along the way and have improved myself as a teamplayer and became more aware of issues in Singapore.

From the team:

Overall, we found this experience fruitful and were surprised at the amount of work we have done within the 2 weeks from the start to the final prototype. We received feedback from our industry partners which gave us new insights on this issue. Throughout the journey, the brainstorming, designing and the improvement of the solution were our greatest pleasure to work on.