



WORKSHOP 07: USABILITY TESTING



FlushFinder

Team Number

G03

Submission Date

5/05/2023

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1.0 Team Details

Team Number / Name: Gee-Oh-Three (G03)

Tute day / time: Tuesday 11am

Project / Name: Where's the cleanest public loo near me? **Tutor:** Dr Shreya Ghosh

Student	Name	Student Number	Role
1	Hans Wong	20968560	Researcher
2	Harry Walters	19166700	Project Manager
3	Kuldeepsinh Talatia	20872043	User Researcher/Data Analyst
4	Navinda Jayawardhana	20537054	Usability Engineer
5	Ola Malek	19756512	Graphic Designer

2.0 Planning Usability Testing

As we built our high-fidelity prototype, we conducted some small-scale tests amongst our team members to determine how well sections ‘flowed’. We noticed some small-scale design inconsistencies which disrupted the overall flow of our app, and have started improving certain components of the prototype.

To validate whether the large-scale design components are built well, we are conducting usability testing on the other students in our cohort. The feedback from these usability tests, combined with our small-scale tests in the team, will help us converge on our final user interface.

2.1 Research Goals

We separated the goals into two sections: the **user-centred** goals and administrator/**system** goals. The user aspects prioritise what users want to do and the system aspects prioritise what we want the users to do. While users want to find a bathroom easily (a user goal), we might want them to find a bathroom by going through a certain process on our application (a system goal).

Here, we try to distinguish user aspects from system aspects.

User Aspects

- Find your nearest toilet
- Edit your preferences
- Schedule your toilet
- Login
- Signup
- Look at Reviews

Systems Aspects

- Is content presented in a way that is easy to find and understand?
- Can people complete a task successfully?
- Test a new feature
- Test an alternative design
- Test a design heuristic
- Test accessibility
- Measure user satisfaction with interface
- Identify product weakness
- Understand what users like best about your website
- Length of time users take to learn how to use your product
- Learning and training costs

2.2 Task Scenarios

As a group, we brainstormed various task scenarios which we could test the Hi-Fi prototype on. We marked the most suitable tasks with stickers; we'll try to then incorporate them in testing.

<p>Having updates on the APP based on the requirements of the users</p> <p>Navinda</p>	<p>In an emergency scenario find your nearest toilet.</p>  <p>Ola</p>	<p>Login as an existing user</p>  <p>Ola</p>	<p>Signup as a firsttime user</p>  <p>Ola</p>
<p>Use the APP as a guest user in emergency situation</p> <p>Navinda</p>	<p>Find your nearest toilet with a drinking station.</p> <p>Ola</p>	<p>View a toilet in list form</p>  <p>Ola</p>	<p>If you need to use the bathroom ASAP, how would you use our app</p>  <p>Harry Walters</p>
<p>Make a bathroom a 'favourite'</p>   <p>Harry Walters</p>	<p>I wanna use the WC but it's my mom's login.</p> <p>Kuldeep</p>	<p>I dont have mobile data because I use WIFI,</p> <p>Can I have offline map?</p> <p>Kuldeep</p>	<p>Is it possible to report a person in a group ?</p> <p>For example "Mike always post fake review and as he is the one always active so people see his thoughts first.</p> <p>Kuldeep</p>
<p>Find the reviews of a bahtroom</p>   <p>Harry Walters</p>	<p>I dont like bright background can i customize it?</p> <p>COZ I am nerd Programmer</p> <p>Kuldeep</p>	<p>Can I create my own shortcuts because I am always in rush and I hold my business to the last min (LOL)</p> <p>Kuldeep</p>	<p>What should I do if I need help for example, I am in the</p> <p>Kuldeep</p>
<p>Did the nearest toilet provide extra amenities or facilities than your preferences?</p> <p>Ola</p>	<p>I am in my 60s and I am not familiar with the app, I want to have a tutorial walk through.</p> <p>Kuldeep</p>	<p>Removing email account because I entered the wrong one.</p> <p>Hans</p>	<p>Checking restroom amenities such as soap, water, hand dryers, toilet paper etc.</p> <p>Hans</p>
<p>What was the author's name?</p> <p>Harry Walters</p>	<p>Since I don't remember my logins to my email I want to register or login using my mobile number</p> <p>Navinda</p>	<p>I want to use a profile picture for my account in the APP</p> <p>Navinda</p>	<p>I want to share the app with my friends so how can I get a link generated within the APP?</p> <p>Navinda</p>

Identifying the Best Questions

We ranked the importance of each of the issues with the context to the user and to us (system). Some tasks, like toilet location efficacy, is a shared priority amongst both groups, while other tasks (allowing the user to recover from mistakes), are prioritised greater than by a user. By sorting by the total score, we are solving issues in the best of both worlds.

Issues	Importance Ranking		
Name	Users	System	Total Score
Is it easy to find the nearest toilet	5	5	10
Can users urgently find a bathroom in map view?	4	4	8
Can users edit preferences?	3	4	7
How easily can users recover from making a mistake?	2	5	7
Do users think the preferences buttons take you to a corresponding toilet?	0	5	5
Are users drawn to a communities page?	2	3	5
Do users distinguish the login scheduling from the map view scheduling?	1	3	4

Task Scenarios Brainstorm

Some Task Scenarios which will be tested include:

Research Goal - User Aspect - Creating a Profile

Task Scenario: You would like to sign up to FlushFinder

Task: Please use the FlushFinder app to create a user account and create your profile.

Research Goal - User Aspect - Login

Task Scenario: You would like to login to the FlushFinder app.

Task: Please use the FlushFinder app by continuing as an existing user.

Research Goal - User Aspect - Find your nearest Toilet quickly

Task Scenario: You would like to find your nearest toilet quickly as you are in urgent need of a toilet.

Task: Please use the FlushFinder app to find your nearest toilet in an emergency scenario.

Research Goal - User Aspect - Favourite a toilet

Task Scenario: You would like to save a toilet as a favourite to remember that you liked this toilet.

Task: Please use the FlushFinder app to favourite a toilet.

Research Goal - User Aspect - Reading Toilet Reviews

Task Scenario: You would like to read some toilet reviews to know if the toilet is clean.

Task: Please use the FlushFinder app to find the toilet Reviews.

Research Goal - System Aspect - Understanding of preferences

Task Scenario: You would like to find your nearest toilet that has a needle disposal bin.

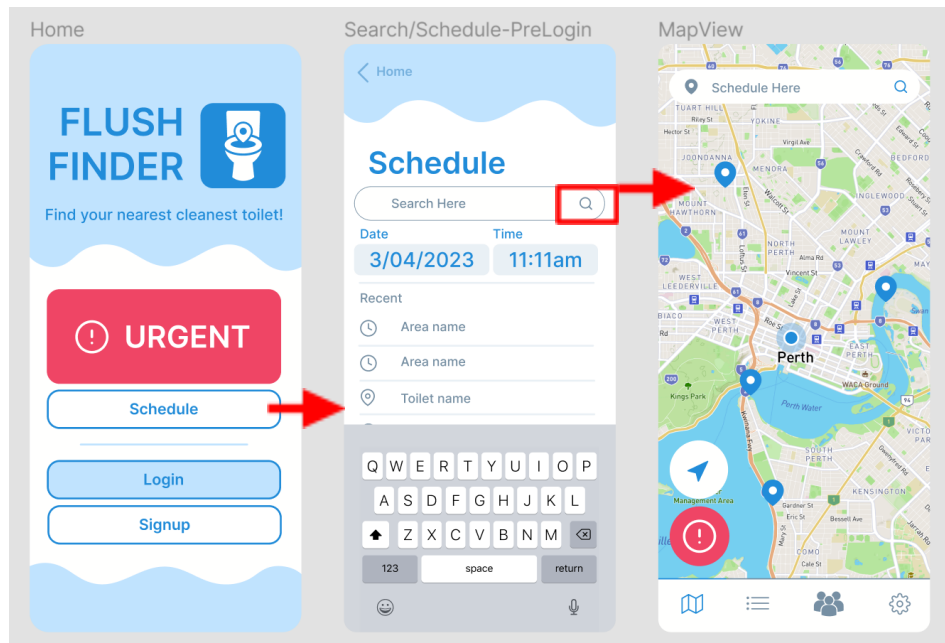
Task: Please use the FlushFinder app to find a toilet with needle disposal.

2.3 A/B Testing

As previously mentioned, in our in-team tests, we found that certain design aspects did not meet our standards. Particularly, we were unhappy with the scheduling page and noticed some inconsistencies. In a fun example of the 'converge-diverge-feedback-loop', we created some alternative scheduling windows/workflows, to replace our original scheduling workflow.

Original Schedule

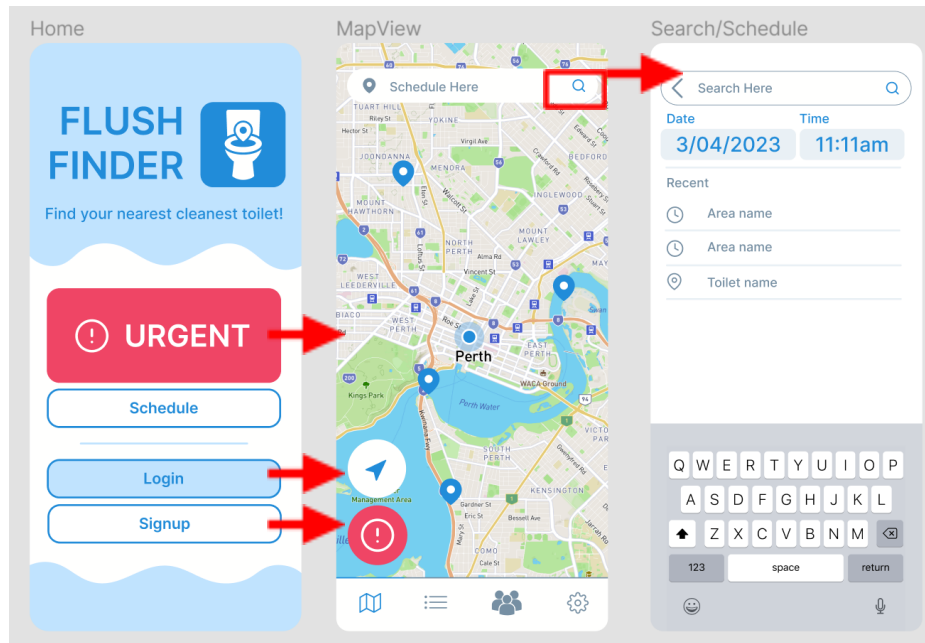
Workflow 1



The first workflow for the original schedule is followed when the 'Schedule' button is pressed on the landing page. This takes you to a pre-login 'Schedule' page. If a user clicks the magnifying glass (next to the 'Search Here' prompt), the user will be navigated to a map view, visually representing candidate bathrooms as blue pins.)

A major flaw was found with the first workflow; a user cannot specify their bathroom preferences and would see all bathrooms open at the specified time - not all of which would suit them. What's more, there is no visual confirmation that map view is displaying scheduled (not the current) available bathrooms, based on the time that the user entered.

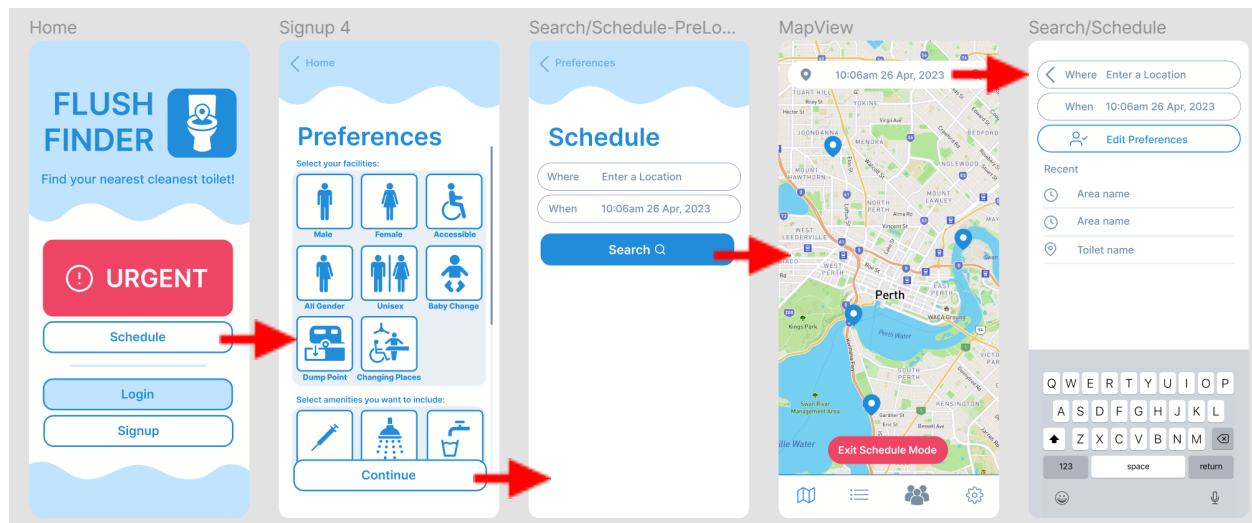
Workflow 2



The second workflow for the original schedule is followed if the user goes through the urgent/login/sign up pages. When at the map view, they press the magnifying glass (at the top of the page). The user is then navigated to a search/schedule page.

We recognize that the two different schedule pages from the original schedule pages might lead to user confusion, due to their separate and inconsistent designs.

Candidate A

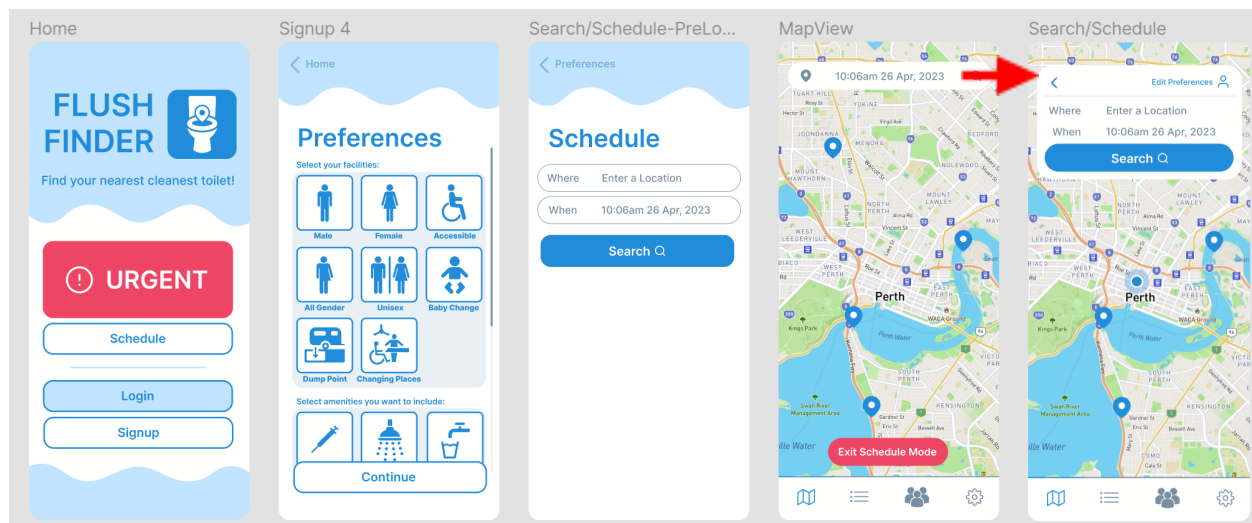


When a user clicks 'Schedule' on the landing page, the user is navigated to a preferences page, allowing them to choose which facilities and amenities to include in the schedule. The user can click 'Continue' to enter location, date and time information. Clicking search, the 'schedule map view' is displayed. If the user wants to edit their search and schedule, they can click the magnifying glass and edit using the screen on the right.

This resolves the primary navigation issues with the original schedule pages, by giving the user a choice in their preferences before viewing bathrooms, and making the 'regular map view' and the 'schedule map view' distinct from one-another. Additionally, the schedule pages are visually clearer; users can instantly tell what information they need to enter (with the where/when bars) and can further edit their preferences when appropriate.

While this provides for a much smoother user experience, we also recognise that some elements need to be further revised (such as the dark blue search button on the centre page). Furthermore, we also realise that we haven't fully resolved the issue of two separate schedule pages - in candidate A, we have two separate full screen schedule pages, one of which doesn't offer visibility of system status, with a design language inconsistent from the rest of the application.

Candidate B



Candidate B replaces the map view schedule window with a contextual menu. This in-page scheduler is accessed from the top bar of the 'schedule map view' page. This version trades the usefulness of the 'recent' menu for a much simpler user experience, visually grounding the scheduling interaction to the context of the map in the background.

This design is not without its faults, either. The in-window search bar is an inconsistent shape and colour from any other page, and the where/when text is right-justified, rather than left-justified.

Both candidates provide a much smoother solution to the original schedule page, but in significantly different ways. We wanted to determine the easiest flow for users (and thus, the target flow to implement). We have decided to conduct A/B testing to find which of our alternative flows perform best.

2.4 Experimental Setup

Recap: our goals are to answer our user and system problems. We can use qualitative and quantitative heuristics to understand and measure our success.

Quantitative:

1. Recording the amount of time a user spends on pages
2. Recording which pages a user navigates to

Quasi-quantitative:

1. User feedback scores (e.g. 1 to 5, unlikely/highly likely, yes/no, etc.)
2. Demographic heuristics (gender, handedness, etc.)

Qualitative:

1. Answering facilitator questions
2. How a user interacts with a page (swipe, pinch, zoom)
3. User's emotion/mood

We will conduct an in person, moderated experiment. When possible, we'll try to conduct a one-on-one test, with no one else nearby. We will distribute the different tasks equally across our testing population. For tasks which involve the schedule window, we will further partition the population into two groups (to try out one of the two different scheduling experiences). For each task, we're thinking that 6-8 people would be an appropriate amount. We expect the test to take about 5-10 minutes for each participant. Because only one team member is needed for a test, we can conduct multiple tests in parallel.

We will present the prototype on Figma's interactive mode (on the facilitator's iPhone). We will screen record the user, to acquire quantitative data on their user journeys. This screen recording can then be processed using a custom app-usage tool.

To ensure the heuristics we are collecting are reliable, we will try to make as much of the testing process as consistent as possible.

This includes, but is not limited to:

- Conducting a single test for each user - any further testing would introduce familiarity to our user experience
- Conducting each test in an indoor environment with similar lighting conditions
- Using the same mobile device, with the same prototype
- A facilitator reading the task/questions off of a text script (to avoid biases or priming)
- Using the same app-usage tool to record the same page timings.

PRE-TEST

1. A facilitator will give a user one side of the 'usability testing' sheet, to answer demographic information.
2. The facilitator will receive the page back from the user, writing the task code, date and time on the other side of the usability test page.
3. The facilitator will read the task out to a user.
4. Immediately after reading the task, the facilitator will commence screen recording their iPhone device and open the working prototype on the Figma mirror app.
5. The facilitator will give the iPhone to the user, who will then commence using the app.

TEST

1. While the user is interacting with the iPhone, the facilitator will write notes on specific attributes of the current user's experience, including how they interact with the application, their body language and facial expression.
2. If the user needs help, the facilitator will record this in the notes page (writing down a timestamp of when the support was given). The facilitator will write the user's question and the facilitator's answer.
3. Once the user believes that they are finished (or if the user gives up), the user will give the iPhone back to the facilitator, who will stop the screen recording tool.

QUESTIONS - INTERVIEW

1. The facilitator will ask the user qualitative questions (as provided on our 'usability test page')
2. The user's spoken response will be written in the appropriate section on the page.
3. If the user makes particular note specific problems, the facilitator will write them into the 'notes' section.
4. Finally, the facilitator will give the testing page to the user, pointing out the 'feedback' section, to answer the 'quasi-quantitative' questionnaire.
5. Once the user is completed, they will give the page back to the facilitator, ending the test.

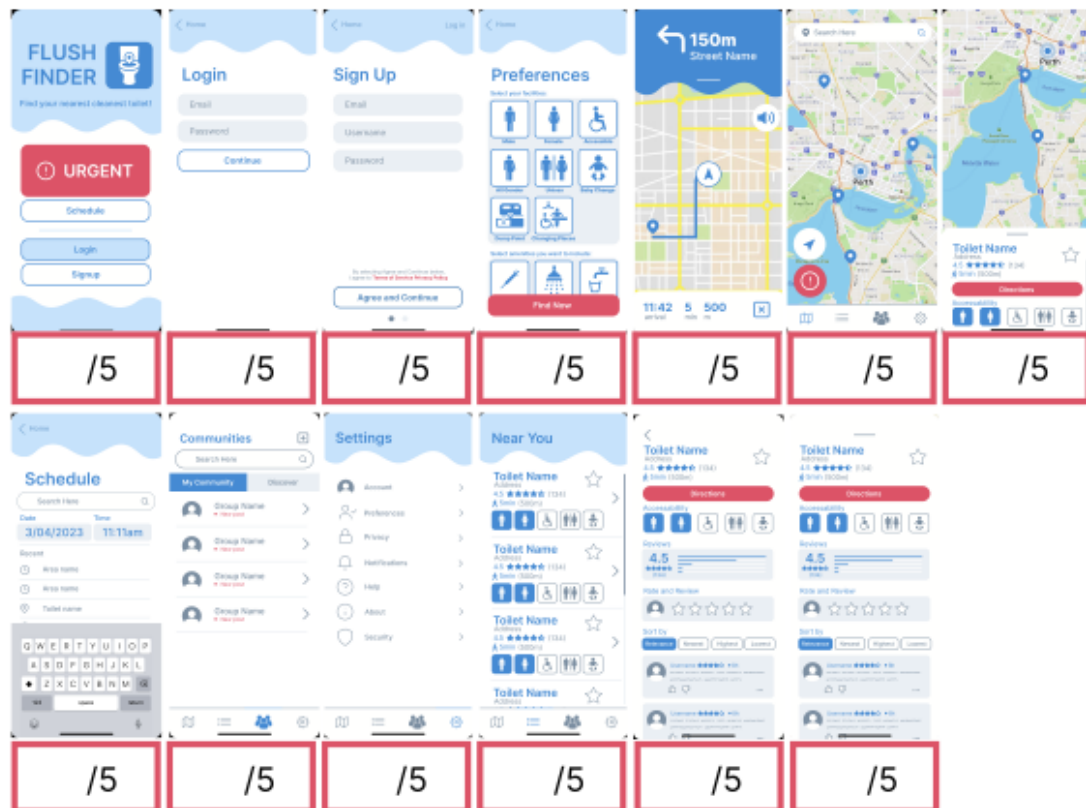
2.5 Task Sheets

Our first attempt at a usability testing page combined quantitative and qualitative data, in a small feedback session with a user. You can see our first attempt on the next page.

Notes

Team G03: Usability Testing

Enter your confidence level (0-5) in using the following pages:
(write 'NA' if not used or seen)



Flush Finder

Team G03: Usability Testing

Name: _____ Gender: _____

Age: _____ Handedness: left - right - ambidextrous

Overall, the task was:

extremely difficult - difficult - neither easy nor difficult - easy - extremely easy

Why did you give this score? _____

How likely are you to recommend this app to a friend?

definitely not - highly unlikely - neither likely nor unlikely - likely - definitely will

Notes

Task Name

Time

Date

We weren't sure as to the amount of information appropriate in this first version, and you can see how sparse our notes section is. We were given positive feedback by academic staff on our consistent visual identity, but were given constructive criticism on the lack of personal questions.

Over the next week, we will reformat this page, making it simpler for a facilitator to use (by following the order of the usability testing instructions, previously mentioned). Our next version will take a more user-centric approach, asking the user how they felt emotionally, giving a dedicated 'support' section, if the user needs extra help. Below, you can see how the team have brainstormed for some more personalised questions.

After Task Scenario Questions



2.6 Facilitator

The role of the facilitator is to guide and oversee the user testing process of this app. The facilitator should be an individual who has a good understanding of the app's objectives and can conduct the testing process in an unbiased and professional manner.

In this case, the facilitator may be a member of the development team, such as a usability expert or our project manager Harry.

The facilitator provides clear and concise instructions to the participant on how to use the app, including how to sign up or log in, how to search for nearby toilets, and how to access directions or choosing preferences/schedules. The facilitator should also explain the purpose of the testing and what the participant is expected to do during the session.

Multiple scripts are used by the facilitator. A sample script used on this project is done accordingly:

1. Introduce yourself and explain the purpose of the testing session.
2. Briefly explain the app's features and how to use them.
3. Ask the participant to sign up or log in to the app.
4. Instruct the participant to search for nearby toilets using the app and access directions.
5. Observe the participant's behaviour and ask follow-up questions if necessary.
6. Thank the participant for their time and feedback.

The facilitator should primarily listen to the participant and observe their behaviour. The facilitator may speak if necessary to provide instructions or ask follow-up questions, but they should avoid giving too much information that could influence the participant's behaviour or opinions. This approach will help ensure that the testing is unbiased and provides accurate insights into the app's usability and effectiveness. This is all done during the testing session where the facilitator is providing tasks to the participant/user.

2.7 Participants

We're going to ask participants in the same workshop session our group has for this app. First, we can start by identifying the target user, their characteristics. This will help you determine the kind of participants we need for our testing. Our app is aimed at participants of any age, since the participants in our workshop tutorial session are mostly young adults, we will be able to cover up this age group of participants.

Second, we will make sure our participants provide consent to conduct testing, and provide clear instructions on what you need the participant to do. It's a good idea to start with some warm-up questions to help them feel comfortable before moving on to the main testing. We can choose to have the facilitator ask follow-up questions or let the participant work through the app on their own.

Thirdly, give participants a chance to stop at any time, ensuring that our participants are comfortable with the testing process, and allow them to stop to ask questions or forfeit at any time if they feel uncomfortable/overwhelmed. This will be crucial for gathering feedback from each of the participants, it can help identify issues or arenas for improvement in our app.

Lastly, we as a team will discuss the feedback we received and will be able to make changes and improvements upon the app or the high-fidelity prototype.

3.0 Conclusion

In conclusion, (in peak diverge-converge behaviour), we have rapidly ideated a usability test and testing page. Next week, we'll improve the usability testing page with some user-centric questions. We look forward to conducting as many tests as possible next week, to maximise our data and validate our findings.

4.0 UI/UX Glossary and weblinks

Weblinks:

<https://xd.adobe.com/ideas/process/user-testing/usability-testing-questions-tips-examples/>

<https://www.userreport.com/blog/usability-testing/>

<https://usabilitygeek.com/how-to-develop-goals-usability-test/>

<https://www.nngroup.com/articles/ux-research-goals-to-scenarios/>

<https://blog.testlodge.com/usability-testing-examples/>

<https://maze.co/guides/usability-testing/examples/>

5.0 Evidence

5.1 Meeting Minutes

GROUP NAME	GEE-OH-THREE
DATE	01/05/23
TIME	2:00-3:00pm
LOCATION	Curtin Library room 526

PRESENT:

Ola Malek, Hans Wong, Kuldeep Talatia (Online), Harry Walters, Navinda (Online)

APOLOGIES:

ABSENT:

DISCUSSION:

- Presentation Date
- Complete figjam for task scenarios
- Delegate tasks for workshop 7 submission
- Organise what is being done for assignment 2 and 3

Tasks to do:

TASK	WHO	DUE	COMPLETE
- Few more screens before usability testing	Ola		
- Usability testing	Harry	25/04/23	
- Have at least one scenario ready for piloting tomorrow			
- Make a user testing paper	Harry	2/05/23	
- Facilitator and	Hans	3/5/23	

participants			

References

Figjam

<https://www.figma.com/file/8sdhma3iM8iET2bwTRJiRM/Hi-Fi-Revised?t=aD7auZflmFXUBVdR-1>

Figma

<https://www.figma.com/file/lShMOAA7S9flYizcv7Nyjf/Usability-Testing?node-id=0-1&t=gxc8vB3sUpaf7pzE-0>