

CSCC10

Phase 2 – Gathering User Requirements

Usability Squad


Team Members:

Annanya Sharma, Bao Yang, Beier Mu, Faraz Malik, Ian Gregory, Kyle Lewis, Omar Patel

Personas

ABOUT

Jacky is very active and outgoing, with a strong passion for exercise. After a stressful day of attending lectures, he loves to relax by going to the gym or playing a sport with his friends. When his friends are unavailable he participates in community sports programs to connect with fellow community members and maintain his active lifestyle.




JACKY SU
UNIVERSITY STUDENT
"Wanna hit the gym after class?"


Age	18
Gender	Male
Address	2 Artisan Trail, Markham, ON L6C 3C7
Hobbies	Working out, Sports
Frustrations	Hates reading large amounts of text Not fluent in English


GOALS

- Discover and register for new community sports programs
- Reserve local soccer fields for him and his friends to play at
- Attend community fitness programs to improve his strength and stamina


PERSONALITY


Resilience 


Adaptable 

Patience 

SKILLS

 Technological Proficiency

 Coordination

 Fast Learner



GERTRUDE JOHNSON


Age	67
Gender	Female
Address	178 Fred McLaren Blvd, Markham, ON L6E 1G8
Occupation	Retired

"Retirement has given me the time to surround myself with cherished ones and do what I love most"


BACKGROUND

Gertrude has been a high-school English teacher for 30 years and is now entering her second year of retirement. She happily spends her time indulging in creative hobbies and catching up with her friends. Due to her passion for literature, Gertrude takes charge of a local book club and a local creative writing workshop. She creates weekly events at community centers in Markham to connect with new and old friends while indulging in her passion.

SKILLS

Multitasking 


Technological Proficiency 


Organization 


GOALS

- Booking rooms in local community centers to host book club meetings and creative writing workshops
- Exploring new hobbies through community-run programs
- Find spacious venues that can accommodate all her friends for their get-togethers
- Connect with new likeminded people while indulging in her passions

TRAITS

Passionate 

Adaptable 

Patience 

FRUSTRATIONS

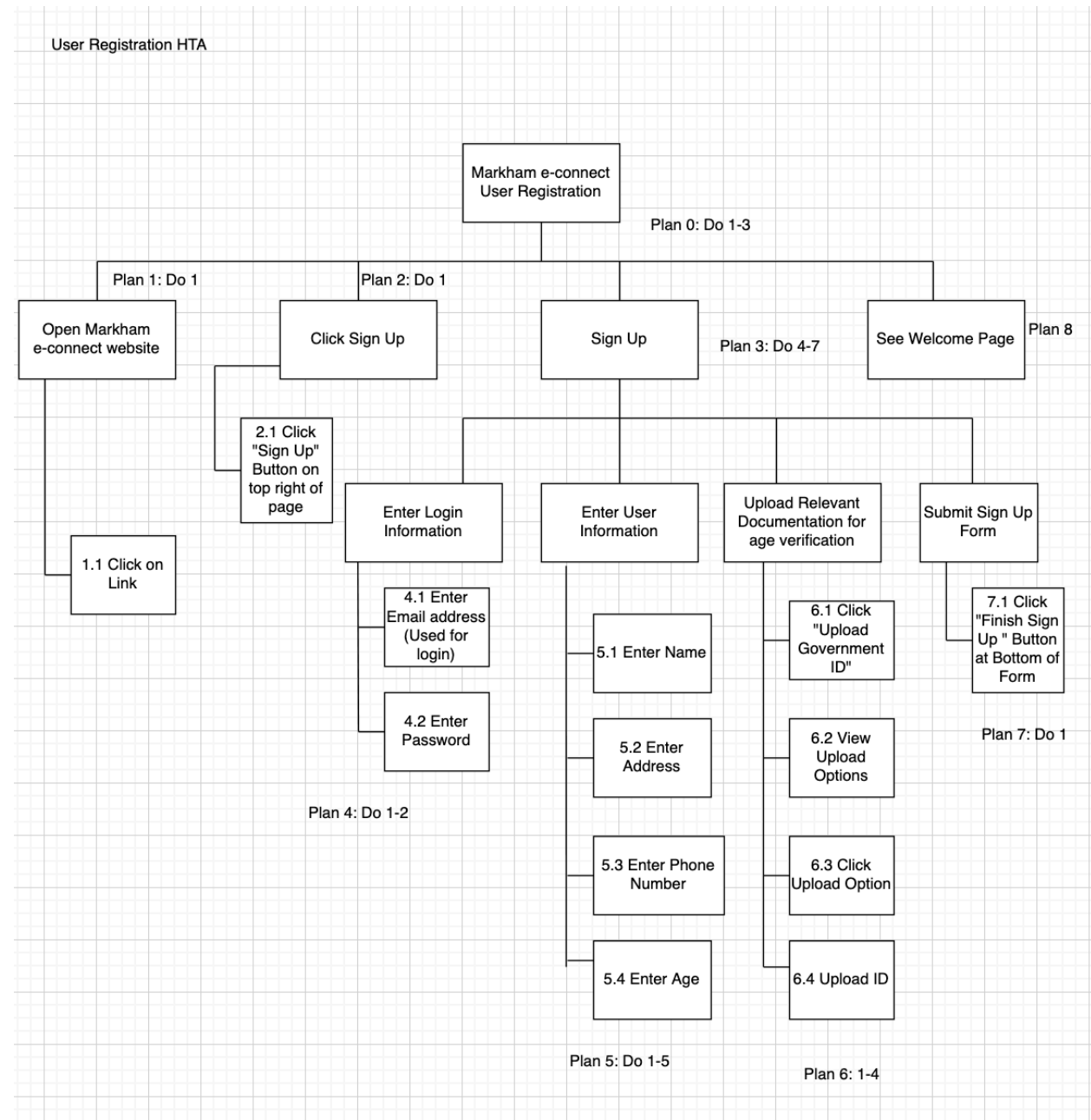
- Gertrude has a lack of time due to her numerous responsibilities. She doesn't like to dedicate herself to tasks that require complex procedures and would rather spend the time learning a new hobby or hosting an event
- Gertrude faces difficulty reading small text even while wearing glasses
- When using new technology, Gertrude feels overwhelmed by complex instructions

Scenarios

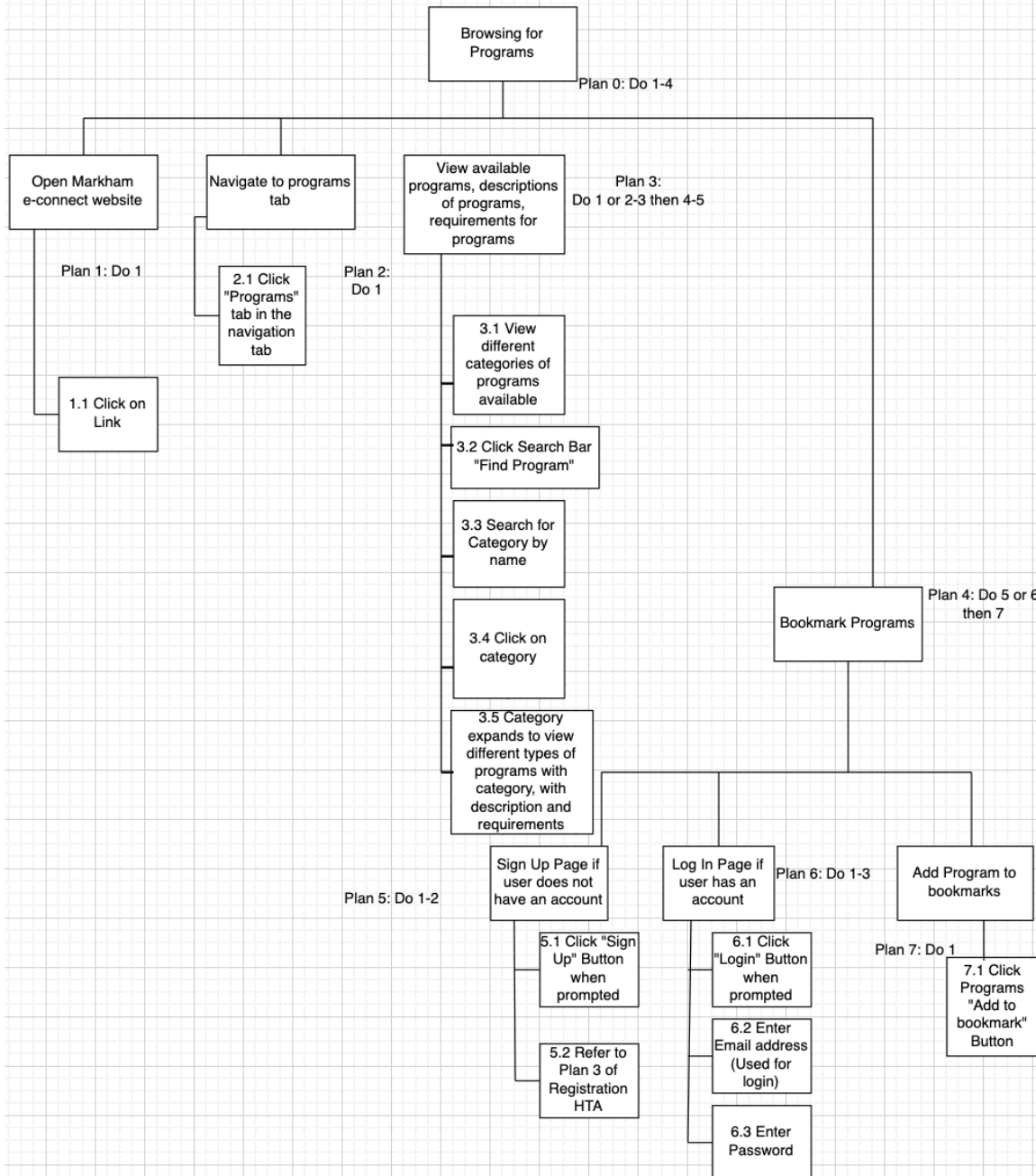
Having recently retired, Gertrude (67) has managed to get a lot of time on her hands. Since she is a creative and has not seen her friends in a while, she decides to throw a small party and wants to book a venue owned by the city of Markham to keep costs low. Not being a stranger to booking services with Markham, she quickly decides that an event hall would be a great idea. She tries booking it online for once after one of the workers at the city gave her the suggestion last month. Gertrude then navigates to the website and is relieved at the immediate welcoming appearance of the website. Her eyes not being what they used to be, she clicks on the option to customize the font of the screen and from the options presented, upscales the font to be larger and changes to contrast to make it more readable. She then navigates to the part of the website that has been labeled for facilities and uses the search bar to search for event halls. She is quickly presented with a list of event halls in Markham alongside information about their capacity, price, availability, and other crucial information. To narrow down her search, she uses the available filters to filter for the date she wants; next Sunday. After finding a facility she wants she books it and begins the checkout process. She already had an account from when she tried to use it with the website's initial design and gave up, so she uses that to log in. She then enters in all relevant information and checks out, receiving a receipt as well as an email to present as proof of booking. Gertrude is relieved to have gone through a much simpler set of steps than last time without having to deal with the complications of phone bookings.

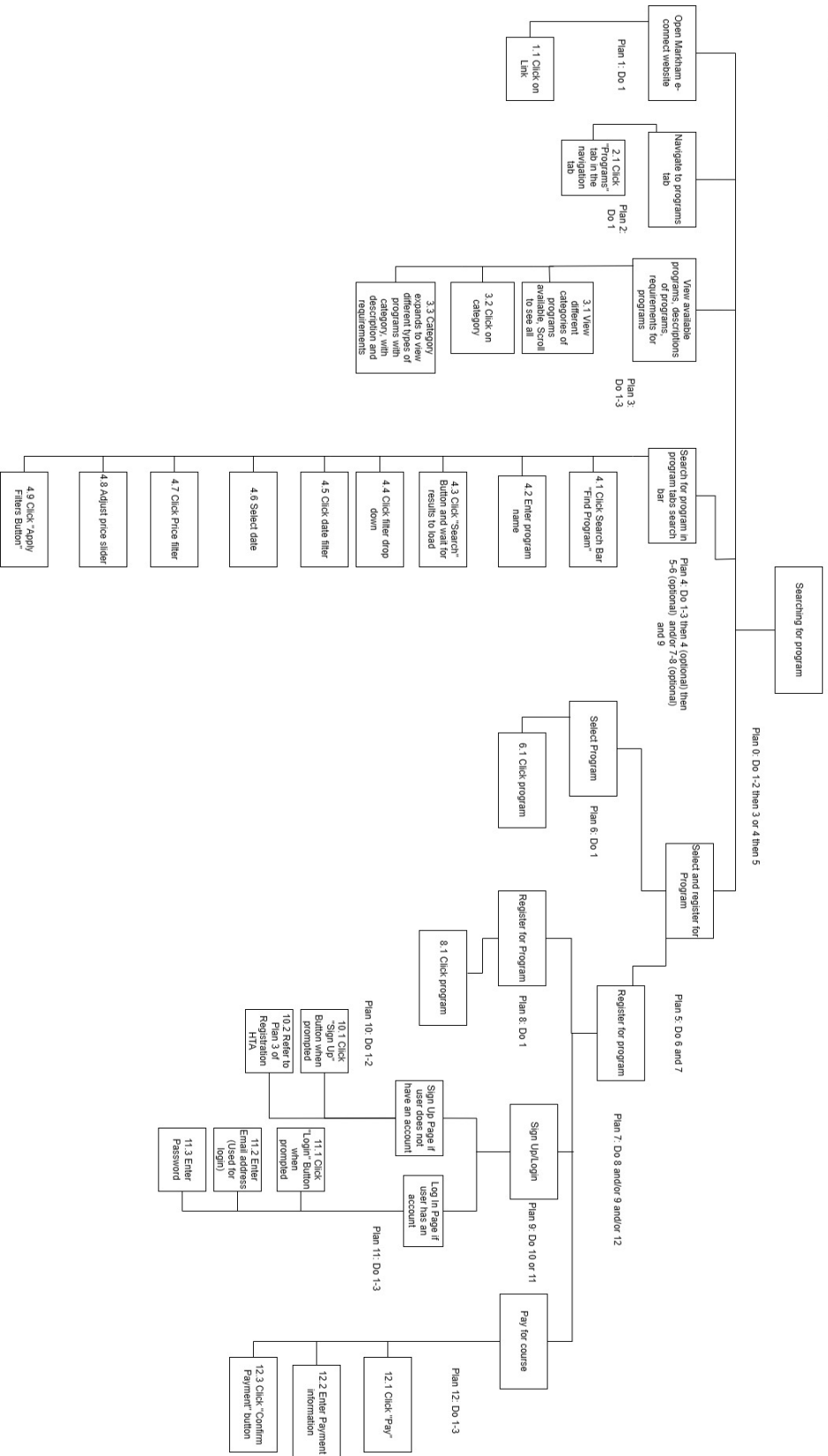
Jacky (18) wants to register his little sister Elise (8) for a summer program within the city of Markham after having been asked countless times by her. Resigned, Jacky navigates to Marham's econnect portal to register his little sister. English not being his first language, Jacky immediately uses the language options provided by the website to switch the website to Mandarin. After setting his preferred language, he navigates to the search bar located on the landing page and simply does a keyword search for soccer summer camps since he and Elise both love the sport. He is quickly presented with an easy-to-read and concise page presenting all the summer tennis camps alongside similar programs and information about pricing, location, and availability. Elise, although excited to go to summer camp, becomes a bit hesitant because she fears that there might not be any other children her age. Luckily, Jacky sees the intended age range for the program and assures her there will be. New to the website, Jacky is presented with the option to create an account which he does by giving his email and setting a password, alongside some basic authentication. Jacky then decides to register Elise and is brought to a page that asks for some basic personal information alongside a checkout screen. Jacky decides to use credit from the multiple payment options, enters the relevant information, and checks out. After everything is processed, Jacky is presented with a confirmation screen, an emailed receipt and confirmation, as well as a very excited response from his little sister.

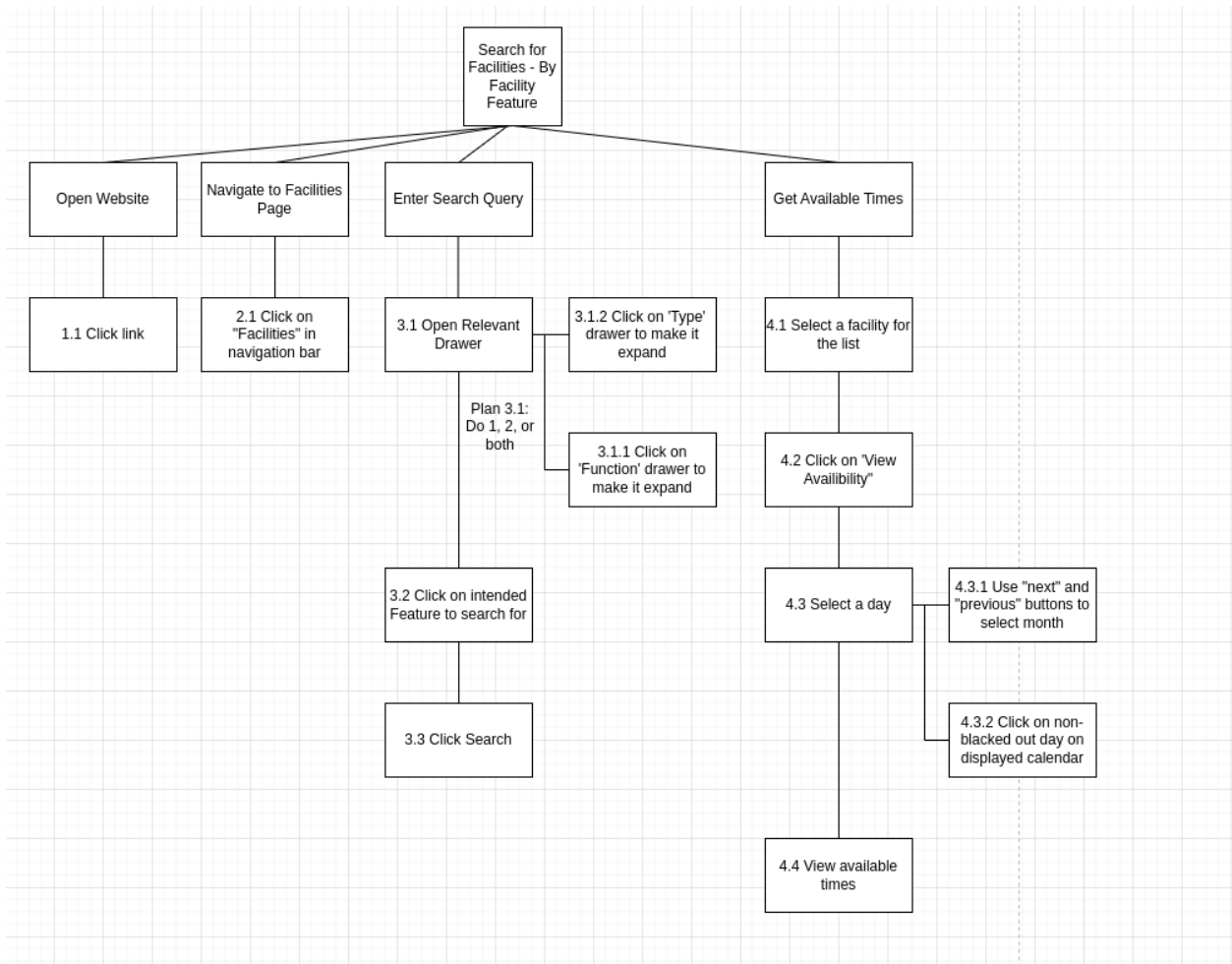
Hierarchical Task Analysis

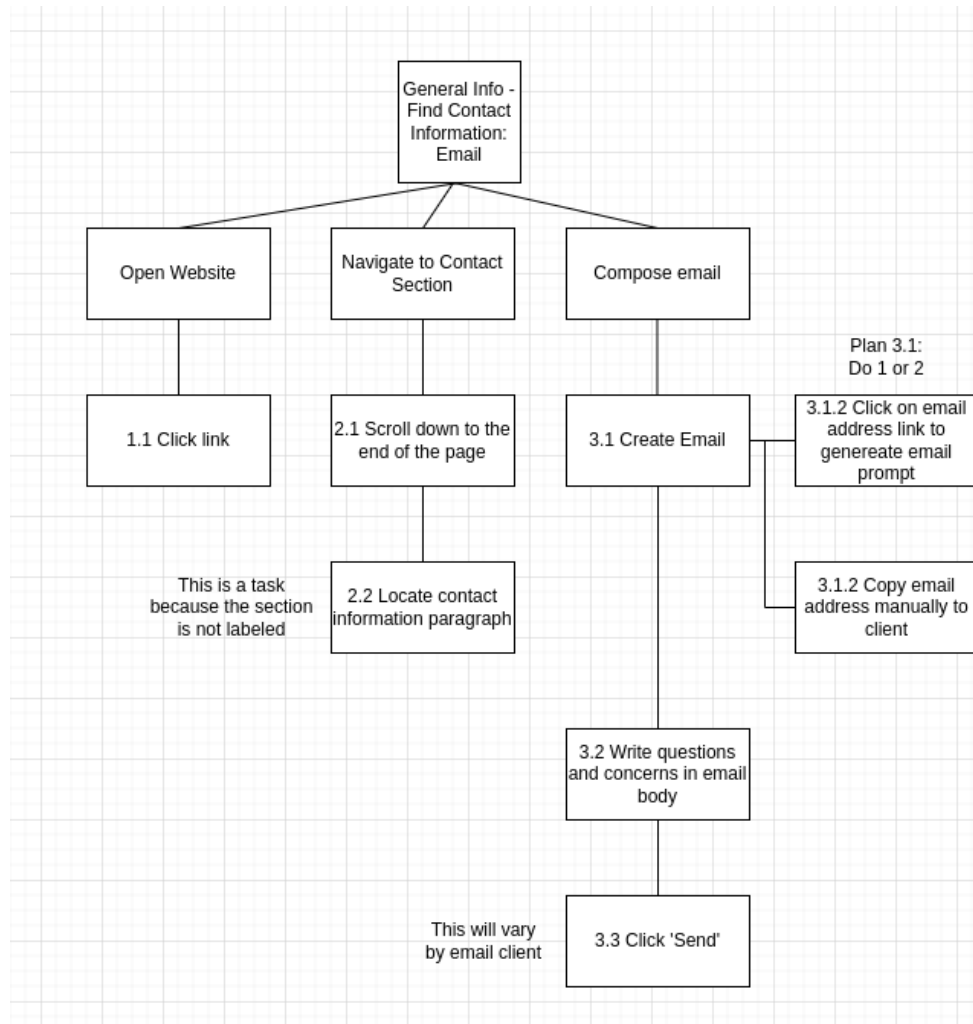


Browsing for Programs HTA:









Techniques Used

In order to gather data, a mixture of surveys, interviews and direct observation was used. An online survey was used to gauge a general sense of the public's opinion on the website and capture a breadth of different opinions, using the common complaints or suggestions as focal points for potential improvements. In addition, interviews allowed us to probe for much more detailed opinions and thought processes related to the website, allowing us to gather personal suggestions and opinions while figuring out some of the root causes for concern with the website. Direct observation techniques were also incorporated into our interview process, with interviewees encouraged to "think out loud." Observing how users think and act in a back-and-forth dialog helped us pinpoint some of the root causes for the issues experienced.

Users Selected and Limitations

In total, we captured responses from 29 users through our online questionnaire, and interviewed 3 users with direct observation incorporated. The majority of users in our questionnaire were university students, as this was the population most accessible to solicit for participation in our online questionnaire. To ensure other demographics were accounted for, some interviews with direct observation were incorporated as well.

Most of our survey respondents were both young (in their teens or 20s) and reasonably tech-literate. Very few claimed to spend 2 hours or less using digital technology on an average day, indicating that most of them should possess the skills necessary to work around poor interface design. Being younger, our users likely also have fewer disabilities on average (vision, motor function, cognition, etc.). These bias factors prevent us from extrapolating our survey to the entire eConnect user population.

To improve our coverage of the user population, an in-person interview with direct observation was also conducted. Our interviewees were working adults and parents. They expressed to us that they would be likely to leave if they became frustrated, as they had little time to spare out of their busy schedules to learn to use an incoherent user interface. These interviewees also gave us coverage of older generations, who are less tech-literate on average.

Little to no data was collected from certain segments of our target demographic—particularly the elderly (who are significantly less tech-literate on average) and those with limited ability to understand written English (often recent immigrants). There are unusual challenges involved in reaching these groups of people. For instance, those who are less tech-literate are more difficult to reach with an electronic survey. There are also simply fewer of these people in our personal networks. To remove this limitation, our study would require a lengthier and more selective recruitment campaign, to allow soliciting participation from these groups.

Now that we have gathered requirements via assessment of the existing eConnect interface, we have produced low-fidelity prototypes that implement our synthesized requirements. However, due to time constraints, we were unable to assess the usability of such prototypes in this phase, as doing so would require a second questionnaire or additional interview participants. In a study with a longer timeframe, this would be the next step for improving the accuracy and details of our synthesized requirements.

Summary Of Results

Through our data collection, designing scenarios and personas, and drafting low-fidelity models, we have come to the conclusion that the main shortcomings of the Markham portal are its chaotic navigation flow, its outdated UI, and its lack of accessibility options.

One of the most common complaints was how difficult it was to find specific information, or even to move in the right direction toward such information. The barcode-based search was likely the biggest detractor and source of confusion for every new user, as they were unfamiliar with the concept.

Survey respondent: “The search experience. Search by barcode is not a good way to search”

Survey respondent: “It would be nice if perhaps the "search by keyword box" replaced the location of "barcode search". I did not know I had the option of "keyword search" until I continued on in this survey”

Interviewee: “Search programs by barcode is not a good idea”

Moreover, the fact that there was a complicated workflow just to find keyword-based search (clicking programs or facilities > advanced search > keyword-based search) posed confusion for most users, especially when the barcode-based search was available during all stages of that workflow. There were also complaints about the filters of the search themselves, and how there needed to be more categories in order to better find what one is looking for.

Survey respondent: “Better subcategories for easier navigation.”

Overall, the search functionality of the website seemed to be in poor standing with most users, and thus it has become a top priority to streamline this functionality as much as possible.

Many users struggled with the overall design of the website. It was often referred to as quite unappealing; for some users, it caused them to miss important information and context. For example, with the way that the econnect portal is currently designed, it doesn’t scale properly to different screen sizes, thus causing unnecessary complications, such as scrolling, for mobile users.

Survey respondent: “Maybe some more photos, or a different layout (I’m on a phone so it might be different on PC)”

Survey respondent: [What is one thing you would change?] “The layout.”

In addition, most users had no concept of a “client barcode” or how to obtain one for login, since that piece of information was hidden behind a small help button in the corner of the screen, buried within several paragraphs of text.

Survey respondent: “It is incredibly basic plus with my incredibly limited attention span I was unable to figure out what a client barcode was. I probably just missed it but if I were to roleplay a 75 year old man with dementia I would have issues registering for programs”

The instructions and help dialog overall were evaluated quite poorly, as users had to go out of their way to find critical information, some of which was not clearly presented.

Interviewee: Tried to read the instructions and got confused, did not know what to do after. Took a while to read instructions.

It is thus important that our redesign makes all pertinent information clear, easily available, and accessible.

The accessibility of the interface was also brought quite heavily into question. The fact that the fonts don’t scale well to different screen sizes (even small for a laptop) and can be extremely hard to read was brought up by several participants.

Survey respondent: “Make it easier to read on a smartphone”

Survey respondent: [What is one thing you would change?] “Larger text”

Alongside this were several other general accessibility issues; for instance, the site will not accept payment methods other than credit cards, which is a barrier for people who cannot get a credit card or simply don’t have one. In addition, the website's poor design and reliance on poorly contrasted walls of text caused multiple users to mention being unable to keep their attention on the website.

Survey respondent: “The layout is not clear, too many words and not an easy organization of information compared to the city of Toronto one for recreation centres .”

Survey respondent: [What is one thing you would change?] “Design, make it more user friendly”

We have thus decided to focus more on making the website more accessible, especially since it is government-run and used by the general public.

In conclusion, based on the data gathered, we will prioritize the following design decisions in future stages (i.e., creation of high-fidelity prototypes):

1. Streamlined search functionality with general inputs and specific filtration
2. Consistent layout to provide a better experience for mobile users and improve overall navigation flow
3. Presentation of relevant information in a manner that is clear, easily available and accessible
4. Consistent color theme, contrasting font colors, and adaptive font sizing
5. Scalable/responsive website design

This will allow us to design a more streamlined, user friendly, and accessible website which will promote inclusivity and a sense of community for the people of Markham.

Artifacts

Survey

The image displays two screenshots of the Markham eConnect Feedback survey interface. The left screenshot shows the '4-minute survey' introduction page, which includes a 'Next' button and a progress bar indicating 'Page 1 of 4'. The right screenshot shows the 'Demographics' section, which includes two questions: '1. When were you born?' and '2. How much do you use digital technology on an average day at work or school?'. The survey is titled 'Markham eConnect Feedback' and is powered by Microsoft Forms.

relations - Google Docs x

Phasell - Google Drive x

Markham eConnect Feed... x

onsepape.aspx?Id=DQ5kIWdWoyEjJlZnRQAaaaaaaAAAN_x_AUDIUME;150qCwDZTMFFUVkhLnug4QUISUURDN4u

2.

How much do you use digital technology on an average day at work or school?
(Including before, during and after work or school)

☐

I don't work or go to school

☐

Very rarely (less than 30min)

☐

Sparingly (30min – 1h)

☐

Somewhat often (1h30min – 3h)

☐

Often (3h30min – 6h)

☐

Very often (6h30min – 9h)

☐

Most of the day (9h30min – 12h)

☐

All day (12h30min or more)

3.

How much do you use digital technology on an average day off (weekend/holiday/...)?

☐

Very rarely (less than 30min)

☐

Sparingly (30min – 1h)

☐

Somewhat often (1h30min – 3h)

☐

Often (3h30min – 6h)

☐

Very often (6h30min – 9h)

☐

Most of the day (9h30min – 12h)

☐

All day (12h30min or more)

ations - Google Docs xPhasell - Google Drive xMarkham eConnect Feed... +

onsepage.aspx?id=DQ5ikwdsW0yEjaJBLZtrQAAAAA..._x_AUDIUME+150QcWdZTMFFUvkhlnUg4QIU5UURdV4u

Feedback (optional and anonymous)

4. Is English a **native language** for you?

☐ Yes

☐ No

5. Please rate your **ability to understand written English**, as you would find on a government website or in a news article.

☐ I understand quickly, with little difficulty

☐ I understand after reading carefully, with occasional difficulty

☐ I mostly understand, with occasional help from a dictionary, a translator, or a friend

☐ I find it difficult to understand without help

6. Have you ever used a website to **register for a community program** or **book a facility**?

☐ Yes

☐ No

BackNext

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Never give out your password. [Report abuse](#)

lutions - Google Docs

Phaseli - Google Drive

Markham eConnect Feedback

+

connectpage.aspx?id=DQSKrWdsWdyEjBzrQAAAAA...s_AUDIUMes150QCZDMTFUVkHLNug4QUiSUUDV4u

Markham eConnect – Tasks

The Markham eConnect website is at <https://econnect.markham.ca>

Please visit the site, and take a minute to try **one** or **two** of the following tasks:

Programs & facilities

- Browse for programs to find one you might want to try
- Search and register for a specific kind of program
- Find and book a facility you might reasonably use

(You will **not actually** be registered or booked unless you have a Client Barcode from the City of Markham.)

General information

- Get a Client Barcode or find out how to do so
- Find important dates and contact information for Markham recreation
- (Bonus if you're bored: Find a printable program registration form)

7. Please select all tasks you attempted.

☐ Browse for programs to find one you might want to try

☐ Search and register for a specific kind of program

☐ Find and book a facility you might reasonably use

☐ Get a Client Barcode or find out how to do so

☐ Find important dates and contact information for Markham recreation

☐ (Bonus if you're bored: Find a printable program registration form)

Back

Next

Page 3 of 4

Never give out your password. [Report abuse](#)

[illegible]

design is internally consistent

☐
☐
☐
☐
☐
☐
☐

The site presents a manageable amount of information

☐
☐
☐
☐
☐
☐
☐

The site is useful

☐
☐
☐
☐
☐
☐
☐

The site is trustworthy

☐
☐
☐
☐
☐
☐
☐

9. Did you have a **good experience** using the eConnect website?

☐ Yes
 ☐ No

10. What is **one** thing you **liked most** about the website?

Enter your answer

11. What is **one** thing you would **most want to change** about the website?

Enter your answer

12. Please **rate your experience** with the eConnect website.

012345678910

Hated itLoved it

Enter your answer

11. What is **one** thing you would **most want to change** about the website?

Enter your answer

12. Please **rate your experience** with the eConnect website.

012345678910

Hated itLoved it

13. Why did you choose this rating?

Be as brief or as thorough as you like.

Enter your answer

Back

Submit

Page 4 of 4

Never give out your password. [Report abuse](#)

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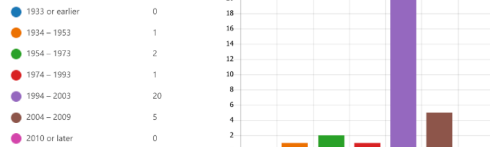
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Survey Results ([webpage version is here](#))

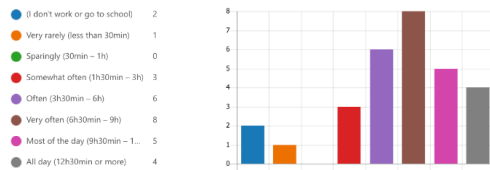
Markham eConnect Feedback

29 Responses 06:40 Average time to complete Closed Status

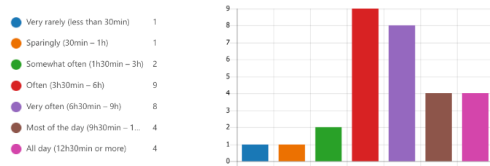
1. When were you born?



2. How much do you use digital technology on an average day at work or school?



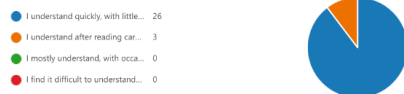
3. How much do you use digital technology on an average day off (weekend/holiday/...)?



4. Is English a native language for you?



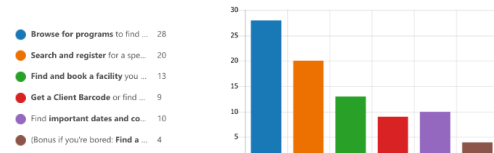
5. Please rate your ability to understand written English, as you would find on a government website or in a news article.



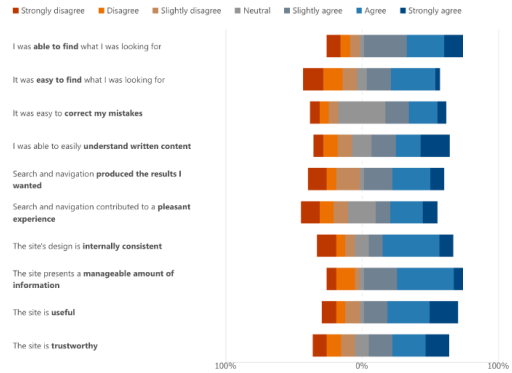
6. Have you ever used a website to register for a community program or book a facility?



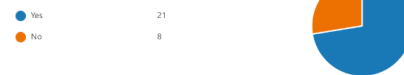
7. Please select all tasks you attempted.



8. Please select how much you agree or disagree with each statement.



9. Did you have a good experience using the eConnect website?



10. What is one thing you liked most about the website?

24 Responses

Latest Responses

"Alphabetical order for names of fitness programs."

"It was short."

"Comprehensive"

11. What is one thing you would most want to change about the website?

26 Responses

Latest Responses

"Nothing"

"Make it easier to read on a smartphone"

12. Please rate your experience with the eConnect website.



13. Why did you choose this rating?

21 Responses

Latest Responses

"Because it was easy to browse programs, with various categories."

"I found the subject I was interested in."

"Mostly easy to use"

Interview Notes – Professor Naureen Nizam

Immediate feedback (Kyle):

- requiring a barcode is ineffective
- website absolutely requires an easy-to-use search, based off keywords (not barcodes)
- multiple clicks required to get to a keyword search is difficult
- confusing to have so many steps to get to programs and required barcode, having keyword and filter being an alternative workflow to the website
- form with search is quite inconsistent, normally filters on side of search
- "start" is not meaningful in terms of a webpage, important dates are useful
- colour scheme and font are terrible, don't catch attention
- search box is inside a menu which is ineffective
- finding information is paramount, barcode and search bar is very ineffective

Further additions from recording (Annanya):

What's most confusing?

- Programs tab → requires many steps and also looking for barcode
- Good ability to filter, but 3 clicks to get there is not efficient

What do you think about the efficiency/consistency of the website?

- The search is not consistent across the board
- Filter on the side is not consistent
- When first showed up, the start is not meaningful
- The important dates are useful
- Colour and font aren't catchy enough
- Search is wrong because barcode is not on anyone's radar + search bar inside the menu

What will make you leave the website?

- If not able to find the information

First glance opinions:

- Bar code and the search is very frustrating

Interview Notes – Working Adult 1 (Lives in Markham) (Baby Boomers Generation)
(Proficient with technology)

Observations (**Task:** Find Soccer Program):

- Took a while to navigate the page and understand how the website works
- Made a few mistakes while trying to find the soccer program, before finding it

First glance opinions:

- Not user friendly, need to understand the workings of the website before using it
- Hard to find things

What's most confusing?

- Search programs by barcode is not a good idea
- Don't know how to register for the program

What do you think about the efficiency/consistency of the website?

- Consistently not user friendly
- Slow to get around the website, since you have to figure out how the website works and where everything is

What will make you leave the website?

- The flow of the website is frustrating, should be more straightforward

Interview Notes – Working Adult 2 (Lives in Markham) (Baby Boomers Generation)
(Not proficient with technology)

Observations (**Task:** Find Soccer Program):

- Navigated to the programs page but got stuck and couldn't find soccer course for registration
- Tried to read the instructions and got confused, did not know what to do after
- Took a while to read instructions

First glance opinions:

- All programs should be mentioned, more specific categories so people who aren't good with searching and filtering can just scroll and find it

What's most confusing?

- Search was confusing
- Too many search options, and ways to search (barcode, category and name) keep it simple

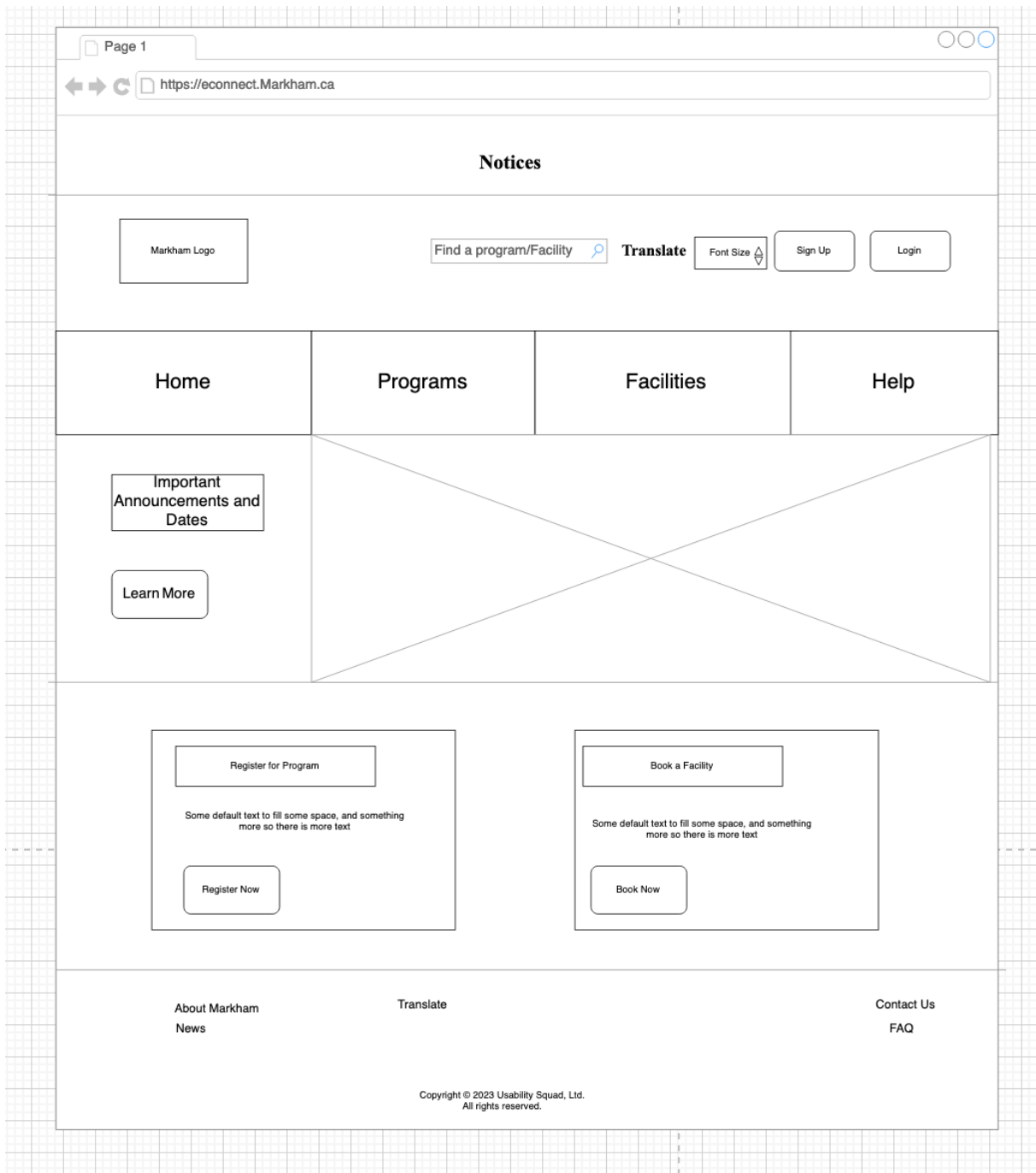
What do you think about the efficiency/consistency of the website?

- Consistency is ok, but can be improved

What will make you leave the website?

- Information is not clear, and detailed. Too much information

Low-Fidelity Prototype – Home



Low-Fidelity Prototype – Programs

Page 1

https://econnect.Markham.ca

Notices

Markham Logo

Translate

Font Size

Sign Up

Login

Home

Programs

Facilities

Help

Find a Program

Filters

Date

Date

Apply

Swimming

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Dance

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