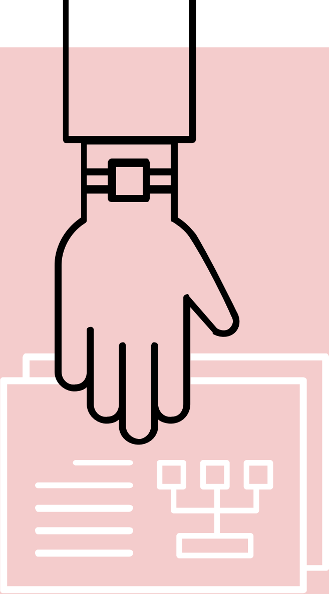
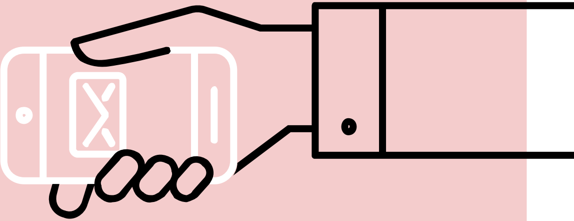
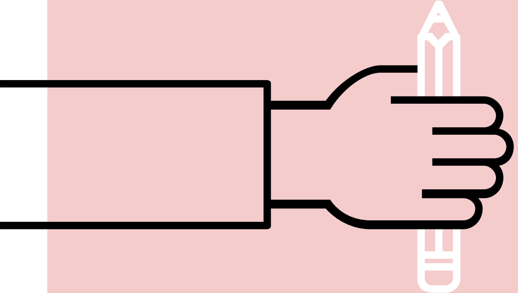
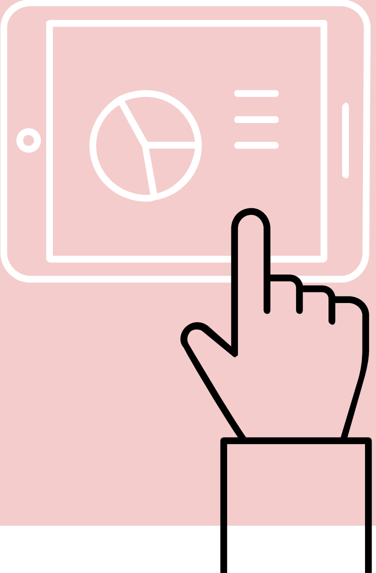




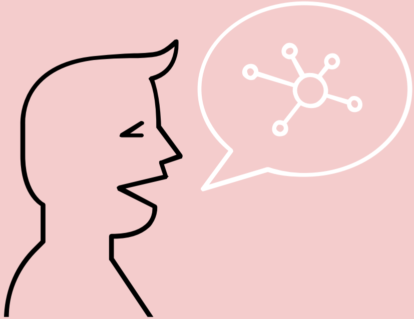
NORTHSTAR

LIBRARY WAYFINDING

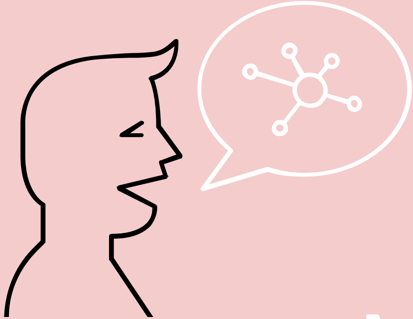




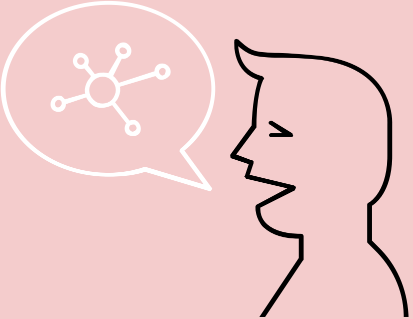
MEET THE TEAM



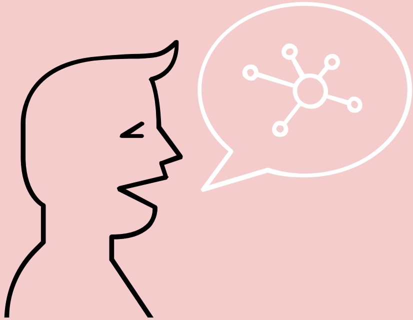
Julio Midence



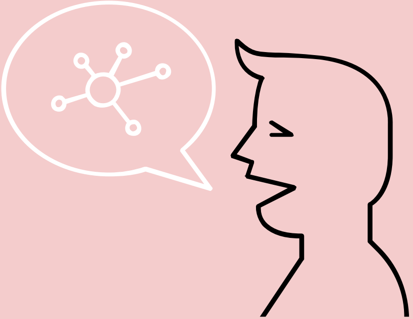
Kevin Tu



Aymane Aziz

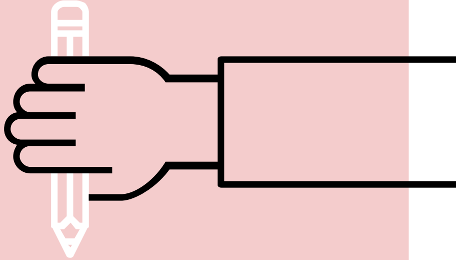


Aidan Billou



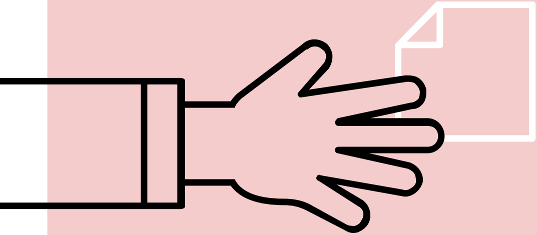
Joon Lee

- The client is working on making the uOttawa Library accessible to all, and they need a product that will be able to guide users, with and without disabilities, in an accurate and simple to follow way. The product will be in the form of an application that requires no assistance to operate.

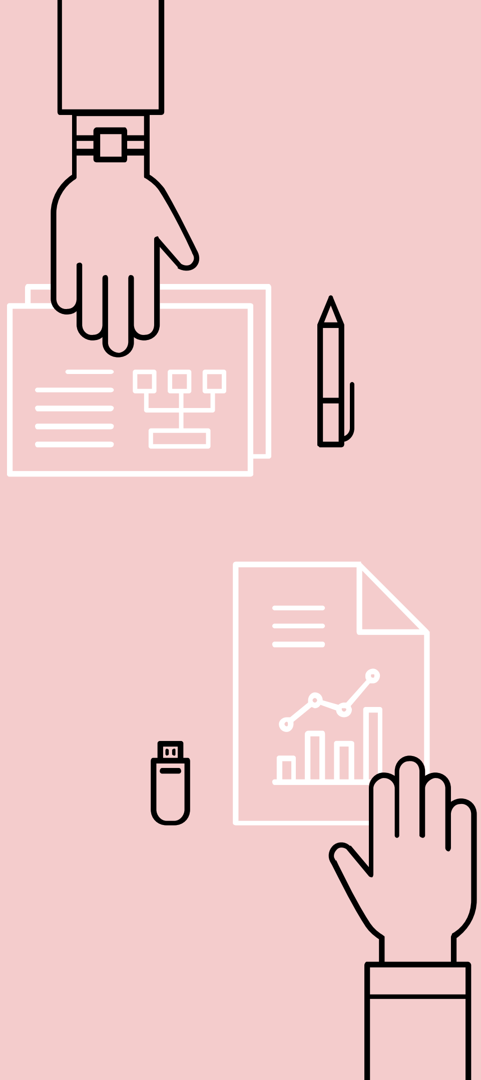


1.

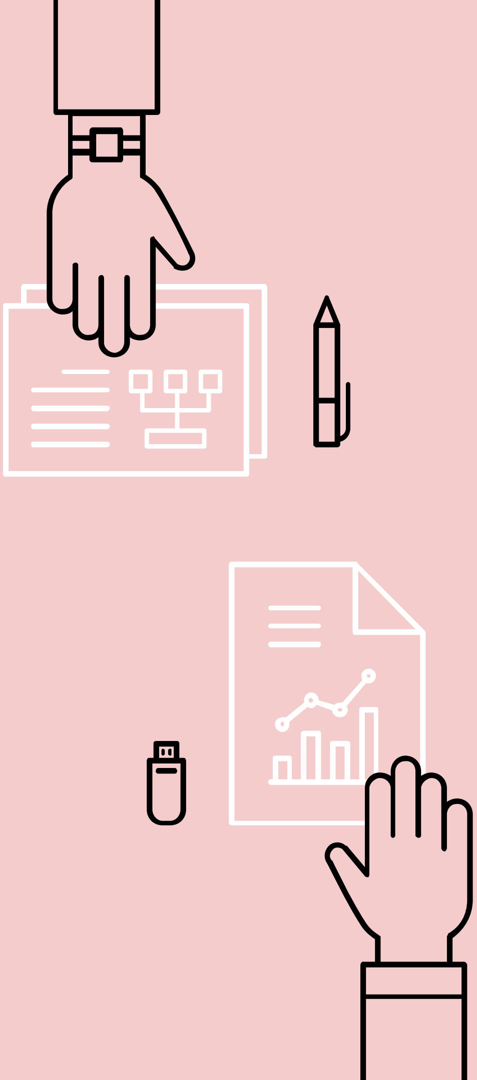
CUSTOMER NEEDS

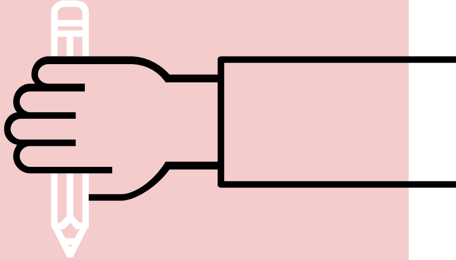


- The app is accessible to users with vision impairments.
- The beacons can operate without frequent charging.
- Accessible to non english speaking users.
- The application is design intuitive.



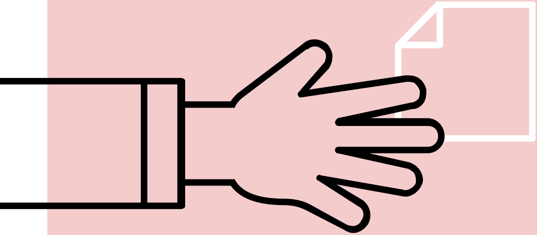
- The product is compatible with both android and iOS
- The product is affordable
- The app is accurate (Location-wise)
- The beacons are portable





3.

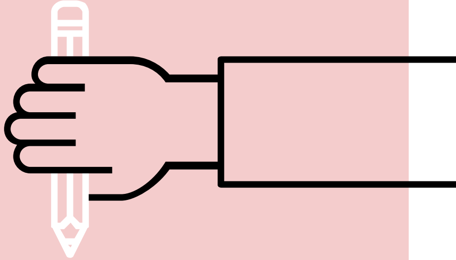
BENCHMARKING



Product benchmarking

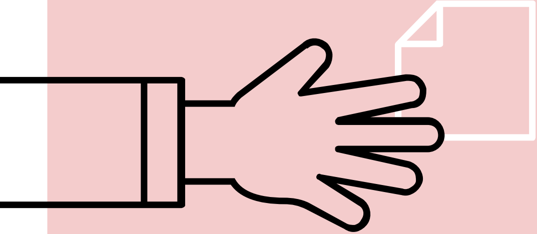
	BKFNDr Mobile App	**infsoft**	**Centrak**
Cost ($CAD)	10/beacon	29.7 / beacon	NA
Accuracy (m)	4.7	<1	<4.9
Location tracking technology	Bluetooth (BLE beacons)	Bluetooth Beacons	Phone GPS
Range (m)	Up to 6.5	upto 75	N/A

#	Metric	Importance (1<5)	BKFNDr Mobile App	infsoft	Centrak
1	Cost	4	3	2	5
2	Accuracy	5	3	5	3
3	Size	4	3	3	5
4	Weight	2	3	3	5
5	Battery Life	3	5	4	5
6	Ease of Use	5	4	5	4
7	Multi-lingual	2	0	0	0
8	Location tracking technology	2	5	4	4
9	Range	3	3	5	5
	Total	**30**	**29**	**31**	**36**



4.

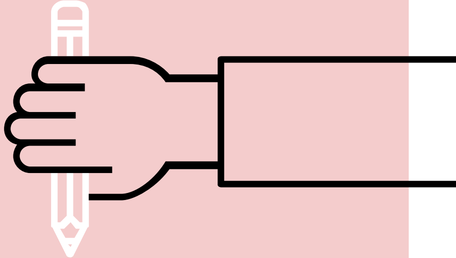
TARGET SPECIFICATIONS



#	Design Specifications	Value	Units	Importance (1<5)	Verification Method
Functional Requirements					
1	Compatible with different operating systems	-	IOS & Android	3	Testing
2	User Friendliness	-	-	5	Testing
3	Bilingual	-	French and English	2	Testing
4	Accessible to users with vision impairments	-	-	4	Testing
5	Accuracy		cm	5	Testing

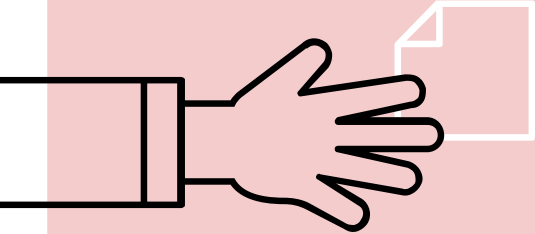
#	Design Specifications	Value	Units	Importance (1<5)	Verification Method
Constraints					
8	Extended battery life	6-12	Months	3	Testing
9	Mobile Phone Software	>11 >6.0	IOS Android	2	Testing
10	Cost	50	$CAD	4	Estimate
11	Time	70	days	4	-
12	Size	-	cm	3	Testing

#	Design Specifications	Value	Units	Importance (1<5)	Verification Method
Non-Functional Requirements					
11	Aesthetics	-	-	3	Testing



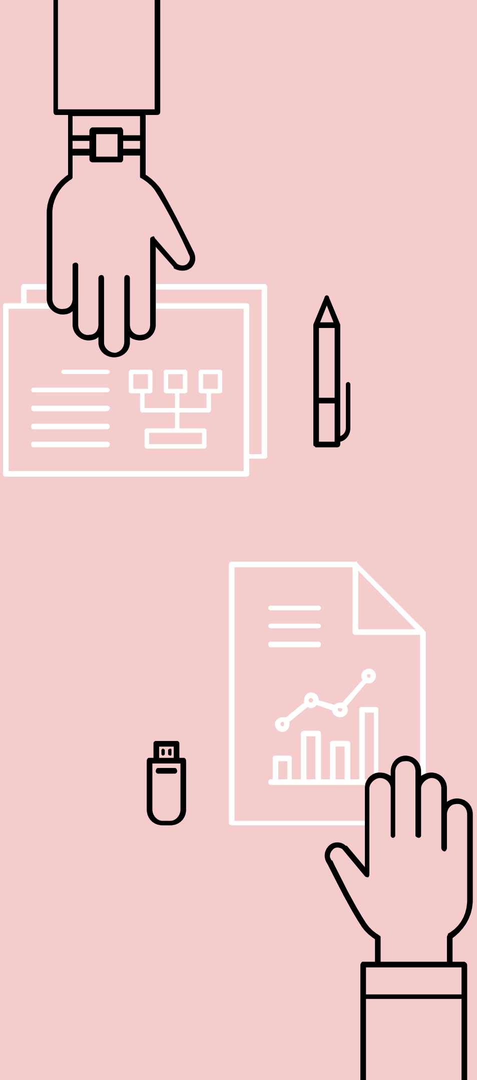
5.

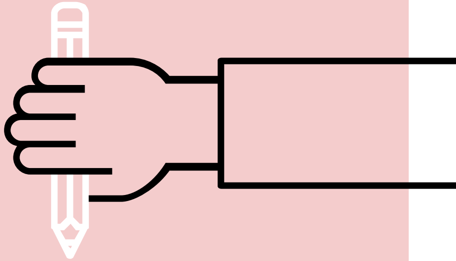
CLIENT MEETING



Client Meet

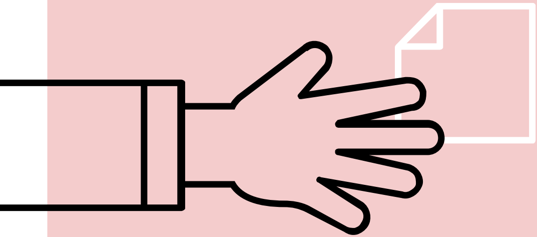
- The client meeting removed a lot of uncertainty of how the project would be implemented.
- The group developed a clearer understanding of the problem.





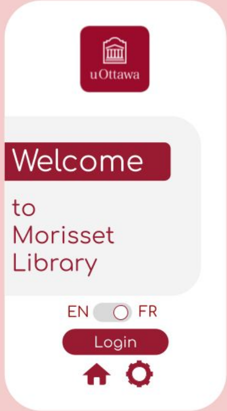
6.

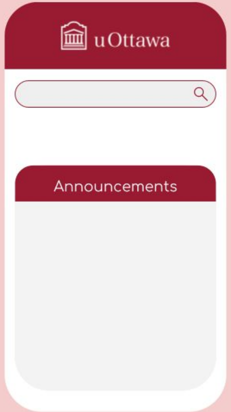
CONCEPTS

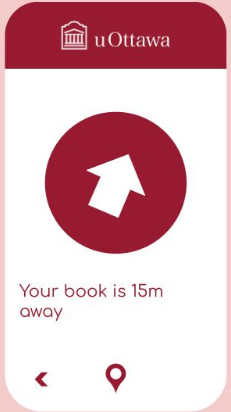


User Interface

- Ease of Use / User Friendliness
- Less Screens
- Simplicity

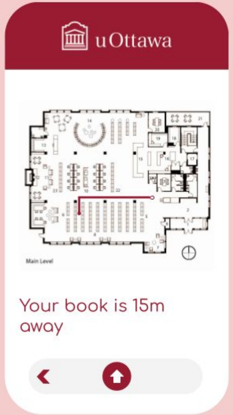






Your book is 15m away

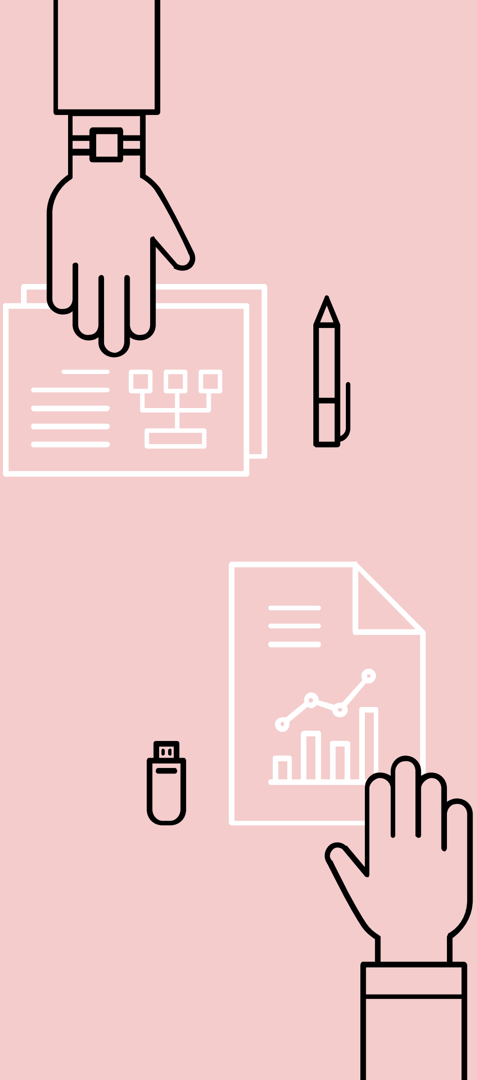
Vibrate ●
Sound ○



Your book is 15m away

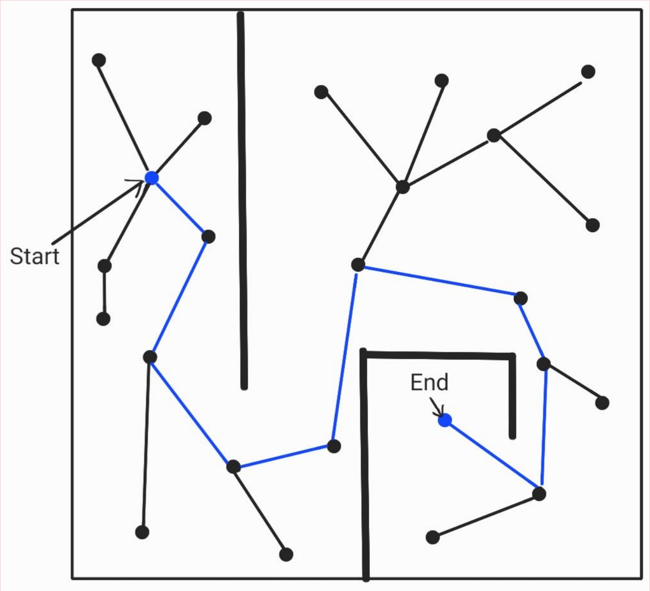
Navigation

- Visual Compass Navigation
- Vibration Navigator
- Auditory Navigation



Algorithm

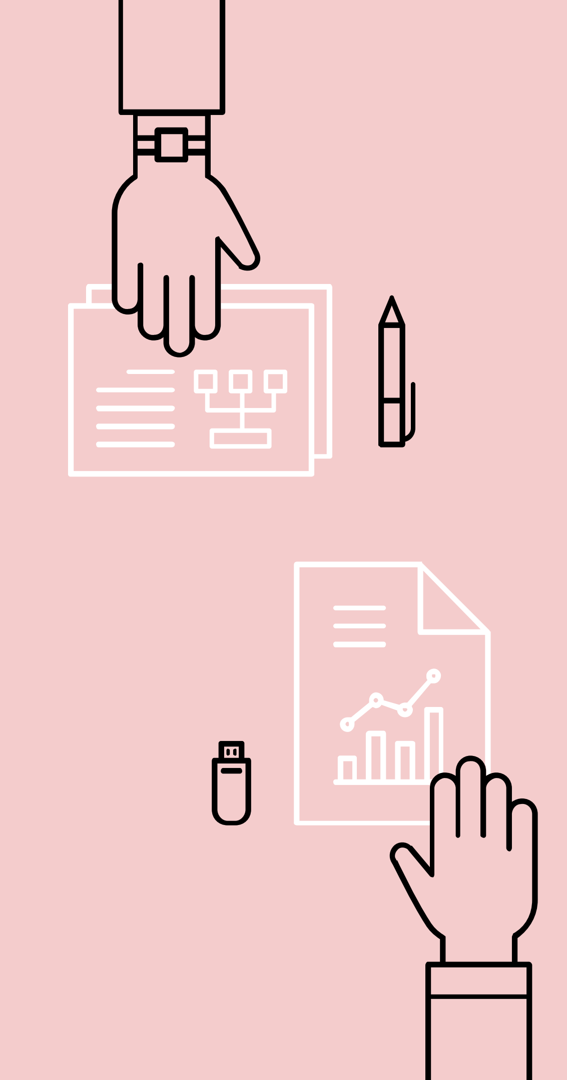
- Accurate
- Fast
- Dynamic



Database

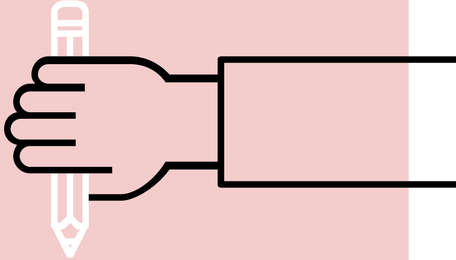
A database is used for three different purposes :

- Store login credentials .
- Store point of interests and their coordinates.
- Store the announcements made by the library.



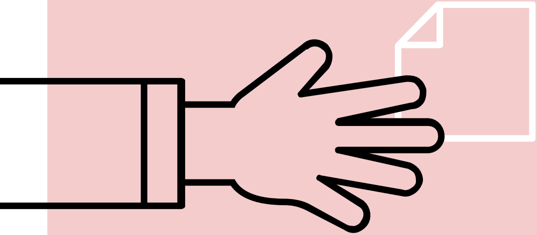
Hardware

- Centralized Microcontroller
- Rechargeable Beacons
- Direct power to the Arduino



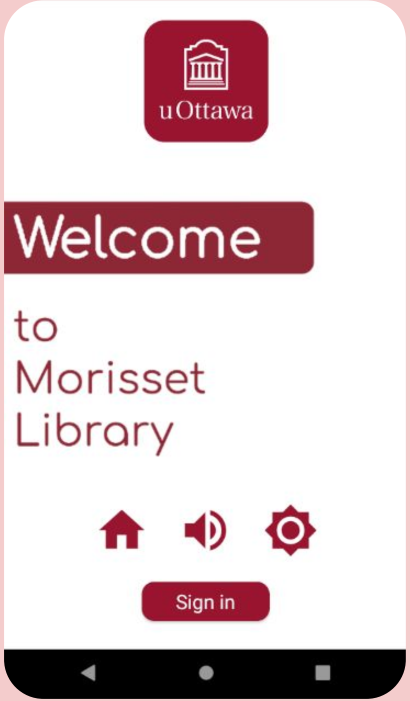
7.

Current Prototype

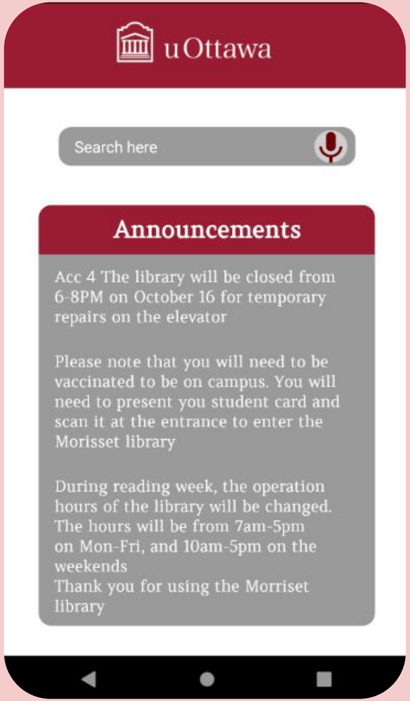


PROTOTYPE SCREENS

Welcome page



Home page

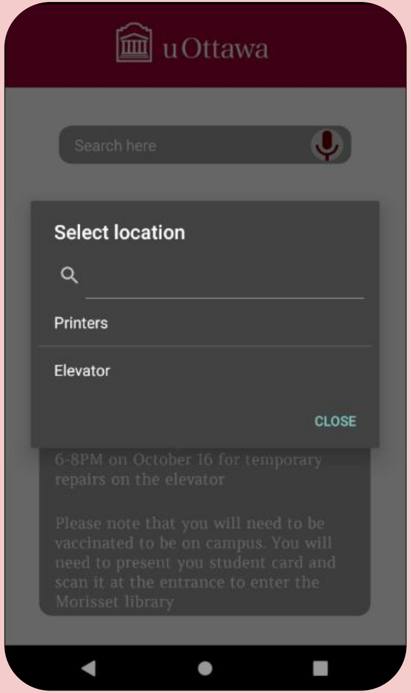


Acc 4 The library will be closed from 6-8PM on October 16 for temporary repairs on the elevator

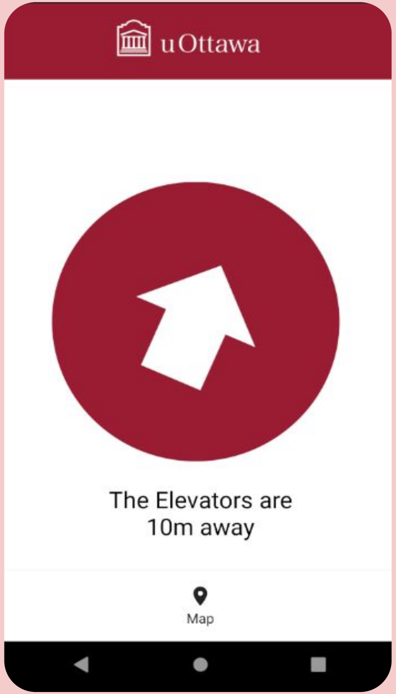
Please note that you will need to be vaccinated to be on campus. You will need to present you student card and scan it at the entrance to enter the Morisset library

During reading week, the operation hours of the library will be changed. The hours will be from 7am-5pm on Mon-Fri, and 10am-5pm on the weekends
Thank you for using the Morriset library

Search bar

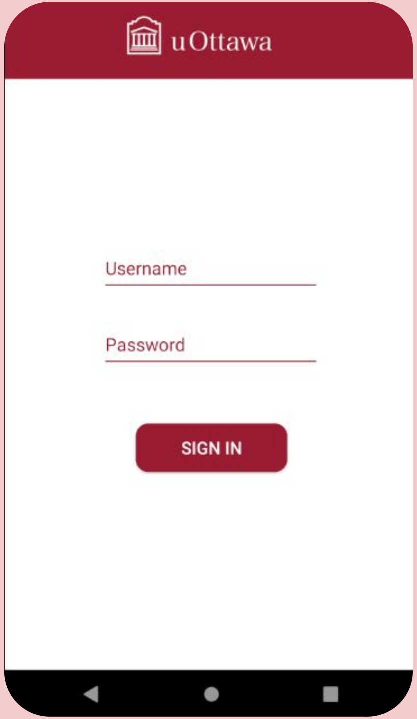


Navigation page

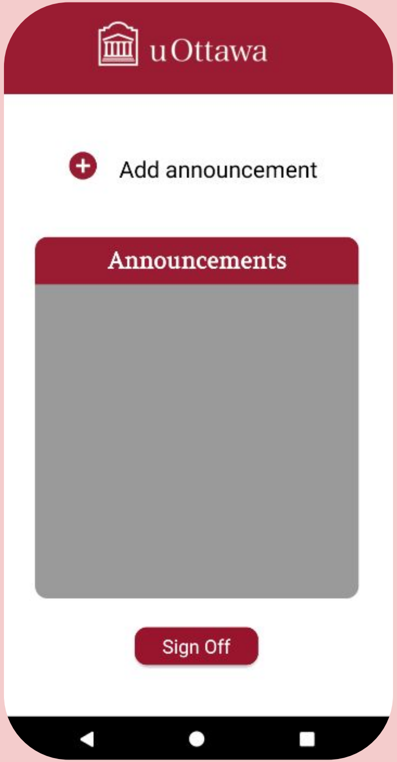


The Elevators are 10m away

Login page



Administrative page



Going Forward...

Hardware related components

Testing location tracking with arduino beacons and mobile device.

User related components

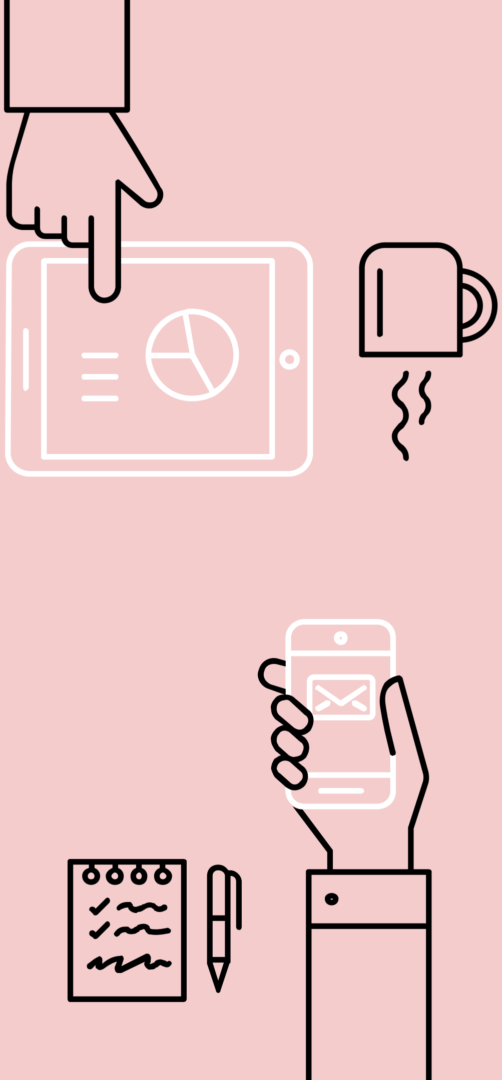
Refining user interface and experience through surveys and demos

Complete auditory setting - Text-to-Speech, Speech-to-Text

Application backend

Complete navigation algorithm and add service locations within the library

Connect Arduino and mobile device through bluetooth to transfer data



Thank you for listening!