*my*Library app

User Experience Design

Evaluation Report

Thomas McCarten

The Product

Manchester Metropolitan University (MMU) lacks a native app for its library services. Whilst the current web app solution is fit for purpose, an opportunity for wholly improving the user experience in the form of a redesigned native app was identified.

Despite earlier predictions by the digital industry that HTML5 web apps would become the standard for businesses, native apps have emerged as the preferred strategy (Arthur, 2014). This is due in part to being more suited to taking advantage of device features, the increase in speed that developing natively provides and the added security that comes from residing within an official app library (Viswanathan, 2016).

Young people are highly impressionable when it comes to the user experience of a mobile app. A negative experience has a detrimental effect on their view of the respective brand or company (Oracle Mobile, 2014:5). With this in mind, inspiration was drawn from the successful myMMU app and how its user experience design practices could be used as a starting point. The app will incorporate aspects of the current web app that work successfully.

Objectives

To bring greater interactivity between users of the MMU library and the services that the library provides.

To improve the user experience with the enhanced capabilities of a native app, including exciting features like push notifications, barcode scanning and geolocation.

Metrics for success

Reduction in the number of books returned late

Increase in numbers of loans, reservations, renewals

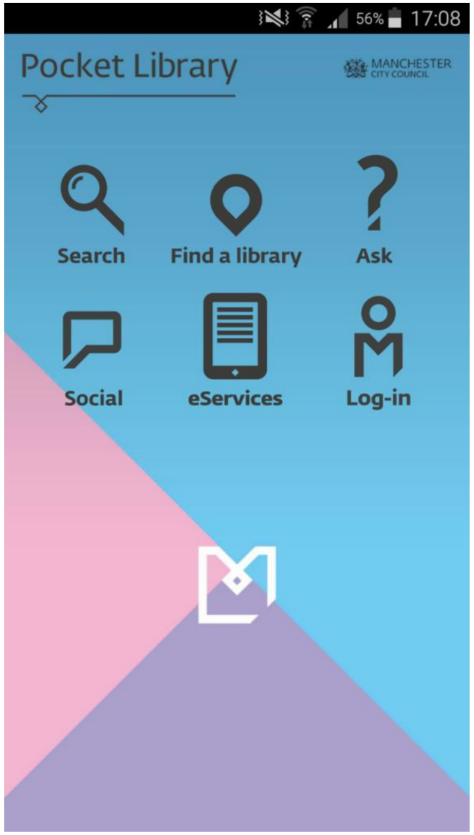
Good feedback in user survey

Research

Competitors

Competitor [Manchester City Council library app]

Screen Grab



Define the product / service

A mobile app for users of libraries in Manchester

Content	Services	Brand
- Links to relevant social media accounts - Link to send email to library as well as links to external websites on job-seeking and 'Ask about business'	- Search for books/scan barcode of book - Find a library (lists libraries in the area, ordered by distance) -User log-in -eServices (links to third party app for borrowing eBooks)	- What is the actual name of the app? The app icon simply names it 'Libraries' - Only the homepage appears to have unique styling, all other pages revert to a generic, outdated look and navigational system

Other observations

Disparity between homepage and rest of app's styling
Little to no unique content

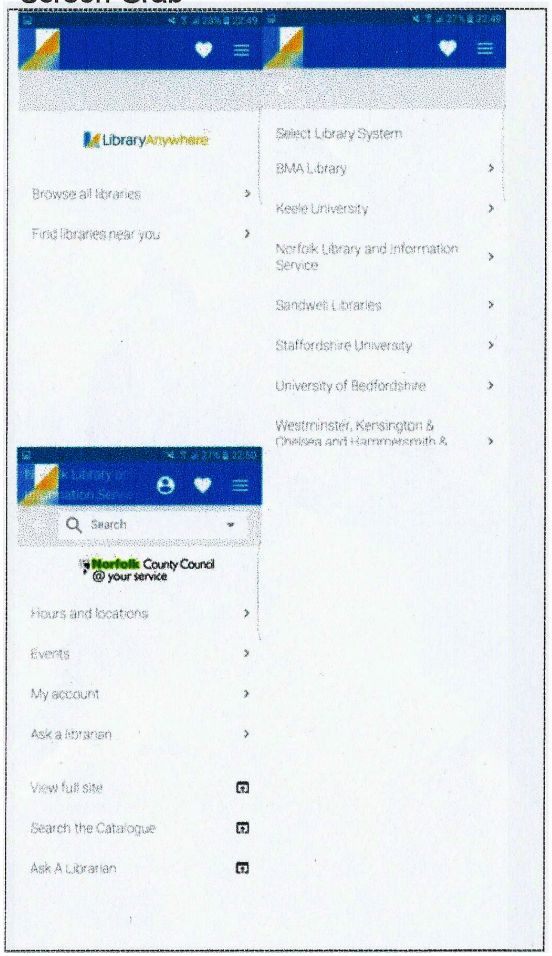
Figure 1: A competitor analyis

Research

Competitors

Competitor [http://www.libanywhere.com]

Screen Grab



Define the product / service

A library app to help users find books they are searching for in a library of their choice. Also the app has features such as geo location in order to suggest the nearest library based on your location.

Content	Services	Brand
App includes opening times of libraries, contact details, a map of the library location and relevant information based on the library the user has chosen.	Geo location to find the users nearest library. Use the devices camera to scan a barcode of a book to see if a particular library has a copy available. Integration with OneDrive.	Consistent colour scheme throughout the app.

Other observations

Very poor design. Doesn't have much information regarding the libraries/very minimal. Quite a lot of the buttons within the app direct to an external URL. When pressing 'my account' it requires the user to fill in a substantial amount of information which they may not even have access to.

Figure 2: A competitor analyis (squad contribution)

Research

Commentary 1

Figures 1 and 2 show the results of competitor analyses. Whilst not competitors in a business sense (due to the app being exclusive to MMU), the competitor analysis is necessary for identifying features that work well, those that don't, and seizing the opportunity to improve on the latter in one's own product (Chudley and Allen, 2012a:98). The key observations with that in mind were: to ensure that the app has a consistent and attractive style throughout, avoid overuse of external links and provide search, barcode scanning and geolocation features at a minimum. Considering the squad had only limited experience of library apps, noting the features of competitor products was a useful process. 'Design patterns' is the term given to commonalities between products in this sense (Chudley and Allen, 2012b:99).

Research

User Requirements

Name [Carly Godley]

Age [27]

Gender [Female]

Uses: ‘Library’ within MMU app

Likes

- Quickly checking the date that currently loaned out books are due in
- Being able to renew books easily
- Quickly searching for books

Dislikes

- Small navigation buttons
- Small text size

Photo

Also uses

Library area on Moodle (website)

Other observations

Would like more information on the ‘reservation’ system of the library – isn’t currently sure how it works

Figure 3: A user profile

Research

User Requirements

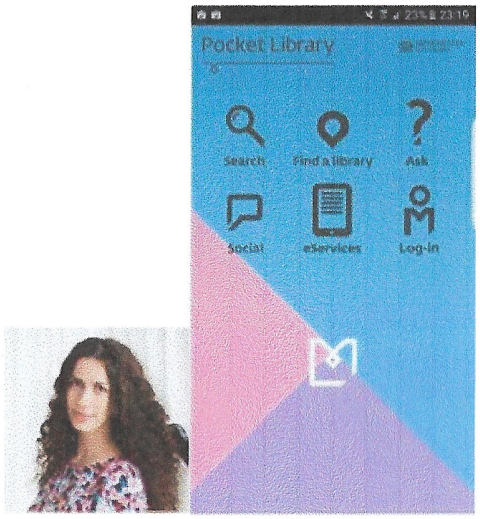
Name [Beth Wood]

Age [18]

Gender [Female]

Uses Manchester Libraries App

Photo



Likes

Simplistic layout
Easy to navigate around
Scan barcode of books

Dislikes

You have to know what book you're looking for. No way of browsing through the catalogue.

Also uses

Tends to use ebooks rather than physical books as they are a lot easier to find and get a hold of.

Uses Amazon to find ebooks rather than searching the Manchester Libraries app for them.

Other observations

Asked Beth to try the LibraryAnywhere app. Beth found it easy to find libraries however disliked the fact there wasn't a list of libraries nearby as they have to be submitted to the app manually.

Figure 4: A user profile (squad contribution)

Research

User requirements

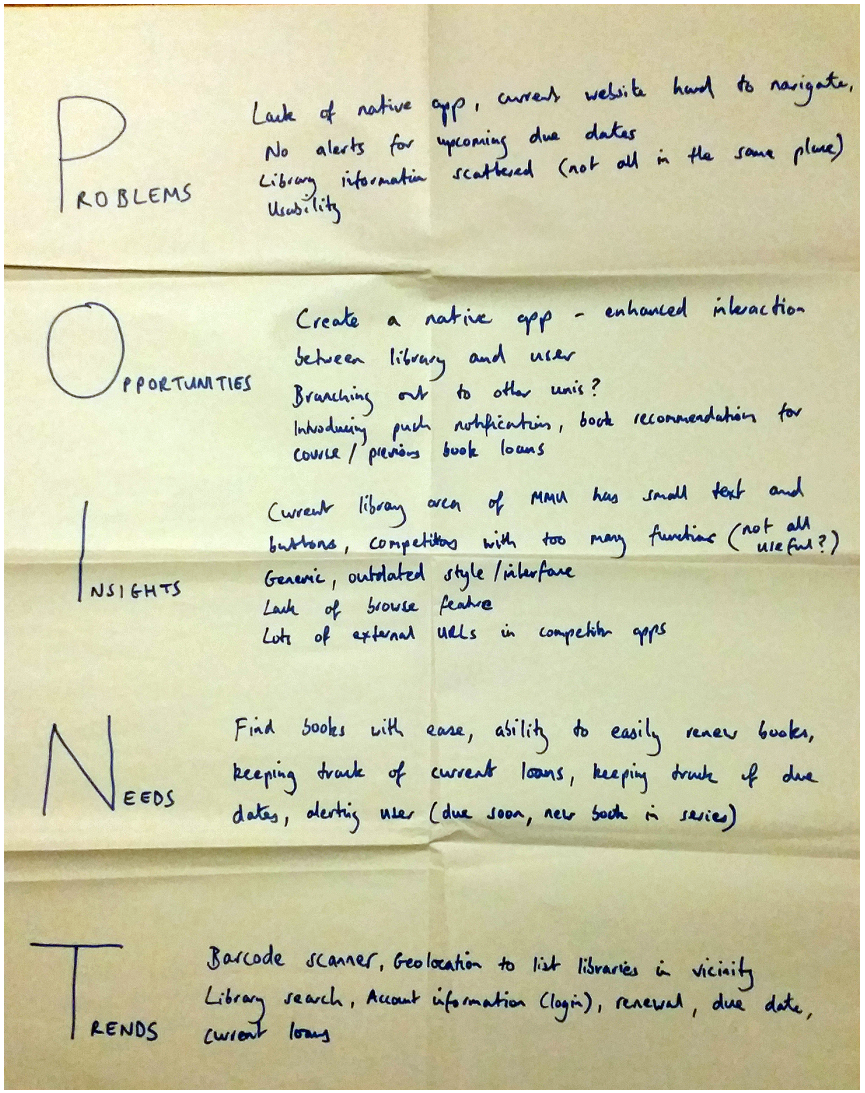


Figure 5: A 'POINT' analysis

Research

Commentary 2

The next step was to build upon this information and gather a list of user requirements. This involved speaking to potential users and making note of their likes and dislikes in relation to similar products. Rosenfeld et al (2015) describe how these "…translate into different information needs and information-seeking behaviours", and Figure 5 shows a POINT analysis in response to that. From this and the user profiles the following user requirements were drawn up.

User Requirements

- Search for item
- Renew loaned item
- Reserve item for collection
- Barcode scanner to check if book is available in library
- Book recommendations based on loan history/degree reading list
- Find book by geolocation
- Push notifications to alert users to important information
- Contact library

Research

Storyboard

An MMU student is on the bus home from university.

He remembers a book the lecturer referred to.

Gets out his phone and searches the MMU library.

Finds the book he requires and reserves it.

He gets a notification in the morning telling him his reservation is ready for collection.

He goes to the library and collects his reserved book.

Figure 6: A storyboard

Research

Persona

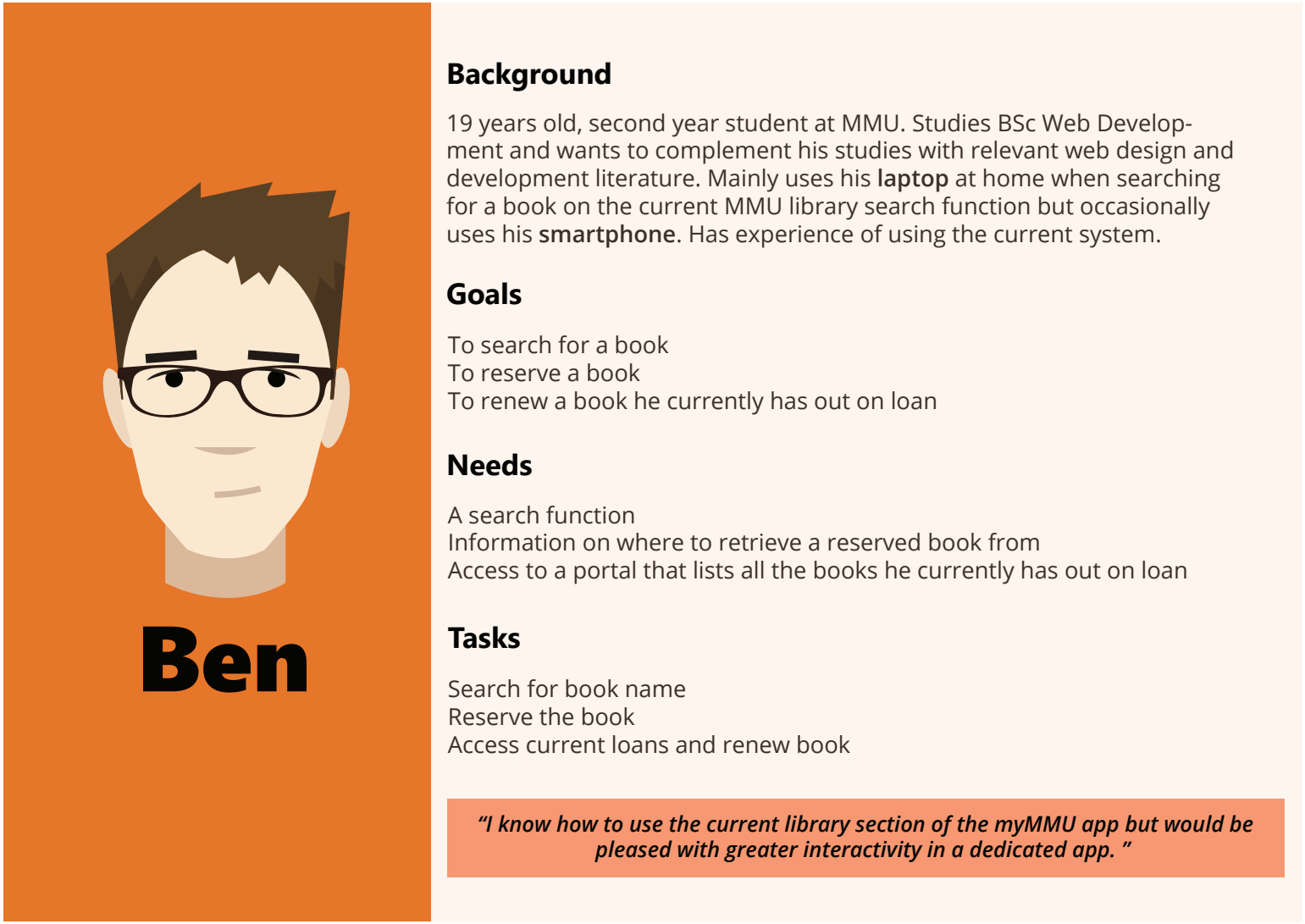


Figure 7: A user persona

Research

Commentary 2

Based on the user research, personas were created to provide reference and keep in mind the needs and goals of the target user demographic (Usability.gov, 2013). Figure 7 shows the goals and the tasks Ben needs to complete in order to achieve them. This fed in to the storyboard. The persona and storyboard aim to cover the three elements of Bandura's (1986, cited in Hepworth, 1998) triadic framework of behaviour, environment and cognitive and personal factors.

Storyboards are, in effect, a persona come to life. They aid the development process by detailing the actions and choices made by a person on a journey as they interact with the product (Crothers, 2011). The storyboard in Figure 6 was informed by the persona of Figure 7 and is a visual depiction of the journey he takes in achieving the goal of reserving a book. The most useful aspect of the storyboard was the contextualisation of the user's environment and behaviour and how we could therefore make more informed choices on the app's ease of use and information architecture.

Content Strategy

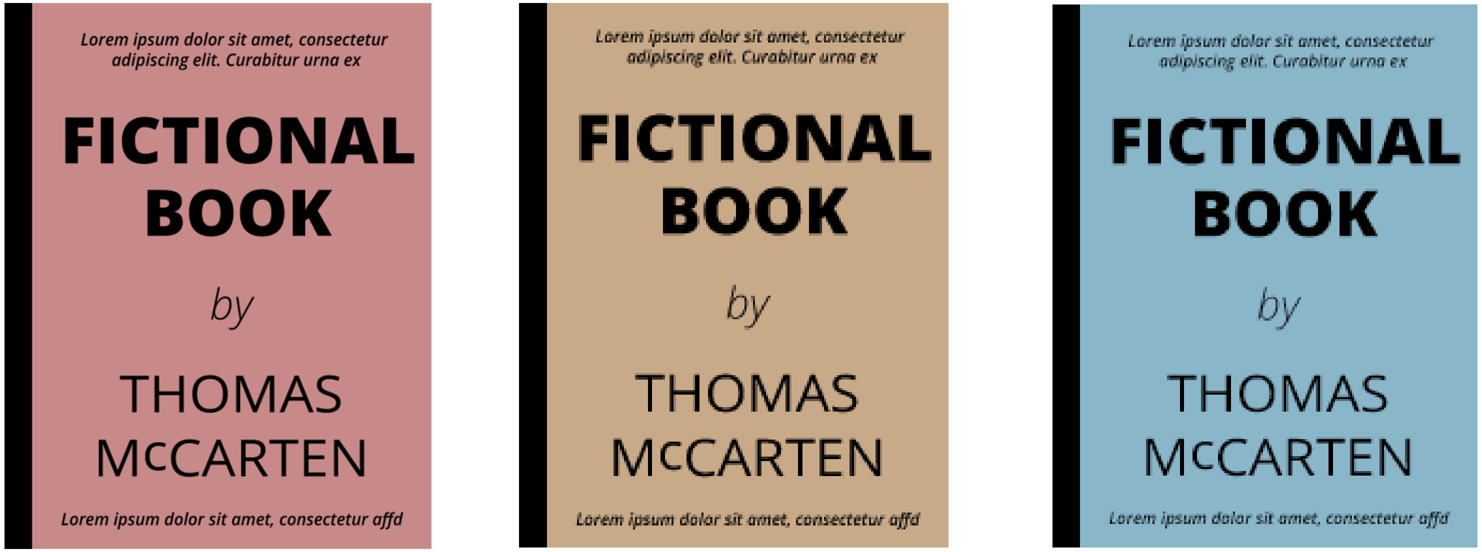


Figure 8: Some placeholder book graphics

Prototype: UX Design Practices

by Thomas McCarten

Filling your prototype with fictional content

by Thomas McCarten

Wireframes and prototypes

by Thomas McCarten

Figure 9: Some placeholder book titles

Draw

Paper wireframing

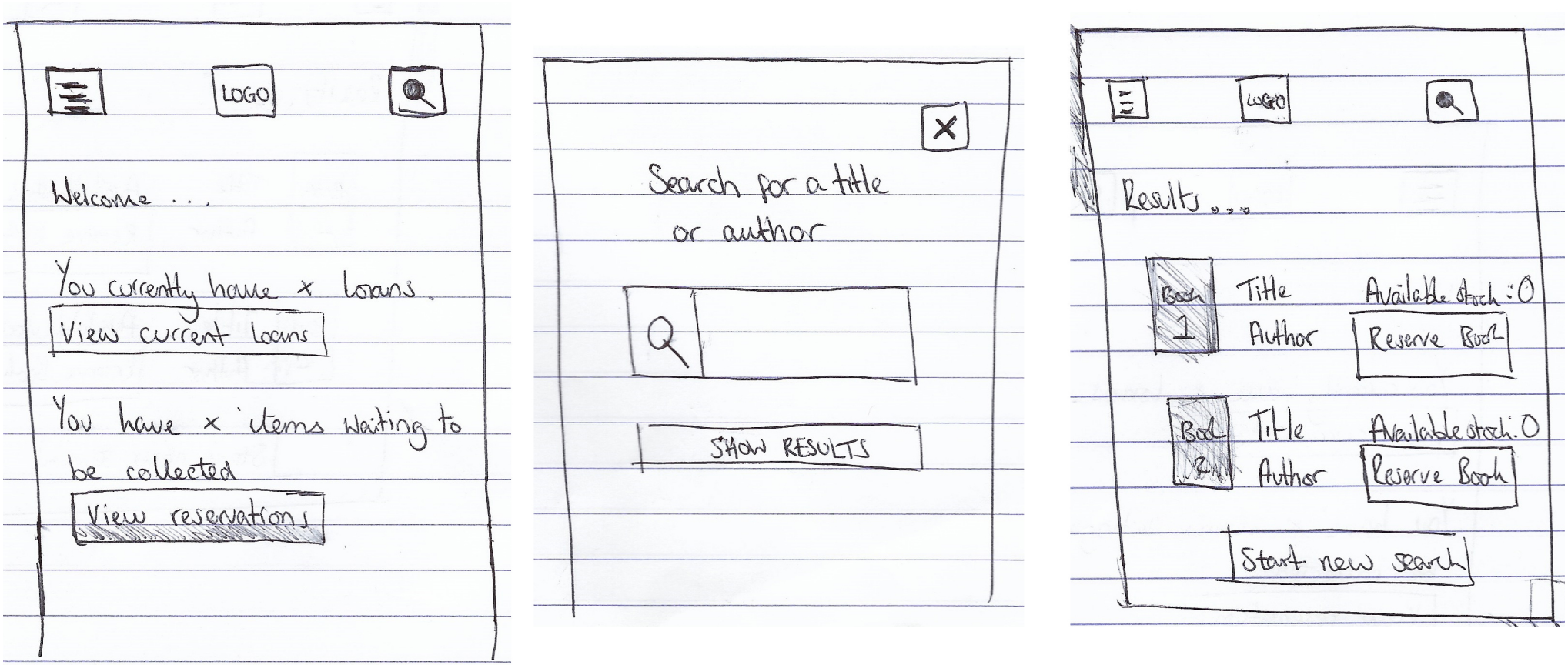


Figure 10: Homepage, search and search results page paper wireframes (squad contribution)

Draw

Paper wireframing

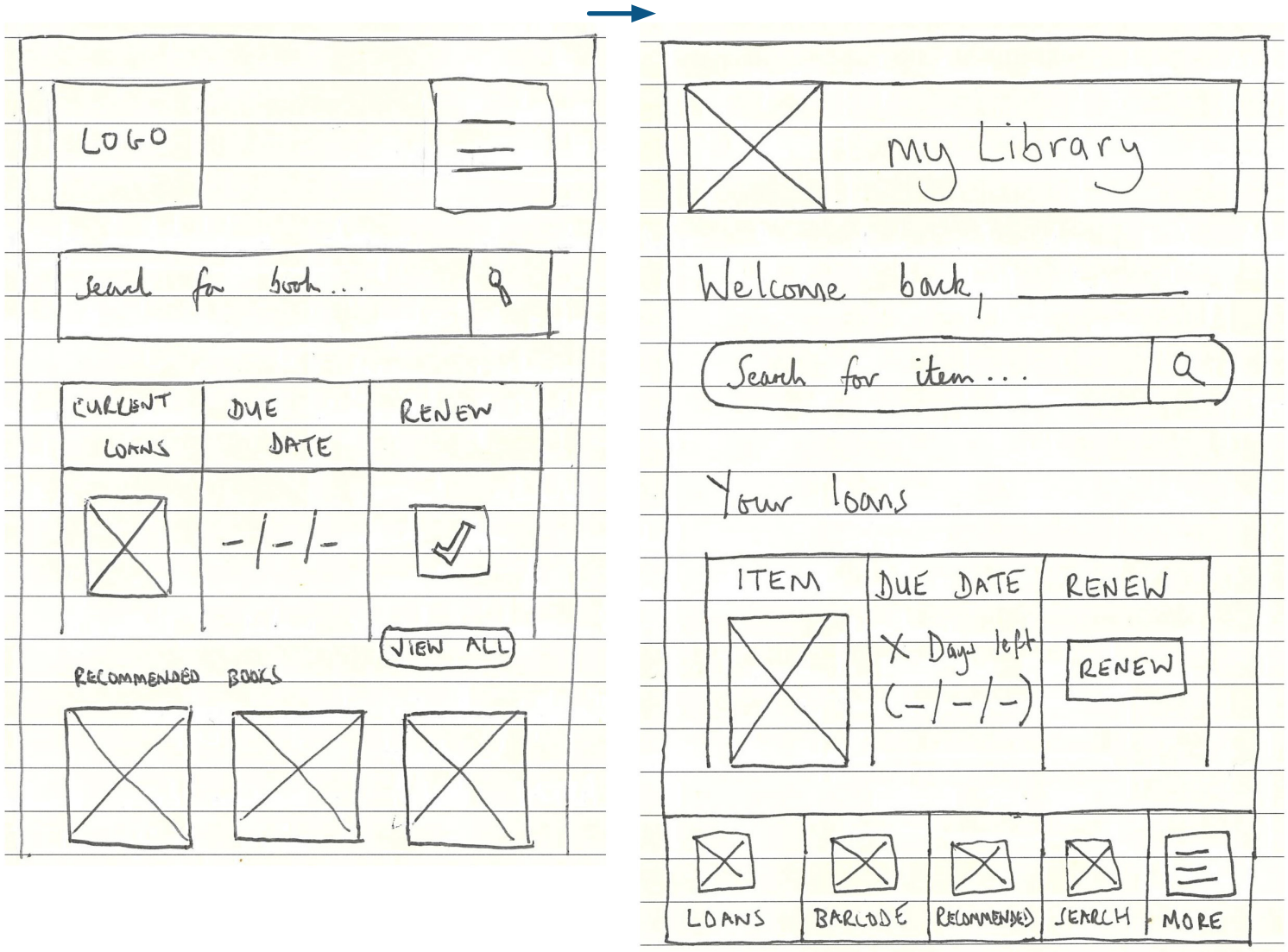


Figure 11: Homepage paper wireframe iteration

Draw

Paper wireframing

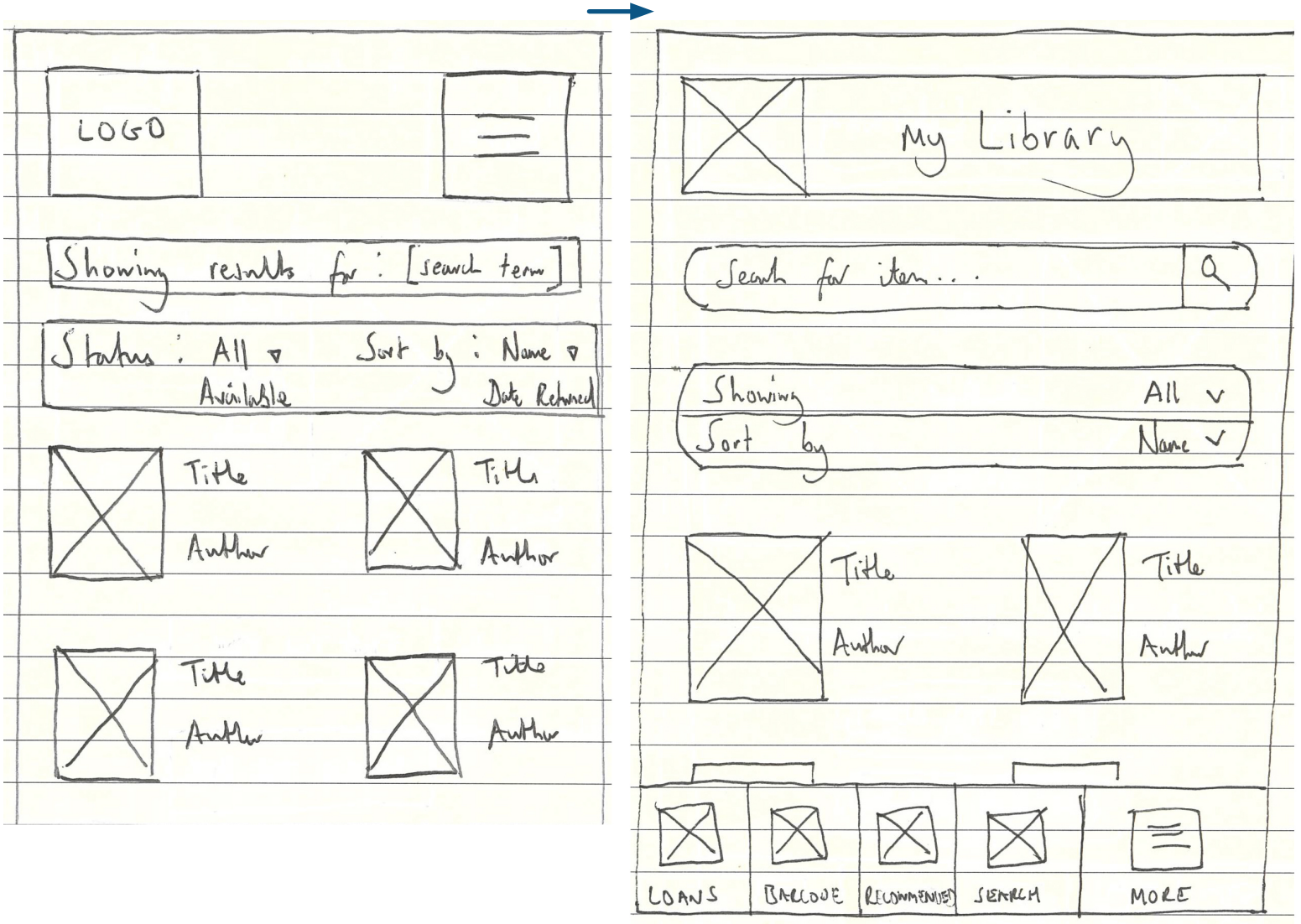


Figure 12: Search results page paper wireframe iteration

Draw

Paper wireframing

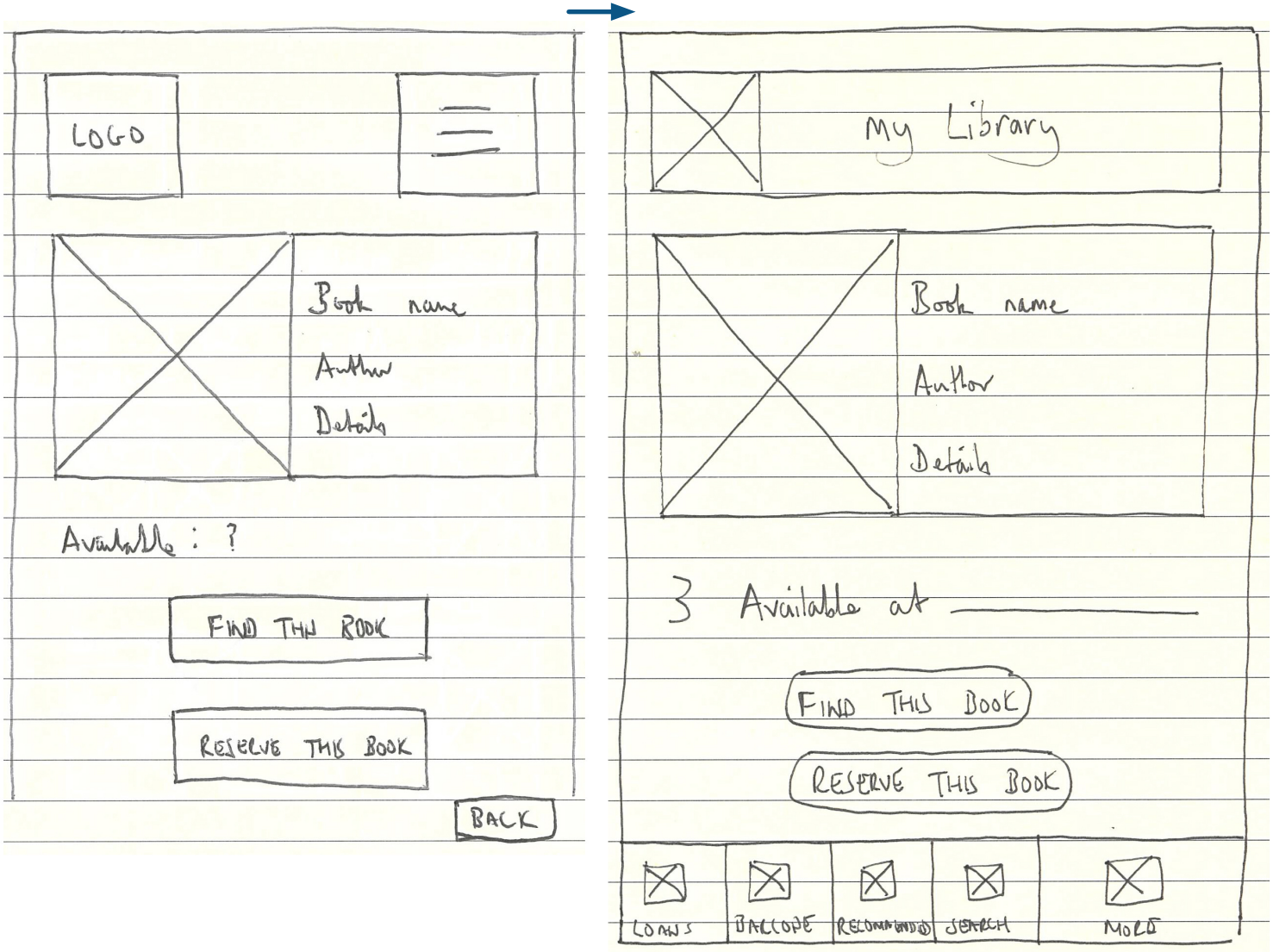


Figure 13: Book page paper wireframe iteration

Draw

Commentary

It was time to begin drawing. The squad got to work on drawing paper wireframes for the app's homepage. The purpose of a wireframe is to show the positioning of elements on the page, demonstrate their visual importance, suggest how they behave and bridge the gap between information architecture and design (Usability.gov, 2013b). Figure 10 shows a squad contribution from which the simple 'welcome' message was carried through into further designs. A welcome message with their name tells the user that they've successfully logged in. Feedback that lets the user know their current status is essential for any system (Babich, 2016a).

The paper wireframes were loaded into the paper prototyping tool POP. This allowed for squad and individual testing with far greater ease than would have otherwise. One major issue became apparent immediately and that was the lack of navigation. Whilst it was inevitable that this would be observed before reaching the stage of a hi fidelity prototype, it was useful to consider its implementation at this early stage in order to allow room for it to improve. Figures 11, 12 and 13 show an iteration of the home page, search results page and book details page with a navigation bar at the bottom of the screen. Whilst the order and choice of links that make up this element were yet to be finalised, the decision was taken due to the importance of putting the top of the tree, most used actions in easy reach of the user's thumb (Babich, 2016b).

Axure Wireframes

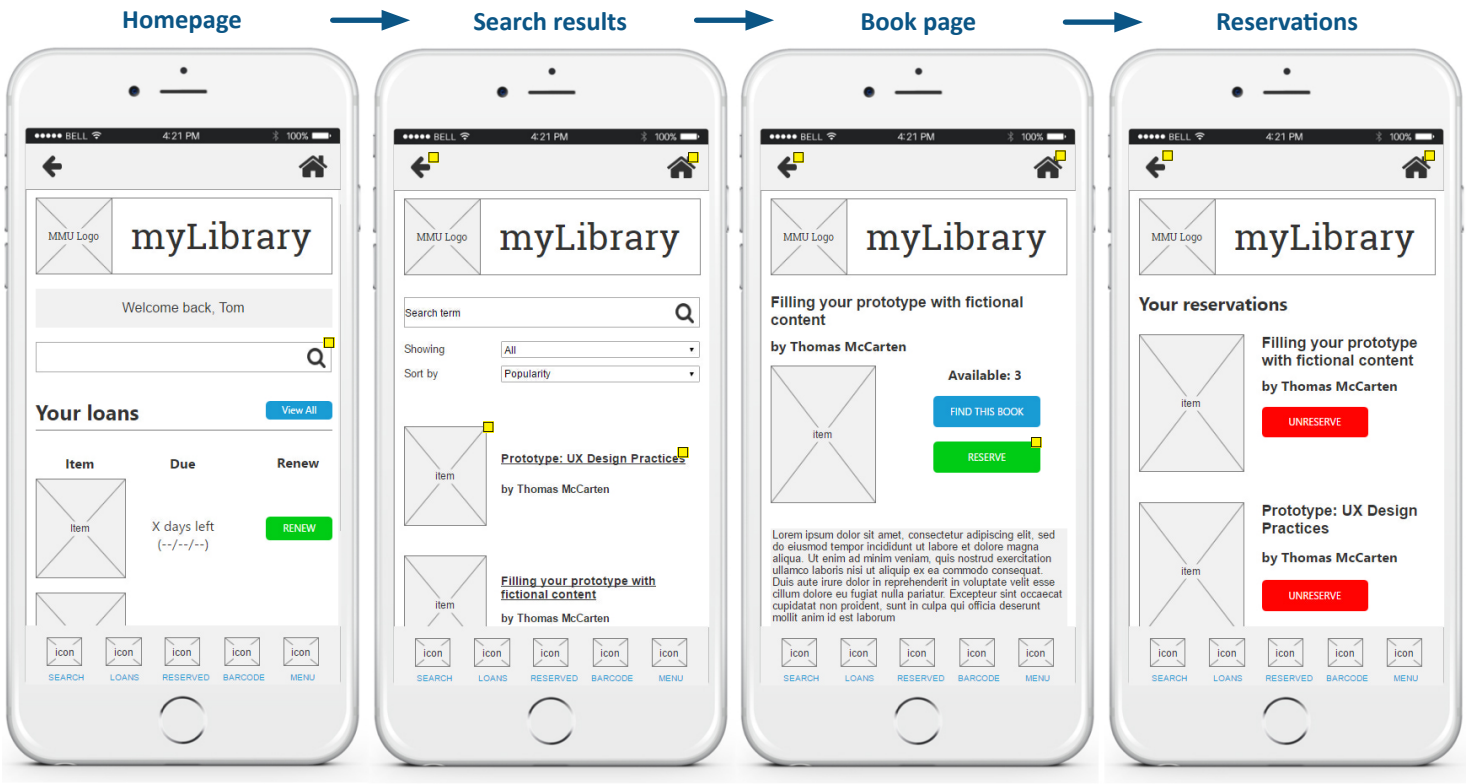


FIgure 14: Axure Wireframes flow

Notes

View Axure wireframe here:
http://blk7w2.axshare.com/

Clickable elements are highlighted with a yellow box.

Axure Wireframes

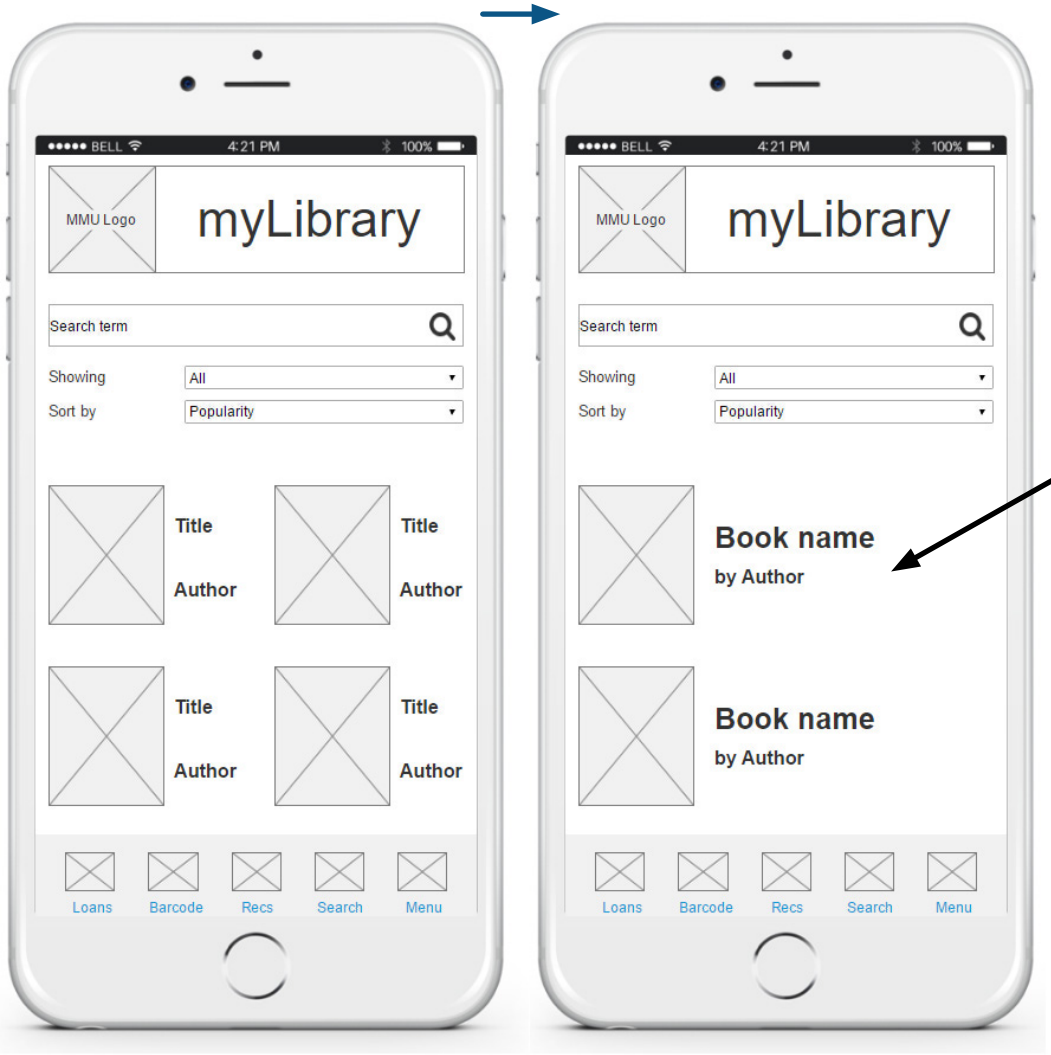


Figure 15: Axure wireframe iteration of search results page

Notes

This was altered to provide space for the book name and author. It is clear in the left wireframe that two items per row leaves very little space for the text.

Truncation wouldn't have been feasible as only one word or so of the book name/author would have fit into the space.

One item per row also avoids any confusion with sorting, e.g. sort by popularity means the popularity decreases in a linear fashion vertically.

Axure Wireframes

Figure 16: Iteration of the navigation bar (left to right)

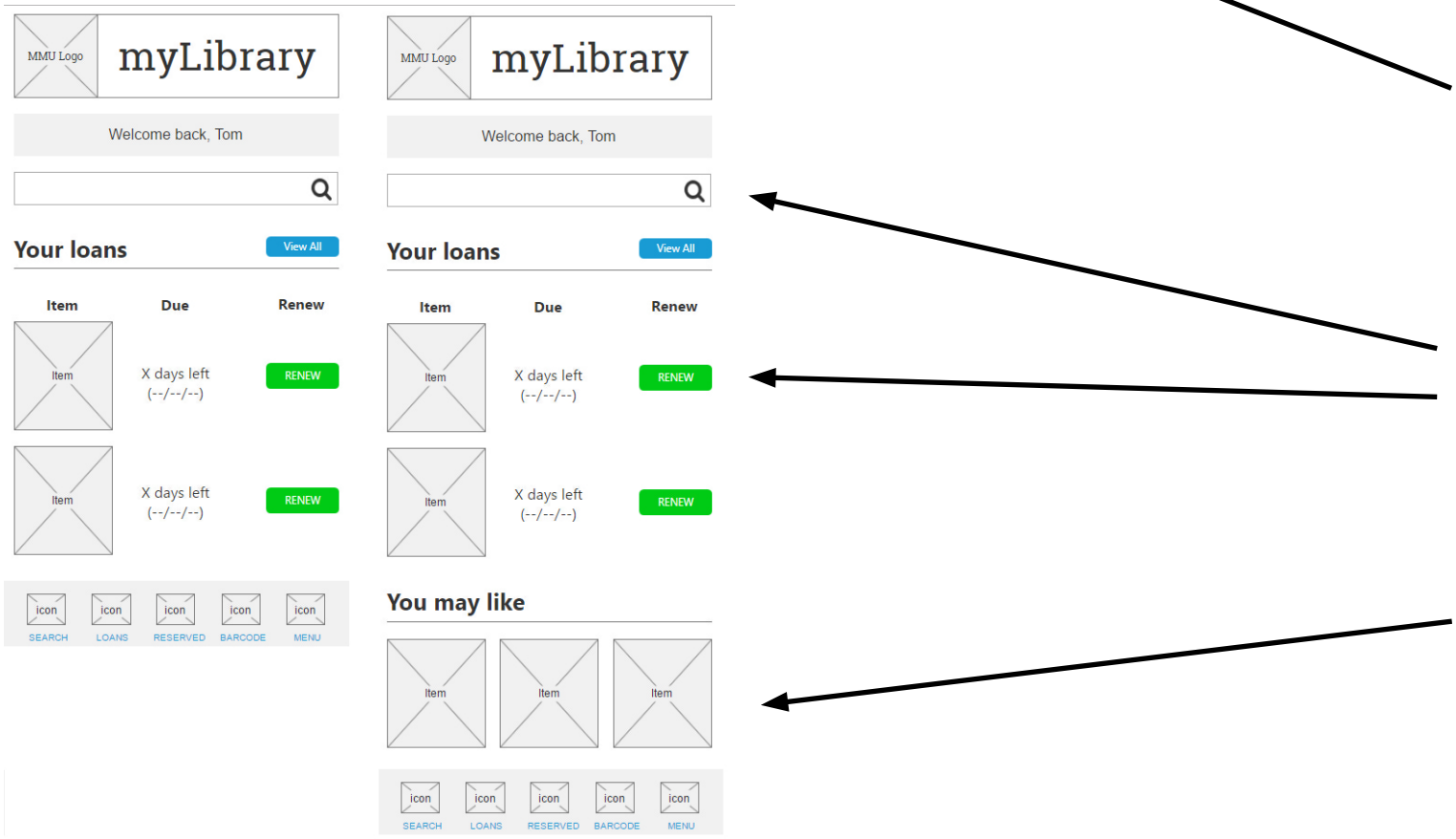


Figure 17: Iteration of the homepage (left to right)

Notes

Five icons, any more leaves too little a gap between each (Babich, 2016b). The order was decided by the ease of reach for a right-handed person, with search, loans and reserved falling into the 'natural' zone (Ingram, 2016) due to their higher proposed frequency of use.

Search and renew on the homepage, prioritization of features in accordance with user research.

Recommendations added as a result of testing (see next page).

Testing

Four participants were approached to perform some simple guerrilla testing. Guerrilla testing is a cheap and easy method of testing a design with people in order to ascertain whether it works as intended (Gov.uk, no date). Three questions were devised to gather some qualitative data:

1. Can you find and reserve a book?
2. Is there anything you particularly like about the design?
3. Is there anything you dislike about the design?

The participants were observed whilst they attempted to complete the task and notes were made of both this and their answers to questions 2 and 3. There were four useful findings:

Testing

Findings and changes

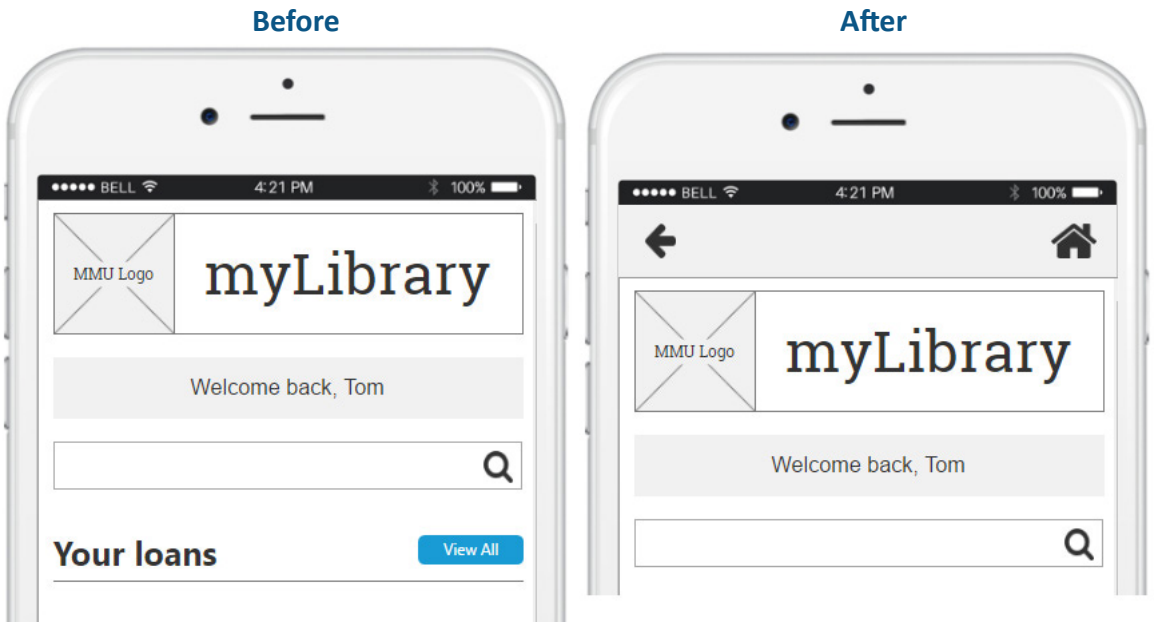


Figure 18: Top navigation added in response to testing

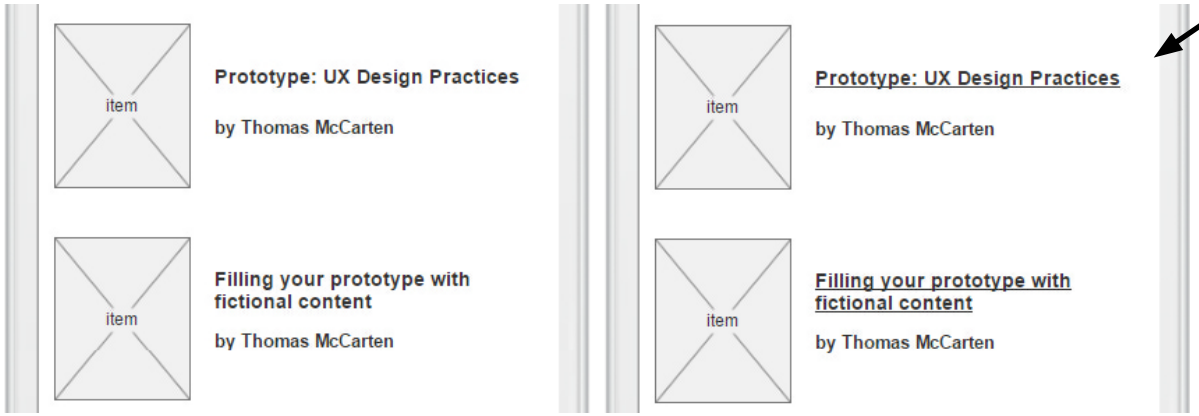


Figure 19: Book titles underlined in response to testing

Notes

Three of the four participants found it unusual that there was no 'back' button/navigation at the top of the app

Two participants weren't sure whether to tap the image or the text on the search results page. Book titles were made into links as well as image in response.

One participant suggested recommendations on the homepage (see Figure 17). This was a useful suggestion and implemented.

All four participants liked the renew buttons on the homepage.

Design

Invision prototype

FIgure 20: High fidelity mockups made in Photoshop

Design

Invision prototype

High-fidelity mockups were created in Photoshop based on the wireframes. The benefit of high-fidelity prototyping is that it is a truer and more accurate rendition of a product, lending the results of any interaction with it greater credence (Usability.gov, 2014).

As an official university app, the intended aesthetic was 'attractive but conventional', and a simple colour scheme of differing shades of blue and white emerged (Figure 20).

The mockups were uploaded to Invision and can be viewed here:
https://invis.io/VR9NFEFSK

Design

Invision prototype

Figure 21: Iteration of background colour (left to right)

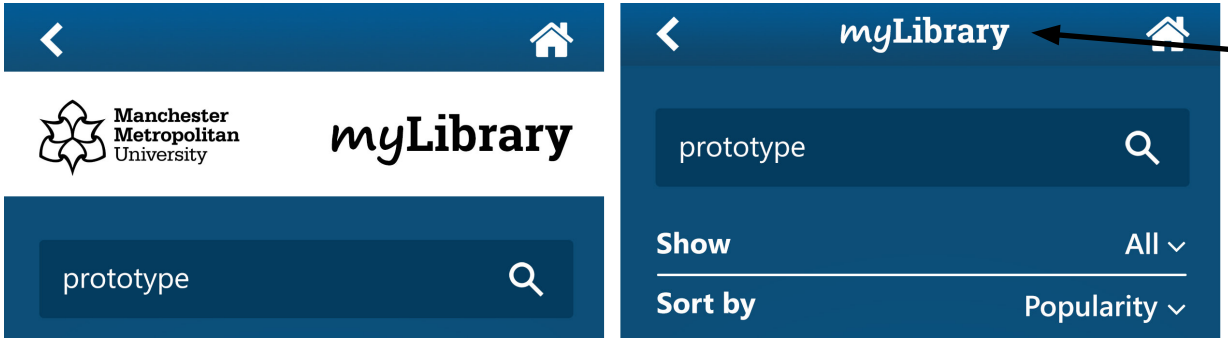


Figure 22: Removal of large header

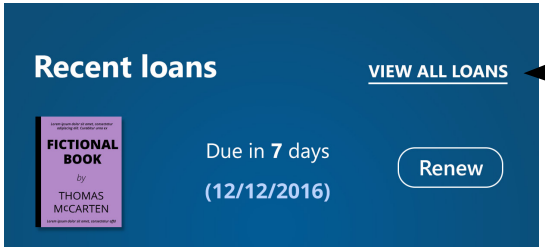


Figure 23: View all loans link

Notes

The first version failed colour contrast checking at WCAG AA Level so this was remedied by darkening the background.

Some basic guerrilla testing with friends whereupon the question put to them was a deliberately vague 'Is there anything you'd change?' revealed their dislike for the large header section on each page. This was an obvious oversight and fixed by simply removing it and placing the logo in middle of the top navigation bar.

This is simply a link to another page on the app, as such it didn't warrant the appearance of a button. The button visual, as seen on 'Renew' below, is reserved for calls to action.

Evaluation

A heuristic evaluation aims to give an overview through inspection of a system's usability in order to reveal user-centric issues with its design/UI (Chisnell, 2010). The following heuristics are taken from "Jakob Nielsen's 10 general principles for interaction design" (Nielsen, 1995).

Visibility of system status
Notification icon at the bottom informs the user if they're on a main navigation page but sub-pages fail this check

Match between system and the real world
Everyday language is used throughout the app that all English-speaking users should understand

User control and freedom
Back button lets user return to previous page. Bottom navigation for main app pages.

Consistency and standards
Consistent visuals and language used throughout

Error prevention
Users are limited to functions that avoid potential for error

Evaluation

(continued)

Recognition rather than recall
Bottom navigation icons also have a text label so users don’t have to remember what each is for

Flexibility and efficiency of use
User can search on homepage as well as renew loans

Aesthetic and minimalist design
The user is only given concise and relevant information throughout

Help users recognise, diagnose and recover from errors
Plans for popup overlay informing user of error

Help and documentation
Help section available on the menu (unavailable in prototype)

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