

## ABSTRACT

The purpose of this project was to improve the UI design of King County Library System's mobile app. KCLS patrons use the app to browse the library catalogue, place holds, check out digital materials and track their account. The app has several flaws that impede smooth navigation. These were discovered by analyzing it through the UI principles learned during the course, and by testing a novice user who didn't have experience using the app. I tasked the user with checking out an e-book relative to the topic of Abraham Lincoln's 1860 campaign for the US presidential election, opening it and returning it. I purposefully chose a specific topic and not a title, because a topic such as this requires more information-digging on the user's part. These observations stood out: the cards for each item on the search result page have too much information and take too much space, the individual item pages contain too much description and unnecessary content that can be tiring to navigate, the bottom menu bar has confusing labels and opening a checked out e-book takes too many unnecessary steps. During the project, and in addition to the analyzed task, I realized that the library did a poor job in promoting its numerous and lesser-known services, and that the app could offer up space for the promotion. For the redesign, I observed similar catalogue apps, including an IKEA catalogue app. My redesign was based on the building blocks of atoms and molecules, which combine to form organisms, templates and pages applied throughout the whole app. KCLS' logo colors are red, black and white, so for the palette I used white, black and burgundy to add visual interest, because red might be too bright and distracting. The interplay of burgundy and green, featured in some pages, follows the utilitarian implication of red and green lights. This is my first UI project, and the first time that I used the software Figma to design. I look forward to exploring it further with new features such as a visualization of search refinement, the barcode scanner, custom user lists, and pages for each library service.

## OBJECTIVES

- Reduce the number of steps for checking out and returning items.
- Establish a design system
- Promote the library's services on the first page.
- Improve verbiage on labels.

## METHODS

- UI analysis
- Competitive analysis
- User interview, observation and testing
- User persona
- Journey mapping
- Task Analysis
- Information architecture assessment
- Sketching
- Wireframing
- Structuring UI components
- Icon design
- UI design with Adobe Illustrator and Figma
- Prototyping

## CONCLUSION

- The steps to check out an item were reduced from 9 to 6.
- The method of atomic design proved to be a sustainable and structured way of designing repetitive components with varied contents.
- The content has been designed to suit an app with easier discoverability of important information.
- Future iterations will involve user testing of the design.
- Next design challenges: UI of search refinement and scanning of barcodes.

## REFERENCES

Keyboard design taken from Material Design Kit 3  
<https://www.figma.com/community/file/1035203688168086460>

Description of the structure of UI components. Taken from *Atomic Design* Atomic Design Methodology Chapter 2, by Brad Frost. <https://atomicdesign.bradfrost.com/chapter-2/#:~:text=Atoms%20are%20UI%20elements%20that,discrete%20sections%20of%20an%20interface.>

Photos used for the home page cards taken from Unsplash/Adobe Stock

Emojis taken from www.streamlinehq.com

## PROCESS HIGHLIGHTS

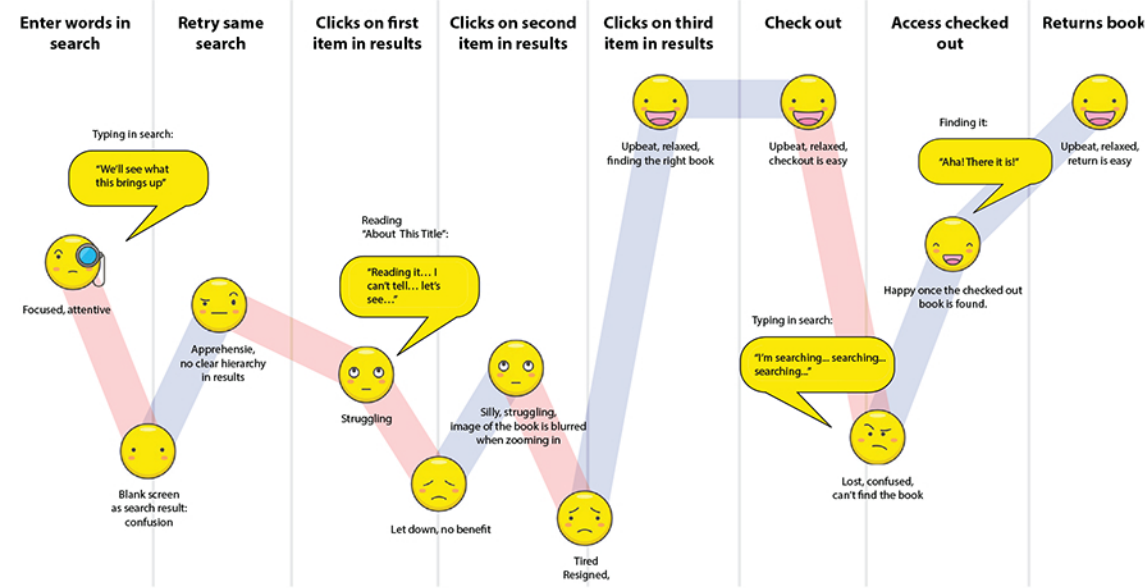
### User flow chart

User experience and interaction design cannot happen without first-hand observation of the user and their interaction with a design.

I assigned a participant and novice user of the KCLS app the task to check out an e-book about Abraham Lincoln's campaign for the 1860's US presidential elections. The task gave a specific topic rather than a title, so that the user would be prompted to navigate the catalogue, find descriptions of the items and in doing so, spend more time interacting with the interface, rather than just scanning a search result for a title.

The user struggled with navigating the information, and once the item was found, it took a lot of trial and error to locate the checked out item, which oddly is not available right away after it's checked out, but needs to be dug out from another section of the app.

During the test, I observed the user's actions, reactions, body language and quotes that might be insightful to their subjective experience.

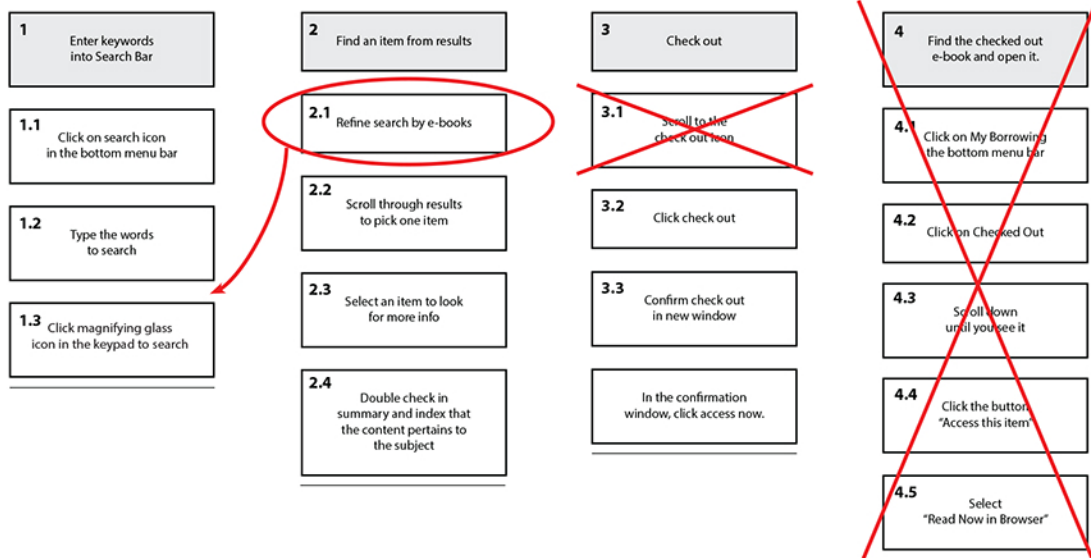


### Task Analysis

The observations from user testing also helped identify the steps that are taken to complete the task of finding and checking out the e-book. These are grouped into major steps and their substeps. A chart is made to clearly visualise and quantify the experience.

It didn't take much review to discover that finding a checked out e-book took an unreasonable amount of steps. The need for to look for an item that's been just checked out seems to be an unnecessary step altogether.

Hence, the task analysis chart allows the designer to delete, move around and change the sequence of steps for a task when planning a design.



### Structure of UI components

#### ATOMS

UI elements that can't be broken down any further and serve as the elemental building blocks of an interface.



#### ORGANISMS

Are relatively complex components that form discrete sections of an interface.



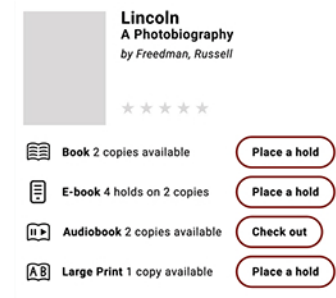
#### MOLECULES

Are collections of atoms that form relatively simple UI components.

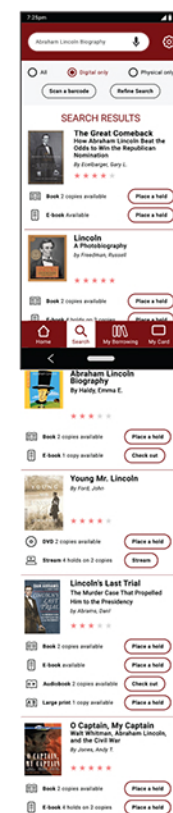


#### TEMPLATES

Place components within a layout and demonstrate the design's underlying content structure.

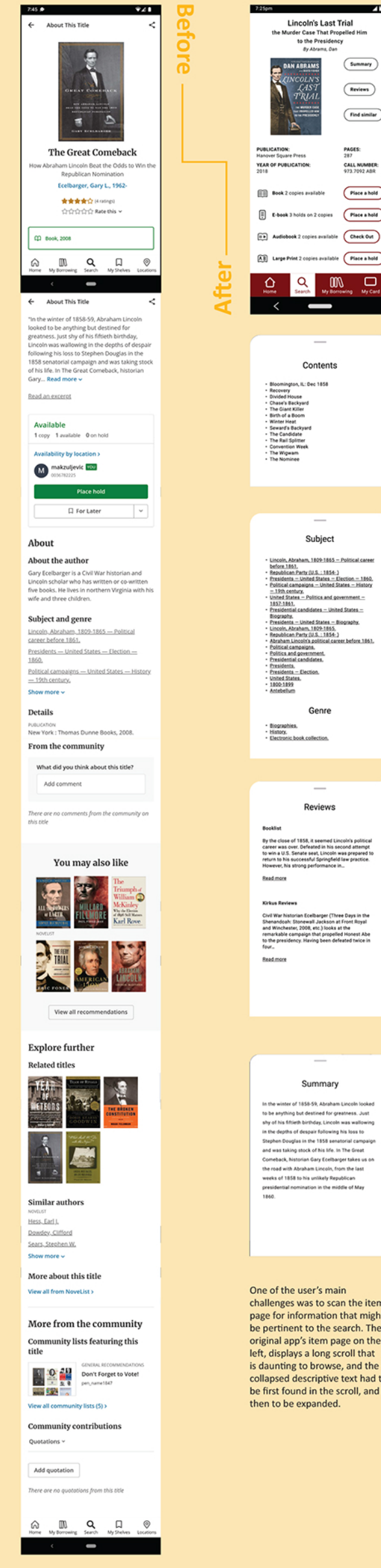


### PAGES

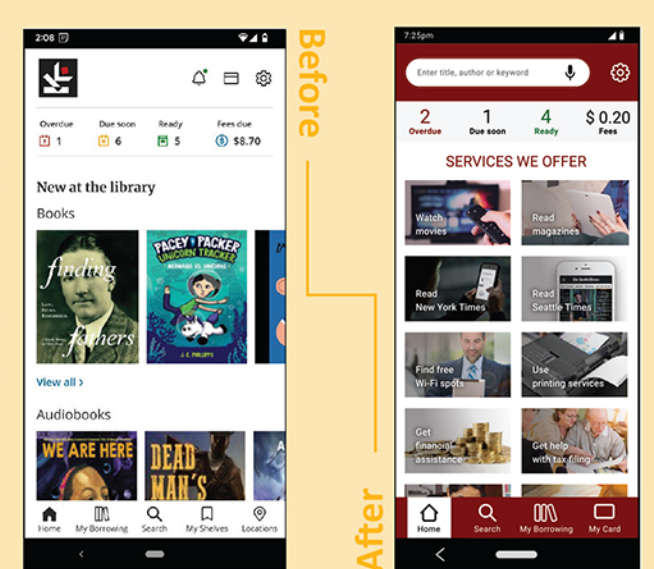


## RESULTS: some of the screens designed

### Item Page

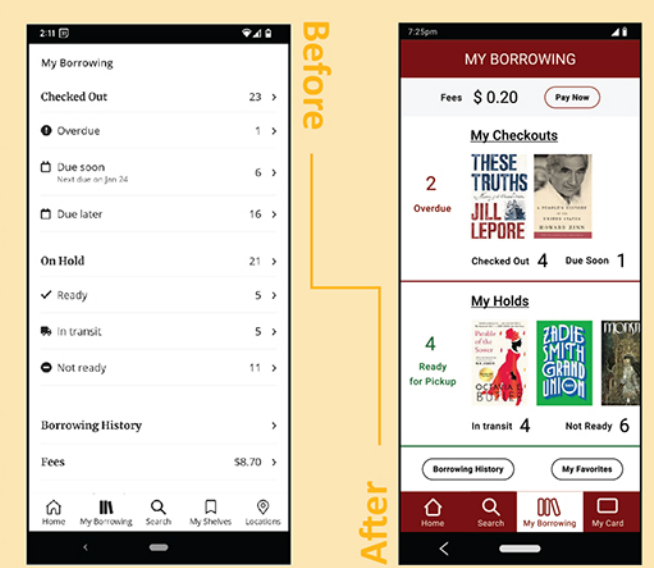


### Homepage



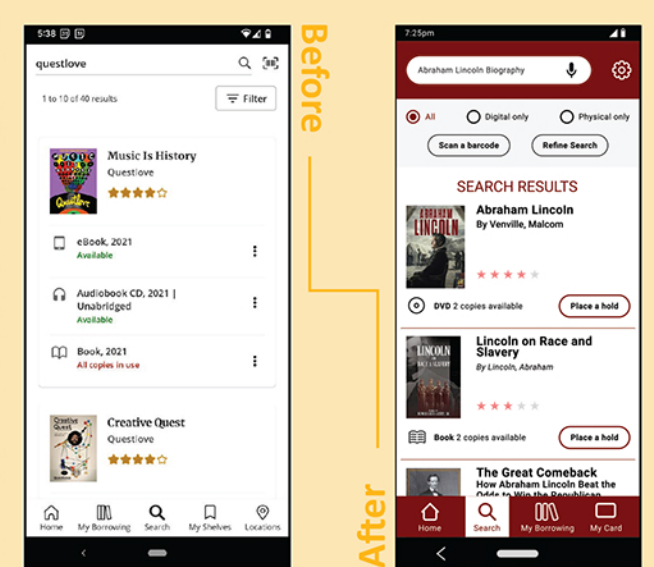
Placed the KCLS services on the homepage as a grid of cards that can be clicked on to find out more about a particular service. Removed my shelves from the navigation bar, as it was unclear for the user whether this is where the checked out items are, or the "My Borrowing" section. The search bar is now prominent on the top, but also available in the navigation bar on the bottom. The navigation bar is burgundy, and the page that the user is currently in, is highlighted with a silver field, whereas before the selected icon for the navigation turned from outline to filled, which was challenging for the user to pickup on. Improvement on discoverability.

### My borrowing page



The "My borrowing" section lets the user manage the account's checkouts, holds, pending fees and borrowing history. It was improved by turning a list with a weak hierarchy into a color-coded layout with images of books checked out or in transit. It's better mapped and easier to scan for information.

### Search Results



Compared to the original design, an item can be checked out or put on hold in this step, without the need to open the item's page. The types of media available are made shorter so that more items can fit in the viewport.