

UX Design Report & Interactive Prototype

Kent District Library - Library Catalog
Functions



KDL

Kent District Library



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EXECUTIVE SUMMARY

This report provides further analysis and evaluation of the research conducted in our previous report, *UX Research & Requirements* report for Kent District Library's online catalog system. Methods of analysis used were in-person usability tests with a paper prototype, and discussion with the catalog software consultant. The results of these methods can be found in the appendices. Other methods of analysis included in the design process were the systems' Google Analytic Data, a usability survey from the patrons, as well as a heuristic analysis and competitive evaluation. Additionally, our analysis is informed by conversation with software experts for SirsiDynx, the system Kent District Library uses to host their catalog. From them we learned more about potential limitations and feasibility of certain features, and will take those into account in our recommendations for our client.

Through this previous analysis, we found there are several areas in which we can reduce the amount of information present on the home page and results page. The prototypes included in this report are iterations of our team conducting research and addressing various issues related to the prototype.

Recommendations discussed in this analyses include (but are not limited to):

- The inclusion of a navigation footer.
- Moving the "Apply Filter" button to the bottom of the filters, or placing a button there in addition to the one at the top.
- Changing "Reset Filters" changed to "Clear Filters."
- A possible alternative to "Apply Filter": once the filter is checked, the page should load automatically with the filter applied.
- Visual indicators of whether a book is available at a user's home branch.

Finally, this report also has the limitation of our team's limited ability to perform usability tests together due to being located in different cities, as well as limited access to users within the largest age range detailed within the user personas.

PROJECT BACKGROUND

Client Mission

Kent District Library (KDL), aims to provide their community with a wide variety of accessible catalog resources and services for education, information, and entertainment. KDL challenges the traditional concept of a library by providing community resources in addition to offering an extensive digital and physical collection.

Project Description

Within the realm of this project, we will identify usability issues with the Kent District Library catalog. This was done through the exploration of common tasks and objectives users go through when interacting with the site. From this point, research was conducted to further narrow down these issues and understand if patrons are able to accomplish their goals using the catalog.

Project Background

KDL serves over 200,000 cardholders and is one of the largest library systems in Michigan, with a collection of over 1 million (digital and physical) items. In fact, it is one of the most expansive in the Midwest United States. Their website is widely used with over 1.4 million visits within the last year.

KDL offers a wide variety of services to their patrons and residents in addition to books (iPads, bicycles, Wi-Fi hotspots, etc.). Their services are crucial to this area as well as to other libraries who borrow materials from their catalog. We will provide technical and design recommendations based on our previous research findings to improve the overall user experience of the catalog system.

Project Goals

Through the completion of this project, we aim to:

- 1) Decrease the time it takes to search and/or filter for an item in the catalog.
- 2) Facilitate common user interactions with the 'My Account' feature.
- 3) Provide clear pathways for users to access the Kent District Library catalog help resources and achieve their goals.
- 4) Provide Kent District Library (KDL) staff with a detailed report of both design and technical recommendations for their catalog based on thorough research about the catalog's record of usage and design.

RESEARCH

Research Questions

Within the realm of this project, we identified usability issues with Kent District Library's online catalog through the exploration of common tasks and objectives users have when accessing the site. Within the site, we focused on four main categories:

Existing Search Fields

Objective: Eliminate, hide, or rework all search limits, fields, and filters that are rarely used.

- Do the current fields make sense, and do patrons understand how to use them?
- What fields are never used, always used, and sometimes used (percentage-wise)?

General Item Searches

Objective: Redesign the user experience of the catalog search to facilitate an observable increase in reportable user satisfaction.

- How do patrons find the materials they need?
- Is there an easier way to connect patrons to these materials?
- What conclusions can we draw from patrons about how they regularly interact with the catalog when searching for items in the collection?

'My Account' Features

Objective: Eliminate, hide, or rework all search limits, fields, and filters that are used 5% of the time.

- In general, what do patrons commonly use their account for?
- Do the current fields make sense, and do patrons understand how to use them?
- What fields are never used, always used, and sometimes used?

Receiving Help

Objective: Facilitate visible and easily accessible options for connecting patrons to informative and effective help resources.

- If patrons don't know how to use an element of the site, how can they find and receive help?
- If patrons don't know how to ask for help, what features or elements of the catalog site are they using to get help?

Competitive Analysis

We completed a competitive analysis of a variety of libraries in order to determine Kent District Library performance and catalog features in comparison to other large, database-oriented libraries across the country. For the comparison, we compared different libraries in order to shed some light on different issues KDL is currently facing with their catalog.

Methodology:

For the competitive analysis, we looked at different libraries that are of comparable size (and type) to Kent District Library. In choosing libraries, we focused on systems that we had personal accounts and/or experience with and which also had a reputation for success in usability. One limitation we faced in choosing libraries to analyze was access to an account and checkout capabilities, as this requires residencies in certain counties or states.

Our research focused on comparing features and categories used within the catalogs and how they might be affected by the software system they use. We focused on features and categories related to different functions within the site because our research goals are focused on decluttering or minimizing the features of the catalog while maintaining both usability and familiar user pathways during navigation.

The features compared were based off of the complete set of exploration of features and paths users take when interacting with the catalog explored during the heuristic evaluation. By comparing paths users able to take in other library catalogs, we are able to gain a better understanding of which paths are integral to a positive user experience (and which ones KDL patrons could interfere with the pursuit of this experience).

Features compared were:

- Library (collection size) and patrons served
- Digital item checkout functions/features
- Physical item checkout functions/features
- Catalog software in usage
- Personal account functions/features
- Search filters and categories
- Help functions and features

User Study Materials:

This evaluation was performed by our own research team. No patrons or external users were utilized. Once the analysis was performed, we were able to consolidate our findings using a chart; this chart is located in the Appendix.

Heuristic Evaluation

We completed a heuristic evaluation of the Kent District Library catalog in order to identify glaring, problematic user experience problems within the system. This process was an assessment of the catalog's features, organization, and usability across levels of comfort with technology. This evaluation served to inform all of the ways how users may interact with the catalog.

Methodology:

The evaluation was done by going through the various catalog features and taking notes about the design and user experience based on the Nielsen¹ usability heuristics for user interface design. For this evaluation, we focused on:

1. Utilizing the 'My Account' feature, which allows cardholding patrons to access specific library functions through the online patron portal.
 - a. Checking out and/or place a hold on a book.
 - b. Paying fines and fees on library materials.
 - c. Updating and/or changing account information.
2. The various ways in which patrons are able to find help when they are having trouble utilizing the catalog.
3. The ways in which patrons access and utilize features within catalog entries, and search results.
 - a. Searching for a specific book, DVD, eBook, or audiobook.
 - b. Different features available to bookmark, or learn more about library collection materials.
4. The ways in which patrons are able to filter their search results to best find items within the KDL collection.
 - a. Filtering search results on an item by different categories.
 - b. The different categories available for patrons to filter by.

User Study Materials:

This evaluation was performed only by our own research team. No patrons or external users were utilized.

¹ "[10 Usability Heuristics for User Interface Design.](#)" Nielsen Norman Group.

Usability Survey

We have released a remote, online survey through our client's SurveyMonkey account that will be sent to the entirety of KDL's mailing list. This mailing list is composed of over 90,000 individuals. By conducting this survey, we hope to gain demographic information about the patrons who use the catalog as well as specific information about usage of certain catalog features we discriminated through our heuristic evaluation. Essentially, we want to connect demographic information gleaned from Google Analytics and specifically connect it to certain behaviors we want to know who is using.

Methodology:

For the usability survey, we focused on getting user's thoughts regarding three matters:

1. Personal ratings of ease of use of catalog features.
2. Identification of what patrons click on and utilize during catalog usage sessions.
3. What patrons instinctively look for first or expect when performing certain tasks.

We chose to use these three matters to gain information about usage because this is a piece of data that we have limited access to via our other methods of research. With the heuristic evaluation, competitive analysis, and Google analytic data, we have limited to no access to patron's actual opinions or intended usage of the system. With survey questions worded in this manner, we have access to opinions and beliefs of the patrons regarding each aspect/category of our previously-defined research goals.

Mostly, we used the same groupings for data as defined by our research goals. The only differences were the consolidation of the search fields and general searches research goals and the addition of demographic information. We found that the distinction between these two topics is necessary for our research, but could only cater to confusion in patrons taking the survey. Finally, adding a demographic section allows us consolidate our data in research findings, and create user personas.

Within groupings 3-5 of the survey, we used yes/no survey questions as a qualifier for whether a user would be able to complete the rest of the questions in that section. Once, in that section, we used multiple choice and check boxes for questions asking users to either choose one or identify all options they commonly interact with in the catalog. Finally, notably, we utilized both matrix table questions and semantic differential scale questions with descriptive adjective ratings (e.g. 'Never' to 'Always').

User Study Materials:

The survey was created by our own research team. The demographic for the survey are KDL patrons who use the online catalog in one form or another. The only other

discriminating demographic (or possible opportunity for bias) is that we restricted survey participation to those 18 or older (to forgo parental permissions and other complications).

Google Analytics Data

We will use the Google analytic data provided to us by Kent District Library to gain a better understanding of the system. One of our main goals in using this data is discover whether the 'My Account' feature is being effectively used (or used at all) by the patrons. Through this we hope to understand which essential features are straightforward and which ones need to be clarified for users through design.

Methodology:

The Google Analytics data focuses on both the KDL main site and the KDL catalog site. From this data we can use information about where users are clicking, and how much time they are spending on different parts of the site. We will compare data from both the main and the catalog site to inform our user research that will be done later in the term.

We want to utilize this data to answer various questions that are crucial to us to provide concrete and meaningful recommendations to the Kent District Library. We are focused on the My Account feature, general search, filtered/queried search, and finding help. There are other aspects that we have deemed crucial to our research including, but not limited to, general demographics of site users, page engagement, traffic channel referrals, and the type of platform that the user has when accessing the website. These will help us to construct our personas and determine who our audience is that we are designing for.

We organized the data into distinct categories:

1. Age Demographics
2. Gender Demographics
3. Platform Demographics
4. Traffic Channels
5. Final Observations

Age, gender, and platform usage all help us shape who our ideal user is that we are designing for. These data points allow us to narrow our scope and focus on more tangible problems that may be specific to certain groups. Traffic channels allow us to see how users are actually navigating initially to the catalog - is it through another website? Social media? Or are they directly typing in the URL in their browser?

We hope that the usability survey will confirm the hard data gleaned from Google Analytics and point us directly towards what issues users are facing regarding catalog usage dependent on their exact situation .

User Study Materials:

We were given Google Analytics access to both the main Kent District Library site and the Catalog site from their team.

Research Results

Technical

- KDL (and many other libraries) utilize the SirsiDynix software for their catalogs. This will limit how much we can change about their UX since SirsiDynix is a separate entity with priced limits to how customized you can be.
- Users have expressed concern with many technical issues within the catalog site that most of which are not be within the scope of our project. However, these issues can still be given to our client.
 - Patrons take issue with unreliability of the catalog search. Items they want are sometimes available but don't show up in the search.

Visual

- Their catalog lacks in visual hierarchy to help organize information and guide the eye. We believe adding diversity in font size and color could help in this area.
- The catalog is the main tool (and first thing users click on from the main site), and has a lot more design issues than the main site. The main insight is that the experiences are different and patrons take issue with this.
- The catalog has many extraneous features and sections that patrons don't use, and could benefit from rearranging or even removal.
- The the design of the catalog (independant from the organization of features), is something that we have a lot of variability with. Changes can be made if we are able to collaborate with the library's IT team.

Feature Availability

- Many patrons express frustration with using cloudLibrary to access digital materials. They prefer using the previous service KDL offered, OverDrive.
- Patrons would like many additional features that aren't currently available on the KDL catalog at the moment such as renewing eBooks online, having more eBooks available in the collection, support for Kindle users, etc.

Navigation

- Libraries in the competitive analysis tended to have similar organizations and layouts despite their software.
- Slightly more people use desktop than mobile to access the main site and the catalog. This may be in part because there is no mobile or tablet friendly version of the site and thus, mobile users must download a separate mobile app to find what they are looking for. We do not have data regarding this app, and Google Analytics does not reflect its usage in their reports. However, we do know from that hard data as well as our usability survey that many individuals use phones and tablets to access KDL's offerings.
- Many patrons don't know how to access other help options aside from the main help page with the help icon (?). Often, patrons get frustrated and most of them just call the library or go to their neighborhood branch for help.
- According to both our survey and Google Analytics data, we can see that women mostly access the KDL main site and catalog site and the two largest age groups are from 25-34 and 35-44 according to Google Analytics. However, the survey responses show that most survey takers were 60+. This can reflect inherent bias from those likely to respond to a user survey stemming from a monthly email newsletter.

USER TESTING

Specific tasks we wanted to include in our user tests include:

1. Having a user search for an item using the catalog and then placing a hold on item.
2. Having a user login to their account and pay late fees.
3. Other tasks we are exploring include finding help, checking out digital items, and checking if a book is at the user's local branch

Specific Persona Requirements

Alice White: 67 years old, retired, has adult children and young grandchildren

- Search results aren't always relevant
- Wants to permanently choose her local library
- Wants to have a fast and easy checkout/hold process, especially for ebooks
- Filtering is too time consuming and often unclear

Jim Haggerty: 45 years old, single, bakery owner, has young children

- Search results aren't always relevant
- Wants to be able to manage his business in a productive and efficient manner
- Filtering is too time consuming and often unclear

Participants

We have conducted seven total user tests thus far with UM students, family, and friends. Of the seven, four are male and three are female. Their ages range from 17 to 55 years old, with occupations being either students or full-time employed. Some have experience with using library catalogs, but not all. At this time we do not have any retired participants, though we aim to hopefully recruit someone from this demographic.

Key Insights and Consistencies

- Inclusion of a footer was, in the majority of tests, very well received
 - Was utilized in multiple tasks, including those where there were other task flows available to successfully complete the task.
- Most participants expected the page to refresh after selecting a filter
 - Most are ambivalent on whether they prefer this over an “Apply Filters” button.
- Across the board dislike of KDL’s usage of an external site for late fee payment
- Caught small but important oversights (back buttons, Forgot PIN, etc.)
- Placing a hold is intuitive.

Results

Many of the insights gained in our usability tests contributed to the decisions we made in our design changes for our final hi fi prototype. Some examples of those changes are:

- Removal or consolidation of repeated functions, pages, and tabs.
- Addition of categorized footer.
- Redesigned header.
- Emphasis on larger images and material type icons.
- Creation of a strong visual hierarchy and organization on all pages.
 - Consistency in button colors and font, improved salience of action items, clearer labeling.
- Significant changes in information presentation, including, but not limited to: search entries, item pages, account info (fines, personal info, notifications, etc.), and checkouts and holds.

PERSONAS

Alice White - Primary Persona

Alice White - Primary Persona



"I love being part of the community, and my local library is a great spot for that."

Age: 67

Work: Retired - makes homemade crafts to donate or sell online

Family: Married, has 3 grown kids and 4 grandchildren

Location: Wyoming, MI

Personality



Goals

- Have a diverse collection of hobby books and cookbooks to learn more from, preferably in digital form.
- She wants to keep a list of books she wants to check out in the future so she doesn't forget.

Frustrations

- She wishes she could permanently choose her local library so she doesn't have to keep entering it every time she searches for something.
- She feels like the search results are not always relevant to the key words she uses.
- MyList is difficult to navigate.

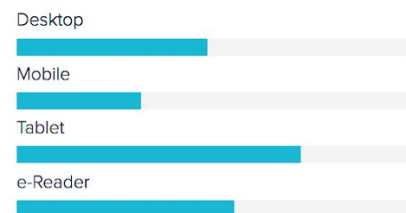
Bio

Alice has been married for 42 years and has three grown children who live on their own. She has always enjoyed craft work and since she retired, she has had more time to devote to her hobbies. She enjoys cooking, crocheting, and jewelry crafting. She is always looking for new recipes to cook, patterns to stitch, and crafting methods and materials to learn. She often donates her creations or sells them online. She also values donating books she doesn't need anymore to her local library. She goes through books quickly and doesn't like making the trip to the library often, so she prefers ebooks.

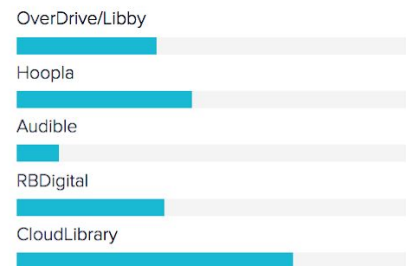
Motivations

Alice wants to fill her time while still feeling productive and contributing to the community.

Technology



Similar Systems



Jim Haggerty - Additional Persona

Jim Haggerty



"I love my job, but as a single father I like having somewhere to go that's fun for all of us."

Age: 45

Work: Small bakery owner

Family: Single, two children ages 14 and 10

Location: Kentwood, MI

Personality



Goals

- Have time to read while keeping kids occupied.
- Have a good resource of children's books and educational materials for his kids.

Frustrations

- Website's calendar is not clear or easily accessible.
- He might want to try browsing for digital media if it was easier to use.
- He often forgets the exact spelling of an author's name or what a book's title is. He wishes the search returned results close to his search query instead of nothing when that happened.

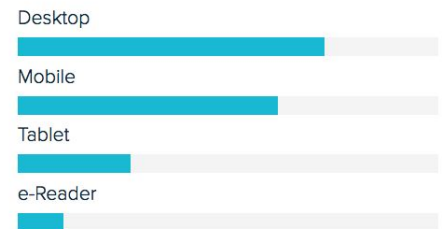
Bio

Jim is a single father with two kids, one boy and one girl, ages 14 and 10. His wife passed years ago and since then he's had to manage their bakery and take care of the children on his own. He manages this in part by taking the kids to the library frequently, where they can read books and participate in events and activities held by the library. He likes to check online to see when these events happen, and what books are currently available at his local branch.

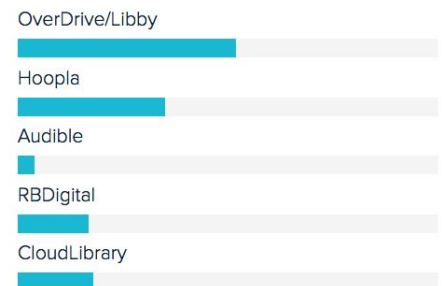
Motivations

Jim wants to manage his business, have somewhere his kids can go after school while he's working, and spend time with them after, but can't afford to put them in paid after-school activities.

Technology



Similar Systems



UX REQUIREMENTS

Client Specifications

The UX requirements for the prototype are derived from the feedback received in the previous report according to each section of research identified in our previous research plan. For our recommendations, in adherence with our clients' existing limitations, we require that they:

1. Work across varying populations (age, background, ability, etc.) due to the discovered demographic of patrons.
2. Adhere to the features and capabilities of KDL's SirsiDynix 4.5 Enterprise software that runs the catalog, and the funding KDL has designated to SirsiDynix.

Implementable by KDL's library developers who have a much better understanding of system capabilities in tandem with design.

Design Specifications

Must Have:

- A home page with discovery content for users to browse who may not know what they may want to check out ("New Arrivals", "Popular Checkouts", "New York Times Best Sellers", etc.). This design specification is reinforced by our usability tests results.
- Simplified catalog search filters that use filters common to patrons, a particular frustration for both our personas.
- Easily findable links to catalog help functions.
- Simplified search results and catalog pages that can easily direct a user's eyes to whether an item is available for checkout.
- Simple workflows for checking out (and placing holds on digital items), and renewing materials.

Should Have:

- Links to external services that were available before the catalog redesign.
- Visible links to FAQ pages, and help resources on how to utilize the catalog.
- My Account page with salient pathways to understand the status of a user's account.

Nice to Have:

- Redesigned workflow for online payment of library fines.
- Included information on donating books in design.

UX DESIGN PROCESS

Process Overview

The design process took place over three iterations of research synthesis, prototype iterations/designs, and feedback/tests. From our design iterations, we plan to address these following questions regarding each aspect of the site's experience redesign:

1. **Home Page:** With the implementation of a singular column home page, are users still able to locate these resources that are now located in a bottom-page navigation?
2. **Search Filters:** Do users understand how to use the simplified, collapsible search filters? Additionally, have we made the filters too simple or more complicated with the new layout?
3. **MyAccount:** Does the new MyAccount organization contain information that users want to see? Will users miss any of the information we have removed from the original catalog design?
4. **Receiving Help:** With the new organization of the website's home page, are users more easily able to find catalog help resources?

Design Iterations and Rationale

Iteration I

Research Synthesis

To create this prototype, we gathered the research from our previous report. From these results and affinity diagram, we were able to narrow down main aspects of the site that patrons were dissatisfied with. Then we went into our first iteration of designs. Our designs were iterated and narrowed down through further research and feedback from users.

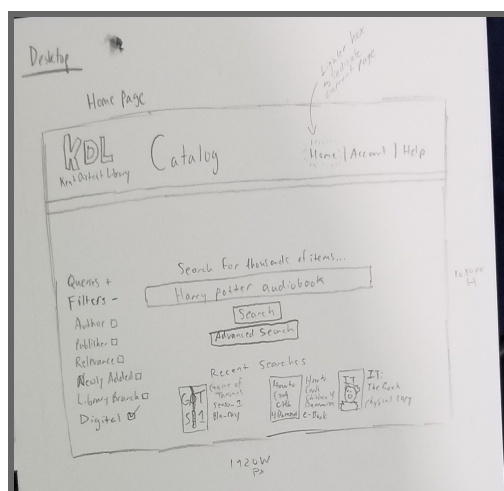
Low-Fi Preliminary Designs

The preliminary designs were low fidelity prototypes that were made in quick succession. Each member of the team created quick, low-fidelity wireframes with that detailed the main deviations from the site that each team member wished to implement in the future design. Screens created were sketches of the main account, catalog home page, a catalog entry, and an example search.

Feedback Sessions

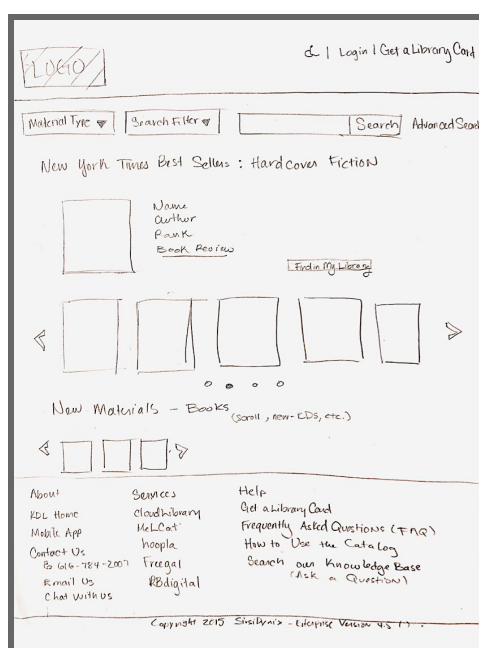
We received our first round of feedback in our stand up session the following week. By receiving extensive feedback and tips on usability issues with our initial design ideas, we were able to fix issues within our first round of low-fi prototypes that could be omitted in the second iteration in which we would combine them.

Home Page Sketches



The first sketch represents the catalog's home page and features a very condensed navigation bar (eight links reduced to three), a centralized search bar with the advanced search feature present, and an improved-upon filtering system. There is also a "Recent Searches" section which can be implemented in different ways including, but not limited to, a carousel animation or "Newly Added" replacing "Recent Searches".

Figure: Iteration 1 Catalog Home v1



In this second sketch, the home page was created with the intention to simplify the process of search and accessing resources. Previously, the home page has had information about different digital resources, and library resources, and book recommendations all on one page. This page simplifies that three column structure, and makes it so that the eye is drawn to book recommendations and search. To further this goal, the rest of the resource links are then moved to the bottom of the page in a new header. The goal of this move was to keep essential information and functions that patrons use, while simplifying the amount of pictures, icons and information when a user first navigates to the page. The book recommendations are now scrolling lists based on genre. Additionally, the drop down filters for 'Material Type' and 'Search Filter' have been simplified, as in the less useful filters for patrons have been removed.

Figure: Iteration 1 Catalog Home v2

My Account Sketch

For the second sketch, an example of the My Account Page has been detailed. In this iteration, the account has been limited to a single scrollable page. With this iteration, the goal was to have the user be able to access all aspects of their account from one page: editing personal information, returning digital items, paying late fees, and viewing holds/checkouts. While this sketch simplifies, the page into one block instead of multiple collapsible icons, it doesn't have all of the functionality we require for the original home page. In the next iteration, this is changed.

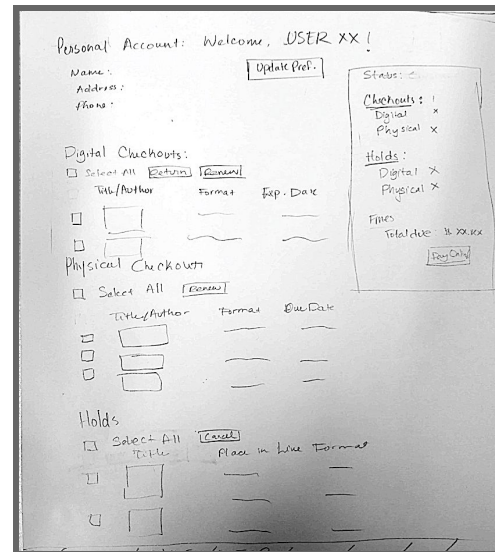
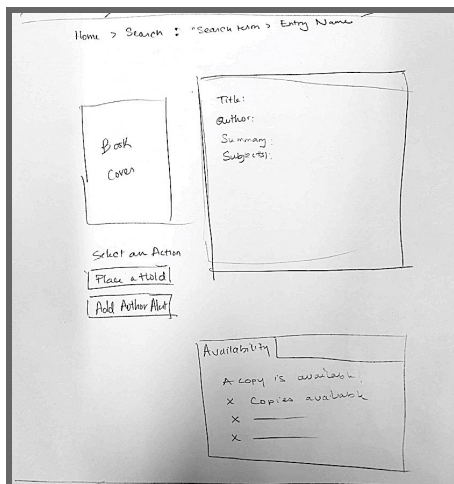


Figure: Iteration 1 My Account v1



Catalog Entry Sketch

This sketch of the catalog entry also follows the design rationale to simplify the amount of information and functions on the page. Previously, there was a lot of links and information for features that it was proven patrons don't use. So those features were removed, and the main functions that patrons focus on were implemented (such as breadcrumbs for navigation, placing holds, and viewing basic book information, etc.).

Figure: Iteration 1 Catalog Entry v1

Iteration II

Combined Design

From these sketches we were able to have a conversation about how to consolidate these designs into one central one. Making the decisions on what to keep, add and remove, in part stemmed from the stand up presentation we presented the sketches in that week. We were able to incorporate feedback from our classmates and professors. Additionally, we were able to talk to one another about our individual design processes to understand the rationale behind each design.

Mid-Fi Paper Prototype

With the combined design, we were able to turn it into a full-fledged paper prototype. For the paper prototype, we kept the same screens, but included a couple of interaction flows that we could go through with users to get information about how easy the system we created was to use.

Prioritized Interactions:

1. Searching for a specific book title.
2. Using search filters to narrow down a search.
3. Placing a hold on a book title.
4. Paying account fees through my account.
5. Locating help with using/contacting the library.

These interactions were prioritized because they make users interact with the aspects of the system where we have made the most changes with our design. Full details of the user testing protocol can be found in the Appendix. Additionally, results of the usability test can also be found in the Appendix.

User Testing & Feedback

We created a user testing protocol with interactions for users to complete. Through this testing process we received our next round of feedback. By performing in-person tests with our interactive paper prototype, we were able to gain additional insight on what improvements to make to our prototype once it becomes fully digital. More in-depth information about this user test can be found in the Appendix and user research section of this report.

Paper Prototype Key Screens

For the paper prototype, the catalog home page focuses one search and discovery. While we wanted to reduce the amount of information on the page, we also wanted to make sure that users are able to still find all of the information that was available to them previously.

To do this, we moved towards a one-column design that focused on two elements: discovery of library materials and search for library materials. Those resources and external services, were then moved to the bottom of the page in a footer element because they while they were not being used as often, they were still essential parts of a user's catalog experience. Other elements in the main menu were then removed such as "My Lists", "Library Branches", and "Recommend a Purchase" because they were not elements that a user interacts with on a day-to-day basis. Additionally, other elements previously located in the side bars of the page were entirely removed due to either lack or relevance to the catalog or availability and use in the main Kent District Library website.

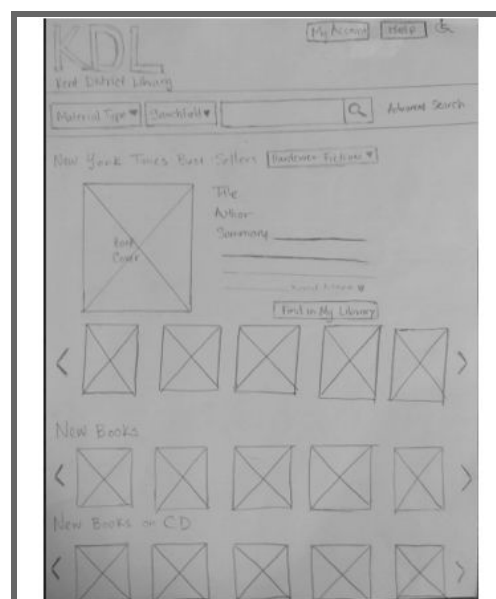


Figure: Iteration II Catalog Home

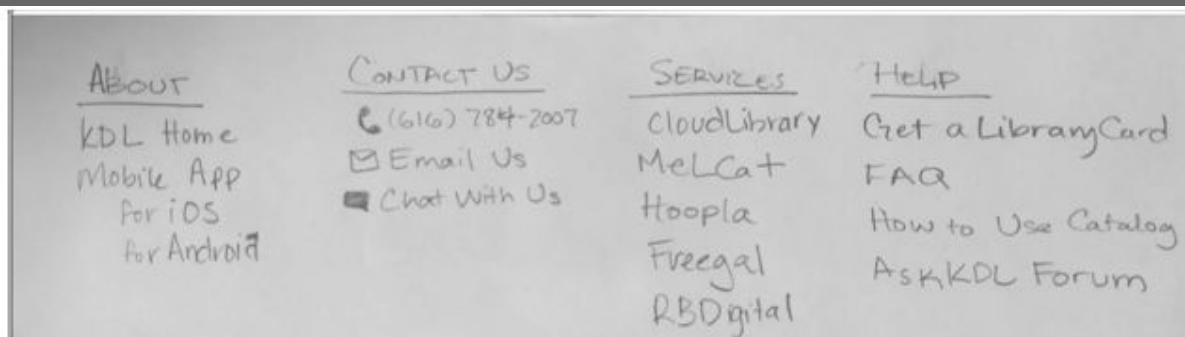
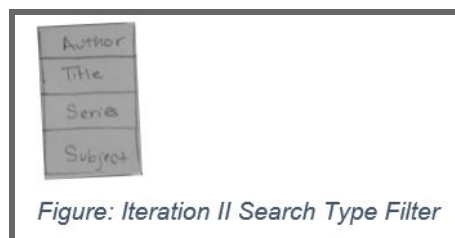
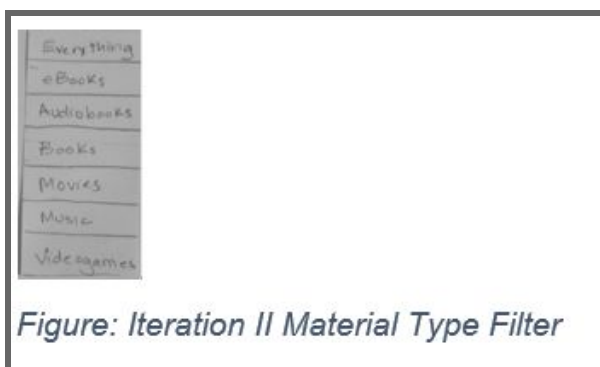
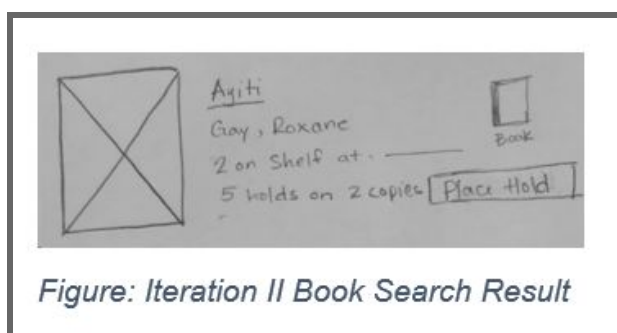


Figure Iteration II Bottom Navigation Footer



The above two Figures are drop down menus for “Material Type” and “Search Field” in the search bar located in the header of every page. They allow patrons to narrow down their search parameters: “Material Type” specifies material format, and “Search Field” constrains their search to authors, titles, etc.



In our paper prototype, we placed more emphasis on image size and material type, and forgone a summary in order to reduce information overload. We also removed the “Text This Info To Me” and “Add Author Alert” buttons from each entry, since we determined from our research that they receive very little use and only clutter up the search results page.

Iteration III

Research Synthesis

To create this prototype, we gathered the research from our previous report. From these results and affinity diagram, we were able to narrow down main aspects of the site that patrons were dissatisfied with. Then we went into our first iteration of designs. Our designs were iterated and narrowed down through further research and feedback from users.

High-Fi Prototype

From the results obtained during the usability test, we are now in the process of drafting a high-fidelity prototype. Although the prototype is not completely finished, we have a couple of user flows present and operated with iterative design, incorporating our Low-Fi and Mid-Fi designs within.

The two user flows that we have dictated thus far include:

1. Placing a hold on a physical item (book) from the main page
2. Paying a late fee associated with a user's personal account from the main page

Feedback

We plan to receive feedback in our stand up presentation, from our client, and with further usability tests. In our next iteration of this report, we will implement these suggestions and improvements as necessary.

Digital Prototype Screens

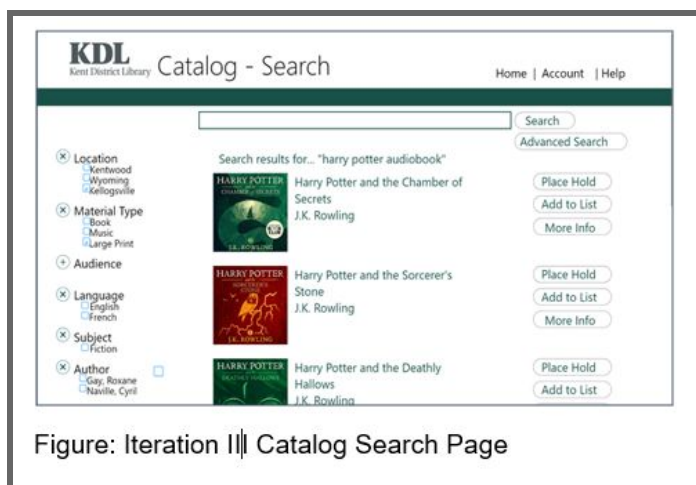


Figure: Iteration III Catalog Search Page

In this iteration, we wanted to simplify the catalog search results screen by having larger images with clear and apparent buttons "Place Hold", "Add to List" and "More Info". Filters are shown on the left hand side of the screen in an expanded view.

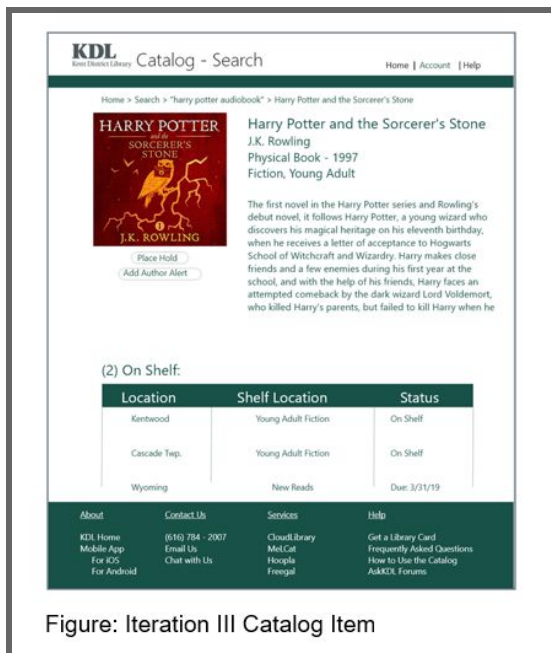


Figure: Iteration III Catalog Item

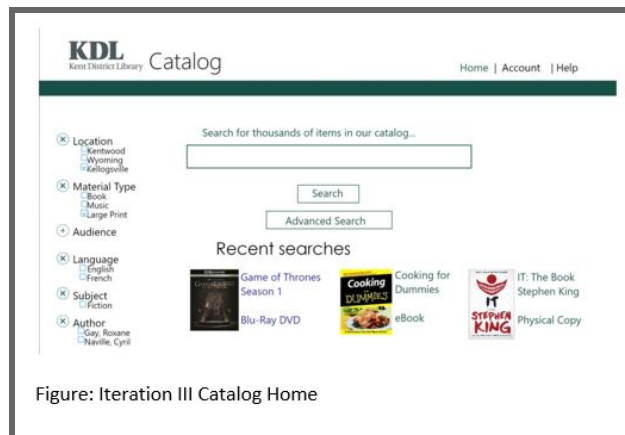


Figure: Iteration III Catalog Home

In the above digital sketches, the detailed item page is on the left and the catalog home screen is on the right. For the detailed view, we wanted to stress the quantity on shelves and which location they are at. Additionally, we included our initial design for the categorized footer and bread crumbs were included at the top of the page. The home page has filter options placed to the side, which we decided to remove for later iterations, a centralized search bar, and a recent searches list, which has been expanded upon as well.

In our later iterations, we decided to revisit this design and included more elements that are similar to KDL's current site, but added expanded functions and navigation, and redesigned existing functions for a better user experience.

FINAL UX DESIGN

Our design rationale was focused on simplicity, efficiency, and familiarity. We wanted to make the KDL Catalog site less cluttered, less confusing, faster (less clicks), and all the while maintaining that sense of familiarity by maintaining some aspects such as the color palette. There were a plethora of repeating functions as well as functions that have rarely seen use. For example, currently on the KDL site, there are multiple buttons to place a hold on a physical item, and both are right next to one another. Additionally, functions such as “add text alert” are underused and have been removed from our design entirely.

Search Functions

We wanted to place more emphasis on a center search bar rather than a search bar that is embedded within the header or navigation bar (as it currently is). We decided to include the Advanced Search function as our user testing and survey has indicated that it does get some usage from patrons. We also think including informative placeholder text in the search bar would help clarify the search bar function.

Currently, searching for ebooks is difficult to do in the catalog. Finding ebooks easily is one of our primary persona’s goals, as well as a common request from our survey. We plan to go over some design options for this task.

Accessing Help

We wanted to have an easily accessible place where all help topics were consolidated. This takes place in two forms in our design and subsequent prototype in both the navigation bar under ‘Help’ and footer where the ‘Help’ section is clearly labeled to the far right with popular topics, ‘Get a Library Card’, ‘FAQs’, ‘How to Use the Catalog’, and ‘AskKDL Forums’. We are considering adding more options under ‘Help’ in future iterations after further analyzation of usability test results.

The footer was especially well received in our usability tests, particularly when participants were directed to try to find help, contact the library, or didn’t immediately know where to look for information.

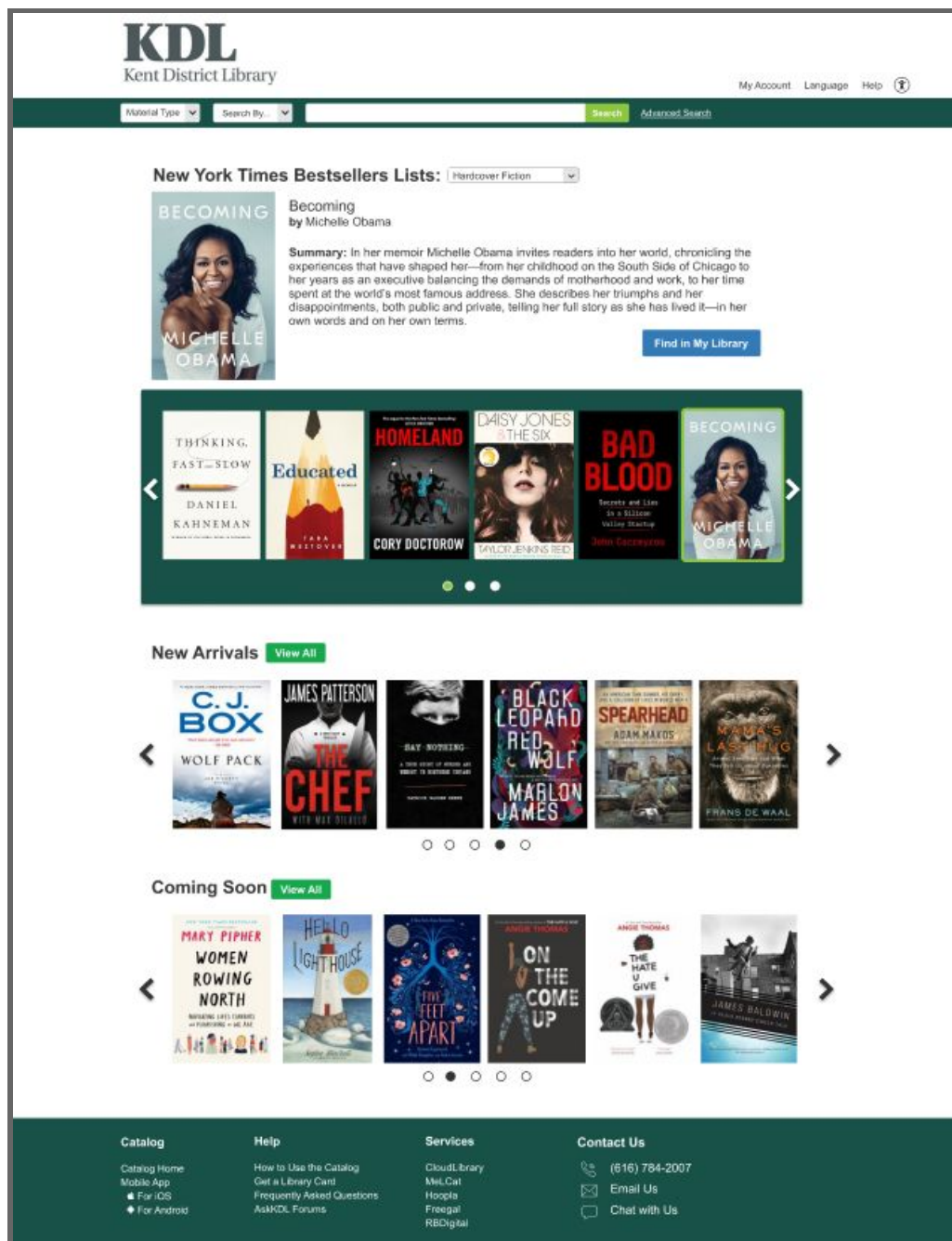
Placing an Item on Hold

We wanted there to be a fast way to make this happen. Therefore, we kept the ‘Place Hold’ button on the search results page right most of the list item, as well as having a ‘Place Hold’ button when one clicks the item for more information. This was a successful feature in our usability tests. Additionally, we included a confirmation pop-up to the user, letting them know that their item is now on hold, and had ‘Place Hold’ change to ‘Cancel Hold’ for easy cancellation as well as for further indication that their hold went through.

Filtering Search Results

We decided to implement a new system that is collapsed on page-load rather than default expanded. In our interactive/digital prototype, we utilize filters such as Location, Material Type, Audience, Language, Subject, and Author - all of which can be expanded and collapsed. We are currently testing whether the “Apply Filters” button should be present at the bottom of the filter list or at the bottom and the top, or whether the page should automatically refresh after filters are selected in lieu of manually applying them.

Interaction Flows - Key Screens

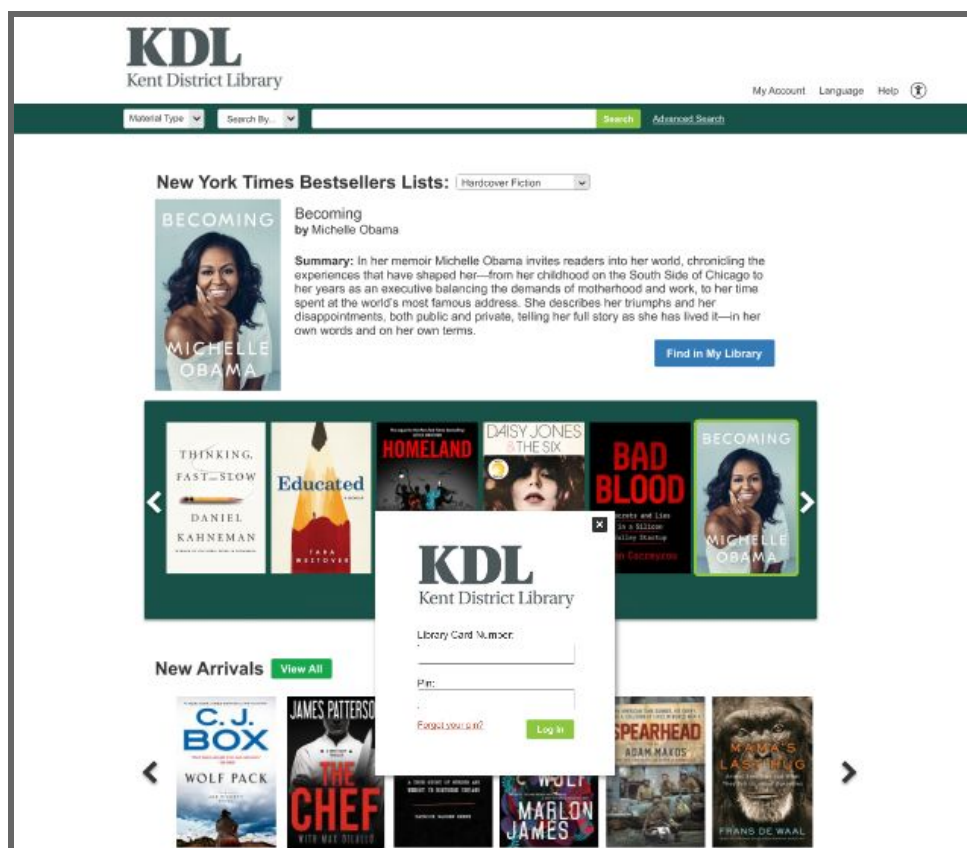


Home Page

This updated version of KDL's homepage consists of more features than the prior version, including updated icons, navigation tools, carousels, and filtering options. The New York Times Best Sellers List summary and carousel, new arrivals carousel, and coming soon carousel were all added to this design iteration to better pair with Kent District Library's current site. "Material Type" and "Search By" replaced the side filters of the prior iteration and matches with the current design of the KDL catalog as well. Small icons were added in the footer, phone, email, chat bubble, iOS, and Android logos added next to their respective text. Footer category headers were bolded instead of underlined, to indicate that they are not hyperlinks. "Home" from version 1 has been removed from the navigation bar, replaced with "Language" but reordered (Home - My Account - Help to My Account - Language - Help) and accessibility icon added.

From the homepage in our second version of our interactive prototype, users may click the "Search" button in the search bar, click the "My Account" button in the nav bar, or click "How to use the catalog" button in the footer underneath help to begin one of our interaction flows. These have been improved upon and consist of searching for an item, placing a hold, canceling a hold, and finding help.

Accessing 'My Account'



Clicking the “My Account” button in the nav bar will bring up a popup in the middle of the user’s screen asking for their library card number and PIN. After clicking the “Log In” button the user will be redirected to the below high fidelity screenshot of the prototype, the user’s Account Overview. The nav bar will also update, adding “Welcome, {user}!” and the “Log Out” button.

KDL
Kent District Library

Welcome, Jim Haggerty! My Account Log Out Language Help ⓘ

Material Type Search By: Search Advanced Search

Account Overview

Address: 814 West River Center Dr.
City, State: Comstock Park, MI
Zip: 49321
Phone: (734) 456 - 2357

Fines - Outstanding

Explanation	Amount
Late Fees - "Game of Thrones vol. 1"	\$1.00
Miscellaneous - Late fees	\$2.50
Miscellaneous charge	\$1.50

Total Due: \$5.00 [Pay Online](#)

Preferences

Default language: English
Preferred pickup library: Comstock Park
Preferred List: No Default List
☐ Show my checkout history
☐ Record my checkout history
[Update Preferences](#)

SMS Notifications [Add New](#)

Jim's Phone	(734) 456 - 2357	2/5 notifications enabled
Wife's email	j_haggerty@gmail.com	1/5 notifications enabled

Checkouts & Holds ⓘ

Catalog
Catalog Home
Mobile App
• For iOS
• For Android

Help
How to Use the Catalog
Get a Library Card
Frequently Asked Questions
AskKDL Forums

Services
CloudLibrary
Med. Cat
Hoopla
Freegal
RBDigital

Contact Us
(616) 784-2007
Email Us
Chat with Us

The Account Overview lists the user’s information at the top, including address, city, state, zip code, and phone number. Outstanding fines are also present, with a table view of current fees, and a button to “Pay Online” opening the external payment portal.

Preferences are listed next, including a user's default language, preferred pickup library, preferred list, and check boxes to show and record a user's checkout history. An SMS Notification section is also present. Finally, the bottom of the screen shows "Checkouts & Holds", and has the option to expand/collapse.

When the plus icon next to "Checkouts & Holds" is clicked, three tables are expanded, a Checkouts, Digital Holds, and Physical Holds table. There are buttons significant to each table, "Renew" for Checkouts, "Cancel Hold(s)" for Digital Holds and "Edit Pickup Location(s)" and "Cancel Hold(s)" for Physical Holds.

Searching for an Item

The screenshot displays the Kent District Library (KDL) website interface. At the top, the KDL logo and name are visible, along with a navigation bar containing links like "Welcome, Jim Haggerty!", "My Account", "Log Out", "Language", and "Help". Below this is a search bar with "Material Type" and "Search By" dropdowns, and a search input field containing the word "witches".

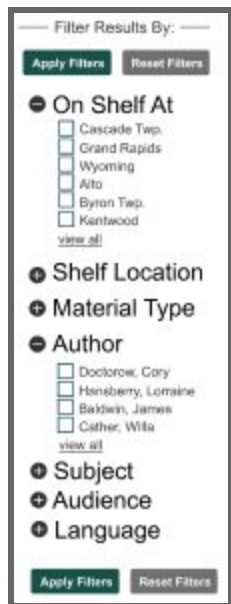
The main content area shows search results for "witches". On the left, there are filter options under "Filter Results By:" including "On Shelf At", "Shelf Location", "Material Type", "Author", "Subject", "Audience", and "Language". The search results are listed in a grid format, each entry including a book cover, title, author, summary, and availability information.

Book Title	Author	Summary	Availability	Format	Actions
Witches	Lynette, Rachel	Author Rachel Lynette investigates the witching ways. Are they real? Is there such a thing as a good witch or bad witch? What powers do witches have? Readers will read eyewitness accounts paired with plausible alternative reasons...	1 on shelf at Wyoming 0 holds on 1 copy	Format: Book	Place a Hold Add to Wishlist
Witches	Basel, Jennifer M.	Describes the history and myths of witches, their features, and their place in popular culture.	2 on shelf at Grandville, Krause Memorial 0 holds on 2 copies	Format: Book	Place a Hold Add to Wishlist
Wisteria Witches	Pepper, Angela	Zara Riddle moves to the town of Wisteria for a dream job as a librarian. She hasn't even unpacked her moving boxes when she and her teen daughter, Zoey, are swept up in a murder mystery. With all the ghosts and supernatural creatures around...	2 on shelf at Walker, Cascade Twp. 1 holds on 2 copies	Format: Book	Place a Hold Add to Wishlist
The Witches	Dahl, Roald	A young boy and his Norwegian grandmother, who is an expert on witches, together foil a witches' plot to destroy the world's children by turning them into mice.	31 on shelf at Alto, Byron Twp., Cascade Twp. ... 1 holds on 31 copies	Format: Book	Place a Hold Add to Wishlist
Shadow of Darkness	Harkness, Deborah	A follow-up to the best-selling A Discovery of Witches finds Oxford scholar and reluctant witch Dina and vampire geneticist Matthew Clairmont in Elizabethan London, where Dina seeks a magical tutor and Matthew confronts elements from his past...	15 on shelf at Alpine, Byron Twp., Cascade Twp. ... 1 holds on 15 copies	Format: Book	Place a Hold Add to Wishlist

At the bottom of the search results, there are pagination links: "1 2 3 4 ... Last".

The footer of the website contains four columns of links: "Catalog" (Catalog Home, Mobile App, For iOS, For Android), "Help" (How to Use the Catalog, Get a Library Card, Frequently Asked Questions, AskKDL Forums), "Services" (CloudLibrary, MeL Cat, Hoops, Freegal, RBC Digital), and "Contact Us" ((616) 784-2007, Email Us, Chat with Us).

If the user clicks the “Search” button at in the search bar they are redirected to the version 2 search page, searching the term “witches”. Breadcrumbs are left at the top of the page and filters are present to the left of search results. We decided to implement “Apply Filters” and “Reset Filters” buttons at both the top and the bottom of the enclosed filters as our participants in user testing were split on which they preferred.



The screenshot to the left displays what the filters container would look when two of the categories are expanded. In this case, ‘On Shelf At’ and ‘Author’ are expanded while the remaining filters are collapsed still.

Placing a Hold

If a user selects the search result “Shadow of Night” they are redirected to the detailed view of that specific item, in this case, a book. From this view, the user can view the item’s status at various library branches, place a hold on the item, or add the item to a list.

When the user clicks “Place a Hold” a popup appears, restating the item and with a drop down menu allowing the user to specify which library to pick up the item at. The “Place a Hold” button will then be replaced with a “Cancel Hold” button.

Welcome, Jim Haggerty!
My Account
Log Out
Language
Help

Material Type
Search By
witches
Search
Advanced Search

Home
Search: "witches"
Shadow of Night

Shadow of Night

Author: Harkness, Deborah

Series: All Souls Trilogy, Book #2

Subject: Witches--Fiction, Adult--Fiction, Time Travel--Fiction

Summary:
A follow-up to the best-selling A Discovery of Witches finds Oxford scholar and reluctant witch Dina and vampire geneticist Matthew Clairmont in Elizabethan London, where Dina seeks a magical tutor and Matthew confronts elements from his past at the same time the mystery of Ashmole 782 deepens.

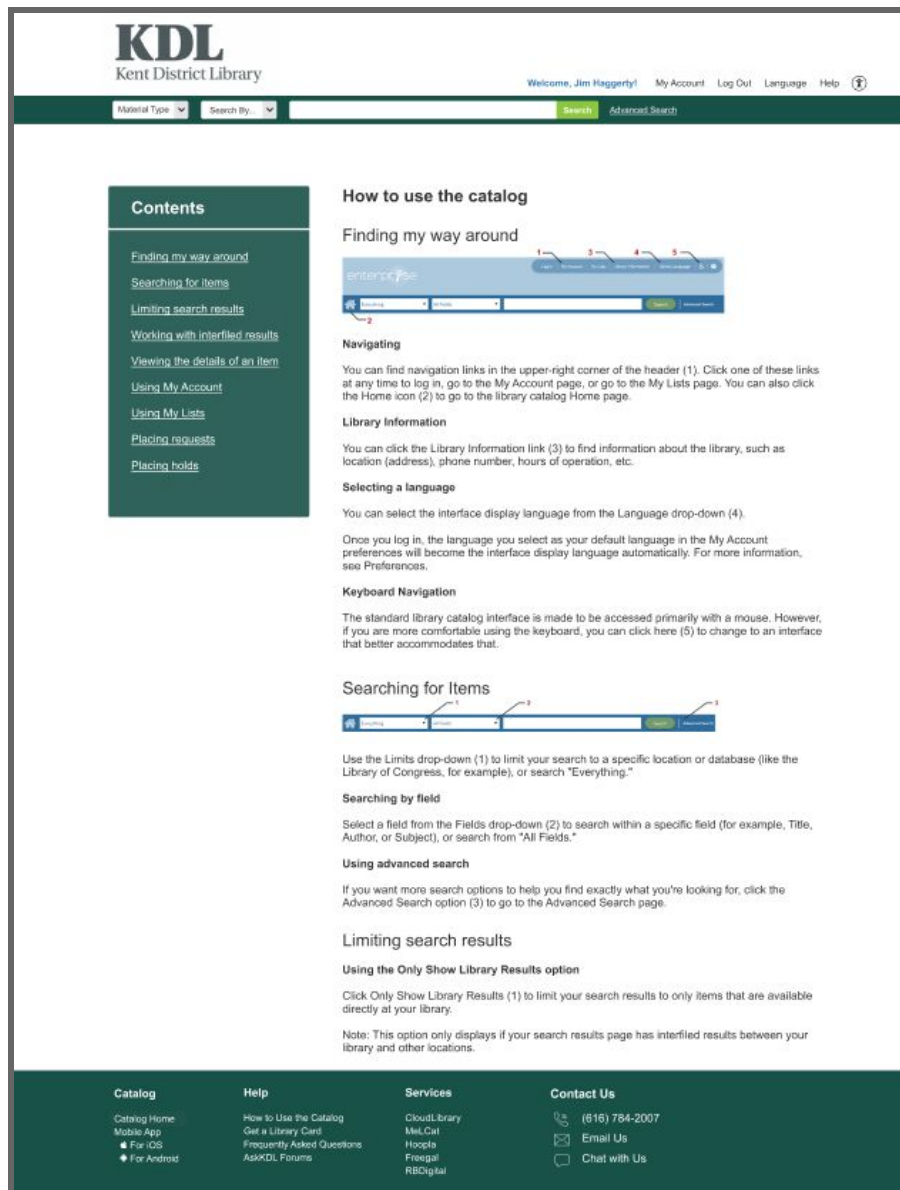
5 copies are currently available for request.
0 copies are currently available at your home branch, Cascade Twp.

Select an Action:

Place a Hold
Add to Wishlist

Library Branch	Shelf Location Callion Home	Call Number	Status
Alpine Twp.	Adult Fiction	SF HARKNESS 06/12	Due 4/5/19
Byron Twp.	Adult Fiction	SF HARKNESS 06/12	Due 4/16/19
Byron Twp.	Adult Fiction	SF HARKNESS 06/12	Due 4/8/19
Cascade Twp.	Adult Fiction	SF HARKNESS 06/12	Due 4/11/19
East Grand Rapids	Adult Fiction	SF HARKNESS 06/12	On Shelf
East Grand Rapids	Adult Fiction	SF HARKNESS 06/12	On Shelf
Grandville	Adult Fiction	SF HARKNESS 06/12	Due 4/2/19
Kentwood	Adult Fiction	SF HARKNESS 06/12	Due 4/13/19
Krause Memorial	Adult Fiction	SF HARKNESS 06/12	Due 4/2/19
Krause Memorial	Adult Fiction	SF HARKNESS 06/12	Due 4/10/19
Plainfield Twp.	Adult Fiction	SF HARKNESS 06/12	On Shelf
Plainfield Twp.	Adult Fiction	SF HARKNESS 06/12	On Shelf
Tyrone Twp.	Adult Fiction	SF HARKNESS 06/12	In Transit
Walker	Adult Fiction	SF HARKNESS 06/12	On Shelf
Wyoming	Adult Fiction	SF HARKNESS 06/12	Due 4/8/19

Finding Help



If a user clicks the “How to Use the Catalog” button in the footer, they are redirected to one of the help pages specifically centered around navigating the catalog. Topics are listed in a container on the left as hyperlinks. As one of our chief focuses for our design, the ability to find help is crucial and the inclusion of the categorized footer has been widely accepted and appreciated by our user test participants. We recognize that this format is commonplace and if users are lost they will navigate to the footer.

APPENDIX

User Testing Protocol

Pre-Test Questions:

Kent District Library is a large library that spans several cities in Michigan. The tasks that we have set up for you today is for a project I (we are) am doing for a course in the School of Information. We want you to try and use a paper prototype version of the catalog we have made, and see what you think of it.

1. Have you used Kent District Library before?
 - a. If not, which library do you have experience with going to?
2. Have you used an online library catalog before? If so, which library?
 - a. What are common tasks that you in that online catalog?
 - b. What are common tasks in that catalog you get frustrated with?

Test Protocol:

1. Log into the catalog.
2. Call the library.
3. Pay your late fees.
4. Search for book "Ayiti" by author Roxane Gay.
5. Filter the results by setting the Language to "English."
6. Check if "Ayiti" is available at your branch. (Comstock being the home branch)
7. Place a hold on "Ayiti."
8. Find help with this question: "How do I create an account with Kent District Library?"

Post Test Questions:

1. Are there additional questions or comments about the tasks you've done?
2. Are there any features you would suggest adding to our paper prototype?
3. Any suggestions on how to make this system easier to use from your experience here today?

User Testing Data

User Testing Data & Notes

	Test #1	Test #2	Test #3	Test # 4
Age of Participant	22	24	20	22
Gender	Female	Female	Male	Male
Used KDL before?	No	No	No	No
Used online catalog before?	Yes, UM Library	Yes, UM Library, Seattle Library, Detroit Library	No	Yes, UM Library
Calling the Library	Easy to find. Looked for it after having trouble locating info at top of page.	Since there was no real top navigation, the user immediately looked to the bottom of the page	Found quickly in footer	Found almost immediately in footer
Pay for Late Fees	Easy to find. Though, annoyed the process takes you to another site. Thinks it would be better to do it in one simpler step	Didn't like the use of external service. Annoyed you had to login in another place. If it was automatic login it'd be better?	Didn't like how there was an external payment service, but thought the process to find and pay fees was intuitive	Thought it was pretty simple, suggested an alert banner if there were late fees to be paid.
Search for "Ayiti" by Roxane Gay	Used only the search bar, and not the two filter options.	Searched using only the search bar, though did ask about the other two drop down filters.	Searched using search bar, did not filter	Searched using search bar, did not filter

Prototypes

Low-Fidelity

[Initial Design Sketches I](#)

[Initial Design Sketches II](#)

Mid-Fidelity

[Paper Prototype](#)

[Adobe XD Initial Digital Prototype](#)

[Adobe XD Sketches](#)

High-Fidelity

[Final Figma Interactive + Digital Prototype](#)

Interactive

[Interactive Prototype](#)