CS2003 Usability Engineering

Designing the Book Recommendation System Report

App Name: Book Finder

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Group 27

Members:

181

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# Introduction

Our project was to create a Book Recommendation and locating app, it should be able to recommend books based on what you read and help you navigate to books within a library. Other features include the ability to leave voice and text reviews when you have read a book. This app is designed to allow users to read books easier from the library meaning the ease of library navigation will be helped by this app with our map navigation within the library. This report will detail the process of how our group selected our design and evaluation methods and the process of carrying them out.

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# Usability Engineering Lifecycle

## Selecting A Methodology

Our group has chosen to use the Star Methodology for our project as it allows for rapid development and testing of multiple prototypes in an iteration based evaluation process. The steps of the Star Methodology allow for evaluation of every stage of development and show where features or functionality could be adjusted. The basic steps of the Methodology are, Requirements Specification, task/functional analysis, implementation, prototyping, conceptual/formal design and the most important, evaluation. The steps of the process have no particular order and can be performed at any time, however they must have a completed evaluation every time they are done. This makes the process very heavily dependent on user feedback and testing. This will allow our app to conform to user expectations while providing the best functionality possible.

## Our Process

The first step we carried out in the Star Methodology Life Cycle was the “Task/Functional Analysis” Stage. In this stage we assessed the key requirements and functions that the brief specified and expanded them into features. This allowed us to come up with a comprehensive list of features that would work together as an app. Some of there requirements were, “Must me able to leave text or voice reviews”. From this we derived a set of features and human use cases that allow the user to write a small descriptive of the book they have read and there opinion or leave a short message (Voice Recorded). Once we had redefined the functions to create a list of features we could implement we could move onto the next phase. From this basic analysis we were able to specify the target audience as university students and begin to shape our design towards that user base. This means the app would be targeted at university libraries and the best functionality for university age students.

Next we completed a Requirements Specification using the Brief and the Task/Functional Analysis we had already completed. This was a description of the software app that we want to build based of the Task/Functional analysis. This would be used as a reference to find the best method of continuing with the project. This includes planning for the next stage of data collection and Conceptual Design. We conducted surveys on the features we have and analysed which ones users thought would be most beneficial. We have done this through the use of Surveys & Questionnaires with our CS2003 course students. We also conducted some informal interviews and discussions to collect more qualitative data on how useable our design concepts would be.

The next stage of the project was to use the data we have collected from students and our Task/Functional analysis to construct Conceptual designs/sketches and well as a formal Design. We used wireframe design to map out how the app would look visually will all of the features we have conceptualised. This was then internally evaluated between group members and improved over several wireframe iteration into a formal design that we could develop our first working prototype from.

Now we can begin to develop our first prototype, this will be a basic working demonstration of how the app will work. We can then evaluate how the users in our sample group rate the app in our heuristic evaluation section. This in depth evaluation of the prototype we will make and the user feedback we will get back from Usability Savvy students on our course will provide better quality feedback to improve the quality of future prototypes on other iteration of the app. The first iteration we designed has some serious usability issues and the testing showed that placement of features was inefficient and unintuitive. We used a questionnaire and informal interviews to collect information on what features should be modified and how they would make for a better experience. For these prototypes we used “AdobeXD” to design an interactive prototype that looked like the real product. Although the initial design was on paper we quickly made this into a electronic prototype to collect better user interaction data and see how the app actually navigates and interacts with the users.

For our evaluation process we have used questionnaires to collect qualitive and quantitative data to analyse the effectiveness of any given prototype. We have also used interview formats to get more personal and explanatory improvements from CS2003 students as they are familiar with Usability Engineering processes and will give better feedback. We used 3 evaluation methods and they will be explain and justified further down in the evaluation section. For testing with our audience we only tested the desired age group (University Students), this app however can still be used by other age groups with ease. If we were going to target a different age group we would have followed the same procedure to tailor the app to that group.

## Gantt Chart

The below Gantt Chart show the flow of the project and what stages we decided to complete when and the multiple iteration we have done of evaluating the prototype, making changes and then re-evaluating it.

## Application of usability engineering principles

The brief that we were given from the project has allowed us to get a foothold for most of the project requirements in a broad sense. This has then allowed us to extrapolate the requirements using user questionnaires and or own research/brainstorming. The basic list of core functionality we designed at the start of the project allowed us grasp the situation and design questionnaire to gather user input and feedback from the requirements of the application. We also used initial paper designs and Naturalistic observation (Regoli, N) to see how the user was interacting with the system. This was effective in my opinion because it game us many small and large changes to the design and layout of the system, this was proven correct when the testers saw the new prototypes as improved.

### User Requirements We Found

The below table shows the list of user requirements that we have completed from analysis and observation.

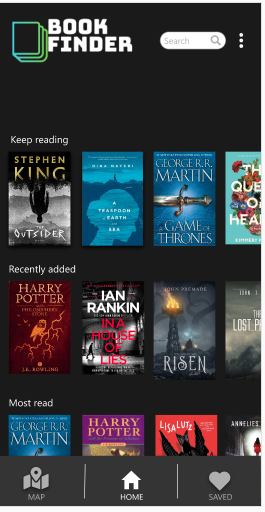
|  |  |
| --- | --- |
| 1 | Get Book recommendations based on previous activity |
| 2 | Users Can leave a verbal or written review |
| 3 | Will guide uses to the book within the library (And To Library) |
| 4 | Look at the verbal or written reviews for books |
| 5 | Search for a book on the platform |

As shown in the table above is our basic user requirements that we analysed from the brief and then used the questionnaires and observation (Wilbert O. Galitz) to design a basic prototype. This was then refined further using the same process of review, suggest improvement, make improvements and the review again. This can be seen in action by a suggestion to allow the app to display the overall most popular books to the users in a section. This acts like a Trending tab. This was a feature recommended by testers and evaluators to improve the system.

## Creating Prototypes

Our prototypes were creating using the 5 principles of usability engineering, Perception, Consistency, Feedback, Attention and Visibility. (Oza, Harnil) Was a reference used to provide guidance of prototype design and the positive and negative of prototypes. We applied the principles to most aspects of the app however we put extra care into the Perception and Consistency of the application features.

### Perception

As shown n the image we have grouped related features on the app together to make it easier for the user to find features of the application. As shown in the image Keep Reading, Recently Added and Most Read are all in a list together. This allows the users to find the book in the section they want the fastest. If the section were at the top bottom and left there would be no relation between them, therefor making it harder for the user to navigation the application. The same grouping can be found with the Map Home and saved sections. They are all grouped in an easy to perceive section at the bottom within easy reach of the thumb for fast use.

### Consistency

The consistency of the application is a very important design principle. If the users changes pages and finds a completely different style of design it will disorient them. This is also true for different features on the same page. If the Keep reading section was white while the rest was black the users would find the app unprofessional and difficult to use. This also applies to the placement of features, if the home button was in a different place of each page it would be a nightmare to use.

### Feedback

Feedback from the system is very important, if the user clicks a button they want to be able to know if it has worked. If the button does not visible depress or another visual indication the user may think that the process has not worked. The reverse is also true, if no visual indication is given and the user thinks they have pressed a button they may end up waiting indefinitely for something to happen when it never will. This can be solved with visual and audible feedback for features of the application. When a button is pressed it can have a dull flash to simulate being pressed and/or have a small click. This will reassure the users that they have pressed the button and the app is working. This will prevent the user from spamming features to make sure they work. We have done the visual feedback component with most of our features on the app, we would have added an audible feedback if we were going to develop the app further.

### Attention

This is the process of directing the users attention towards a desired focal point through the use of colours or component flow. We have done this in the app by positioning the books available at the centre of the screen and making them the only colourful thing on screen. This will mean that the users attention is direct towards the books and they will be inclined to scroll and look through them. The home button has been placed bottom central on very screen and is slights whiter that the other buttons allowing for easier navigation to the home screen.

### Visibility

The visibility of the app is a very important design principle as it allows the user to get information of what is happening and the information that is currently being displayed. If the app was very dark with grey text then it would be very difficult to see anything. We have used a dulled background with all of the relevant information and features coloured or highlighted to draw the users attention and maintain visibility of relevant features. An example of this would be the books on the home screen being centred and colourful when the rest of the app is dark. This shows the users the most important feature on that page is the books. This also contributes to the global aesthetics of the app making it pleasing to the eye.

## Usability Evaluation

## References

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