



Assignment definition and documentation

# Oula-Finna

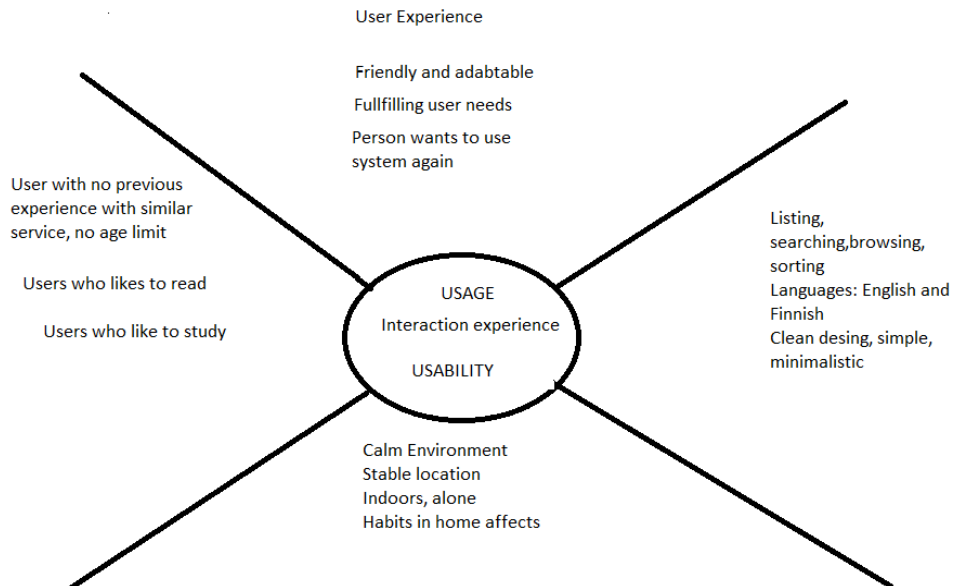
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# 1. Assignment topic and plan

## 1.1 Assignment topic

We chose ebook system as a topic. Service is browser based, interface is kept clean and simple but informative enough, with very little icons or bright colour used. User is meant to search and find information quickly. Listing and sorting is diverse. Later on the process we decided to do redesign for tablet device for Oula-Finna ebook system. User is meant to search and find information quickly and be able to pick ebook to read it within one application. The purpose is to fill users needs to make loaning ebooks simple and intuitive and reading of eBooks pleasurable. We chose ebook system because it's universal, easily adaptable and free service where user group is very wide. The purpose is to fill users needs to make loaning ebooks simple and intuitive and reading of ebooks pleasurable.



## 1.2 Intended users and user groups

Users with no age limitations, but target group will be students and staff of the university who would like to use ebooks on the future. There is no previous ebook service or application experience required.

## 1.3 User tasks and functionality for the focused users

The system provides users with a reading environment which allows listing, storing, sorting, and searching eBooks, articles, journals etc.

## 1.4 Typical user environments

The system is used in calm environment for studying, work, business matters or leisure, preferably alone.

## 1.5 User interface

User interface must be simple and suitable for a tablet use. Searches should be easy to use and advanced options should be easy to find. Not too many options shown on one page, when using tablet, to keep calm feeling to use pages.

The Interface will have ebook reader, simple colours, where would be the list of read books. There will be also a search interface with a sorting functionality for showing all the books related on the search data, with short descriptions of the books. Using text icons for making the UI more understandable.

## 1.6 Basic interaction types

Users use the system to find and read eBooks. There should be good searching options and information about books to help users choose the books they want. In reading section of pages should pay attention to :Marking books/documents as read, important. Organizing files in folders. Searching for a file by author or title.

## 1.7 Affective aspects (emotional interaction)

In order to create a positive experience for the user, in our group project we should aim for comfort and usability of our system.

- all options and settings should be simple and easy to pick up
- intuitive in use
- the user should not experience any delays or frustration throughout the use of our system
- the system performs all desired functions well: fastly and with no delay
- the structure of the product meets users' needs and causes no confusion

## 1.8 Assignment plan (all meetings, all tests/interviews)

14.09 First meeting, chose our assignment topic and started the planning

21.09 Did evaluation of an existing electronic book library, set UX goals for our own system

28.09 First interview, interviewed Anna-Maria, a member of a different exercise group

*30.09 Second interview, interviewed Niko, a family member*

*4.10 Basic scenarios (see attachments)*

05.10 Continued following the plan, established requirements

12.10 Sketching the prototype, designing and mapping out all the settings and pages

*17.10 Finalizing the first prototype, prepared an interview and a questionnaire*

19.10 Evaluation (using the prepared questionnaire & interview questions)

26.10 Finishing up the project; cleaning up the prototype, creating the presentation for the seminar

*26.10 Cleaning up the prototype, creating the presentation for the seminar*

*29.10 Finishing up the assignment and preparing for the seminar*

*(in italics are the off-schedule meetings)*

## 2. UX evaluation of the target system

### Interaction Design 2013: Heuristic evaluation of User Experience

0 = The heuristic is not applicable with this target  
actualised at all

1 = The heuristic is not

**2** = The heuristic is only partially actualised

**3** = The heuristic is totally

UX Heuristic	0	1	2	3	Comments and improvement suggestions
1. Ensure usability	2				<p>There could be ebooks icon on the homepage, there is now icon only for journals</p> <p>No separate list for read books or status available on the book's page. Could add a default list or different icon for marking books read in progress or already finished</p> <p>It's possible to add favourite ebooks to the list, but hard to find that list at first.</p> <p>Categories used under ebooks could be more specific.</p>
2. Provide utility matching with the user's values	1				<p>Better search engine with sorting based on material: books, magazines, journals, databases. Currently only keywords, adding search options by title, author etc.. Narrowing down and sorting of search results is inclusive enough.</p> <p>Adding books to favourites list is possible.</p> <p>Filtering books with the category action, mystery etc.</p>
3. Surpass the user's expectations	2				<p>Design seems overloaded at first glance, but quickly proves to be rather usable. Confusing design at first. "What is this page?"</p>
4. Respect the user	2				<p>Finnish and English languages available for the website. Not all features are translated, leading to confusion and a not full functionality.</p>
5. Design the product or service to fit the intended contexts	1				<p>The service should record list of read books.</p> <p>Simple browser based design, supports mobile use. Mobile usability poor, no optimization for small screens, same design same visuals, scaled one object at a time.</p>

6. Provide several ways to interact, leave choice for the user	2	User have several ways to search and use search different categories of e-books, but it takes little time to find options and some of the menus are hard to find.
7. Respect the user's privacy and security	3	Logging in with a secure university account, after the login user can will have to link his library card.
8. Support the user's activities - do not force	1	<p>Renting or making a book reservation is easy, but terms are not clear. Returning an ebook when reading in a browser is done by clicking "return book". What if I close my browser before? Does the book stay rented or return automatically after session? The latter would be better.</p> <p>Track progress on each book downloaded/opened online. Keep a history of visited books etc.</p>
9. Go for a perfect visual design	2	<p>Visual design is formal with faint colours and little interesting objects other than book covers at the bottom of startpage. The menu design is not consistent throughout.</p> <p>There is search-functionality, but not clear what is for, for searching books or for web-pages search over all.</p> <p>While usable and somewhat minimalistic, the design seems overloaded with too many options with no choice of hiding/expanding them. Could be a good idea to choose the visibility of needed options in account settings.</p>
10. Give a surprise gift	0	<p>There should be some kind of reward of reaching a millstones. System could correlate with the "read books" list and with the progress on books not yet finished, counting the number of words read. Possible achievements for 10.000, 100.000, etc?</p>

Arhippainen, L. A Tutorial of Ten User Experience Heuristics. Tutorial in the MindTrek'13 conference. October 2<sup>nd</sup> 2013. Tampere. Finland.

## **2.1 Expert evaluation in the group**

A table of heuristic evaluation of UX was used. All the aspects were discussed and marked with the group. Evaluation was done individually by group members and discussed afterwards about different aspects.

We also made evaluation using basic scenario of use the system, select the book, loan/read the book and found some usability issues from there. ( see attachment 1 and 2)

## **2.2 Design problems and redesign ideas**

We found some issues from the Oula-Finna system which could be redesigned. There is minimalistic and formal design with emphasis on search field, which doesn't function too well. Better search options and sorting are needed. There is no place to get started instead of search field, no suggestions or categorising based on material or users. The layout is confusing and design is inconsistent, overloading content for a user. The system would need better adaptability and context sensitive field for users liking. Simplified design for mobile platforms, not very usable (or useful) on small touch screens.

## **2.3 User experience goals for interaction design**

Our User experience goal is to fill users needs to make loaning eBooks simple and intuitive and reading of eBooks pleasurable for them.

Because of overloading content the user got confused, that's why if there were less content should be loaded for the application. Filtering the books is frustrating to the user by reloading the page every time category is selected. That functionality should be changed.

Application could be make better by adding the ability to hide/show some functions which are overloading the visuals. User can go to settings and toggle whatever functions they might need, making the experience more personal. Adding progress bar on books, watch history. Uniform, platform independent design, that better support users needs while searching, browsing, loan the content. Reading content should be comfortable with any size screen.

We will measure the achieving the user experience goals with user evaluation by non operational prototype in Powerpoint. With prototype evaluation we'll use questionnaire and exploration test. User is asked to use the prototype of the system and answer to the likert scale questions and pick some adjectives to describe his user experience after the use of the prototype.



## 3. User data collection and analysis

Collected user data and analysis are described in chapters 3.1 and 3.2.

### 3.1 Interviews

We did two interviews. The first Interviewee was a student of University of Oulu who has used eBook system of University of Oulu sometimes. She has used also some other eBook systems. Interview was held in the classroom using semi-structured interview. Questions were asked and answers written to notebook. Specifying questions were used to find more important and detailed information of eBook system for the user.

The second person interviewed was student of University of Oulu also. He has used Oula-Finna few times. Interview was held at interviewer's home using semi-structured interview. Questions were asked and answers written to notebook. Specifying questions were used to find more important and detailed information of eBook system for the user.

Prepared questions were:

1. Have you used any eBook systems?
2. What kind of eBooks would you like to read and for which purpose?
3. What would be the most important value to for use the eBooks instead of usual books?
4. On what platform would you prefer reading, tablet, PC, mobile phone?
5. How would you like to search books by topic, or subject or something else?
6. Would you like to choose books based on pictures on the system?
7. What features would be important to you in e-book system?
8. What do you think is the main advantage in using the eBooks?

The first person told she would prefer reading eBooks with tablet, since it's easy to carry and big enough for reading. Good reason for selecting eBook from the library is the price. She prefers eBook compared to traditional book because it's easier to take with. For pleasurable user experience it's important to system to work smoothly, without crashing. She had bad experiences of the systems freezing while reading. There should be able to search books by name and by author's name. It would be nice to riffle books before downloading or loaning it. In Oula-Finna user don't see well when she is logged in. There could be some kind of tracking have user read the book or not. Audio for eBook could be good idea for future development.

Second interviewee told he would like to use eBooks on laptop. He said laptop is better for reading than traditional book, since you can move the screen on different positions

while sitting and reading. He searches books by name or author's name and thinks it would be nice to have picture of the book for searching. It would be good to have info if someone has recommended the book for reading and from the search results it would be nice to have links for books related to issue of the chosen book. List of references from the chosen book and summary of the book should be found easily.

As a summary both users prefer eBooks over the conventional books and think the reliability of the system and different search functions are important for them.

## **3.2 Cultural probes**

We used different cultural probes kits to collect data of values and habits from our system's potential users.

The first and second Cultural probe kit consist of notebook, a map and colour pencils. Test subjects were friends. They were given an assignment to take notes every time encountered with eBooks or books and reading in general, and write them down in notebook. Describe feelings about these situations. Suggestion was to use simple words, adjectives, and also mark a location of these findings into a map. Timeline given to complete the task was two days. Final delivery on the later day evening. Users produced diary notes of daily activities including observing of books and locations and marked the locations into a map.

Next probe kits has artifacts for the user a notebook, phone and computer. The user used notebook for gathering funny lines with a unknown words and computer and phone for reading a ebook. Results were that user found interesting lines and had to lookup unknown words, while reading a book. By using the phone, user founded more difficult to read ,since it was with smaller text and for computer it was more pleasing to read with bigger screen. Phone was better for reading since you could move easily around and continue reading, but with the computer the user found it difficult move around.

The fifth and sixth cultural probes kit included as artifacts books and post-it notes and on the other set notebook and a pen. Users attended for this study were an adult user and 11 year-old child. The tasks given to users were to mark to the books post-it notes in those places what users thought would be important for choosing book for reading or optionally write those reasons in the post-it notes. The task with notebook was to keep diary about their web use and where and with what device and they would prefer to search for information. Users were asked to write also down where and how they were using the searches in web.

The seventh and eight cultural probe kit consisted of a book, notebook, and pencil. The task was to take photos of places you most prefer for reading, answer some questions about preferred fonts and backgrounds and types of books (paper or ebook), what they enjoy most while reading and what helps them concentrate more. The kit was given to an adult and a young adult. The results also ranged a lot, for example, one person preferred larger fonts, while the other always chose smaller when possible.

### **3.3 Intended users and user groups**

Users are young adults, students or other potential users of University of Oulu library. Users with little or more experience from Oula-Finna or other eBooks systems.

The major findings gained from the interviews and probe kits are described on sections 3.1 and 3.2.

### **3.4 User tasks and functionality for the focused users**

User tasks and functionality given with the probe kits are described on the section 3.2.

### **3.5 Typical user environments**

Typical user environments to use system are home, work, public transports and nearby convenience stores.

### **3.6 User experience**

The main findings using the cultural probes were users prefer to choose books for reading by summary of the books, by recommendations of friends, by price and they would like to riffle books for choosing the books to read. Users used tablet and laptops for reading news and other info from the web. Users found it more relaxing while using the tablet since you could change position comfortable. They prefer use the Google - search if they need to find info and younger user wanted to use also pictures on her searches.

In another cultural probes test group the users basically encountered books everywhere in everyday life. Of the two test subject the former enjoyed books more and felt relaxation, joy and certain form of escapism when reading but also exhilaration when casually bumping into them while walking by a bookstore. The latter subject felt more anxiety than excitement towards books because of their strong and mostly negative association with work and school, and although does enjoy reading into certain extent, was more selective about material and easily irritated by advertisements about books on Internet and on TV. In this probes kit there was no definition if a user preferred eBooks or conventional books.

Another probe kit was designed to find out the preferred place and surroundings for reading, as well as such major details as customizable view of a reading page (size of the font, colour of the background, the font itself). Turned out, while not exactly minding the possibility to change the font, the participants ranged wildly in their preferences: for example, one person preferred larger fonts, while the other always chose smaller when possible.

### **3.7 Design problems**

From interviews and probe kits was found out that some of the users prefer using tablet instead of the laptop and because of that it's justified to do design for tablet, which would have better usability and scalability on that platform. On the interviews was also found out that it's important for user that using the system is fast. We noticed that in some searches when you go into details of some eBook, the whole search result page is reloaded, which makes using the system frustrating. There was also comment that it's not easy to see if you are logged into system or not in Oula-Finna. Better feedback could be given to user.

### **3.8 Redesign ideas**

We wanted to avoid reloading the whole page content for the faster use and also decided to make application for tablet instead of redesign of the webpage. From the interviews we found out users would like to get recommendations from the other users and riffle the books before the loaning the eBooks. Also login page was something we need to think how it should work in our system.

## **4. Establishing requirements**

User requirements were gathered through the expert evaluation done by design group, user interviews and probes kits done for potential users. Users want to use eBook systems also with the mobile devices and that's why UI should be scalable and usable for smaller screens too. Users would like to have possibility to see which eBooks they have read and system should be fast and easy to use. In Oula-Finna login is asked to do several times while ebooks are found on different databases, this should be handled with one time logging to system. It should be possible to read eBooks with same mobile application where they are searched.

### **4.1 User profile for the intended user group**

User group consists of students in university, from novice freshman to more advanced bachelor degree students. Typical user studies academic books online or works at the academy, but some also loan novels to bring them home for leisure.

### **4.2 Personas for the user group**

First case: Keijo

Keijo is 25 years old male who studies information systems in university of Oulu. He lives in Oulu in one room apartment. He moved to Oulu four years ago. He is active in sports.

He's hobbies are running and going to gym. He likes to read on his free time. He has good a knowledge of computers.

Second case: Tytti

Tytti is 20 years old freshman in University of Oulu, she started to studying psychology this autumn. She lives with her boyfriend in two rooms apartment and has just moved to Oulu. She likes to cook and spend time with her friends. She is attends actively to students activities. She has used library a lot as she was younger, but she hasn't got experience about e-books yet.

### 4.3 User scenario for the user group.

First scenario involving Keijo.

Keijo was having exam in one week and he started to panic, that he wasn't gonna do well. Keijo was in Italy at that period of time and couldn't get his hand on course material. The next day his friend Aku told him about ebook system, that he could use for loaning the course book. He went to the website, wrote name of the book to the search bar and press the search button. The book came up to the search first, so he didn't need to spend more time finding the book. Keijo was surprised how easy it was to loan the book in online.

Keijo was reading for his exam by using computer in kitchen while drinking coffee. After many nights of reading and obstacle, he finally came back to finland and took the exam. Afterwards he was really happy of having this kind of system.

Second scenario involving Tytti.

Tytti just moved here recently with his boyfriend to near university to the empty apartment. They have bought so many furniture, so they decided to spend much less money for the next two months. For the next period they decided to use e-books, and did the homeworks by reading e-books. After the period she got good grades and was surprised how easy it was and how much money she has been saved.

### 4.4 Use case for the user group

Use Case 1	Loan a book
Actor	Student

Basic Flow	Student started searching for a book and didn't find a book right away. After sorting the book by author and year of publication, the student found a book. Then user pressed loan button, that redirect him to login page. After the login he was able to loan the book.
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## 4.5 Experience map for the user group

Logging in	Searching and loaning a book	Customizing the settings	Reading the book
Create an account using university ID	Clicking the search options	Choosing the book to read	Searches through contents easily
Proceed to using the application	Looking through basic search	Opening the settings from the book's pages	Can access the settings from the reading page
Re-login in case of using a new device or accidental logout	Adding more parameters in advanced search for more precise results	Changing the fontsize to what is most comfortable	Views reading progress (in %) from the homepage when browsing through library
A bit annoyed at having to register to use the app	Loaning the book indefinitely	Changing the font to the preferred one	Happy they could see the „read“ status of any book or document
Relieved the registration is quite simple and fast	Relieved that the search is simple and has advanced search options Relieved that there is no need to return the book on time	Happy they could customize the reading page	Happy using the product due to simplicity and usability

## 4.6 User experience goals for interaction design

We add rewards to reading state and contributing the ratings to red books for user the get better user experience. Goals could be measured asking users about their user experience for example using the questionnaire to ask their feelings after the use of the system.

## 5. Design and prototyping

Describe how the conceptual model of the new solution was developed. Describe prototyping in relation to the intended user group, tasks and context of use: how the user experience goals defined earlier were involved when creating the prototype. Conceptual model and prototype

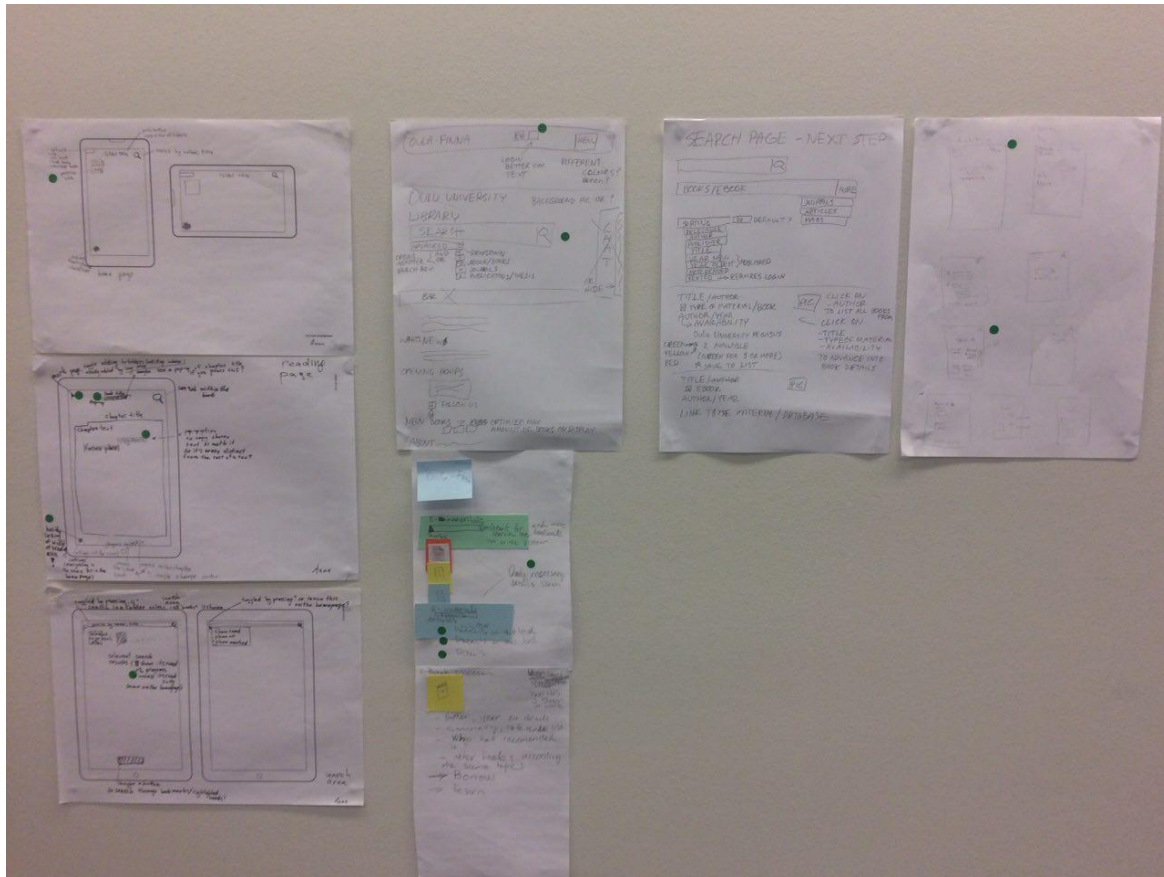
Conceptual model was created based on navigation in our system.

While thinking of user's point of view, we decided to make the minimum of navigations and to use icons that the user might be already familiar with. For searching a book, we would reload the page once after picking all of the sorting options to keep the user satisfied. Prototype includes a state of books, which will show the progress of the book. When the book is red, it would be shown as green color for keeping progress of red books. While reading a book the user could add marker, where user wants to stop reading.

### 5.1 Brainstorming

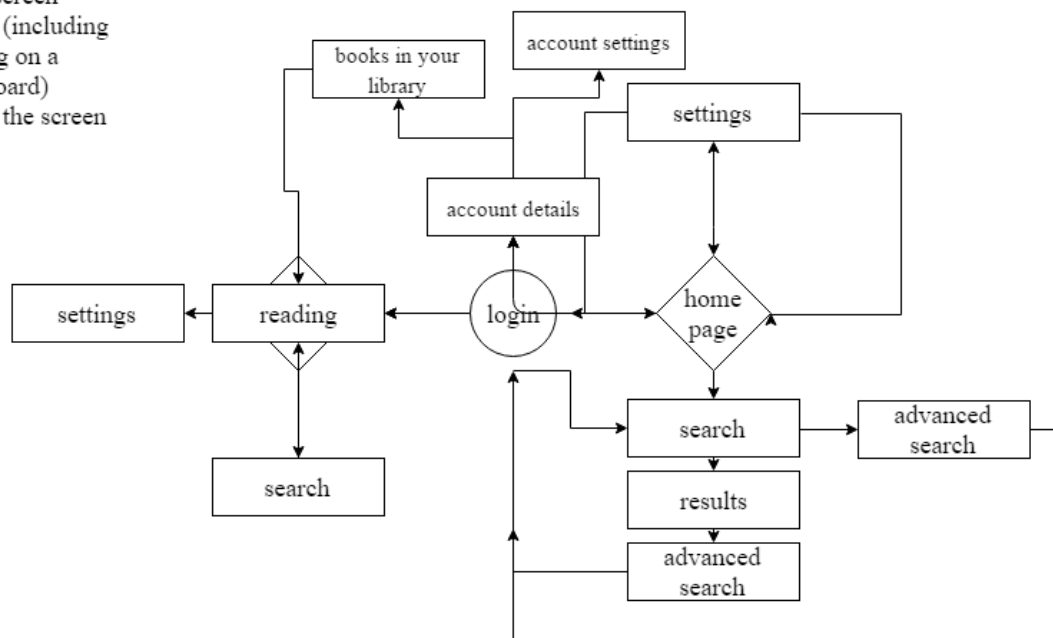
Brainstorming was done using sketches individually by all group members, after sketching we discussed as a group and pick the ideas what we would like to keep in our design. We decided to do design for a tablet.

After the sketches we decided to create similar prototype with PowerPoint, where the design was much easier to create. Another main reason to make design with computer was making evaluation much easier.



## 5.2 Conceptual model

Designing for a  
touchscreen  
All actions (including  
writing on a  
keyboard)  
by tapping the screen







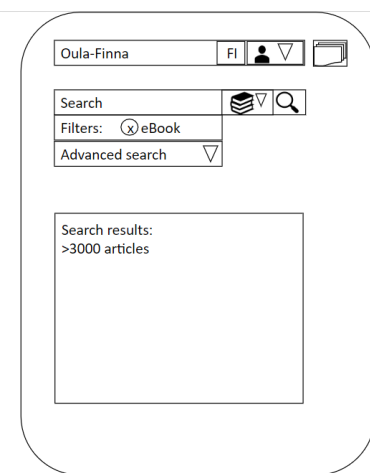
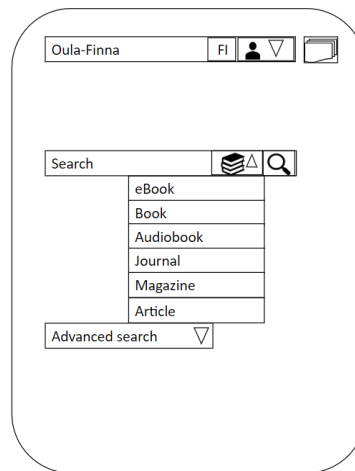
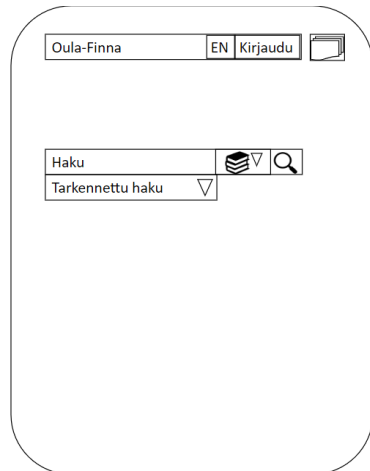
The metaphor is about loaning a book in the real life. First the user goes to library and knows, what kind of book he is looking for. After few minutes of searching, the user will finally finds the book and goes to reception desk for loaning the book. This is same as going to our application and start to search for the book. After going through sorting, the user finally finds the wanted book and is able to loan the book.

## **5.3 Prototyping for alternative designs**

Typical prototype scenario. Start page, search page (results), logging in, loaning.

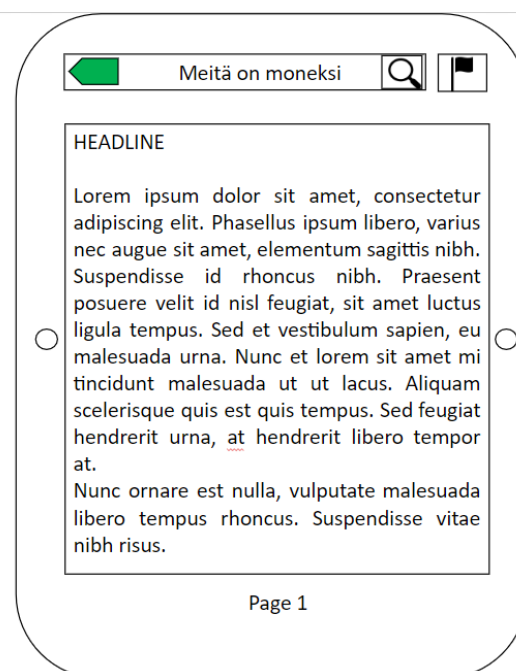
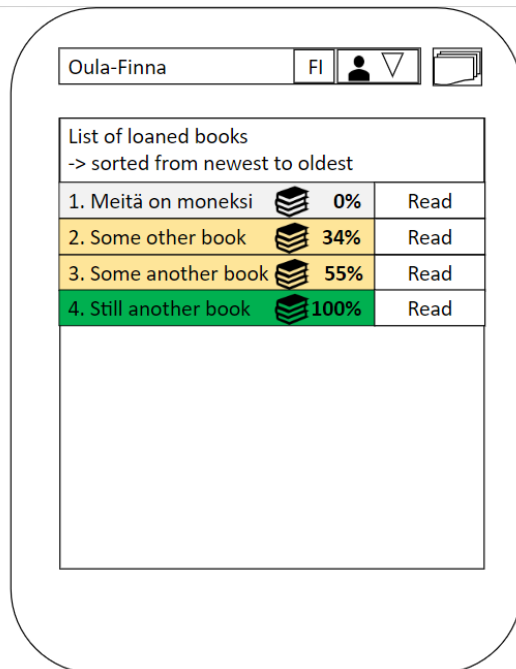
At the beginning of designing our prototype, we decided to use sketches first to make sure that we agreed on everything. After getting everyone on the same page, we proceed to design it again with PowerPoint with new points of views.

In the section 5.1 we have our sketches. Therefor here is our new version of the prototype. we decided to use main pages where user spends most of the time.



In the pictures are starting page, advanced search and searched books. On the top of each layouts there is a header, where is name of the application, language chooser, login/account and also menu, where is buttons that will lead you to about the authors, general information about the application and helping page.

In the prototype we have used icons to make it easier for user to understand the application.



In these pictures we are having state of books and reading stage. On the list of the books there are color, which tells the user, if the book hasn't been red, its been started and its finished. The percentage expresses how far you are in the book. On the reading stage, there is a marker used for marking where the user left off and a search button to find a text or words from the book. user is able to change pages by swiping or pressing little circles. Back arrow is set on green, which highlights the back button.

## 6. Evaluation

Evaluating the prototype described in next sections.

### 6.1 Test tasks

The purpose of the task was to test how our scenario works for prototype testing and see if we can find out if the changes we have planned for the system would give user better user experience.

Tasks for the user for pilot evaluation was to change language setting to English. Then we asked him to search ebook with word 'Meitä' and year 2009. Open the e-book for reading and riffle it.

We modified task little bit for final evaluation. Final test tasks are written on chapter 6.4.

### 6.2 Interview or questionnaire

Questions before the test:

1. Have you used any e-book systems?
2. What kind of e-books would you like to read and for which purpose?
3. How would you like to search books by topic, or subject or something else?
4. What features would be important to you in e-book system?
5. What is the main advantage of using the e-books for you?

Evaluation will be started with explanation of the target system which was Oula-Finna eBooking system. It is explained that we found some usability problems with tablet device and are making redesign to tablet for some parts of the system.

In the pilot test we used open unstructured questions for prototype evaluation by asking the user questions about the adjectives he picked from the board and by asking what he thinks about using the system. For the final evaluation of prototype we made some structured questions with Google Forms. User will answer to part of the questions before the using the prototype and for part of the questions after using the prototype. The moderator of the evaluation will ask more laddering questions after the user has answer to the questionnaire.

### 6.3 Evaluation of prototype in the design team

Pilot test was done with Oulu-Finna comercial webpage as a prototype to get idea what kind of user experience users are getting from it. Our own prototype was in progress on this time, so we could improve it through the results we will get from this pilot test.

In pilot test we asked user to change language setting to English and log in to the system.

Then we asked him to search ebook with word 'Meitä' and year 2009. Open the e-book for reading and riffle it. After these tasks we asked user to pick 4 words from adjective board to describe his feelings when using the system. With the adjectives which could be thought to be either positive or negative we asked user to mark plus or minus sign beside the word.

User needed some time to figure out where the language setting was. Search he made by using advanced search from the front page, where he could set the year and the word 'Meitä'. After the search results he added ebook selection, needed some time for finding it.

After ebook was found he was asked to do login again to read a book. He opened ebook to browser, in tablet swiping the pages didn't work user has to use arrows to go to the next page.

Adjectives user picked after the use were appropriate, coherent, conventional and straightforward.

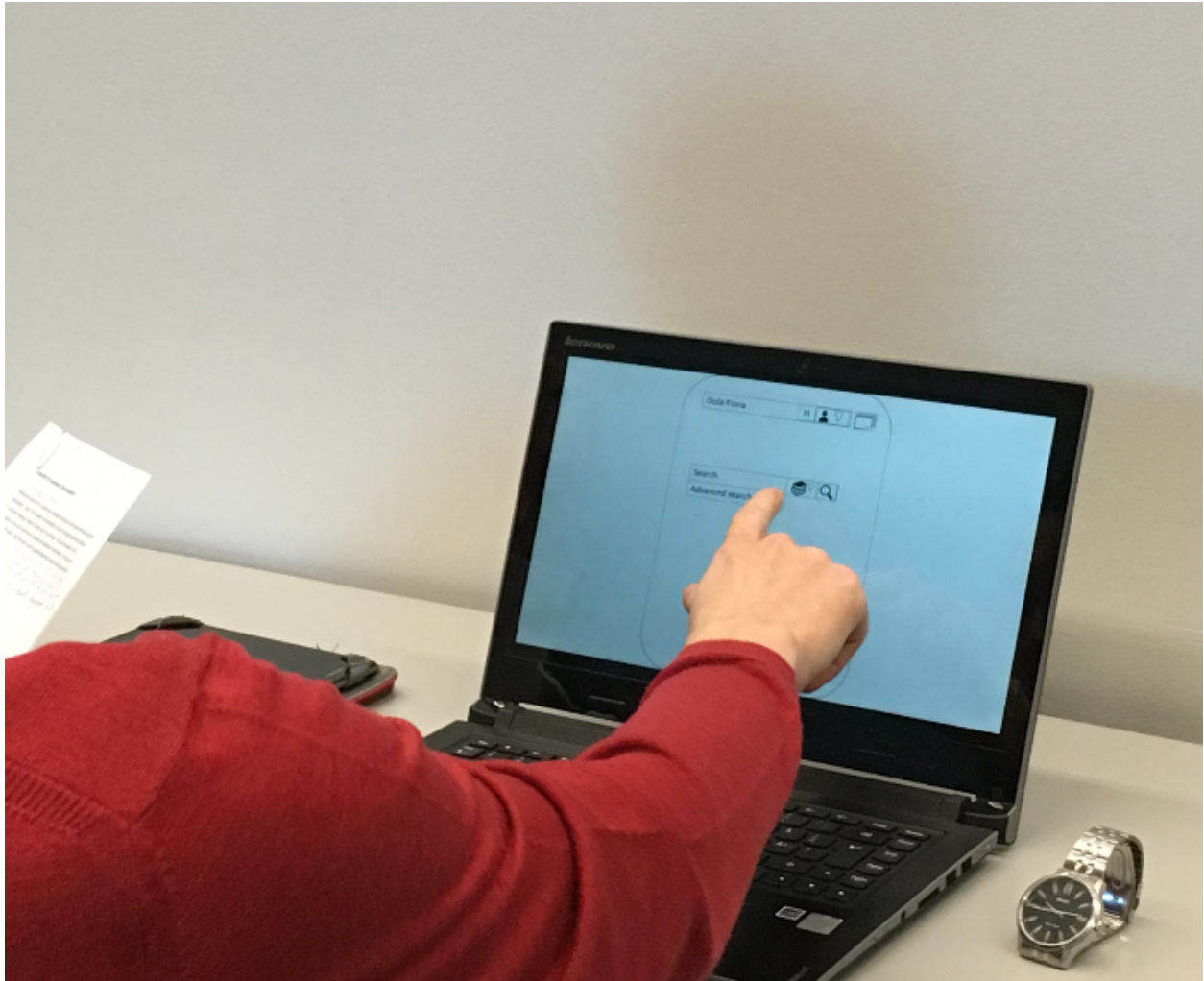
We will try to find more User Experiences from the users with some visual aspects to our prototype next user evaluation test, using the Likert Scale.

After the first pilot test we got our PowerPoint prototype ready. It was tested first by group members. There were some missing views, when user picked advanced search choices. Views were added and some links between different views were built, so that prototype would have some functionality when user makes searches.

## **6.4 Evaluation of prototype in user testing**

Describe the actual prototype test (when, where, with whom, what), how tests proceeded in practice and analyse how well the test users' characters fitted the purpose.

The prototype test was done on Friday, 19th, during the Interaction Design exercise group. We found two participants and they tested our system by Powerpoint prototype. Users were using prototype through the touchscreen on the laptop. They were given tasks to do and asked to think out loud while doing the evaluation. Users were able to choose icons or menus their wanted to choose and got that way the idea how the system would work, since there were built links on the PowerPoint to move from one screen to another.



*User evaluating Oula - Finna mobile app through the PowerPoint prototype*

We used checklist for moderator in evaluation:

- Welcome person who is attending to evaluation welcome and tell basic information about the evaluation. Tell the user we are evaluating the system, not the user.
- Topic of the system to be evaluated is Oula-Finna ebook system and purpose is to evaluate redesign made for tablet using the prototype.
- Tell user that reason for the evaluation is the group exercise for studies and possibility of withdrawing. And about the privacy of the event.
- Give the user a part of questionnaire which should be filled before the use of prototype.

Give next tasks to user

1. Search ebooks with published year 2009.
2. Search for ebook with word 'meitä' in topic.

3. Loan the ebook.
  4. Open the ebook for reading and riffle it's pages.
  5. Add the bookmark to the book
  6. Close the reading state.
- After the using the prototype ask user to fill questionnaire to answer the questions how she or he experiences the use of the system through the prototype.
  - Discuss about the choices user made to get more detailed information about the user experience.
  - Thank user attending to the evaluation and give him or her a surprise gift.

Users got two questionnaires to fill (attachment 3 and 4), first one before the tasks were given and the second one after user has completed given tasks. The first questionnaire included demographic questions and some background questions about eBooks usage. On the second questionnaire was questions how user experience the use of system and they were asked to answer to questions on Likert scale. The answers were discussed with the user. Finally users were asked to pick up to five adjectives to describe they feelings about the system and user experience gained from it. After selection we discussed with the users, why they made these choices. At last we gave the users also possibility to tell anything they had on their mind, suggestions how to make system better or any other feedback.

Evaluation was recorded by teacher and some pictures taken during the evaluation..

## **6.5 User experience findings from user evaluation**

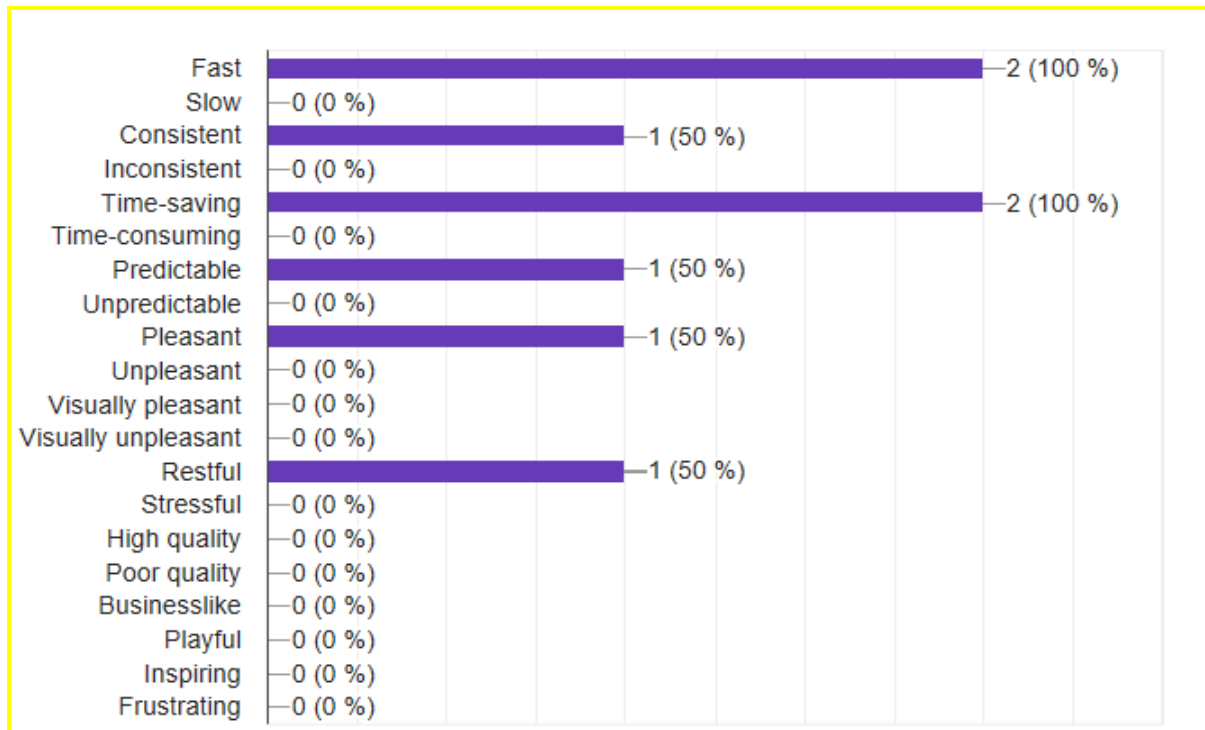
We had two persons testing prototype of our system. The findings of the questionnaire revealed that

both of the users had previous experiences on eBooks. Users liked to read fiction or science books.

They liked to search books with tags or by subject of the book. For user experience they preciated ease of use and speed of the system. The benefit of the using eBooks was for users the light weight compared to conventional books and easier and quicker search options.

Users thought the Ui was pretty easy to figure out, an was easy to use after getting to used to it. they did not experience frustration while using the prototype. About the Search page they said it felt comfortable to use. Users were also satisfied with the Reading page, they experienced it to be very pleasant to use.

Users were asked to pick up to five adjectives to describe how they felt about the system and testing it. The picked adjectives are shown under. The other of the test users decided to pick three adjectives instead of five.



*Adjectives picked by the users*

Users were asked to give some more information about the adjectives they picked. They suggested more colors to the system. There was one screen where one arrow was missing from the book icon, was a bit misleading. This was fixed for the other test session. The given task was to find e-book with the publishing year 2009, the prototype didn't show the which year was picked, only that some year, the exact year shown would have helped.

The users gave suggestions for improving the system, search field could have some indication that it's possible to write on it. The choice for type of reading for example article, journal, e-book could be under the advanced search instead of being beside the search field. The icon for choosing could be also different, now the first idea for the other user was that there was possibility to see books one has loaned under the icon. For personal account ect. menu on the upper corner on the right users would prefer three lines icon ( or some calls in hamburger) as they have used to see it for menu. Both users thought the reading page was easy to use. Another user said he might would prefer scrolling in .pdf mode from up to down instead of left to write, but said also that this solution is also possible for him.

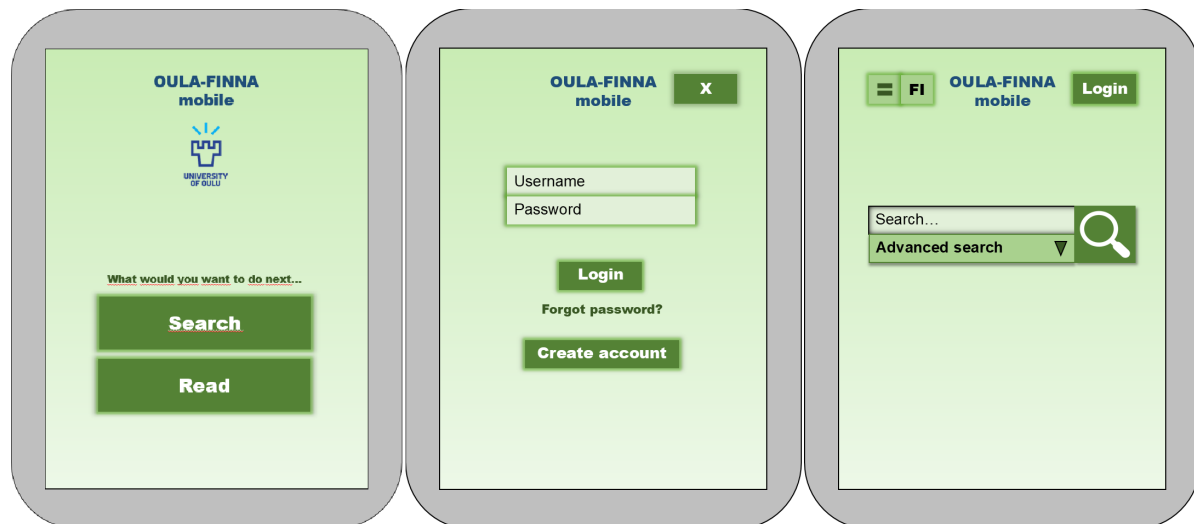




## 7. Results and presentation

Our main user experience goals were to make loaning book simple and intuitive, while reading a book should be pleasurable, less overloading content and filtering books without reloading the whole page and also help the user keeping track of loaned and read books.

After the evaluation we noticed that we need colors to make the system more pleasant, highlighting elements and using better icons to make it easier for users. Based on the evaluation results, we came up with new design.



We decided to create a welcome page, that will redirect the user to search page or to own books after the login. We are using darker green to highlight pressing buttons.



These are designs for searching and loaning a book. Users found it hard having a book icon in the previous prototype, so we decided to move type of search to advanced

search. Searching results will be scrollable page with details of the book. Users wanted to have a rating of each book, that's why after the users has read a book, they can rate them afterward. When the user has logged in, the icon will change and by pressing it the user can go to own account or redirect to own books.



Pictures of loaned books and reading stage. In the new design the user is able to rate a book after being done with reading. If the book is read and being rated, the color will change to grey. In the reading page we have highlighted the elements to make more understandable. After the book has been read the user gets star as reward.

Since the new design is based on evaluation and we did changes based on it. The new design will definitely meet the defined user experience.

## 7.1 Visualization of the design solution

In the section 7.

## 7.2 How well the solution meets the defined user experience goals?

In the section 7.

## 7.3 Presentation of the results

See Presentation slides.



# 8. Analysis of the design process and learning

## 8.1 Interaction design process

How users were involved through the interaction design process as working with the assignment?

How user experience goals were identified? Whether and how they were achieved?

From the viewpoint of intended users, reflect on what grounds the designed interface solutions would be better if implemented in practice?

We have users involved in the process when searching user requirements, while we did interviews and used cultural probes kits. With pilot testing the prototype we had also user involved in testing. For the final test of the prototype we had two users testing the system. User experience goals were defined from the results we got from the interviews, probes kits and expert evaluations.

Through the evaluation results we got from the users, we can think we achieved the user experience goals which was set. Users were mainly satisfied with the UI and functions we made for the application. They thought the use of read page was very pleasurable and that using of the application was fast. They gave us some suggestions how to improve the UI by using the more colors in it and by modifying some icons more universal. We did improvements to the final design.

With our design users would be able to search and read eBooks easier with the mobile application design for the tablet. Scalability of the pages would be better and the search functions would be simpler and read page would be pleasurable to use. There wouldn't be need to change application when moving to read page. There wouldn't be need to log in many times during the use of the system.

## 8.2 Learning outcomes

This assignment taught for us how the process of interaction is done in practice. Even we had only few users participating to the process there were some involved in every part of process and influencing the design. There were several iterations done for some stages and design changed during the process. We learnt also to use use different methods how to evaluate the system. When working on group we noticed also how important is to listen to each other ideas and combine them to get best results. Sometimes compromises must be done.

The objectives during the course were a good motivation to learn about interaction design, but most importantly about how the process of creating a new project, working on improving it, evaluating works. I know now what steps are taken, and gained some experience in it thanks to the group assignment.

#### Required and recommended reading

##### **Required:**

Sharp, H., Rogers, Y. & Preece, J. (2007) Interaction Design: Beyond Human-Computer Interaction (2 or later Edition), John Wiley, chapters 1-13

##### **Recommended:**

Arhippainen, L. (2009) <http://jultika.oulu.fi/Record/isbn978-951-42-9108-1>, 222–224

Bødker, S. & Iversen, O. S. (2002) Starting a professional participatory design practice - Moving PD beyond the initial fascination of user involvement. In the Proceedings of *NordiCHI'02* (Århus, Denmark, October 19-23 2002), 11-18.

Botero, A & Hyysalo, S (2013): Ageing together: Steps towards evolutionary co-design in everyday practices, *CoDesign: International Journal of CoCreation in Design and the Arts*, 9:1, 37-54

Johnson, J. and Henderson, A. (2002) Conceptual models: begin by designing what to design. *Interactions* Jan/Feb, 25-32.

Maguire, M. (2001) Methods to Support Human-Centred Design. *International Journal of Human-Computer Studies* (2001) 55, 587-634

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Schlatter, T. and Levinson, D. (2013): *Visual Usability, Principles and Practices for Designing Digital Applications*. Morgan Kaufman, MA, USA-

