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Introduction

Importance of recommendation of goods has always been part of the human society and mankind. People recommend themselves different things on a daily bases, starting from the favourite food up to the new car or house. Everyone on the planet Earth, no matter where he is coming from, makes plenty of decisions based on what he heard from the others or what was recommended to him. With the upcoming of the new technologies like the Internet, new possibilities for recommendation appeared. Many of us started to share their opinions about the products we think are the best and definitely should be bought. We started to recommend globally and anyone can read our preferences and advices.

However those processes can be a bit disarranged and not every user is interested in reading plenty of comments. Fast forward after the digital revolution, time has become one of the scarcest values therefore there is a need for more automation of these processes. The introduction of first recommender systems in 1992 [1] brought revolution to the area of recommendations. Not so long time after in 1995 [2], Amazon, first book recommendation portal appeared and its “rules of recommendation” became so strong, that nothing bigger emerged in this field until now. Books are one of the most interesting commodities to handle and they accompany mankind for very long time and for most the time of our existence, it has been the most important source of knowledge and information. Even in the epoch of the internet and instant access to the information they are still irreplaceable.

On the other side, books are not only valuable source of information and knowledge. They are also reservoir of joy, sadness, love and other emotions. From the first poem called Epic of Gilgamesh [3] up today, when thousand of stories are published yearly, they are our friends, when we want to escape from the reality and experience the story of someone or something else.

Today, there are plenty of ways, how to get a new book. One of the most specific ways is to get a recommendation from the online book recommender system. From my point of view, most interesting part of this process is that algorithm, regardless of the technical specification (Collaborative or Content-base filtering and many others), can tell you which book you should read or which can fits the most to your preferences. The largest players on the market even developed their own algorithms to make recommendations more precise, faster and broader. But honestly we have to ask the questions: “Are those algorithms working for us, book readers, or for them, who are behind the scene of recommendation and earn some share, if you buy their books? Are they so well developed, that they can always guess, what your preference is in such a complicated field, like books definitely are?”. The answer is definitely not clear and there are plenty of arguments on both sides of the river.

While these big questions each deserve a discussion that is beyond the scope of this theses, they form however the background and inspiration for the present project. By a practical

design experiment, an alternative solution for book recommendation is sought for. I will try to design book recommendation portal, which will be based on the random recommendation for the users. System will display random page or chapter from recommended book to the user, based on his preference (genre, style, etc.) or automatically, without any preference choices. It is hard to say, how random will recommendations be, because there are some different ways how to recommend the book to the user, but different approaches will be tested. The random book pages will be displayed without name of author and title of the book or with another general information, because I believe, that this information easily confuse the reader and he will rather believe the name of the author, like the text or story itself. Nevertheless user then can reveal name of the author, book title or he can even be redirected to the book e-shop. Another necessary functionality will be the button, which will show another recommendation to the user, who won't be satisfied with the first recommendation and so on. All of these assumptions will be part of the testing session, which should lead me to the successful end.

Motivation and Background

My motivation is coming out of fascination and pleasure of the book reading, which is one of my hobbies. I really appreciate the books with fantasy, sci-fi or historical topics, but I don't despise the classical ones or simply the ones with good story inside as well. During study on the university, I met different systems, techniques or processes which enable to fulfil this idea. Idea came from the assumptions, that users are tired of the classical Amazon approach of recommendation, which was adopted in many e-shops or recommendation portals and therefore, there is a time to try to replace it with something else.

As a classical Amazon approach we can consider "Item-to-Item Collaborative filtering", which process massive data sets and produces kind of qualitative recommendations in real time. Other well-known part of the Amazon recommendation system is "Your recommendations", which are based on your own preferences from the history of your purchases and always appear on the homepage. Second well-known part is "Customers, who bought this item, also bought", which shows the recommendations based on the other customer preferences. More detailed information about these topics will be described later in the chapter "Related examples" [4].

As I already mentioned, recommendation portals are well known for their use as e-commerce Web sites, where inputs about a customer's interests are collected to create a list of recommendations. Many services use only the items that customers purchase and explicitly rate to represent their interests, but they can also use other attributes, e.g.: items viewed, demographic data, subject interests, and favourite artists [4], depends on the type of recommendation algorithm.

Basis of all recommendation portals are recommendation algorithms. Recommendation algorithms provide an effective form of targeted marketing by creating a personalized shopping experience for each customer [4]. For large companies a recommendation algorithm can be used over large customer and product bases, requires only very short time to process and generate proper recommendations. System should be able to respond instantly to changes in a user's profile, and makes suitable recommendations for every user regardless of the number of purchases or ratings.

The next and probably the most important parameter in this area should be the customers. More customers recommendation portal should have, more precise should be its recommendation. Actually it is not decisive in all types of portals; it also depends on the type of algorithms. There are two main methods for choosing right recommendation algorithms: first one is Collaborative filtering and second one is Content-based filtering. First one is based on collecting and analyzing a huge amount of data on customers' behaviours, activities or preferences and predicting what customer would like to see or buy on behalf their similarity to the others [5]. Example of recommendation portal using this approach is music service Last.fm.

Second one is build upon a description of the item and user's preferences [5]. Here, the keywords are used to describe the items; while, a user profile indicates the type of item he likes. Example of recommendation portal using this approach is music service Pandora.

There are also other methods or recommendation, but these two are the most famous. Nowadays, many of recommendation services are using combination of both approaches, Hybrid recommender systems. One of the example here is already mentioned Amazon.com.

In this section I briefly described and named already existing and verified methods for recommendations. For my project I won't use any of those algorithms, nevertheless they will be described more detailed later.

Problem formulation

The project investigates one main issue and it is creating and designing book recommendation portal, which will generate random book passages as recommendations. My motivation comes out of my personal satiety of the actual book recommender systems, which by my point of view don't satisfy users' expectations at all. Main assumption for this project is followed with some sub questions, which will help me to find the answer of the issue:

How should an alternative book recommender system be designed to be attractive to users?

Main assumption will be answered through following sub questions:

Which target group of users is most suitable for this service?

Find the proper way of using book excerpts.

How should be people`s ideas used to build up the system?

Which functionalities should this kind of system has? Is it better to build this system for mobile phones, tablets or as a web service?

Project Limitations

This project will focus on the domain of book recommendation, and in particular on designing and building online book recommendation system, which would recommend books based on the random choice of book passages. Other forms of algorithmic recommendations, which are in use nowadays, are out of the scope on the project, they will be only mentioned as related example and for some kind of basic understanding. The project is focusing on a user interaction via web service (HTML page), but suggestions of other forms (mobile applications or other services) will be welcomed and considered as well.

The main focus of this project is on the user, his needs and motivations. Technical issues and business aspects are going to be discussed but won't be elaborated in detail. Also, any legal aspect regarding use of different book passages won't be taken in consideration and is out of the scope of the project. Furthermore, the project will not evaluate user satisfaction of the existing book recommendation portals.

Project Structure

This report is divided up to several chapters, where I described the steps of whole project. The main chapters are:

Introduction - Here I explained the aim and objective of the report. It also includes the problem formulation, motivations and background, limitations and structure itself.

Methodology - This chapter provides description about the project methodology, which I used to carry out during the process.

Literature/State of the art - In this chapter I shortly described background of recommender systems and related examples which inspired me.

Analysis of user tests - In this chapter are recorded all three stages of testing I did together with resulting summary.

Prototype - Here I suggested and explained final prototype build upon the results obtained from the users.

Discussion – Here I discussed results and outcomes from the project both from positive and negative point of view.

Conclusion - In conclusion I discussed, if all assumptions from the beginning of the project were fulfilled or not.

Future work - Here I wrote some future suggestions and way how we project could be developed in future.

References - Records of all literature sources I used in the report.

Appendix – In this chapter I placed source code and recordings from the tests.

Methodology

This section will be about the methodology and its tools used in the project. I will also discuss the reasons why I decided to use them.

Secondary research

To understand issues and complexity of recommendation services, I had to make so called Secondary research. Secondary data are known (published) data, which were originally collected for a different purpose, but they can be applied to a particular research study. In my project I had to take in consideration different approaches used in recommender systems, analyze the way how they work and compare them to strengthen my idea. Due to explorative way of work in the project, secondary research wasn't the initial phase of the project itself. Explorative way of work means that, problem wasn't clearly defined in the beginning of the project [6]. Data relevant for this type of project was gathered through the whole process. The reason is that in the very first stages of development, there were too many ways to go and therefore theoretical part was under construction throughout the whole process and added in the end as some kind of prove of achieved results and findings.

In my project secondary research consisted mostly from the scientific, marketing and industrial articles and texts, where I was looking for the data regarding to recommender systems, book quotation and genre specification.

Primary research

Primary research is the collection, analysis; evaluations of information, derived directly from the potential users, that are analyzed and used in a different and complex way. In my project primary research consisted from iterative process of three stages. First three stages were kind of same structure and fourth one was done online through the online prototype as we can see on the **Table 1**. All of the testing sessions served also for comparison of user interaction with the system. The first stage of iterative process was "quick and dirty testing" with four testing persons, before the test group was specified.

	Stage 1	Stage 2	Stage 3	Stage 4
Questionnaire		X	X	
Briefing	X	X	X	
Execution	X	X	X	X
Debriefing/Comments	X	X	X	(users could sent comments, if they wanted)

Table 1 Structure of four stages of testing

In the primary research, information was gathered via different methods in order to strengthen the reliability of the results. Most important methods I followed were the interviews with the potential users, a small heterogenic sample of people, where I applied qualitative methods. Methods, like think-aloud sessions, co-designing or collection of quantitative data create a potential for development of new systems. Testing the concepts in a way of explorative methods provide valuable insights in the users' preferences that may help you design your system very well.

Target group

Problem of specification of the target group became important on the very beginning. Before the first "quick and dirty" testing I was considering as target group every reader of fictional books, no matter how many books per month/year he reads. Due to results based on this testing, it became clearer, that target group has to be more specific and probably more interested in fiction books and reading as well. Therefore I decided that my target group will be the readers, who read at least several books per year and are interested in exploring and discovering new books and genres through the internet. For the testing purpose (Stage 2 and 3) I applied same approach, since it was necessary to test potential users. I recruited the users, which reads at least six fiction books per year, no matter how long the books are. Before the Stage 2 I didn't discriminate the potential user on the basis of their age, but before the beginning of Stage 3, I narrowed down the choice of my testing persons to the people younger than seventy years. Main reason for this is that my access to the people around this age is quite limited. Therefore I decided not to waste a time and as testing groups I chose adults or children, to whom I have much better access. I knew, that at the Stage 4, possibly everyone will have an access to the prototype. The results proved that this assumption was right and an average age of users, which visited my site, was much lower. I will describe this process more in the Chapter "Stage 4: Live web service with Google Analytics". The fourth stage of testing was bit different then previous ones, because its purpose was getting an amount of quantitative data, therefore I didn't specify my testing and target group.

Books and genres specifications

There was only one limitation for the books, which I was using during the testing and in the final prototype as well. It has to be fiction book, no matter how long or old is it. For the "quick and dirty" testing I used only ten excerpts of books which I read in the past. For the Stage 2 of iteration I used twenty books (all from well known authors) by which I was trying to cover sixteen basic genres. I read all the books as well, thus I could manually choose interesting part of the book. Unfortunately it is just human perception and point of view, because different sources can place one book to different genres. One can think about a book as historical novel, but on the other side, the rest of the readers consider it as a fantasy. This problem appears in all of the genres, because there is no official worldwide

accepted genre selection or manual, how to class the books. Literature is different all around the world and even in almost e-shop; books are sorted differently, not in the same order.

Therefore in the Stage 3 I decided to use book genre selection from the webpage Martinus.sk to have some kind of genre template to which I can adhere anytime. The results from the Stage 2 and 3 showed me, that there is a necessity to use genre selection, therefore I continued with it in the last iteration as well. Only difference between Stage 3 and 4 in prototype was adding possibility to click on the “Comments” and write comments. It was due to change of testing environment, which changed from the personal meetings to the anonymous interaction done possibly anywhere and anytime.

Book quotes specifications

One of the most important parts of this project was to choose the right part of the book, which will be presented to the user. First suggestion was based on assumption that the quote from the book shouldn't be from the end, because of the denouement and it doesn't make any sense to show the end of the story to someone, who would like to read it in the future. User can become frustrated and not motivated anymore to read that one. In the Stage 2 I used only twenty books covering all basic genres from quite well-known authors and I took piece of the text from the end of the second or third chapter. Then in the Stage 3, after the processing of the results from the second one, I started to present the part of the book chosen by the publisher or writer, which usually appears on back page of cover and therefore probably should have more informational content than random part of the book. Based on the results I got during the Stage 3, in fourth iteration I randomly changed some quotes from the books for the first paragraph or section in the book. Reason for doing this was to see, if the so called “narrative hook” can be more attractive for the potential users than the other part. *It is something in a story that captures the attention of the audience and makes them interested in finding out what will happen next. This is often found at the beginning of a story, and serves to initially “hook” the audience and get them to continue reading or viewing a story. A narrative hook can also occur during the body of a story, to ensure a reader is intrigued and engaged when events may otherwise be slowing.* [7] This issue I tried to investigate with Google Analytics tool, which was monitoring how much time testing persons were spending in case they read the beginning of book or the other part of the story.

Recruitment process

Persons I recruited for the testing were coming from the different environments. In the Stage 1 I just asked four people, who were in some way participating in my life that time. Unfortunately results from this testing weren't very informative and relevant; therefore I changed my scope of interest. This will be described in next section, called “Testing”.

Due to this experience I started to recruit testing persons more precisely and before testing sessions, I asked them a question, how many fictions book they read per year. If they answered six or more, I asked them if we can meet and do the testing.

For the Stage 2 of testing I recruited twelve testing persons **Table 3**, eleven of them I contacted and recruited through the Facebook (all of them are my friends or relatives) and one I asked personally (my mother). I didn't make any difference between the users based on their technological background, because in this quite early stage, I didn't have to make explicit technical decisions, rather I needed to hear more suggestions and feedback about the idea. I will reflect more on this issue later in the chapter "Stage 2: First HTML-based prototype".

For the Stage 3 I used the snowball sampling method [8], where I asked the first round testing persons to recommend me someone, with quite similar reading habits. I also recruited 12 persons, but this time I decided to skip the category of the oldest potential users, due their disinterest into new technologies and system as well. My testing persons were again mostly younger ones (eight from twelve were under 30) and four others were over 40 years. As contact platform I used mostly mobile phone and email, because I knew only two of them before personally. Again I didn't make any difference between technologically more skilled people and those, who are not, because so called "lead users" in my project are not the ones who have strong technical background, but those who reads a lot. I will reflect this part later on as well.

For the Stage 4 I changed my strategy due to different approach. I didn't recruit any persons in a way, that I asked them to do a testing session with me. All users, who participated in this stage, are unknown for me. Only information I can provide about them are those, I could extract from Google Analytics overviews. They are described in detail in the chapter "Stage 4: Live web service with Google Analytics". For recruitment of users, I used two book forums and four Facebook fan pages concerning books. All these forums and fan pages were in Slovak or Czech language to make sure, that users will understand language. Together with a link to prototype, I wrote there few sentences to explain what is going on. Names of the forums are: Ebookforum.sk, Xtrance.info. Names of the Facebook fan pages are: "Knihy", "Milujem knihy", "Knihcentrum", "Bookfan.eu". All of these fan pages have more than two thousands of "likes", so quite enough potential users could see my posts. I expected that, users visiting these pages or forums are readers or have some kind of relationship to the books at least.

Testing

Testing ran in four stages. In first, very early stage I had 4 testing persons as we can see in the **Table 2**. None of them was frequent book reader and testing was executed with the

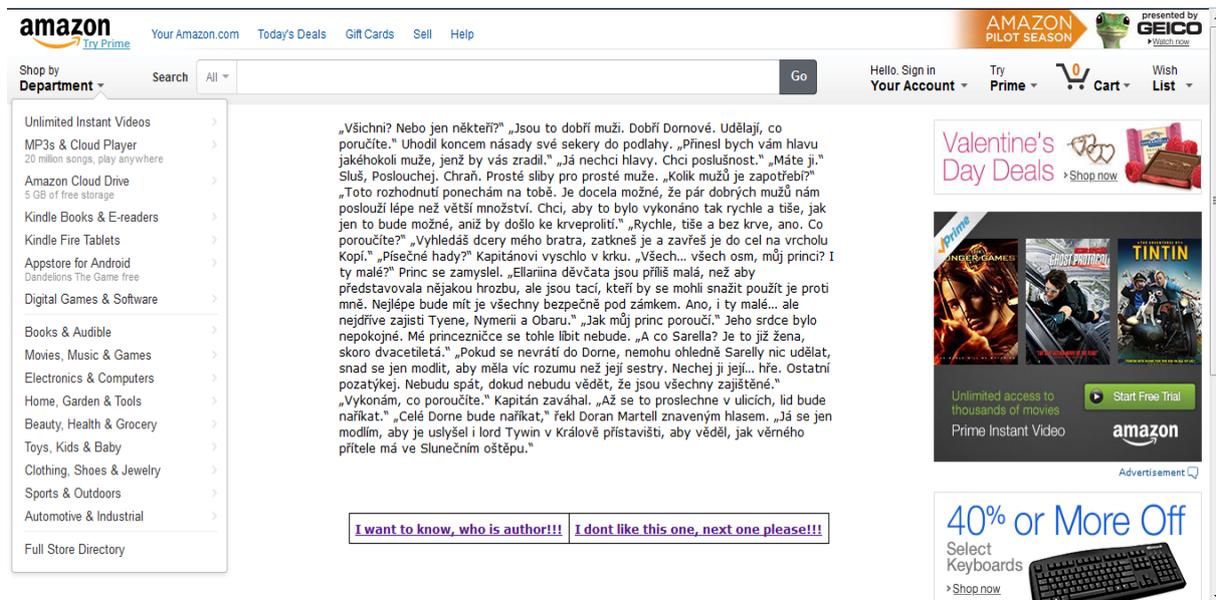
book quotes printed on ten different paper sheets, which can be considered as low-fidelity (lo-fi) prototyping. Low-fidelity (lo-fi) prototyping is characterised by a quick and easy translation of high-level design concepts into tangible and testable artefacts [9].

Gender	Age	Occupation	Nationality
Male	27	IT	Danish
Female	29	Marketing assistant	Danish
Male	24	Student	Mexican
Female	21	Student	Slovak

Table 2 Profiles of testing persons in Stage 1: Quick and dirty testing (lo-fi prototyping)

I randomly mixed the sheets and after short briefing gave to the testing persons. They could read the excerpts if they wanted and then told me if they liked it or not. The results from this early stage testing were quite vague and it didn't really prove any pros and cons of the system. The reason is probably in the very early stage of prototyping, where user couldn't imagine, how the system could work on the computer. Next problem could be also, that users never came into contact with book recommendation portals, due to lack of interest in books.

Due to this, I decided to create simple webpage **Picture 1**, which served as the testing tool and first version of prototype as well. There wasn't any genre selection, just twenty ordered book parts. User could decide if he is interested in the book passage and click on the button "I want to know, who is author" and be redirected to the Wikipedia page with information about the book and author. If he wasn't interested in the book passage, he could click on the button "I don't like this one, next one please", which redirected him to the next recommendation.



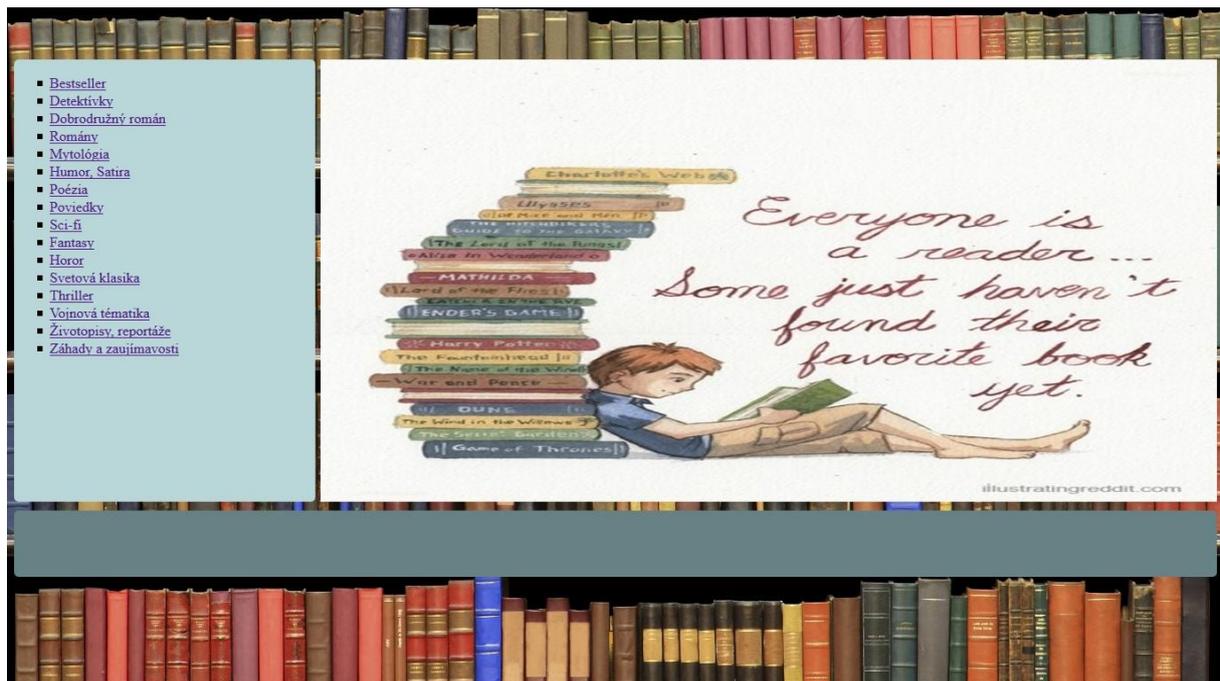
Picture 1 Screen dump of first testing web page, where we can see randomly chosen passage. There are two button also, first one (“I want to know, who is author”) redirects users to some other page with book description. Second one (“I don’t like this one, next one please”) will randomly choose new passage.

Testing persons **Table 3** were at first asked some background questions, which I will present, bit later in this section. Testing further consisted from briefing about the system, execution of the testing and then debriefing, where testing person could tell me his feelings and suggestions.

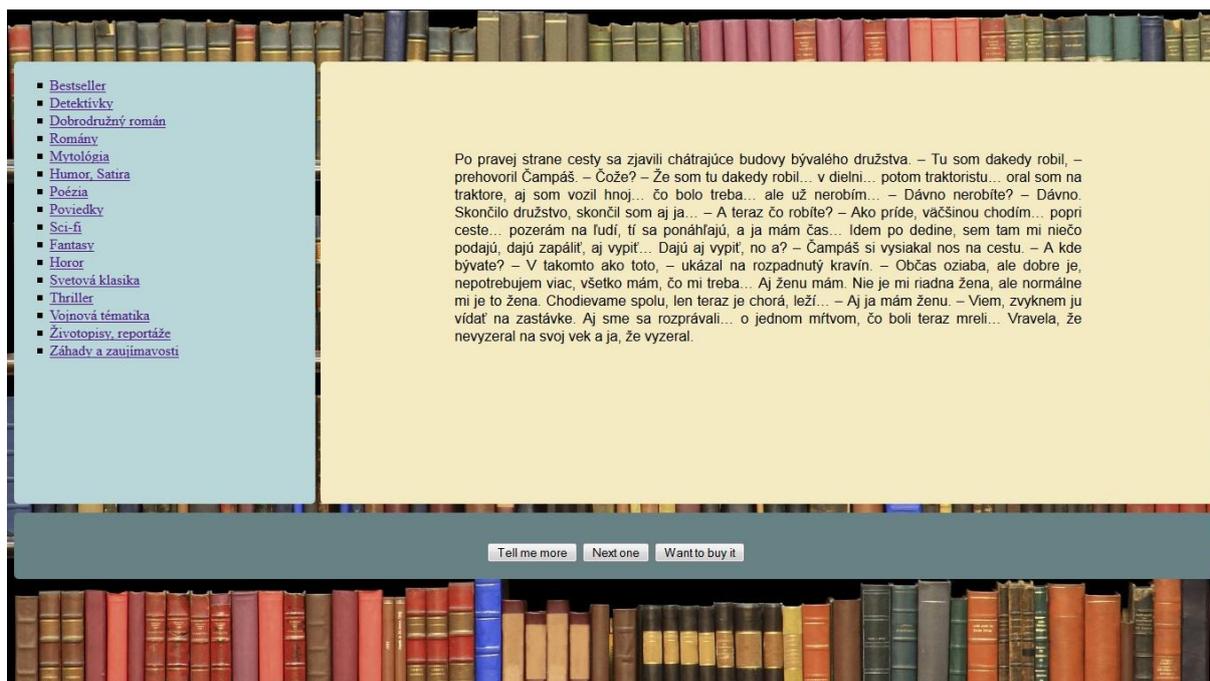
Gender	Age	Occupation	Nationality
Male	83	Pensioner	Slovak
Female	79	Pensioner	Slovak
Female	23	Student	Slovak
Female	52	Pharmacist	Slovak
Male	26	IT	Slovak
Male	21	Tour guide	Slovak
Female	22	Student	Slovak
Male	26	Unemployed	Slovak
Male	25	Student	Slovak
Male	26	IT	Slovak
Male	28	IT	Slovak
Male	29	Environmentalist	Slovak

Table 3 Profiles of testing persons in Stage 2: First HTML-based prototype

Stage 3 started after the first testing was done and the results were processed. I tried to make testing meetings as some kind of think-aloud sessions [5], where testing persons could suggest me how they would change the system. I completely rebuild original simple page and created more structured system **Picture 2 and Picture 3** for testing purpose. Main difference between first and second testing tool was the genre selection and third button “Want to buy it”, which redirect you to the book e-shop. This version was created in the Slovak and Czech language due to reason, that my testing persons **Table 4** were Slovaks and Czechs, where mutual understanding of our languages allowed me to do it.



Picture 2 Screen dump of second testing web page (home page) with eighteen genres chosen from the Martinus.sk webpage



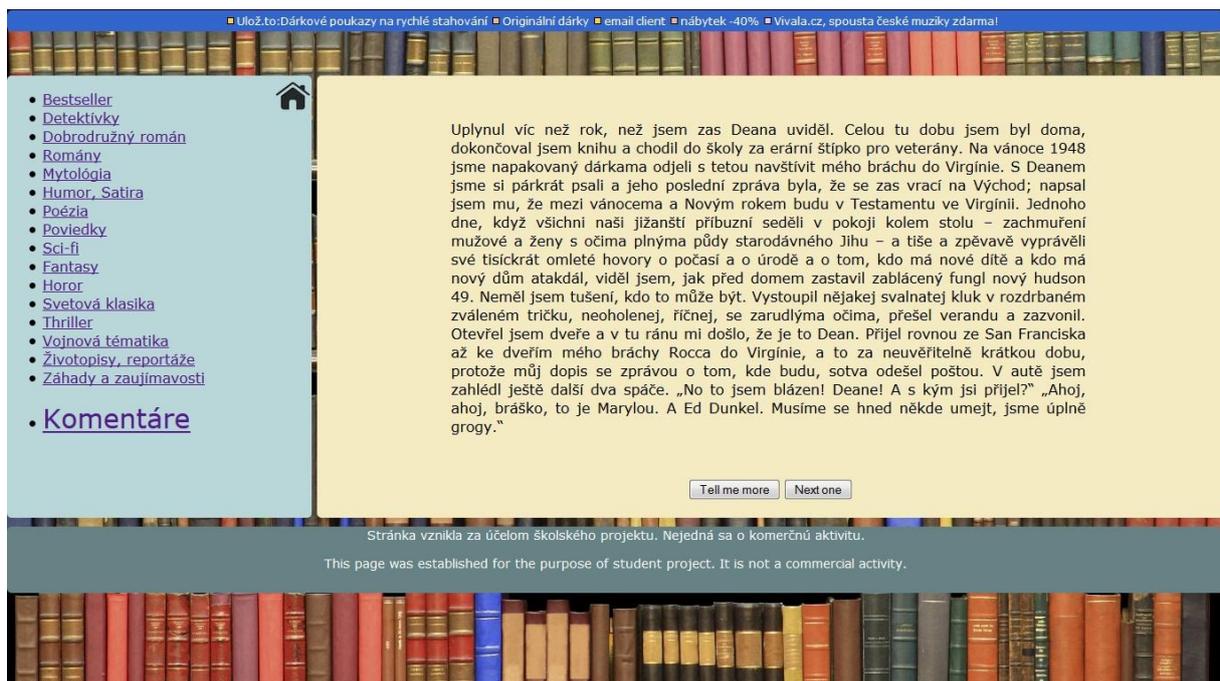
Picture 3 Screen dump of second testing web page – random recommendation from the novel (“Romány”) genre. We can also see three buttons under the passage. First one (“Tell me more”) redirects you to the Martinus.sk, where user will see all information about the book. Second one (“Next one”) will generate new randomly chosen passage. The third one (“Want to buy it”) will redirected you directly to the e-shop.

Gender	Age	Occupation	Nationality
Female	23	Student	Czech
Male	29	AT & T worker	Slovak
Male	26	Web developer	Slovak
Male	21	Student	Slovak
Female	30	Teacher	Slovak
Male	36	Accountant	Slovak
Female	35	Pharmacist	Slovak
Male	25	Student	Czech
Male	33	Bank officer	Slovak
Female	45	Pharmacist	Slovak
Female	26	Accountant	Slovak
Female	24	Student	Slovak

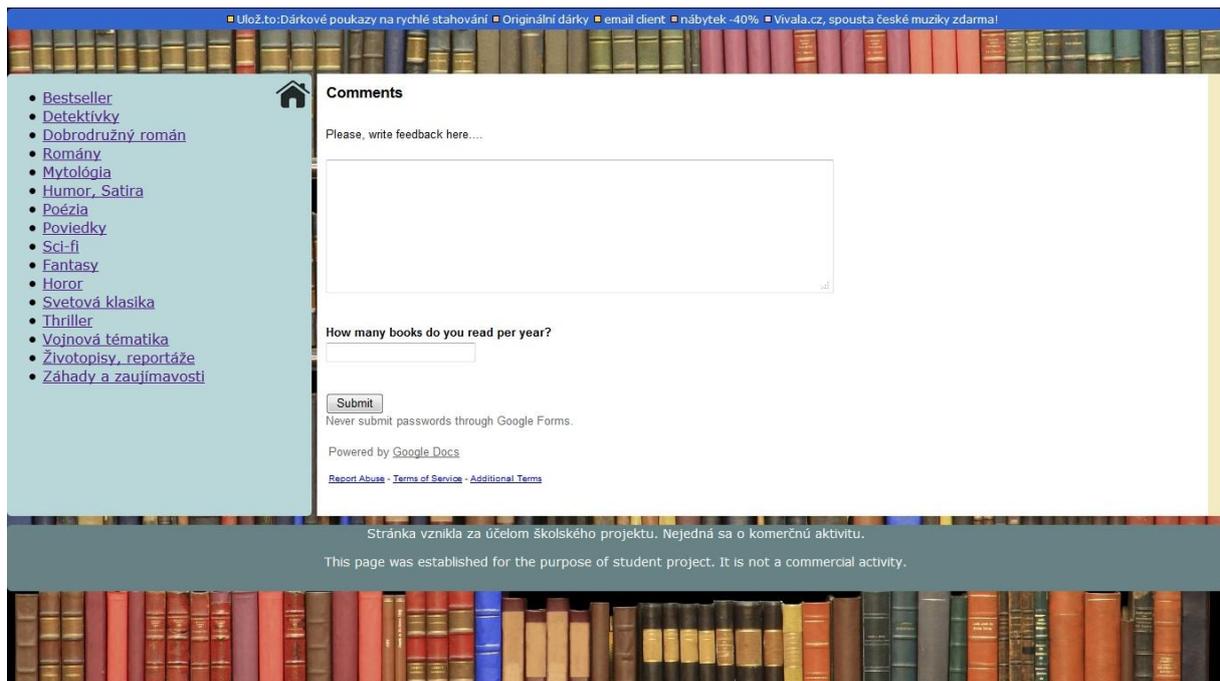
Table 4 Profiles of testing persons in Stage 3: Comprehensive HTML-based prototype

Fourth stage of testing (Stage 4: Live web service with Google analytics) started around one week after the Stage 3 was done and analyzed. I decided not to change almost anything from the second version of HTML-based prototype. The only striking change was, that I

removed button “Want to buy it”. The reason for this was that when I was making personal session I could easily explain to the user, that this is not a commercial system and he can’t buy a book through it. However, this stage of testing was done online without my presence, thus I wanted to prevent complication about the commercial purpose of the system. As we can see on the **Picture 4**, I also added a warning on every single page, that this is a school project and it doesn’t have any commercial purpose. Next difference was addition of the field “Comments”. As I already mentioned, this was due to situation, that I wasn’t present, when user was browsing on my page, thus if he wanted to leave me a feedback, he could do it in this way. For this I used Google forms system, which I embedded into the “Comments” **Picture 5**. User could write a feedback there and answer on optional question, “How many books do you read per year?” This question was added only for some informative purpose and personal interest. Another important technique I used here was piece of code from Google analytics, which I embedded into the source code of my testing page. It allowed me to monitor, what is happening on the webpage. Most important parameters I was looking for were the average time spent on the webpage, if users were single or returning visitors, what they were looking at and some demographics information. More detailed table with the information about the users, collected in third stage is located in the chapter “Stage 4: Live web service with Google analytics.



Picture 4 Randomly chosen book passage from one of the genres. We can notice that button “Want to buy it” is not here anymore and the warning about the student project on the bottom of the page. There are also comments (“Komentáre”) embedded already. For a better orientation on the webpage I made home button as well, represented by “black house” picture in the upper right corner of the genre panel.



Picture 5 After clicking on the comments (“Komentáre”), user was redirected here, into the Google forms page, where he could write a feedback. Optional question is under the text field. When user submitted the answer, it was sent to me to special excel sheet. User could continue directly to the recommendations from here.

All testing sessions in Stages 2 and 3 were done in pleasant environment – home, cafes or libraries. Testing persons were offered with the homemade cake, drinks or invited to order any kind of drink or food from menu list. The reason for this was to make them feel comfortable during whole session. I tested them individually to not affect the results from the other ones and every person was tested only once, no matter if it was first or second stage of testing. However in the third stage of testing, I couldn’t avoid them to become part of testing group again, since it was online testing and I didn’t have any possibility to deny them access to the online webpage. Nevertheless the data obtained from this stage of testing were different like from the first two, so it shouldn’t affect the final results.

Background questions

Background questions were always asked at the beginning of the testing session. Testing persons were asked these questions to get some data to process and overall view on the problem of recommender systems and book recommender systems as well. I wanted to know, if the users understand issues of recommender systems, what is their purpose and if they are using them. Users could react as long as they needed and if they wanted to add something they were welcome to do it. Background questions weren’t changing at all during the Stages 2 and 3 and in the fourth one, they weren’t used at all.

- Do you know what Recommender systems (RS) are?
- Do you use RS?
- How and for what are you using them? Why?
- What are you expecting as a result? Do you feel satisfied with the result?
- For what kind of goods are you looking for the most? Why those?
- Have you ever used RS, when you were looking for a book? If yes, which one and was your answer relevant for you?
- Which other kinds of information sources are you using, when are you going to buy new book? Do you ask you friends, family or are you looking for the information in the newspapers, media or just go to book store and randomly buy a new one? Tell me please more about it. Why this is trustful source?
- Last question: Please, tell me your opinion about, why people use RS?

Sometimes I added some optional questions based on the actual answers from the testing persons. They were some kind of supporting questions, when testing person presented something interesting and relevant before the testing execution began. They are described more detailed in the chapter about the testing results.

This part of the whole process was quite important for better understanding of overall problem. During Stage 1, 2 and 3, I was present during the whole session and ready to answer to all users' questions. Also, based on these questions, user could get some kind of overview of what is going on. Conversely, during the third stage of testing, users weren't asked any question, thus they had to explore more on their own behalf.

Briefing and Execution

Before the testing execution, testing persons were shortly briefed about the system functionalities and its purpose. I instructed them how to interact with the system, for what are those buttons. They were also announced that, they can correlate with system as long as they want and read as many book passages as they want. They weren't asked to read all passages.

For the execution of the testing, I let the testing persons to interact with the system, while I was waiting until he is finished. I asked them to be focussed on the system, but in a case, if they want to suggest or ask something to do it. They could also present their suggestions and ideas after. If there was any question about anything, I answered the question, and made a note about it. Then I asked about the issue during the debriefing to understand, why it was confusing.

Debriefing

Debriefing in my testing sessions were quite similar in all cases. Testing persons were asked to tell me their opinion about the system in general and all their observations as well (kind of think-aloud session [10]). I tried to ask them about their opinions, suggestions and also their

misunderstandings, which they mentioned during the testing execution. The debriefing gave testing persons possibility to think over the prototype and foster them to contribute with their own ideas and suggestions to as ideal as possible service.

All sessions were recorded and transcriptions of the most important parts are published in the chapters about the testing results.

Summary

In this chapter I was mostly describing methods and approaches I decided to use. Whole project was build upon the mix of different methods, which brought complex results. Despite the complexity of the results, I could analyze and apply them later in the process. From my point of view, so called “exploratory research”, which was one of the most important parts of this project, was very instructive method for the further and future development. This means that a lot of work went with finding out how the service should be designed (since there is no similar service on the market). As a disadvantage, I could see the problem of something like a “cold start”. By this term I meant, that you don’t have any specific data or previous researches to use, so your idea and way of implication of this method have to be clear. If you will struggle due to many reasons, the whole process can be used for reshaping the idea fitting to your requirements, but the solution than could be wicked. Fortunately, this method worked well for my purpose.

Literature/ State of the art

This chapter focus mainly on the background of recommender systems and related examples and tries to point out relevant functionalities that are needed and desired for creation of recommender systems. However, it doesn't mean, that I have to build my system on the basis of these principles. After the section about related examples I also added a summary, where I tried to point out similar concepts and functionalities I used in my project. In the end I present critical point of view on the recommender systems in general, especially pointing at their weaknesses.

Related examples

In this section I described four different online book recommendation services – Amazon.com, Booklamp.org, Goodreads.com and Martinus.sk. Each of them has their own preferences and way of recommendations. The first and last one is both online book sellers, with the main difference, that Amazon also offers other kinds of stuff (electronics, clothes, games, etc.) and operates on the world market. Martinus.sk operates only in two countries and offers only books with few additional types of goods (magazines, tabletop games, movies), thus goods which is quite close to the books. Booklamp.org is quite innovative project of book recommendations, applying so called “Book Genome project”, where the story itself is analyzed and divided by plenty of “genes”. Goodreads.com is mostly social and interactive place for readers' community, where people can recommend and discuss books between themselves. I will try to describe overall functionality and purpose of all these web pages separately. In the Summary I would like to point out, functionality of all these services, which could fit the best to my project.

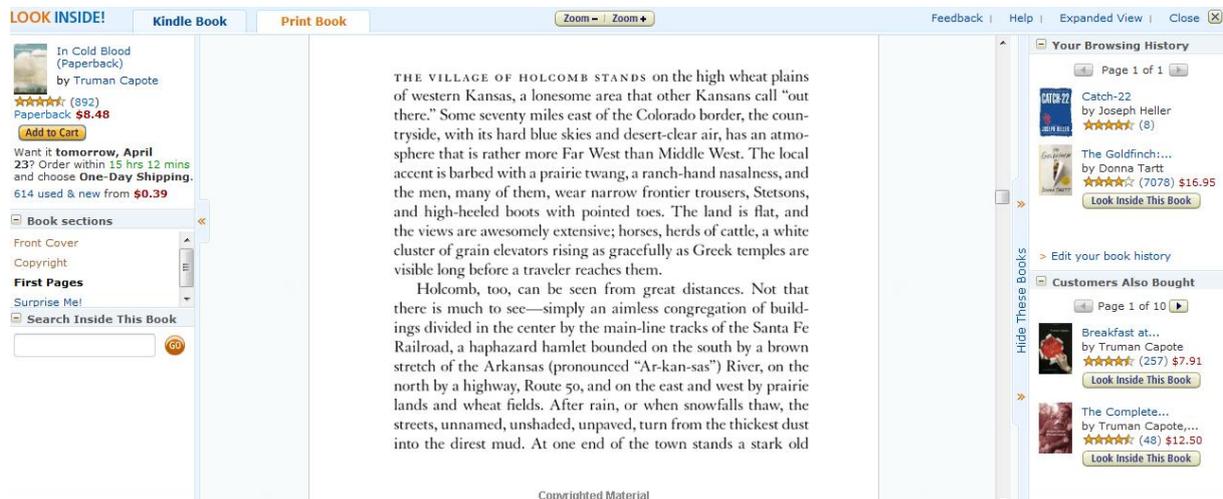
Amazon

URL link: <http://www.amazon.com/>

Amazon is known as the largest and most popular online store in the world. Company started with selling online book, which remained one of their most popular parts of business, now accounts for 7% of company revenue [11]. The company then expanded its business into various segments, including sales of toys, electronic equipment, clothing, medicines and even food. The final step was the introduction of its own, very popular device for reading online books named Kindle. Amazon offers reviews for all products, thus it became especially popular in the books sale and music CDs. Users can also write a short review and share their own experiences with others. The results of the recommendations on this site are under the Product Details. This system uses item to item collaborative filtering methods.

In a case, that user knows what kind of book he wants, he can simply write title or authors name in the “search field” placed on the top of the web page. After this, system shows him list of results. User can also enable sorting, if he changes his preferences in Your Amazon.com. Then if one decides to click on the book enrolled on the list, he will be

redirected directly to the book details, where he can “look inside” the book (**Picture 6**), where he can read usually few initial pages of the book. On the page itself, he can read plenty of additional information like price, product details, reviews both from customers and editors.



Picture 6 Example of “look inside” function, where user can read few initial pages from the book for better awareness. We can notice, “Customer also bought” recommendation on the right side of the picture.

Most important components for the recommendation used by Amazon are showed on the **Picture 7** and **8**. Right under the cover, description and information about the prices are located recommendations build upon the other customers’ preferences. “Customers Who Bought This Item Also Bought” is a function that takes in consideration, what customers mostly bought before or after they bought this item. It doesn’t mean that, they had to buy it together in same time. For this occasion, Amazon uses another function displayed on **Picture 7** - “Frequently bought together”. However, this function is probably more oriented on some discounts or special offers, than recommendation.

Frequently Bought Together

Price for both: **\$13.47**
[Add both to Cart](#) [Add both to Wish List](#)
[Show availability and shipping details](#)

This item: In Cold Blood by Truman Capote Paperback **\$8.48**
 To Kill a Mockingbird by Harper Lee Mass Market Paperback **\$4.99**

Customers Who Bought This Item Also Bought

<p>Breakfast at Tiffany's and Three Stories > Truman Capote ★★★★★ (257) Paperback \$7.91 ✓Prime</p>	<p>The Complete Stories of Truman Capote > Truman Capote ★★★★★ (48) Paperback \$12.50 ✓Prime</p>	<p>Capote: A Biography > Gerald Clarke ★★★★★ (54) Paperback \$13.47 ✓Prime</p>	<p>Other Voices, Other Rooms > Truman Capote ★★★★★ (71) Paperback \$12.50 ✓Prime</p>	<p>To Kill a Mockingbird > Harper Lee ★★★★★ (2,754) Mass Market Paperback \$4.99 ✓Prime</p>	<p>Music for Chameleons > Truman Capote ★★★★★ (45) Paperback \$11.79 ✓Prime</p>	<p>All the President's Men > Bob Woodward ★★★★★ (145) Paperback \$9.28 ✓Prime</p>
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Picture 7 One of the most famous Amazon` examples of recommendation (Customers Who Bought This Item Also Bought) on Amazon webpage, together with some special offer (Frequently Bought Together).

Nevertheless, Amazon uses also other methods of recommendation (**Picture 8**). On the bottom of the page, one can explore other items suggested by customers or “What Other Items Do Customers Buy after Viewing This Items”. This means, that customer didn’t have to buy this item, he was just reviewing it, but then he decided to buy something else. The other function (Suggested items) reveals the close items suggested from the other customers, but they don’t have to be books definitely. In a case, that movie was made based on the book, DVD can be presented here.

What Other Items Do Customers Buy After Viewing This Item?

- Threat Vector (Jack Ryan, Jr)** by Tom Clancy Mass Market Paperback
 ★★★★★ (1,811)
\$5.92
- Locked On** by Tom Clancy Mass Market Paperback
 ★★★★★ (850)
\$8.09
- Sycamore Row (Jake Brigance)** by John Grisham Hardcover
 ★★★★★ (10,440)
\$16.36
- Dead or Alive (Jack Ryan)** by Tom Clancy Mass Market Paperback
 ★★★★★ (803)
\$8.09

[Explore similar items](#)

Looking for "tom clancy" Products?

Other customers suggested these items:

<p>Command Authority (A Jack Ryan Novel) by Tom Clancy</p>	<p>Crescent Rising (Ryan Black Thriller) by Zack Hamric</p>	<p>Dead or Alive by Tom Clancy ★★★★★ (803)</p>	<p>The Hunt for Red October DVD ~Sean Connery</p>	<p>Tom Clancy's Splinter Cell Conviction - Xbox 360</p>
--	--	--	--	--

Picture 8 The other two components of recommendation from Amazon, showing what the customers bought mostly after they saw this item and what kind of other items are suggested to buy (books, DVDs, CDs).

Booklamp

URL link: <http://booklamp.org/>

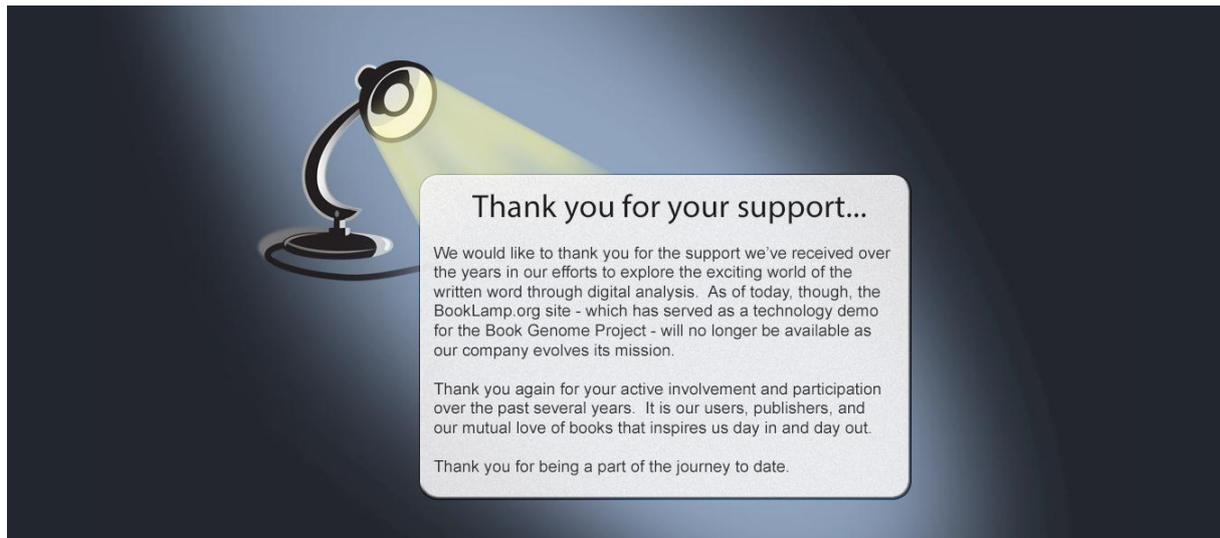
“The book genome is derived through the analysis and comparison of books, specifically the Language, Theme, and Characters of books. In order to survive in the marketplace, a book has to appeal to readers: a reader must find what happens in a book to be interesting (theme), care or be interested in who it happens to (characters or actors), and have both aspects translated through a writing style that is palatable (language).” [12] This citation was taken from the web page Booklamp.org, which was the book recommendation portal, which presented so called “Genome recommendation”. This term was first time conceived in January 2000 by music streaming and music recommendation service Pandora. It is an effort to "capture the essence of music at the most fundamental level" using almost 400 attributes to describe songs and a complex mathematical algorithm to organize them [13].

The key focus of the Book Genome Project was to use algorithms to draw out and measure, on a scene-by-scene basis, useful information about the major factors of books. System created so called "gene structure" for each of the three primary elements to analyze.

The genomic approach defines the three components of Language, Story, and Character as the book equivalent of DNA or RNA specifications. Each of these categories carries its own version of measurements specific to its part of the book genome structure [12]. Language DNA is made up of components called Pacing, Perspective, Description, Density, Motion, and Dialog, and each of these is a combination of pieces which capture the construction of aspects of linguistic style [12].

Thematic DNA – also called a Story DNA - is directly linked to the thematic content of a book and is build from plenty individual thematic components. Each component is evaluated, and each story is sectionalised and categorized based on its thematic "expressions." Some books indicate more Fantasy than Sci-fi, others more Love than Hate. Each "gene" of the Story DNA is checked relatively to the others in a book and then in relation to the dominant themes of it. Each individual book produces around 30000 genomic measurements, which created database of hundreds of millions of data for classification [12].

Unfortunately, Booklamp.org system was shut down on the 1st April, despite the quite interesting system of recommendation oriented on the accuracy of the recommendations and user satisfaction.



Picture 9 Announcement about shut-down on the webpage Booklamp.org

Goodreads

URL link: <https://www.goodreads.com/>

Goodreads is a book recommendation portal founded in December 2006 and launched in January 2007. The website allows searching user-populated database of books, citations or reviews. Users can create their own profile and then register books. Registered books can be sorted and enrolled to library catalogues and reading lists. User can also create their own groups; suggest books to the other users or discuss different topics on forums. In December 2007, the site had over 650,000 members and over 10,000,000 books had been added [14].

The screenshot shows the Goodreads page for 'Life of Pi' by Yann Martel. The page layout includes a search bar at the top, navigation links, and a main content area with the book's cover, title, author, and a 3.86 star rating. A detailed description of the book is provided. On the right side, there are 'Readers Also Enjoyed' recommendations. At the bottom, there are 'sponsored books' including 'Oculus' and 'Until We Die'. A 'Want to Read' button and a 'Rate this book' section are also visible.

Picture 10 Example of Goodreads page of the book “Life of Pi”. Description together with the rating is located on the top of the page, while on the right side of the screen, recommendations are presented. On the bottom of the page are situated community reviews, lists which contain this book and some other subsidiary information. Users can be also redirected to the Amazon or other online stores, when they are interested in buying that particular book.

On the Goodreads, users can rate and review books, upload them to their personal library or reading lists, which are often presented as some kind of recommendations. They can also see what others are reading, thus get suggestions or inspirations for future choices based on they read previously. Social dimension is a strengthened by participation in discussion clubs on a variety of topics, especially about the books or new trends in this area.

As I already mentioned, Goodreads is strongly oriented on social dimension of recommendation, therefore once a user has some friends, he can see their shelves, reviews or libraries and he can comment their posts. Goodreads also use five star rating systems with the possibility of connecting ratings to a written review. The site has three default types of shelves —read, currently-reading, to-read—and the possibility to make your own shelves to categorize books. It also offers small miscellaneous like quizzes, quotations, or games.

If members want, they can receive newsletter about new books, suggestions, author interviews, and many other information. If a user has written a review, it can be linked to the book or group of books profile page. Goodreads as well organizes some live events such as IRL book exchanges or "literary pub crawls".

Martinus.sk

URL link: <http://www.martinus.sk/>

Martinus.sk is the largest Slovak online book seller and also book recommendation portal. Company was founded in 1990 as one of the first private book shops and it went online ten years after in 2000. From that time, company has become the largest Slovak book seller both online and direct (stone shops). They expanded to the Czech Republic as well, where they become one of the major player on book market [15].

Locked On
Tom Clancy · Vydavateľstvo: Penguin Books, 2012

Bežná cena: 8,50 €
Naša cena: **8,08 €**
Ušetríte: 5% (0,42 €)

Zvyčajne posielame do 21 dní.

Pozriete, v ktorých knihkupectvách máme na sklade

Detaily

- 720 strán
- brožovaná väzba
- anglický jazyk

Informácie

- O knihe
- Recenzie
- Odporúčania

Upozornenie: Táto obálka môže byť iba ilustračná

Moja knižnica

Prihláste sa a môžete ihneď začať hodnotiť knihy jedným klikom a vytvoriť si u nás vlastnú knižnicu!

Čo je moja knižnica?

Ďalšie knihy z tejto oblasti

Beletria – anglicky

- The Great Gatsby**
F. Scott Fitzgerald
Naša cena: 3,25 €
- A Song of Ice and Fire - Box set**
George R.R. Martin
Naša cena: 43,23 €
- The Fault in our Stars**
John Green
Naša cena: 9,35 €

Zákazníci, ktorí si kúpili tento titul, si kúpili tiež

- Tom Clancy - Živý terč
- Tom Clancy - Proti všem
- Tom Clancy - Získaš nebo umrteš
- Tom Clancy - Red Rabbit
- Tom Clancy - Patriot Games
- Tom Clancy - Bear and the Dragon

Picture 11 Example of book page on the portal Martinus.sk. On the top of the page we can see typical information, like title, author's name, cover and other details. Under that, recommendations are displayed ("Zákazníci, ktorí si kúpili tento titul, si kúpili tiež"). Translation of this saying is: "Customers, who bought this title, also bought", which markedly remind Amazon approach. On the bottom of the page, user reviews are shown.

Overall style and technique of Martinus.sk markedly remind Amazon approach as it was mentioned under the **Picture 11**. Company is operating webpage, where users can search for a book, order it, pay it and then choose a way of delivery. On the homepage, new books and bestsellers are shown, together with some other perks, like top ten most sold books this month, blogs and so on. By clicking on some preferred or searched book, user will see basic information, shown and described on **Picture 11**. For some books, user has also a possibility to read part of the story, which reminds Amazon "Look inside" as well (**Picture 12**).

Master of explosive international intrigue Tom Clancy brings together his greatest characters and a new generation to fight the war on terror.

Although his father had been reluctant to become a field operative, Jack Ryan Jr. wants nothing more. Privately training with a seasoned Special Forces drill instructor, he's honing his skills to transition his work within The Campus from intelligence analysis to hunting down and eliminating terrorists wherever he can - even has Jack Ryan Sr. campaigns for re-election as President of the United States. But what neither father nor son knows is that the political and the personal have just become equally dangerous. A devout enemy of Jack Sr. launches a privately funded vendetta to discredit him by connecting the presidential candidate to a mysterious killing in the past by John Clark, his longtime ally. A shadowy mercenary team is dispatched to capture the former Navy SEAL.

With Clark on the run, it's up to Jack Ryan Jr., along with Ding Chavez, Dominic Caruso, and the rest of the Campus team, to stop a threat emerging in the Middle East: a corrupt Pakistani general has entered into a deadly pact with a fanatical terrorist to procure nuclear warheads, which can be used to blackmail any world power into submission. With the breakneck speed and military action scenes that have made him the premier thriller writer of our time, Tom Clancy delivers a novel of high-tech warfare in which the enemy within may be even more devastating than the enemy without.



Z nášho blogu: [Zomrel Tom Clancy, jeden z najúspešnejších autorov trilerov na svete](#)

Picture 12 Example of book passage in a way displayed on the Martinus.sk

Based on the facts and information obtained through the analysis of Martinus.sk portal, we can tell, that company didn't bring anything new in the area of book recommendations. It seems that they just saw the opportunity on Slovak market and build their system based on the new Amazon trends. On the other side, Amazon is well-established and well-working online reseller, therefore getting inspired by their model is probably quite a good idea. Martinus.sk proved it as well, since they seized Slovak book market [15].

Summary

Based on the information obtained from the analysis of four quite different recommendation portals, I would like to specify which features can be used in my service. Amazon.com is well organized and the largest book reseller on the world and it provides plenty of information about the books. From my point of view, I could see common features at the "Look inside" feature. However in my system, book passages will be from different parts of the book, not only from beginning. Next important feature are the information about the book (title, author, genre...), which will be displayed, when user will decide, that he wants to know more about the book. This is not mandatory although, but Amazon as the largest book portal probably has the largest book database.

Booklamp.org brought really innovative approach for book recommendation. So called "Book genome project" was used as motivation of different approach in recommendation for me. Deeper analysis of the story itself could be used for choosing proper book passage in my service; nevertheless it is not possible to prove this assumption.

Goodreads.com is social oriented book recommendation portal. Social domain will be used in my service as well; therefore I could see some common features here. In Goodreads, user can update book database, add new books and so on. It is the same approach as I m using in my service. Goodreads could be also used as book information base, but Amazon is probably more trustful service.

Martinus.sk looks like simpler copy of Amazon.com. In my service it was used as book information base, due to fact, that I tested prototype mostly with the users from Slovakia. Therefore I decide to choose the portal, which is the most famous in Slovakia and will create feeling of something safety and known. Otherwise, system has most in common with Amazon.com.

Algorithmic recommendation methods

The goal of Recommender Systems, (hereafter RS) is create meaningful recommendations of items or products to users that might be of interest or useful in some way.

Examples of operation of RS in the real world are recommendations of books in online store Amazon, movies on Netflix (Internet TV), friends on the social network Facebook, or videos on YouTube. Everyone who uses these services is using recommender systems [16].

Recommendations are usually personalized, made uniquely for each user, so each user gets a different list of items. Definitely not every proposal is individualized and it makes much easier for systems to create it. These kinds of recommendations are most often found in online newspapers or magazines. A typical example of such proposals is the best ten books, or DVDs, according to sales or customer reviews. These proposals certainly have its uses, but mostly they do not deal with any RS research [17].

Construction module for RS depends on the particular characteristics of the data available. For example, Amazon visitors often provide a rating on a scale from 1 (dislike) to 5 (like this). Such assets record opinion of the users about the items. Additionally, the system may have access to specific attributes, such as demographics or product description. Referral systems differ in the way they analyze these resources to develop ideas about the relationship between the user and items that can be used to identify connections [16].

According to the book Recommender Systems: An Introduction [17], recommender systems can be break down as follows:

- Collaborative recommendation (Collaborative filtering)
- Recommendations based on content (Content-based filtering)
- Recommendation based on knowledge
- Hybrid technology

Collaborative filtering

The basic idea of this approach is that when users in the past shared the same interest in the item, they will probably have similar tastes in the future. So, for example, when a user A and B have a similar purchase history and user A buys a new item, the logical outcome will offer this item to a user B. Purely collaborative approach requires no knowledge about the items themselves. The advantage is that we do not need any data about the items, and therefore there is no need for data maintenance. On the other hand, the use of information about the items and then design evaluation according to their similarities could be more efficient. [17]

Collaborative recommendations may be divided into the memory or model recommendations. Recommendations on the basis of the similarity of users purchase history is an example of memory design (original database is stored in memory) and it is used directly to generate recommendations. In data modelling approach are data initially processed offline and then user model is formed, as in the recommendations based on the similarity of items. In online mode, there is only need this ready-made model to create recommendations. Memory recommendations are more accurate because they use all available data to generate recommendations, but they have a problem with the calculations in huge databases. [17]

Example of Collaborative filtering (item based Collaborative filtering) is SlopeOne [18] algorithm (invented by Amazon.com). Other well known services like Facebook, LinkedIn or Last.fm are using this approach [19].

Content-based filtering

In the collaborative approach may not be known about the items absolutely anything. The main advantage in this approach is that there is no need to maintain an updated description of the items. The disadvantage is that you cannot do recommendations based on the characteristics and tastes of the user. In everyday life, it is very natural for users to recommend the book Eragon, if we know that Eragon is a fantasy, and if user likes the fantasy and also likes Lord of the Rings. In electronic recommendation systems it's needed just a handful of information: a description of the characteristics of items (books, films) and the user's profile, which is its description of-interests (favourite books, movies and genres). [17]

While this approach depends on other information about items and users, it does not need large user base to generate recommendations. List of recommendations can be made, even if there is only one user.

Content-based filtering is used in e.g. cluster analysis or Bayesian Classifiers. Well known services like IMDB, Rotten Tomatoes, mostly oriented on movies or books recommendations are using this approach. [19]

Knowledge based approach

This approach uses knowledge about users and items to generate recommendations. Previous approaches are suitable for recommending products, such as books, movies, music or newspapers. But when recommending goods such as cars, computers, residential and financial services there are not the best option. The reason is that e.g. for housing is impossible to get enough ratings because there are not enough copies of the same, or the user wouldn't be happy with the recommendations around year old.

Recommendations based on knowledge is not facing any of the problems of previous approaches because of the recommendations requires no reviews. The recommendation is calculated individually for each user and independently. This is actually the interactive filtering system, where the user enters what he needs and the system delivers recommendations. [17]

Hybrid recommender systems

Each of the previous approaches have some weaknesses that it in some situations disadvantage compared to other approaches. Hybrid recommender systems combine two or more recommender techniques. Their main purpose is to improve efficiency and reductions disadvantages of previous approaches. Most of these are combining collaborative filtering with some other techniques and the avoidance of the issue with new items or users.

Well known example of Hybrid recommendation service is Netflix. They make recommendations by comparing the watching and searching habits of similar users (i.e. collaborative filtering) as well as by offering movies that share characteristics with films that a user has rated highly (content-based filtering). [17]

Summary

This part briefly describes basic principles of recommender services. However I didn't describe any particular approaches for the recommendations, because there is no need to use any of existing algorithms for recommender system in my prototype. Therefore I preferred to describe already existing book recommendation portals as examples, how different approaches can be used.

Critique of algorithmic recommendations

Since Amazon has been established, algorithms have been used to recommend books to users. Algorithmic recommendation has either been based on similarities in customers' preferences, or similarities between the books, e.g. terms of genre, author etc. However, this project takes another point of departure, namely the text itself by presenting excerpts

from books to the users of the recommender system. Also, in this project I don't compare performance or success-rate (or anything else) with the algorithmic recommenders, but just examine the text excerpt idea in itself.

The reason for this was first time presented in the chapter "Motivation and background", where I mentioned, that my motivation comes from users' frustration of the current recommender systems. Problem of algorithmic recommendation services is that, even if you are using combination of the latest algorithms build, it is still questionable, how good your recommendations are. Many recommender systems, especially those ones, who have high profit, suffer from problems of marketing and necessity to sell. Therefore, they used to recommend on bestsellers or books from the "modern and stylish" authors, who are at odds right now, instead of preferring recommendations from other, maybe more qualitative authors. Another weakness of recommendation portals is that, many of the recommender systems use same kind of recommendation algorithms and analyze same user preferences, thus user's suggestions could be in several cases. This raises the question of need different portals, when they recommend still the same books.

However, as most fundamental weakness in this case I see the absurdity of some recommendations. Based on my previous experience, there were many cases, when I was looking for a new book and after data entry; I get totally strange suggestions from the system, which completely didn't fit to my requirements and expectations. Cause of this issue is that algorithmic recommendation is build upon the mathematic formula (or more formulas), which counts with many parameters and based on this "artificial" intelligence suggests you something which fits to them. Therefore I decided to completely skip this part of the recommender systems and don't use any complex algorithm to provide recommendations. System only applies a very simple principle for the recommendation: Random selection from a fixed pool of items.

Analysis of user tests

As I already mentioned in the chapter “Methodology”, testing ran in four stages. In this chapter I described the outcomes of the testing and summarize the results coming out of it. This was necessary due to creation of the final prototype.

Stage 1: Quick and dirty testing

In the stage 1 of the user testing, four persons (see **Table 5**) were presented to a low-fi [9] paper prototype. The testing provided a first response to my idea, but due to the low number of test persons, and the fact that none of them is frequent reader, the test results cannot be interpreted as more than a rough confirmation of the concept. The test procedure was as follows:

Procedure

I didn't ask background questions, I came directly to the testing itself. I prepared and printed out 10 different pages from different books (all in English language) and showed them to the user. They had to go through the texts one by one and tell me, if they are interested in it and if they would like to know more about the book.

Result

Generally, users were bit confused with the test itself, because they couldn't imagine, how this kind of system would look like on computer. However what is more important, they liked the idea, but all of them advised me to create some testing tool on the PC to not confuse the testing objects and use a bit more realistic environment. Unfortunately, all of them said, that they don't know if they would use this kind of system or read the book, based on such a short passages. On the other side, every one of them added, that he is not reading very often, so I should ask someone else, especially people who likes to read.

Gender	Age	Occupation	Nationality
Male	27	IT	Danish
Female	29	Marketing assistant	Danish
Male	24	Student	Mexican
Female	21	Student	Slovak

Table 5 2 Profiles of testing persons in lo-fi prototyping

Stage 2: First HTML-based prototype

Based on the results from the lo-fi testing I created simple HTML web page, where I uploaded 20 different passages **List 1** (Slovak/Czech language, usually end of 2nd or 3rd

chapter, all from quite well known authors, only one author was from Slovakia) from the different books, as the testing tool. I also placed two simple buttons on the webpage (“I want to know who the author is” - linked to some other page with book description) and the other one (“I don’t like this one, next one please” – generate next recommendation). The text is in the middle and as the background picture I used the screenshot from the Amazon homepage to make the testing environment (book recommendation portal) as realistic as possible. Originally, I started with the home page, where in the table I had 20 random choices and user could click on one of them and then he was redirected to the page with the text itself. But after the discussion with well educated interaction designer, I changed the testing page to the actual looks **Picture 1**.

Books in the first testing (List 1):

- Game of Thrones, G.R.R.Martin – fantasy/historical fiction
- Little Mermaid, H.C. Andersen – fairy tale
- Pet Sematary, S.King – horror
- When the gravity fails, Effinger – sci-fi
- Flowers for Algernon, D.Keyes – short tale
- Harry Potter and Sorcerer`s stone, J.K.Rowling – fairy tale/mythology/legend
- Post office, Ch. Bukowski – humour/metafiction
- The Redbreast, Jo Nesbø – Detective story/Realistic fiction
- The Beach, Alex Garland – Realistic fiction/Fiction narrative
- The hunt for Red October, Tom Clancy – Historical fiction
- The flowers of evil (Carcass), CH. Baudelaire – Poetry
- Brother Karamazov, M.F.Dostojevskij – Folklore/ Historical fiction
- The life of useless man, M. Gorkij – Folklore/ Historical fiction
- The red dragon ,T. Harris – Detective story/Thriller/Mystery
- Catch 22, J. Heller – Realistic fiction/Tall tale/Humour
- Black hawk down, M. Bowden – Realistic fiction/ Historical fiction
- The count Monte Christo, A. Dumas – Historical fiction
- On the road, J. Kerouac – Fiction narrative
- Journey to the centre of Earth, J. Verne – Sci-fi/
- Flapper, D.Dán – Detective story/Realistic fiction

Procedure

Testing was running on the different places (home, café`s, book shop and friend`s flat) in the week from 9th to 16th of February. All testing persons were questioned with the same background questions with no time limitation to the answers. After the questioning, I presented them the idea itself and explained how the testing will look like. Procedure of the

second and third stage was similar, thus first I asked the background questions, then briefing, execution of the testing and as last – debriefing.

Testing persons were encouraged and offered to read as much as they want from the text placed on the screen. If they were interested in the piece of the text, they could click on the first button and check the book title and author`s name. In most cases it was a hyperlink to Wikipedia, but in a two cases, it was link to the Amazon.com e-shop or the biggest Slovak book e-shop Martinus.sk. The assumption behind this was to see, how the user will react to the situation, that he was redirected directly to the place, where he can buy a book.

If the user weren`t interested in the text, he could click on the second button and being redirected to the page with other text. Unfortunately, incorrect design of the initial testing tool, user had to click on the second button with a bit confusing name, even if he liked the book and wanted to see more. Many testing persons pointed to this problem. Testing persons in all cases went through more than one text and in most of the cases through the all twenty texts.

After the testing itself, each testing person was asked to tell their feelings and opinions about the idea itself. I also tried to motivate them to present their suggestions or other kinds of future improvements. I haven`t tried to ask too much general questions, only the specific ones about the system features and overall functionality or when I tried to get more specific answer from the testing person.

Here is the list of all my testing persons, listed chronologically based on the day of the testing. I will describe and analyze their answers one by one and after all in the Summary chapter, I will bring the executive summary, necessary for the next stage. Testing was done in Slovak language. There were twelve testing persons used in the Stage 2 **Table 6**.

Interview	Gender	Age	Occupation	Nationality
1	Male	83	Pensioner	Slovak
2	Female	79	Pensioner	Slovak
3	Female	23	Student	Slovak
4	Female	52	Pharmacist	Slovak
5	Male	26	IT	Slovak
6	Male	21	Tour guide	Slovak
7	Female	22	Student	Slovak
8	Male	26	Unemployed	Slovak
9	Male	25	Student	Slovak
10	Male	26	IT	Slovak
11	Male	28	IT	Slovak
12	Male	29	Environmentalist	Slovak

Table 6 Profiles of testing persons in first stage of testing

Result

Background questions made it easier to understand for the users what recommender systems are and what will be their role in the testing. It also showed many uncertainties among them about this domain. Execution of the testing itself was the most important part of the whole session. All of the users participated gladly in this part of the session and tried to explain their views on the problem. I presented more about these comments and suggestions later in this section (“Stage 2: User requirements/ feature wishes”). Users were trying to suggest many features, especially the ones, they are using in other services, which has many in common with my prototype. There were also differences between the users based on their age and occupation. More technically oriented users were suggesting more technical and precise features, whereas the others were more oriented on the content part of the prototype. However I tried to consider usage of every suggestion.

This stage of testing brought me many new ideas how to continue with my project and how the prototype could be upgraded. It also showed me the interest of users, especially the ones, who like to read, into the development of such a system. Obviously, combination of the results from this and others stages of development could bring interesting and useful system.

Stage 2: Interview findings

In this section, I will present the questions I asked the users during the Stage 2 and 3. After every question, there is a small section, where I analyzed answers and findings from the interviews. As well I didn't show what exactly the users said. These transcriptions can be found in the “Appendix – Free transcriptions of the answers from Stage 2”.

First question was:

Do you know what Recommender systems (RS) are? Do you use them?

Most of the users knew what the RS are, except two (Interview 1 and 2). Both of them were quite older (79 and 83) and they argued, that they are not using PC at all. A lot of the users told, that they used to check prices on the portals like Pricerunner.co.uk, where they get a lot of recommendations and then based on them, they decide where they will buy a product. Generally, based on these answers it is quite obvious, that people are looking for the information on RS, but they are not willing to trust every single recommendation there. They used to check more portals or sources to make a decision (Interview 4, 6, 10, 11).

Next supplementary questions from the area of RS were asked one by one, but in this chapter I decided to present them together, due their connection to each other.

How and for what are you using them? What are you expecting as a result? Do you feel satisfied with it? For what kind of goods are you looking for the most?

The answers regarding these issues were also quite clear. Users used to check electronics (Interview 5, 6, 10), real estate services (Interview 4), clothes (Interview 6, 11), restaurants (Interview 6) or music (Interview 7). Moreover, they trust also references from the other users – Facebook, blogs (Interview 3, 11). Some of the users rather ask someone else for the recommendations (Interview 7). Based on the outcomes from these questions, most well-known RS are Amazon, Pricerunner.co.uk, Google, Ebay.com and Martinus.sk. For the music, one user prefers using Last.fm and Spotify.

Have you ever used RS, when you were looking for a book? If yes, which one and did you find something relevant? Which other kinds of information sources are you using, when are you going to buy new book? Do you ask you friends, family or are you looking for the information in the newspapers, media or just go to book store and randomly buy a new one?

In this question, almost every user said that they rather ask for recommendation for book from someone who knows them then go to the recommendation portal. Most of them trust friends, family or people around, who can advise them the best. Some of the users prefer magazines or newspapers (Interview 1, 2, 11) or combination of the different online portals (Interview 12). Based on these answers, I can conclude, that people, who knows you the best are the best for the book recommendations.

Please, tell me your opinion about, why the people are using RS?

In this question, most of the answer was that people want to save their time, if they have to make some decision or they want to see other people's options.

Stage 2: User requirements/feature wishes

From the information obtained from the interviews, I would like to reflect some suggestions or comments. For this purpose, I decided to create simple list:

- Genre selection or differentiation on the beginning – check box
- More information about the book on the page – in a way of pop-up windows
- Social domain – possibility to send the text to some friends
- Random button on homepage – something like Google's "I m feeling lucky"
- Connection with some book e-shop or shop
- Piece of the text from author/publisher/editor/critic etc. + length of text
- Different structure of the text
- Third button – It's amazing, I want to buy it.

Based on the information from the interviews, I see that there are more upgrades or the features, which can be added to the system, but these were mentioned and approved from the most of the potential users and I also see them relevant.

The experiment (testing) proved some assumptions said before. Frequent readers liked this idea and it was kind of interesting and attractive to go through the different texts and find something new.

Target group was selected in a right way, but in the next level of testing, I would like to narrow down my testing group to the people younger than seventy years. The problem I could see in this testing was that older people don't use recommendation systems at all and their preferences are probably not going to change. Next problem could be more difficult access to this group of people. The other age groups didn't have any problems with the using of the system, thus there won't be any other change.

Many testing persons pointed to the problem of text selection, which is one of the most crucial problems in this type of system. I think that it could be solved by authors/publishers or the other persons, who know some background information about the book and they can choose attractive part of the book. I think that if there would be a connection with some book store or bigger book portals, there would be better chance to present interesting passages. On the other side, I can give "power to the people", thus users can update the portal as well (assumption for testing in next round). Social domain and social networks are in many cases daily routine of plenty of people around the whole world, and users like to be part of something. Therefore I think that this functionality could be the part of the system as well.

Potential users also demanded more information about the book on the page itself, because they didn't feel comfortable, when they had to go to other page and then back. I believe that some pop-up windows (like it was suggested) can solve this problem. It can be also tested in next stage.

Different structure of the text appearing on the screen is also quite a problem, which have to be solved. Question is that if it is necessary to solve this question now or not. Simple graphics and structure of the web page is due to reason, that this is just a testing tool, worlds away from the final product. If there would be an opportunity to enter to the market, I would definitely ask some professional web development studio to solve this question for me. On the other side, I changed testing environment before the Stage 3 to make it clearer and nicer.

The most important part mentioned by all users was the genre differentiation. Users expressed themselves, that they would prefer it definitely. This issue combined with "random button" can be solved with adding of some kind of homepage, where user would choose some genre and after that he will get the random recommendation from the specific genre. Random button could be also used for some kind of quiz game, which was mentioned by some users.

There were also some other suggestions, which I would like to present, but I can't see them as important as those listed above:

- Tool for new authors
- Affiliate marketing
- Mobile version
- Language options
- Pictures from the book

These suggestions can be presented later as some part of the “future work”. It will be interesting to see, if some of these will appear again in the next stage of testing.

All of these suggestions, mentioned above will be compared and analyzed in the final section of this chapter after all stages will be done.

Stage 3: Comprehensive HTML-based prototype

As a second step of data gathering process, logically based on outcomes from Stage 2, another eleven interviews were conducted, aiming to find out how potential users interact with the system. After Stage 2 and application of selected results, system was significantly changed to this form **Picture 2** and **Picture 3**.

Procedure

All tested users were asked same question as in Stage 2 and they were allowed to interact with system as long as they wanted. None of them participated in the Stage 2 of testing, thus they considered system as completely new and they didn't comment changes in it. Additionally, the users' own ideas how system would look like and suggestion about the content were also subject to the interviews. Stage 3 ran from the 1st of March until 16th of March. Generally, procedure was completely same as in Stage 2.

In a **Table 7** below, we can see all users participated in the interviews together with their age, gender, nationality and occupation. Users are listed chronologically from first tested to the last.

Interview	Gender	Age	Occupation	Nationality
1	Female	23	Student	Czech
2	Male	29	AT & T worker	Slovak
3	Male	26	Web developer	Slovak
4	Male	21	Student	Slovak
5	Female	30	Teacher	Slovak
6	Male	36	Accountant	Slovak
7	Female	35	Pharmacist	Slovak
8	Male	25	Student	Czech
6	Male	33	Bank officer	Slovak
10	Female	45	Pharmacist	Slovak
11	Female	26	Accountant	Slovak
12	Female	24	Student	Slovak

Table 7 Profiles of testing persons in Stage 3: Comprehensive HTML-based prototype

Result

As I already mentioned in previous section, procedure of this stage haven't changed at all. Only difference was the changes applied to the prototype, because the one used in this stage was more complex. Users were also suggesting a lot of features, which are reflected later in this chapter. Some of the suggestions were repeated, thus I could see that these ones are important for the users and they shouldn't be excluded from the final prototype. However I decided not to apply these changes for the fourth stage of the testing, but rather wait with it until final prototype will be under construction.

I believe that testing with real users in these stages brought me invaluable knowledge necessary for successful ending of this project. Also I could understand user needs much better, than I would just from some anonymous questionnaires.

Stage 3: Interview findings

In this section, I will present the questions I asked the users during the Stage 3. After every question, there is a small section, where I analyzed answers and findings from the interviews. As well I didn't show what exactly the users said. These transcriptions can be found in the "Appendix – Transcription of the answers from the Stage 3".

First question was:

Do you know what Recommender systems (RS) are? Do you use them?

Again, from the answers it was obvious, that some users weren't quite sure, what RS are and if they are using them. Younger users (students) except one and technically oriented respondents were more clear in the answers and can at least describe what is it RS. Many of them confused this term with e-shops or normal web sites. If I saw that users are not very

clear about the answer, I tried to explain them what RS are and show them some examples, how they work to make their other answers clearer.

Next supplementary questions from the area of RS were asked one by one, but in this chapter I decided to present them together, due their connection to each other.

How and for what are you using them? What are you expecting as a result? Do you feel satisfied with it? For what kind of goods are you looking for the most?

Some users didn't answer these questions (Interview 9) and some of them already answered in previous questions (Interview 4). As it is obvious from the answers, users are usually looking for some specific items on the internet (table top miniatures, electronics, toys). Four of the users answered that they are using book recommendation portals. The answers showed that users liked to be influenced by the systems; especially the younger ones and they are only partially satisfied with the results. As a main problem they see a lot of unnecessary comments, too much options or recommendations.

Have you ever used RS, when you were looking for a book? If yes, which one and did you find something relevant? Which other kinds of information sources are you using, when are you going to buy new book? Do you ask you friends, family or are you looking for the information in the newspapers, media or just go to book store and randomly buy a new one?

I have to tell it again, but based on the answers from respondents it is clear that friends and family (or relatives) are most trustworthy source of book recommendations. Most of the tested person are also using internet (blogs, specific websites) for getting new information or inspiration about the books, but they have their concrete characteristics for this process. Also the libraries and bookshops are some kind of inspiration as the answers showed (Interview 1, 4, 8). Some of the users have their favourite authors (Interview 6, 10, 11) and read everything, what they publish. These answers are relevant to question, if this project/system has true meaning and if users actually use any RS for discovering new books.

Last question asked before briefing and testing itself was simple open question to hear what users thinks about people who use RS.

Please, tell me your opinion about, why the people are using RS?

What I found out from the interviews and this last question were feelings and opinions of the users about RS although they are not using them in some cases. Users believe the main purposes of RS are influence and time constrains in this fast age. Also many of the users have tendency to trust certain amount people on the internet with same opinion.

Stage 3: User requirements/ feature wishes

Here in this part I present the comments and suggestions from tested users about the prototype. I decided not to present every single comment, only those, which has got some relevancy about the topic. All comments and suggestion are my translations:

Interview 1:

Comments:

I really enjoyed reading these passages and sometimes been surprised and pleased, if I knew some. I can tell you, that I would use this service for getting new inspirations and also if I would be bored for example on the lectures, I would browse through it and read passages there. What I didn't like, was that I was redirected to Martinus.sk. I would prefer if I would stay on same webpage.

Suggestions:

I would add genre "Drama" definitely there. And there is no non-fictional literature.

Change a design little bit as well, but I assume, that it is not your main problem now, isn't it?

Interview 2:

Comments:

I think that the idea is good and it has got some potential, but you have to find a way, how to extend it among people.

Suggestions:

From my point of view, I really can't see importance of "I want to buy it" button there. I think that you should unite those two ("I want to buy it" and "Tell me more") in one. If you want to use this portal as e-shop, you should keep only one - I want to buy it. I also think that this concept of redirection to the other page (Martinus.sk) is quite good.

The passages were relevant for me, but I would add some graphical content as well. Maybe some book cover or pictures from book. They can attract you much more then the plain text. One or two are just enough. On the other side it would lose that surprise effect. Maybe if you would blur the name of the book and the author. Or it can be under the button "Tell me more".

Interview 3:

Suggestions:

Buttons, which are on the bottom shouldn't be there. If you click on any webpage, you can't see them. They have to be visible all the time; it is basic rule of UX (User experience). It should be on the top, right above the text.

All texts should have same length. I think that some of them are too long. You should unite them. There is no necessity to have them so long. If you are expect to attract the readers, they should be attracted from first let's say ten sentences.

Definitely don't use pop-up windows. People used to think, that it is some advertisement, so they are closing it very fast and don't click on the button again. Keep it in same way, like is it now.

I would suggest adding some tags to the books, e.g. under the text. They should be simple, one or two words, which will tell you more about the text. For example, if you will click on the sci-fi, there will be tag: action-space-aliens-mars. Reader will get much better overview about the text and he still doesn't know about the author and title, so it won't lose its main purpose.

Interview 4:

Suggestions:

I would prefer to have more language options in the system. If the translator translates the original book, it can lose a lot from their originality or style. I always prefer to read a book in original language.

I think that these passages are bit long. I would suggest to have more passages there, maybe shorter ones, but one for example from beginning, second one from the middle and the third one from the end, but of course, the last one shouldn't divulge the end. Preferably, all expects should be with main or one character or story line. Then user would get much better overall view about the book. And if the text is divided in many small pieces, it is easier to read it and user doesn't have a feeling that he has to read a lot.

You should involve readers in the process of adding new passages as well. They could add passages what they liked, write there name of the book and author and then submit it. Then someone responsible would check it, if it is okay and upload it to the server or whatever.

Interview 5:

Suggestions:

I know some people, who never buy book through the internet. They rather go to bookshop, browse some books and then they buy something. I think that you are trying to simulate this habit, but I don't think so, that just one passage is enough. Maybe you should use more than one.

On the other side, people can solve this issue by themselves. You can give them opportunity to add their own passages.

I would prefer, if there would be more passages from the book. And they should be linked in some way to each other. I would also write there number of the page, where the passage is coming from, e.g. 101/347.

Interview 6:

Comments:

I recognized some of the texts there, I read them already. But some of them were quite poor. I think that it is very important to choose right passage.

Quantity is not quality.

Suggestions:

I don't think so that it is a good option to allow people adding their passages into the system. There are very few people, who are capable of writing something relevant. And time is also very important constrains. Who has got a time to rewrite book passages on the internet?

Interview 7:

Comments:

Passages should be eye-catching. But I don't know how to deal with this issue.

Suggestions:

I think, that you are missing psychology literature genre, some esoterically literature. But idea is very nice; I would definitely use this system as an inspiration.

Use the same fonts everywhere on the webpage.

I definitely wouldn't use longer passages; I think that this is just enough.

Interview 8:

Comments:

I think that this wasn't most brilliant idea about book, what I have seen, but it looks interesting.

The best is if the passage is funny or abrupt. But I can't tell you, how to choose it.

Suggestions:

I would prefer, if there would be some content description as well. It is difficult to make your opinion based on such a short passage.

I would like to see there some pictures – cover or from the book, if possible. Picture can tell more than thousand words.

You should inspire yourself with Facebook – some social connectivity between the people there, mass of people has a lot of power on the internet today. You can make a game from it. People can guess, what book is this and this can motivate them to read later on.

Interview 9:

Comments:

The idea is very interesting and great.

Suggestions:

I would suggest you to move buttons above the text. It will be more user-friendly.

You should consider your categorization. Now it is quite messy and it should be more structured. Every genre should have some sub-genres and then you will get your recommendation.

“Tell me more” button is something, where I can't see any problems. It is okay, that it is redirected somewhere, where you can get more information or buy the book.

Some homepage with trends, charts or news in literature would make this page even more interesting.

Interview 10:

Comments:

Sometimes, you can be manipulated on the websites like this. They can suggest you book, which has to be sold.

Suggestions:

If I'm once attracted to the book passage, at least I want to know who wrote it and what is the book title. Therefore it is important to choose good passage – long enough to give a good overview about the book. Maybe you can use even more. Passages should be chosen by someone who already read the book. It can be author, publisher or even reader, who likes it.

I think, that social dimension of this project is necessity. Now almost everything is happening online among many users, people set up “communities” online and so on. Therefore it can bring a value to this project. On the other side, they have to be some kind of control. People have tendency to start “flame wars” on the internet.

Genre selection is ok. I would add “Slovak literature” column, because our literature is not presented very well these times. And add travelogues as well.

Interview 11:

Comments:

I really liked that you can read some passage from the book. I don't like when someone tells you that you shouldn't read it or you should. I like to decide by myself.

I like travelogues and biographies at the most.

Suggestions:

I can speak three languages fluently. I would definitely prefer more language options there.

More passages you see, more sure you are about the book. I would like to see author opinion as well. Of course, if it is possible. It is interesting to know more, why he decided to write that book.

I think that there should be some interactive functions. People like, if there is something floating, jumping or whatever on the webpage. I would simulate book pages there instead of that text. If you would click on the “next one” button, page would change in same way like in the book.

It is difficult to decide which book belongs in which genre. Some of them should be in more or you should make some subgenres.

All comments and suggestion mentioned in section above are listed here:

- New genres: Drama, Travelogue, Biography, Esoterically literature, Slovak literature, Miscellaneous
- Design issues: Buttons position - top of the page (or right side of the page), Interactive functions – flipping book pages, Same font everywhere

- Buttons issues: irrelevance of having two buttons with same functionality
- Passage length: passages should have same length
- Amount of passages: there should be more passages – one from the beginning, one from the middle, one from the end – they don't need to be too long, but they should touch one topic (main character or topic)
- Tags and Subgenres: book passages should be tagged in some way – some of the books belongs in more than one genre, so they should be tagged with more than one genre or with a few words, what is the book about
- Paging: User should see from which page is passage coming from (e.g. 103/349)
- More language options: Users would prefer if they can choose their language option (Slovak, Czech, English, German....)
- More information about content: There should be more information about the book together with the book passage.
- Homepage: Homepage should have more functionality – something like charts, top ten, etc.
- Pop-up windows: Pop-up windows shouldn't been used – they remind advertisement, users have tendency to close it without reading it.
- Graphical content: Pages with the passages should include some pictures as well – if possible pictures from the book itself or cover (name of author and title can be blurred)
- Social dimension: Users can share passages with other users, users can send passage to other users (via Facebook or Google +), users can add passages (there have to be some control mechanism)

If we look on them, we can see some common suggestions from the Stage 2 and 3 of testing. The reason for this is that users have some kind of expectations for these kinds of portals. Nowadays, social networks and social interaction through the internet became important part of the life and many people are spending their spare time or time in general on them. Therefore, they suggested a lot to implement a social dimension into the system like this. They would like to share, send or discuss the passages between themselves.

As another very important suggestion I could see the language option. The world is becoming more and more globalized and younger generation are learning foreign languages from their childhood. This creates a possibility to offer a service based on multilingual platform. Definitely it is an advantage if user can choose between more languages, especially in this field. Many users like to read books in an original language, because they don't like translations or they believe that book will lost some of its magic if you will read it translated. Next reason could be purely educational. Users just want to learn foreign language better, thus they decide to read books in that specific language. And we shouldn't forget about the market potential, which rises with more implemented languages. In this section I would like to explain also the issue about the new genres, e.g. Slovak literature. If there would be more language options, each language option should have their own national literature in their

own language there, e.g. Slovak version – Slovak literature, Danish version – Danish literature.

Passage issues emerged again in this stage of testing, which was actually expected. Users stopped to complain about the quality of the texts, they rather suggested more options, how to present them to the users, e.g. more passages in one recommendation, paging, same length of passages and so on. This information showed me that my initial assumptions about usefulness of this system were right. Users (book readers) would like to see the system, where they can find something new, no matter how they will get it and they will more than gladly cooperate to build this kind of system.

The other suggestions, especially those ones, regarding the design and graphics are not very important in this stage of testing. I will try to explain them in more detailed way in chapter “Prototype”, where I will create some kind of definite version of the system.

I will analyze and compare all relevant suggestions from this stage of testing in the final section of this chapter, after the fourth stage of testing will be done.

Stage four: Live web service with Google Analytics

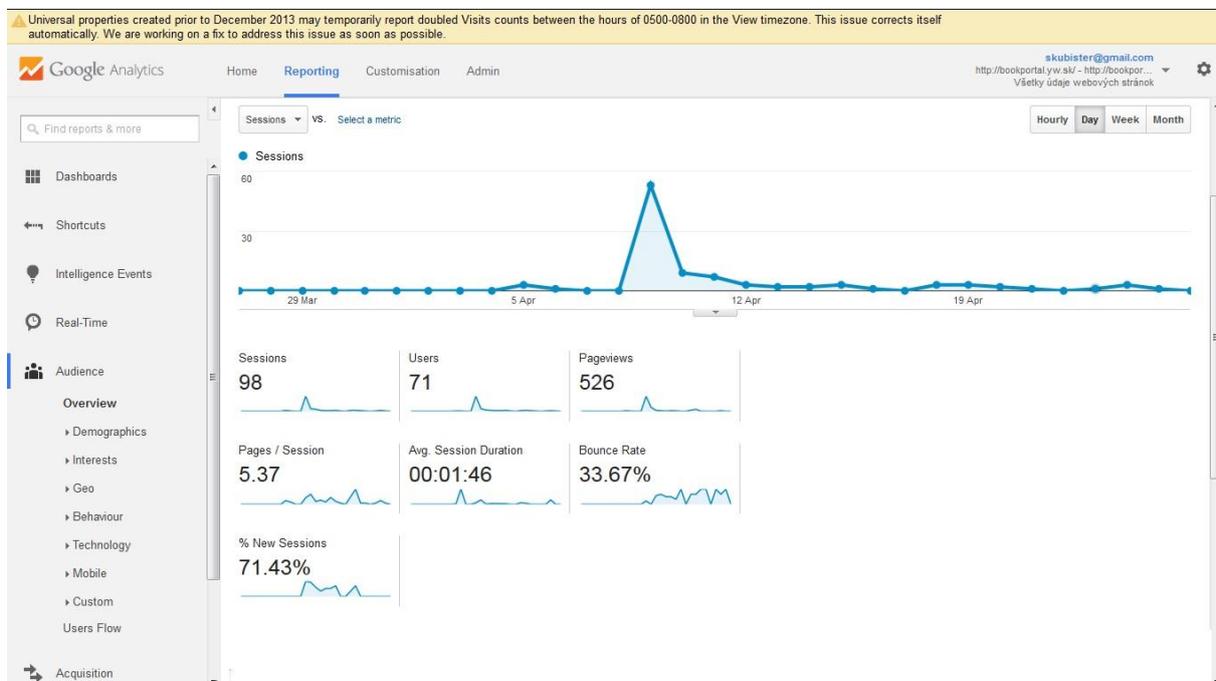
Stage 4 differed quite a lot from previous stages of testing. The main difference was that I stopped to make personal meetings and interviews and I decided to test my prototype online with the users I never met personally. Therefore I registered domain at free Slovak web hosting and created domain www.bookportal.yw.sk [20]. After applying some small changes, which I described in the chapter “Methodology”, section “Testing”, I uploaded files of my prototype there. Next issue I had to solve was to find out, how I could track users’ behaviour on the web site. For this purpose I decided to embed a piece of code from “Google Analytics” into my source code. Google Analytics is a powerful digital analytic tool for anyone with a web presence [21]. Google Analytics’ big advantage is that, it’s free and provide quite broad range of reports. Piece of code from Google Analytics embedded into my webpage can be seen in **Appendix – Code from Google Analytics**. Also other interesting screen dumps from the Google Analytics (Exit pages, Overview of behaviour of the users, Site content) can be seen there.

Google Analytics allows you to monitor plenty of different types of statistics. For the purpose of my project, it was important to track behaviour of the users. Fortunately, Google Analytics offers this possibility.

Procedure

The procedure of testing was different than in Stage 1 – 3. There were no personal meetings with the real or potential users, the only interaction could possibly happen through the “Comments” field, where users could write their suggestions or general comments. Also, there were no questionnaires on the beginning of the session and no debriefing in the end of the testing session. Nevertheless, Google analytics tools allowed me to monitor plenty valuable information about the users’ behaviour. The most important statistics I was monitoring was the Overview of the audience **Picture 13, 14**, Content drilldown **Picture 15** and Behavioural flow **Picture 16**.

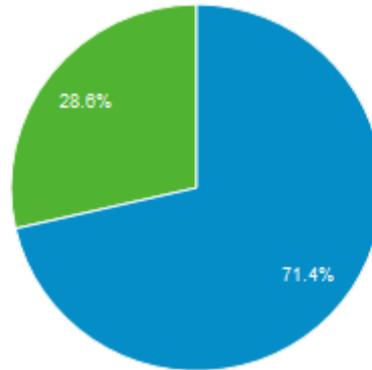
Overview of the audience is providing clear picture about the users visiting your webpage. User can find there plenty of information about the users’ habits and also some demographics. Unfortunately, my account on Google analytics was restricted to see “Demographics” of the users, thus I was only monitoring the basic Audience information: how many sessions were made – Sessions (total number of Sessions within the date range. A session is the period time a user is actively engaged with the website), how much unique users visited my page – Users, how many page views was done – Page views, how long was the average session duration – Avg. Session Duration, how many pages were seen during one session – Pages/Session and Bounce rate – how many users saw just one page from prototype. From my point of view, there was also one other parameter from the audience group, which I was monitoring. It was ratio of new and returning visitors. This was important to me due to the mapping of the amount of users, which returned to see my page again.



Picture 13 Overview of the audience shows the invaluable type of basic information about the users. From the picture, we can see that most of the visits occurred between 8th and 12th April. The reason for this is that I was promoting the page on the other book forums or fan

pages on that day. Other statistics are showing the parameters already described above in the section “Overview of the audience”.

■ New Visitor ■ Returning Visitor



User Type ?	Acquisition			Behaviour			Conversions		
	Sessions ? ↓	% New Sessions ?	New Users ?	Bounce Rate ?	Pages / Session ?	Avg. Session Duration ?	Goal Conversion Rate ?	Goal Completions ?	Goal Value ?
	98 <small>% of Total: 100.00% (98)</small>	71.43% <small>Site Avg: 71.43% (0.00%)</small>	70 <small>% of Total: 100.00% (70)</small>	33.67% <small>Site Avg: 33.67% (0.00%)</small>	5.37 <small>Site Avg: 5.37 (0.00%)</small>	00:01:46 <small>Site Avg: 00:01:46 (0.00%)</small>	0.00% <small>Site Avg: 0.00% (0.00%)</small>	0 <small>% of Total: 0.00% (0)</small>	\$0.00 <small>% of Total: 0.00% (\$0.00)</small>
1. New Visitor	70 (71.43%)	100.00%	70 (100.00%)	18.57%	6.74	00:02:00	0.00%	0 (0.00%)	\$0.00 (0.00%)
2. Returning Visitor	28 (28.57%)	0.00%	0 (0.00%)	71.43%	1.93	00:01:13	0.00%	0 (0.00%)	\$0.00 (0.00%)

Show rows: 10 Go to: 1 1 - 2 of 2 < >

Picture 14 Ratio of new and returning visitors shows amount of visitors returned to the page

Content drilldown allows you to drill into the sites directory structure. It shows activity at the folder level, not just page level. Depending on the structure of a given site, this can provide a very useful aggregation of data by folder that allows for easy comparison of performance between different sections of your site [22]. Therefore by rolling up the page views in sections, we can see that some parts are doing better than the others. When you click on the item, you can drill down into next level of folder.

Page path level 1 ?	Pageviews ?	Unique Pageviews ?	Avg. Time on Page ?	Bounce Rate ?	% Exit ?
	526 <small>% of Total: 100.00% (526)</small>	499 <small>% of Total: 100.00% (499)</small>	00:00:24 <small>Site Avg: 00:00:24 (0.00%)</small>	33.67% <small>Site Avg: 33.67% (0.00%)</small>	18.63% <small>Site Avg: 18.63% (0.00%)</small>
1. /	99 (18.82%)	93 (18.64%)	00:01:08	32.61%	34.34%
2. /bestseller1.html	33 (6.27%)	30 (6.01%)	00:00:24	0.00%	18.18%
3. /comments.html	30 (5.70%)	28 (5.61%)	00:00:42	0.00%	26.67%
4. /fantasy1.html	24 (4.56%)	22 (4.41%)	00:00:14	0.00%	16.67%
5. /zahady1.html	18 (3.42%)	16 (3.21%)	00:00:09	0.00%	16.67%
6. /humor1.html	15 (2.85%)	12 (2.40%)	00:00:12	0.00%	0.00%
7. /mytologia1.html	15 (2.85%)	14 (2.81%)	00:00:03	0.00%	26.67%
8. /detektiv1.html	14 (2.66%)	13 (2.61%)	00:00:10	0.00%	7.14%
9. /fantasy2.html	14 (2.66%)	13 (2.61%)	00:00:10	0.00%	0.00%
10. /bestseller2.html	12 (2.28%)	12 (2.40%)	00:00:16	0.00%	16.67%

Show rows: 10 Go to: 1 1 - 10 of 89

Picture 15 Content drilldown on this picture represents the activity at the folder level. From the picture we can see that from 526 of page views, there were just 99 page views of home page at the bounce rate 32.61 %. This list also reveals the users perception of something, which is called “bestseller”. As we can see from the picture, “bestsellers” are the second in the views. They are followed by the “universal comments” and then by the different categories (listed from the first one after the comments): fantasy, mysteries, humour, mythologies, detective stories and then followed by the fantasy and bestseller again. I will explain this deeper in the *Result* chapter.

Another very important report to monitor was the **Behavioural flow**. Behavioural flow report visualizes the path users did from one *Page* or *Event* to the next [23]. This can help to discover which content keeps users engaged with your site. Reports are showing three main types of data – Page Nodes, Event nodes and Connections. Page nodes are visualizes in the green on the picture and are representing as points through which traffic flows. An event represents video play, download or etc. Connections visualize path from one node to another and volume of traffic along the path [23]. As it is quite obvious from the recent chapters, there were no videos or possibility to download something from the live web prototype, thus there are only two types of data in my report from Google Analytics – Page nodes and Connections.



Picture 16 Behaviour flow shows the connections between the page nodes (represented by green colour). From the picture we can see, that from 98 sessions, there were 35 drop offs, which is quite high number. From 63 sessions in the 1st interaction, there were 17 people who clicked on the bestsellers, 10 directly went to the comments, 8 to fantasy, 6 to humour and 3 to mysteries (“záhady”). There were 19 other sessions, which continues to the other genres. However, after the first interaction there were only 4 drop-offs and 59 people continued to the 2nd interaction (there were 11 drop-offs).

My only role in this stage of testing was the promotion of the web page on the different book forums and fan pages mentioned above. I was checking the comments and reports from time to time, however I wasn't changing anything on the page to get the results, which will be based on the same basis.

Stage 4 ran from 27th of March until 25th of April.

Result

Results obtained from the Stage 4 are more complex and completely different, than the results obtained from the previous three Stages. Main difference is the quantitative amount of the results of the different types. However they are even maybe more important, because they show, that if you are choosing testing persons very carefully and arrange the personal meeting, then the users are more willing to cooperate and usually go deeper into the problematic. On the other side, if you present the page just like it is to the group of anonymous users on the Internet and they don't have to pretend interest into it, they simply quit it after very short interaction with it.

As we can see from the **Picture 13 and 14** - Overview of the audience and ration of returning and new visitors, there were not so much sessions, as I expected on the beginning. Only 98 sessions occurred during the one month of testing period. There were 71 unique users

during this period. However, this statistical sample created reasonable amount of statistics necessary for this report.

Type of report	Result
Sessions	98
Users	71
Page views	526
Pages/Session	5.37
Avg. Session duration	0:01:46
Bounce rate	33.67 %
% New sessions	71.43%

Table 8 Brief overview of the reports from the Audience Overview.

As I already mentioned above, there were 526 page views and 99 index (home) page was displayed. This number is actually quite high (almost 19 percent). It is hard to guess, why it happened, but from my point of view and the comments from the users (will be presented later in this section), users were confused with the quite poor graphical layout and overall appearance of the web page. Other explanation can be, that they weren't interested in the page at all and they just drop-off immediately after they click on the link.

Users saw an average of 5.37 pages per one visit. This number is also quite low, but if we take into consideration that 35 from 98 users dropped-off on the home page. This creates quite big amount of visits, where just one page was visited. However, there was some small amount of users (7), which saw more than 20 pages (excerpts) from different genres. Together there were slightly more than one third of the users (35), which visited more than 12 pages (excerpts). On the other side, the majority visited just few (less than 5) pages. Obviously, not everyone who "likes" the book fan page on the Facebook has to be the reader, thus majority of the users need not to be interested in such a service.

Average Session duration was one minute and 46 seconds. It also quite low number, but if we look to the section above, we can see, that there were 35 drop-offs on the home page. As we can see on the **Picture 17**, those 35 users spent on the page less than 10 seconds. Here we can also see, those 35 users, which read more than 12 excerpts (categories from 61 up to 1800 seconds spent on the page).

Session Duration	Sessions	Pageviews
0-10 seconds	35	39
11-30 seconds	9	42
31-60 seconds	19	90
61-180 seconds	20	155
181-600 seconds	10	159
601-1800 seconds	5	41

Picture 17 Engagement of the users well described by the ratio of the Session Duration, Sessions and Page views

Bounce rate is just an expression of the amount of users, which left the page without any further interaction. They only stayed on the first (home) page. This number represents those 35 users; only difference is that it is stated in percentage – 33.67 %. However, it is interesting to see, that bounce rate of the new visitors were only 18.57 %, but the returning visitors had bounce rate up to the 71.43 %. This can be caused by the users, who later on returned just to remind what was going on the page.

Another important statistics is amount of new and returning visitors. There were 71.43% new visitors, which is 70 sessions. There were 28 returning visitors. As we can see from the Pages/Session and Avg. Session Duration, returning visitors had tendency to see less pages per session (6.74 compare to 1.93) and spent less time on the page (2 minutes compare to 1 minute and 13 seconds). These numbers show, that my assumption from section above is probably true and most of the returning visitors just wanted to saw the page again, but they didn't interact with it again.

Content drilldown **Picture 15** shows the users page views in kind of detailed view. There were together 526 page views done by the 98 users. There were 499 unique page views, because total page views also include repeated views. What is interesting is that users spent an average of one minute and 8 second on the home page. The reason for this is could be that users opened my page and they were wondering what to do here or they just opened it and interact with it bit later. The amount time spent on the different pages with the excerpts is quite low (usually less than 20 seconds), because many of the users didn't visit that specific page at all. Thus these numbers can misrepresent. Users also spent an average of 42 seconds on the comments page. I only get 8 comments from the users (will be described later in the chapter "User requirements/feature wishes"), thus this avg. time was created mostly by the users, who spent some time writing the comment there. Comments also has quite high exit rate – 26.7 %. It is probably due to reason, that user after writing comment left the page. Based on the page views, the most popular choice for the users were the bestsellers (33 page views), fantasy (24 page views), then mysteries (18 page views) and so on. The most of the users decided to continue reading at the fantasy genre, because from the top twenty page views, there are 4 fantasy excerpts. None of the other genres has got more than one or two (only bestsellers) read excerpts in top twenty. Exit rates also differ quite a lot here (the highest is at the home page, followed by comments), but usually it

moves around 20 percent. However we can see that higher is the excerpts number (e.g. Bestseller 4 is 33.33% compare to 16.67% of Bestseller 2), higher is the exit rate.

Behaviour flow **Picture 16** is well constructed tool, where one can see, how the users were changing their mind and jumping from the genre to genre. There is also displayed typical information like amount of sessions, drop-offs and how many interactions users did and so on. From the results we can see, that users mostly changed their mind at the bestsellers – from 28 sessions, only 12 continued to the second bestseller excerpts, 5 dropped-off and rest continued to the different genres. On the other side, 17 of users went directly to bestsellers from the home page, but 11 of them came there from other genres. The other genres were acting in more stable way, thus the users didn't change their mind completely there so often. It is probably caused by the users' perception of the bestseller genre. Bestseller is not specific book genre, thus there are the books, which can be literary classified as fantasy, mystery, novel, poem and etc. Then if the users don't like the genre of the "bestseller", they switch their mind and interest and click on the genre, where they can be sure, that they will get what they are looking for. On the other side, fantasy and world classics had the most stable behaviour flow. This is probably caused by the reader themselves. As I know, the both groups have got a lot of avid fans, who like to read almost everything from the genre.

In the end I would like to summarize, what I got from the results obtained from the Google Analytics. It is obvious, that the prototype still has got plenty of constrains and it was completely uninteresting for one third of the users (35 from 98 session had immediate drop-off), which decided to click on the link and explore what is going on here. This is probably caused by the weak appearance of the page itself, time constrains or just disinterest. On the other side one third of the users spent quite a long time (more than 60 seconds) and read at least some 12 excerpts. This is probably caused by the readers, who could become interested by the prototype. The last one third of users didn't spend so much time on the page and they didn't go through many excerpts, but they at least interact with the service for a while. The other important finding was also in the behavioural flow of the users at different genres, especially bestseller (big changes) and then fantasy and world classic (almost no changes).

However it is hard to guess, why only 71 users (98 sessions) visited my page and participated in the testing. It is probably caused by the strange looking domain name of the prototype and also the distrust of the internet users. People are not so willing to click on everything, even if there is accompanying text written to it. Last reason could be that people don't visit their fan page on Facebook or different book forums so often. Nevertheless, all of these users provided me very important amount of information for further development.

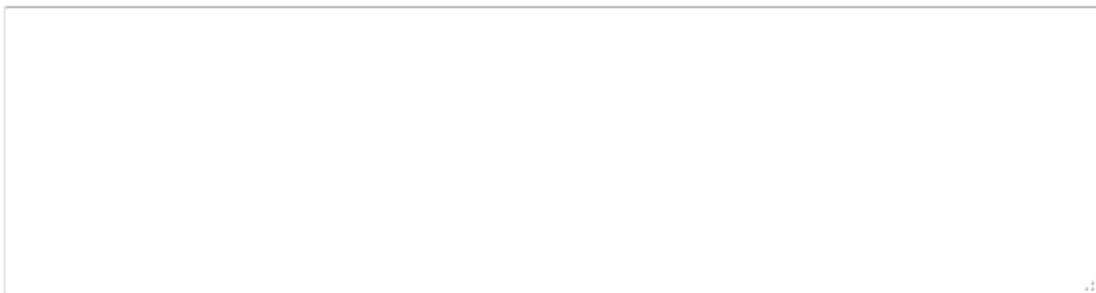
In this chapter, there will be no section called "Interview findings", like it used to be in the Stage 2 and 3 chapters. Reason is very simple, there were no interviews conducted during this stage.

Stage 4: User requirements/feature wishes

By using another useful Google`s feature – Google forms, it was possible to create a space for the users to comment and suggest some features for the purpose of final prototype. I embedded piece of the code generated by Google, into my HTML source code. The Google forms allowed to create your own questionnaire or form to fill in a case you need to add it to your page [24]. On the **Picture 18** we can see the form I used in my Stage 4: Live web service with Google analytics. Question under the blank text field, is only optional, so there wasn't necessity to answer it. Answers were sent to me and stored in the specific excel sheet with their own timestamp.

Comments

Please, write feedback here....



How many books do you read per year?

Submit

Never submit passwords through Google Forms.

Powered by [Google Docs](#)

[Report Abuse](#) - [Terms of Service](#) - [Additional Terms](#)

Picture 18 Screen dump of Google forms tools, which was used in my prototype during the Stage 4 of testing. User could write a feedback to me to the blank text field and fill the optional question “How many books do you read per year?” and then send it to me.

Only 8 decided to send me some feedback, thus I decided to extract their suggestions and present them here. Transcriptions of comments can be seen in the Appendix under the title– **Google forms comments transcriptions**. Here are the suggestions and comments of the users:

- More information about the books (author, title, etc.)
- Buttons are in English, but text in Slovak – should be changed

- Graphical layout, design of the web page
- More genres: Slovak literature, Non-fiction literature...
- Possibility to comment and discuss the excerpt
- Better technical processing – user noticed, that pages are just bind together without any further functionality

All of these suggestions except the last one were already suggested during the Stage 2 or 3. Likewise the last comment is also not very breakthrough, because it is obvious that final prototype has to be coded properly and this page was just a testing tool. However this finding brings me to the question, if some of those 35 drop-off users didn't drop because of the bad technical performance.

Summary of the user requirements/feature wishes

In this chapter I gathered plenty of suggestions, comments or wishes from the potential users about my service. Therefore in this section I would like to summarize them, go through them one by one again and then in the end decide which ones will be chosen for the final prototype. Decisions will be done based on some kind of specific “rules”, which include attractiveness for the users, overall functionality and rule called “idea preservation”. The attractiveness for the user rule means, that if there were more (suggestion appeared at least at two stages) of the users demanding same feature, it probably should be used. The next selection rule is the overall functionality – if it is possible to include the feature into the prototype. As the next, probably most important rule will be so called “idea preservation”. Many of the users were suggesting, that I should add the name of the author, book title or other information about the book to the final prototype. During the testing sessions I wasn't telling the users what to suggest or what not, because I didn't want to limit their creativity. Unfortunately with adding this functionality (feature) to the final prototype, I would transform my idea into the basic book recommendation portal, which isn't definitely what I want to do. Thus I decided to apply the rule, which guarantees, that suggestion won't be in conflict with the original idea.

All suggestions about the features are displayed at the tables **Table 9** and **Table 10**, whereas **Table 9** shows suggestions regarding the content and the excerpts and **Table 10** shows suggestions regarding technical issues. First parts of the tables are shown with these three rules (Attractiveness, Functionality and “Idea preservation”) and second one with the Stage where they appeared and were demanded by users. Fields are filled with four types of colours, where green generally means that this suggestion satisfies the rule and red generally means that suggestion doesn't satisfies the rule above or is in the conflict with it. Colours in second part of the tables mark, if the suggestion was demanded (orange colour) or wasn't demanded (blue colour) by users in specific stage.

Suggestion	Attractiveness	Functionality	“Idea preservation”	Stage 2	Stage 3	Stage 4
Genre selection, more genres	Yes	Possible	Not in conflict	Demanded	Demanded	Demanded
Info. about the content	Yes	Possible	In conflict	Demanded	Demanded	Demanded
Tool for young authors	No	Possible	Not in conflict	Demanded	Not demanded	Not demanded
Affiliate marketing	Yes	Possible	Not in conflict	Demanded	Demanded	Not demanded
Language options	Yes	Possible	Not in conflict	Demanded	Demanded	Demanded
Pictures from the books	Yes	Possible	Not in conflict	Demanded	Demanded	Not demanded
Passage length, structure of text	Yes	Possible	Not in conflict	Demanded	Demanded	Not demanded
More passages	No	Possible	Not in conflict	Not demanded	Demanded	Not demanded
Tags and subgenres	No	Possible	Not in conflict	Not demanded	Demanded	Not demanded
Paging	No	Possible	Not in conflict	Not demanded	Demanded	Not demanded
Possibility to comment	Yes	Possible	In conflict	Not demanded	Demanded	Demanded

Table 9 Content (excerpts) oriented suggestions

From the table above we can see that, except the language options and genre selection, none of the suggestions fulfils all the rules. However it doesn't matter. There are eleven suggestions displayed in this table. Few of them are essential, as we already know, because users demanded them a lot from the beginning. Those are: Genre selection (no matter if every genre from suggestion will be used) and Passage length, structure of text.

Due to conflict with the basic rule (“Idea preservation”) suggestions Possibility to comment (someone can write a name of author or book title there before user can read the excerpt) and Information about the content has to be excluded.

Then there are some suggestions, which definitely should be accepted and used. It is: Language options and Pictures from the books. Language options were mentioned in every stage of testing by many users and it also doesn't affect the rule “Idea preservation”. What is more important is the thing, that users show the willingness to read the books/excerpts in

foreign or original language as well. Nowadays people usually know or learn more than one (mother language) language, therefore they want to practise and books are really good platform for it. As well, there were some comments about the book translators, that they can ruin the story or emotions by wrong translation. It means that, the users rather like to read books in their original language if possible. Next one, pictures from the books, can be tricky feature, but as it was said “picture is worth a thousand words” [25], many users demanded this feature. From my point of view, it would be nice feature if user could see the book cover with blurred name of author and book title and there on the back side of the cover would be the excerpt. I will present this in more detailed way in chapter about the “Prototype”. The other suggestions which left are not so “mandatory” to solve as those one before. From my point of view,

Affiliate marketing is really good option in a case that you don't have your own database of books or excerpts, therefore you have to get it somewhere else. For the purpose of testing I was using this possibility from the biggest Slovak book e-shop Martinus.sk. I would rather discuss this suggestion later on in the chapter “Future work”, where I will briefly describe also the business potential of this service.

Paging, More passages and Tags and subgenres are also quite fancy suggestions, but from these I decided to choose only tags and subgenres, due to the possibility of creating better categorizing of excerpts in the genres. Other two I will rather describe little more in the chapter “Future work” as well.

Tool for the young authors could be also included, in a way of some kind of feature, where young authors can upload their excerpts or parts of the stories to get some feedback or comments about their works. This functionality will be also described in more detailed way in chapter “Future work”.

Accordingly this section I decided to go further and implement these functionalities in final prototype: Genre selection, Structure of text (length of passage), Language options, Pictures from the book, Tags and subgenres.

Suggestion	Attractiveness	Functionality	“Idea preservation”	Stage 2	Stage 3	Stage 4
Social domain	Yes	Possible	Not in conflict	Demand ed	Demand ed	Not demand ed
Random button (“I m feeling lucky”)	No	Possible	Not in conflict	Demand ed	Not demand ed	Not demand ed
Connection with e-shop	No	Possible	Not in conflict	Demand ed	Not demand ed	Not demand ed
“I want to buy it” button	No	Possible	Not in conflict	Demand ed	Not demand ed	Not demand ed
Mobile version	Yes	Require different approach	Not in conflict	Demand ed	Demand ed	Not demand ed
Homepage	No	Possible	Not in conflict	Not demand ed	Demand ed	Not demand ed
Graphical/design layout	Yes	Possible	Not in conflict	Demand ed	Demand ed	Demand ed
Better technical processing	No	Possible	Not in conflict	Not demand ed	Not demand ed	Demand ed

Table 10 Technical oriented suggestions

In this table, we can see suggestions oriented bit more on the technical side of the prototype. We can see that none of this suggestion is in the conflict with the “Idea preservation”, which is mandatory. Here I would like to start with the suggestion about the Mobile version (an app), which is very promising idea for current age of smartphones. However this system was originally planned to be build for the computers and nothing about this attitude changed during the time. It may be quite challenging to build this kind of system for mobile phones or other fast growing platforms. Nevertheless there can be also potential in creating some book quiz game, which can accompany launching this portal. I will also mention this idea in chapter “Future work”.

There are some non-substantial suggestions in the table above, which I would like to discuss in next few lines. It is: Random button (something like Google`s I`m feeling lucky), Homepage, “I want to buy” button and Connection with e-shop. These functionalities are very fancy in a way of making the service more complex. Connection with e-shop is actually almost the same like Affiliate marketing in section above. It is difficult to build your own database or e-shop full of books, thus cooperation with some already existing book shop could be convenient (e.g. Martinus.sk). Definitely, homepage requires some changes and upgrades, but this can be done during the last phase of development. You can become

inspired by other web services and add some charts, forums and news on the homepage to attract the user. “I want to buy” button was part of the system during the Stage 3. However I realized later on, that this kind of button doesn’t have to be there during the testing, so I removed him for the Stage 4. Another reason was also not to confuse users. This button can become part of the system, because it has got lot of in common with affiliate marketing and connection with e-shop suggestions. It can redirect the user directly from the excerpts to the e-shop, where they can order a book. The last one of these suggestions is random button. This button can be a nice feature as well, especially for the users, who aren’t so sure about the genre selection or the ones, who want to be surprised by recommendations completely.

The next two suggestions in the table are the Graphical design/layout and better technical processing. First one was suggested by many users and I can completely understand why. The reason for these suggestions was the fact, that my testing tool wasn’t build with respect to the proper web design and beauty. In a case, that I would like to build this service, I would definitely ask for the help some well educated web developers or company. Better technical processing is also a question, but I would like describe this part a bit more in the chapter about the “Prototype”. It is obvious that this kind of service cannot be build upon the simple HTML/CSS and more complex programming languages has to be used (especially for the proper random function).

The last suggestion I would like to discuss is the social dimension. This one I consider as one of the most important suggestion I got from the quite amount of the people. If I would decide to engage social networks, users could then share passages with other users; users could send passage to other users (via Facebook or Google+ or other social networks). Nowadays, social networks and social interaction through the internet became important part of the life and many people are spending their spare time or time in general on them. Another part of the social dimension could be if users could add passages (there have to be some control mechanism) to the system. This could also fill the database with excerpts and if the users would be adding their favourite passages of the books, it could solve the question of adding proper excerpts. However, this possibility would require some approval mechanism, whether by other users or by some kind of administrators.

Accordingly this section I decided to go further and implement these functionalities in final prototype: Social dimension, Random button and “I want to buy button”.

Prototype

Since the first stage of testing up to now, all theoretical and practical information from the literature and potential users has been gathered to reach this goal and finally design a prototype. In the chapter above I analyzed all the suggestions about user requirements and feature wishes. In this one, I would like to combine them together with already existing idea to create conceptual solution of book recommendation portal.

In my solution design I will describe the system from the design and functional perspective, without deep dive into the technical part of the problem. For this purpose, some of the main technical issues and technologies, especially programming languages and other necessary parts, will be described later in the section “Technologies”.

From the beginning I was looking at the problem from the user`s point of view. Reason for this is that I would prefer to use system like this, because as I already mentioned I`m a keen reader. Therefore I could imagine and define some basic functionalities of this type of portal, but creation of such a portal requires more ideas. By conducting of user tests and interviews, possibility of analyze plenty of suggestions for this purpose emerged.

As I already mentioned, next section will present and describe the system from design and functional perspective based on the findings from the previous chapters.

Overall description

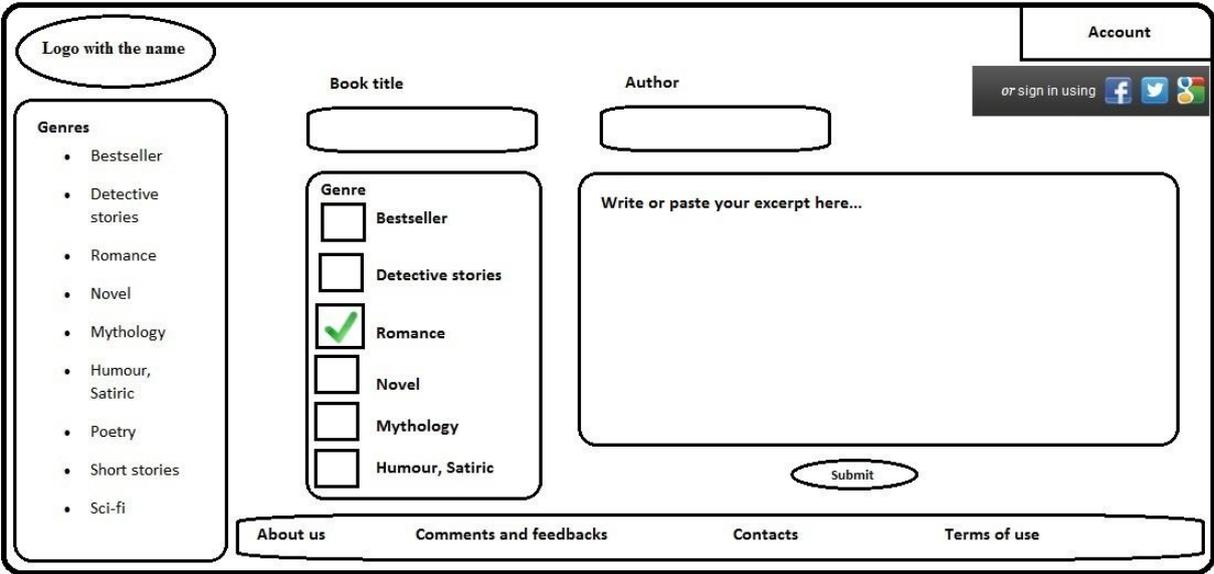
In this section, I deal with conceptual solution of “Discover a book” recommendation portal. By combining different ideas collected from the users with the concept, I wanted to present with this report, I`ve created final version of prototype. Prototype will be presented as web service in a form of web page, which was originally build for computer platform, however can be used also on the mobile phones (smartphones).

Book excerpts

System requires database of the book excerpts indexed by genres or if possible by subgenres. As I already mentioned, initial database of the books or book excerpts can be provided by external book e-shop for the purpose of affiliate marketing. On the other side, interviews and user suggestions showed that users would be willing to add excerpts, but definitely they cannot and probably also wouldn`t like to fill the whole database. If there won`t be any books excerpts or just few of them, users could become frustrated with same repeating excerpts (recommendations) and they will stop using the system. Therefore it is almost necessary to begin with the already existing database of book excerpts. The solution is that system will be divided into two parts – user part and commercial part. Commercial part will be supported by the contractual book e-shops; therefore the excerpts will be added by them. In the user part, users could add their own passages from the books, no matter if another book excerpt from the same book is already in the system. System could then merge

these book excerpts under one title (as one recommendation) and if the system in the future randomly recommends that one, user would see both (or even more) excerpts, depends on his preferences from his user account. Users without account (or not logged in) will always see just one excerpt.

However, users could add passages only if they are logged into the system with their account. When they would like to add new excerpt to the system, they have to fill the mandatory information – name of the author, book title and genre of the book, respectively optional subgenres or tags (in a case that they are not clear about it). If all information is filled correctly, they have to submit the information to the system **Picture 19**. In a case of spam prevention, all excerpts have to be approved by internal administrators (or maybe by the group of trusted users). Users will then get a notification, that his excerpt was successfully added to the system. He can also see all his added excerpts at his profile.



Picture 19 Sketch of the interface, at the step, when user wants to add new excerpt. User has to fill “Book title”, “Author”, “Genre” and past or write down an excerpt. After all these steps are done, he has to press submit.

Genres

Genres will be displayed on the left side of the screen **Picture 19**, in a same way like it was on the testing tools. Additional genres will be generated based on the users` wishes and preferences from the interviews. Complete list of genres can be found in **Appendix: List of genres**. Due to the non-existing standardized genre selection, some of the book excerpts could fit into more than one genre. For this purpose, there will be optional tags and subgenres, which could accompany any of the excerpts to make sure, that it is properly classified.

Buttons

As it was already mentioned, three main buttons **Picture 21** will be displayed under every displayed excerpt. They are already well known from the previous sections of the report; hence I present them here again. Clicking on the first button, called “Tell me more!” displayed on the left side, (number 1 on the **Picture 21**), will provide basic information, like authors name, book title, description of the story and so on. This button will be located on the left side, under the text (excerpt). Next button is “Next one!” This button`s functionality is to provide new recommendation for the user, in a case, that he is not satisfied with the current recommendation. This button will be located beside to “Tell me more!” button from the right side (number 2 on the **Picture 21**). Last button here will be “I want to buy it!” button. This button purpose is to redirect (webpage opens on a new tab) user to the e-shop, if he is interested into buying the book. This button will be on the right side, beside to “Next one!” button (number 3 on the **Picture 21**). These buttons together with the genre selection and book excerpts form the basis of the system.

User account

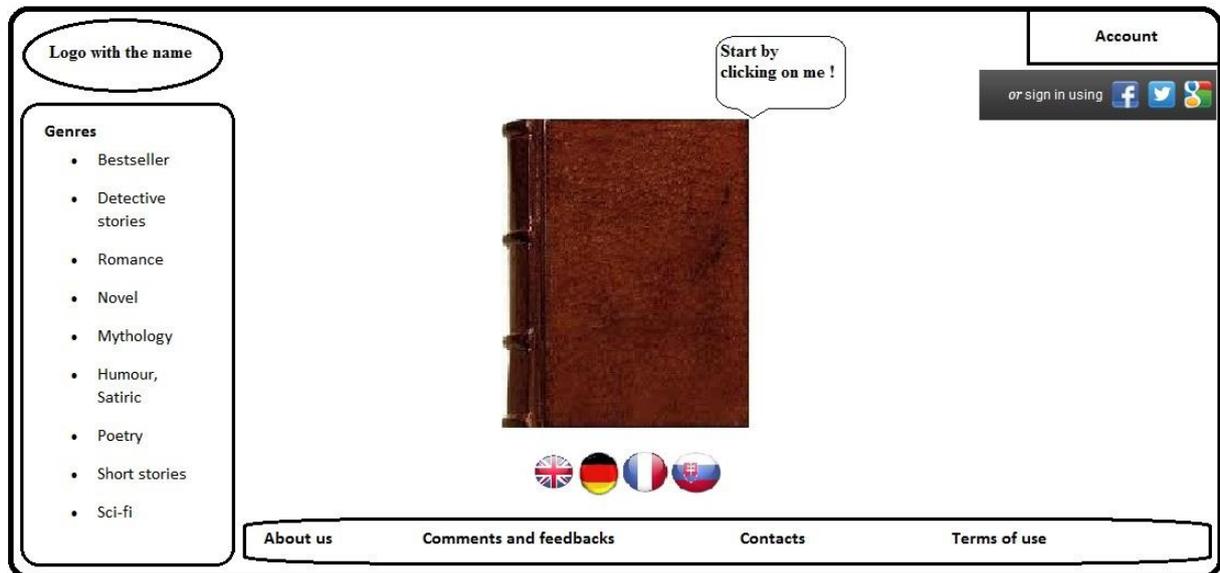
User doesn't need to create an account, if he wants to use this service. However there will be an option to create such account. User has to fill some basic information (name, age, country of origin, etc.) about him and set-up his email address as login name and password consisting of at least 8 characters, containing at least one upper case and one number. After the creation of the account, he can set-up his preferences regarding the language, genre and other personal preferences. As I already mentioned, users with a created account can add excerpts to the system and see how much excerpts they already added to the system. Login and password field are located in the right top corner **Picture 20**.

Users also will be able to log in with the Facebook, Google or Twitter account. This option allows users to log into the system without creating another extra account and then synchronise their accounts to provide more social interaction between the users.

Language options

While during the testing period, all excerpts were presented in Slovak or Czech language (due to the tests), in the final prototype, it should be possible to change your language options in the final prototype. For this purpose, system would offer more language options, than just two very similar languages. System should offer possibility to choose, if you want to see excerpts in English, German, French or CZ/SK language **Picture 20**. User could choose his language preferences under the book by clicking on the proper symbol of that specific language. Users logged with their accounts could choose their option in their profile; therefore they haven't to do it every time they open the webpage. In a case, that user enters a webpage always without logging in; he should choose his language option, otherwise his recommendation will be displayed in English language (basic language). On the other side, by using technology known as “cookies” [26], this problem can be overridden. Persistent

cookies [26], which Max-Age will be set for some time (e.g. few months), can operate and stay in memory for that specific time and be sent to the server every time user connect to the server, thus he doesn't need to set-up his preferences every time he enters the page. In a case, user deletes his cookies; he has to set-up his language options again.



Picture 20 From the picture we can see the webpage after its loading (homepage). There is a “book” in the middle, where excerpts are displayed. Above the book, we can see the sign, which serves as some kind of starting point. Language options are located under the book. If user wants to sign with his account, he can do it on the right top corner, either with his original login name or with his account from social networks.

Overall appearance

Webpage consists of just few important elements. Overall appearance will be very simple **Picture 20**. On the top of the page will be the name of the service (left side), then on the opposite side will be language options and login space. On the left side under the name of the service will be genre distribution. In the middle of the webpage will be picture of closed old brown leather book. There will be small sign next to the book saying “Start by clicking on me”. If the user decides to click on the book, he will get random recommendation without any genre specification (one of the suggestions). Recommendations will be provided in a fancy way, which means, that if user will click on the book (random recommendation) or any genre, book will open **Picture 21**. On the left page, there will be an excerpt with those three buttons under the text. There will be nothing on the right page, but if user decides to click on the button “Tell me more!” all the information about the book displays on the right page. In a case, user wants to see the picture (cover page); he can click on the edge of the open book. Book will slightly close again, now with the cover of that specific book instead the common leather one. If book contains more pictures, there will be an extra option to click on and see the pictures. At the point, that user would like to get a new random recommendation and he is already using “the book”; he can click on the small “X” (same symbol like Windows

“Close”) on the right top corner of it and book will close. Then he can click on the book again and he will get new random recommendation (without genre selection). If he wants to get a new recommendation from the specific genre, he doesn't have to click

On the top side of book will be three bookmarks, everyone representing one social network (Facebook, Google+ and Twitter). If user decides to send or share the excerpt he has to click on one of the bookmarks, depends which kind of social network he wants to use. After that he will see two options: Send or Share. Depends on the type of the activity he wants to do, he can then send the excerpt with some accompanying text to his friend or simply share it as a status. Unfortunately, Twitter messages can be only 140 characters long [27], thus user cannot send the whole excerpt through the Twitter to someone else, but he can share the name of the book with some accompanying text as well.

On the bottom of the webpage will be some general information, like “About us”, “Comments and feedbacks”, “Contacts”, “Terms of use” and so on.

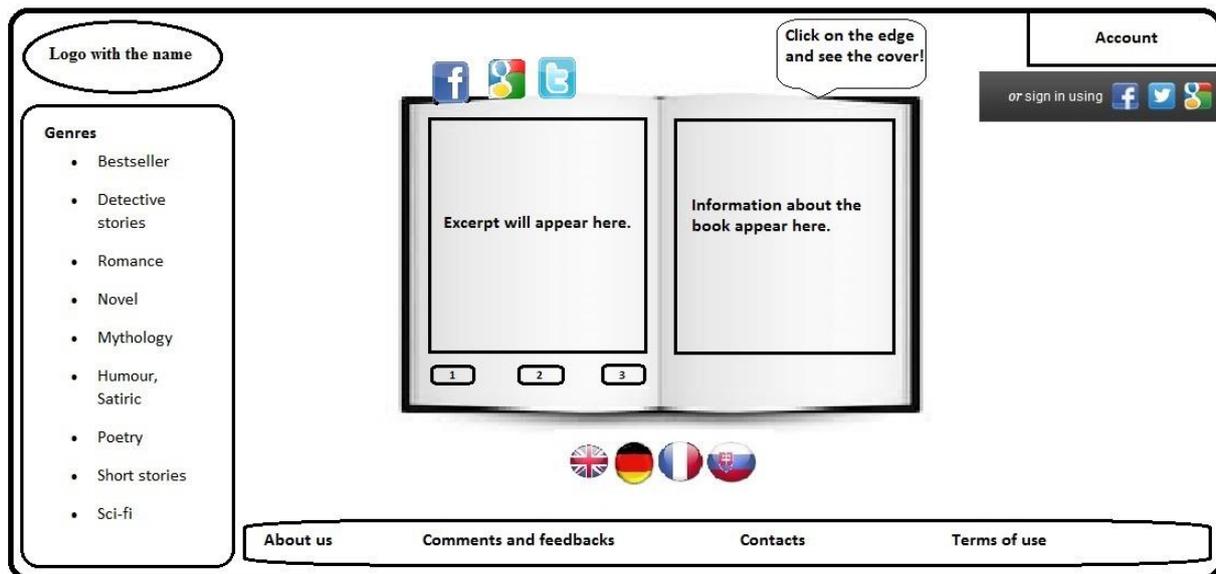
Social dimension

Social dimension **Picture 21** of this system comprise from two main components. First one was already mentioned above in the section about the book excerpts and it is that users will be able to add their favourite passages to the system.

Second one will be ability to send or share book excerpts through the Facebook or Google+ social networks. If user finds excerpt interesting he can share it through these social networks with his friends. On the other side if he reads some excerpt and he knows someone, who can be interested in this one, he can also send it to him. These possibilities increase social interaction between the users and also can strengthen the community around this service.

Method of recommendations

Recommendations in this type of service will be provided random. Tough, there will be still the rules regarding the genre distribution, so if user will choose that he wants to get recommendation from “fantasy” genre, he will get it. The reason for this is to maintain the level of surprise as high as possible. However system will filter already recommended excerpts for users, which will be logged in with their account. Same repeating recommendation can sicken the user, which can lead to end the use of this service.



Picture 21 Here we can see the book open, which means that recommendation, was offered to the user. The buttons with numbers 1, 2, 3 are the buttons described in section *Buttons*, in same order as they are described in the section. On the left side, under the logo and name is list of genres. If user wants to see cover of the book he has to click on the black edge of the book. Above the book on the left side, we can see three symbols of social networks which represent bookmarks. If user clicks on any of them, he will get an offer to either Share or Send an excerpt. By clicking on the edge, left part of book slightly closes itself and user can see book cover.

Summary

In this section I presented overall view on the final prototype. I described the functionality of it together with the appearance. For clearer imagination I also joined some sketches of the system. Due to time constrains I couldn't execute usability testing of system functionality, but as it was said before, this solution is conceptual at this level, thus it still requires plenty of effort before it will be completely finished.

However for better illustration of system use I decided to write short scenario, representing usage of this system. Story telling or scenario is an essential tool for understanding what people do and how people use the system. It also helps to focus on particular instances rather than generic types and rough instead of formal [28].

Scenario:

John likes to read a lot. His favourite books are about history and historic events, but rather then read about it from nonfiction or encyclopaedias; he prefers fictional literature about historic events. Thus one day, when he decides to read something new from this area, he starts his search on the internet. But all the suggestions he sees there are the books he already read. Then he makes up his mind, that he will try that new random recommendation

service. He goes to the webpage and chooses genre “Novels”, where he clicks on the subgenre “Historic novels”. He gets his first recommendation then and start to reads. When he is finished with reading excerpt, he clicks on the “Tell me more!” button, because he has got the feeling, that he read this text already. His assumption is right and he clicks on the button “Next one!” This process continues for a few times, until the moment he finds a book, he is satisfied with. He clicks on the “I want to buy it!” and order the book from the e-shop. Few weeks later after he finished reading the book, he come back to the portal. He creates an account due to the reason he wants to add his favourite excerpt to the system as well. When he is done with it, he decides to play around a little bit. He tries some other genre categories, read few excerpts and suddenly he observes one interesting excerpt from the “Fantasy” genre. He knows that his good friend likes to read exactly this kind of literature. Therefore he uses another function of this service and through the Facebook he sends him the excerpt.

Technologies

Due to time and knowledge constraints I couldn’t develop fully working prototype, but in this section I will present technologies, which can be used for development of such a service. In previous section I described system from the functional and design point of view and outlined how system and his features could work. For this purpose, it is necessary to create some fundamental parts of the system, especially database of book excerpts and web page, which includes application itself.

Database

In order to create database, which can meet above described requirements is possible to use MySQL database. MySQL is a multiplatform database, which communicates via SQL language. Due to its easy implementability (can be installed on Linux, MS Windows, etc.), performance and fact that it is a freeware; MySQL became one of the most currently used databases. Very popular and often used is a combination of Linux, MySQL, PHP and Apache software as basic web server. [29]

However, not only for the advantages mentioned above I would use MySQL database for storing book excerpts. Another advantage is that simple command in SQL language **Picture 22** can be used for picking random record from MySQL database. Here is the example of such syntax:

```
1 SELECT column FROM database:
2 ORDER by RAND ()
3 LIMIT 1
4
```

Picture 22 Example of the syntax in SQL used for random pick from the MySQL database. In the line 3, we can mention that amount of picks is limited to 1. However this can be changed, if there are more excerpts under one title.

Excerpts in the database would be listed in the database by unique indexes, which would ensure that logged user wouldn't get same recommendation again. This would work in a way that if logged user asks for a new recommendation, system matches indexes of the book excerpts in the excerpts database with indexes of already seen excerpts in the user database under his record. After this check, system processes his request. On the other side, it is questionable, if this method wouldn't require too much computing power.

Web application

Web application in software engineering is the application provided to users from a web server through the internet or possibly also in-house network (intranet). Web applications are popular due to ubiquity of the web browser as a client. [30]

Based on the definition above, it becomes clearer, that system like this could be developed in a way of web application. Web applications generate series of dynamic web pages in a standard format (HTML, CSS), which is supported by all browsers. For the purpose of adding of dynamic elements to the application is used JavaScript programming language. Recently are starting to use other programming languages which better cooperates between client and server (no need for refreshing page), e.g. AJAX or HTML5, which contains many enhancements designed just for creating Web applications. [30]

As a programming language for whole application could be also used PHP, but there is a problem with scalability (especially for larger applications) of this programming language.

Summary

In this section, I briefly described technologies and some approaches, which could be used for development of such a service. Despite the fact, that these technologies are generally well-known and often used, there are more methods and technologies which can be used. As a programming language for web application can be also used Ruby or Python. There are as well two quite new web application frameworks, called Node.js and AngularJS, which could be used for building this system.

Discussion

The project main purpose was to build and design book recommendation portal using explorative and slightly innovative approach rather than classical recommendation approach, mostly using so called “Amazon approach”. The project has shown willingness of potential users to cooperate on such a task. Users’ suggestions and answers provided many findings which I analyzed in different chapters throughout the whole report. In this chapter I would like to analyze overall findings from this project. Also summary of the answers to the problem questions will be presented here.

The first step in the process was to define and then narrow down the main idea, which came from the frustration of the current book recommendation portals or different web portals concerned fiction literature. I assumed that plenty of book readers are also tired with classical approaches of recommendation and ever-recurring articles “100 books you have to read before you die” containing still the same suggestions. This assumption reflected into the users’ interviews and tests, where I asked users, if they are using book recommendation portals and about their way of acquiring new recommendations. Interviews showed that users have overall knowledge about the recommendation portals, although some of them are using them seldom or not at all. Reason for this is that people are not willing to trust everything what is presented on the internet (e-shops) and many of them feel that reviews about the products are fake and written by sellers. On the other side, some of them used to check different types of products in e-shops, before they decide to buy a product. Mostly, this regards electronics, clothes and other things of daily use. However, the results were slightly different with the books. Because of the complexity of books, it can be hard to guess the taste of specific user, even if you are using latest recommendation algorithms and have a huge database with data of millions of users. The user study had shown that users strongly prefer to get recommendations regarding the books from their friends, family or relatives. This brings me to the question of necessity of such a portal, which can become crucial for this kind of project. If users prefer to ask people around what they should read, then why so many book e-shops and recommendation portals exist and suggest their opinions every day in a huge numbers? There is probably no definitive and true answer. Therefore I decided to accept this fact and continue to work on the development. However from that moment I realized, that users most often accept the recommendations from their close people, thus I started to think about engagement of social domain into the system. Later on, users came with this idea as well. In this context I applied some of the already functioning technologies from social networks to meet these criteria. In the future, this assumption should be subject of the tests to prove if I was right or not.

When it comes to the question of the target group, I tried to solve this issue from the very beginning. First stage of testing ran with the group of users, who didn’t have any close connection to the literature and definitely cannot be considered as “readers.” Thus I realized that for next stages I have to recruit users, who like to read a lot and can advise me in a basic

questions about the book excerpts. I decided that I will recruit only the users, who read at least 6 fictional books per year. Overleaf, this decision can bring me a lot of constraints in a future, because my tests were conducted only with very specific group. If I would recruit any non-readers and did tests with them, I could find out more about their needs. Purpose of this portal should be also motivation for reading, not only recommendation of books. Thus this decision could be also put under the test in the future to find out, if portal is viable with such a specific target group. However, in a Stage 4, I didn't put any restriction about the target group; everyone could visit webpage and test the prototype. Unfortunately, not so much users reacted to my question (How many books do you read per year?) at the comments, thus I can't tell if only readers visited the prototype. There was an expectation, that mostly readers will visit the prototype due to the promotion. On the other side, 35 of 98 visitors dropped-off after few seconds spent on the page, so these users could be considered as non-readers, who weren't interested in and when they saw, what is going on there, they quit. Also, demographic reports from Google Analytics were disabled at my account for the purpose of "book portal" webpage, thus I didn't find an answer for this question there. In the end I would like to summarize one more time, what I wrote in this section. My target groups for now are mainly the readers, but in the future, it will be necessary to find out how non-readers could react to the service and if they could be potential group of users.

The most crucial problem of this prototype is the excerpts from the books. As it was stated in the beginning of the report, I didn't investigate legal aspects of this issue. The idea of this portal is build upon the assumption, that random book excerpt will be displayed and presented to the user and based on it, user should decide, if he would like to know more about the book or even read it. Unfortunately, this idea can be undermined quite easily. Too many questions emerge around this idea and I have to tell the truth, that I couldn't find proper solutions for most of it. E.g. it is still quite unclear, how the excerpts should be chosen and who will upload them to the system. I tried to use more ways of choosing excerpts, but users didn't support my solutions at all. In most of the cases they read a plenty of excerpts and they said, that they are satisfied with them and they could find a book in a system, they would like to read. There were also suggestions from the users to let the experts (e.g. writers, publishers or critics) decide, thus only they would be allowed to choose the excerpts, which will be presented to the users. On the other side, some users suggested, that users also should have a power to add excerpts. They pointed to the social dimension of such a service. In this context, together with the fact that people most likely accept new recommendations from their relatives, this looks as the most useful solution. But even if it looks ideal, there are plenty of constraints as well. First, there have to be a community of readers around this service and it is not presumed, that user would just start to use empty system without any motivation or beneficiary. Therefore, first there have to be some kind of initial warm-up of the system, where group of experts fill the system with proper amount of excerpts and by this attracts the others, who would become involved in a process as well. Another solution of this issue is to make a deal with already established book e-shop, who can provide the database of the excerpts. This is the most crucial issue of this project and it

will require plenty of time in the future to solve it. However, there is still a possibility, that there isn't just one right answer and this can be solved only by a comprehensive set of solutions.

Despite all of these concerns, service met with a lot of sympathy from the users. It is obvious, that users would like to interact between themselves and share good book excerpts with their friends. Looking back on the report, I could tell, that exploratory method of development, was probably the best option, how to elaborate this idea to the successful end. Fact, that the project was led in a bit different way, than it is usual for many school projects, brings me to the conclusion, that it would be much more difficult if I would decide to apply classical methods (casual or descriptive research). During the whole process I encountered many problems with secondary research, especially with the proper literature. This problem and idea, was something almost completely new, therefore it wasn't so easy to find literature concerning this issue. Also, the idea and main goal of the project weren't so clear from the beginning, thus it was better to elaborate a bit on the idea and then find a proper literature, which backed up the idea and whole project. On the other side, I have to admit, that this project is still not properly backed up with the sufficient amount of literature. Instead of looking for new knowledge from the theoretical sources, I decided to put more effort on the practical part of this project, which also brought valuable results. These results were then incorporated into the prototype, thus final prototype is combination of original idea with the users' suggestions. However, some of the suggestions weren't incorporated due to the reason that some of them weren't applicable and they were in the contrast with the basic idea of random recommendation and level of surprise.

Although many of the people embraced the idea and called it interesting and useful, few of them had difficulties to imagine how the overall system could work, even they interacted with the prototype. This problem occurred probably due to the different background of the users and possible solution is just more interaction with the system. Prototype was also changing during the test stages from the paper prototype to the live web service. Unfortunately, due to time constrains, final prototype wasn't the subjects of the usability testing, which could affect some users' confusion regarding the system.

Conclusion

From start to finish this project was dealing with many obstacles and issues regarding the main idea and its application towards the successful end. Going through the different stages of development provide me unique experience of research maintained in bit unusual way. Development of idea passed through four different stages, where real users have been tested for purpose of getting proper results, which help me to design prototype. First stage of development was very important due to the fact, that original idea was quite broad, thus it had to be narrowed down. Originally, this idea came out from frustration of current book recommendation portals and way of their recommendations. By this project I was trying to test different approach on groups of potential users.

In the beginning of the project I presented the idea of random recommendation and how it can be applied to the area of book recommendation. However, truth is that, random recommendation may not be considered as a way recommendation, because it is just random choice without necessity to know anything about the user, items or any other facts. Nevertheless, the assumption on the beginning of the project was that random choice of book excerpt presented to the user, can affect his decision and persuade him to read the book. Reason for this, was that plenty of recommendation portals adopted "Amazon" way of recommendation, because it is effective, reliable and easy to use. I also believed that from the reader's point of view, it is always better, when user first see the style of the writer, reads part of the book and then decides if he would like to read the whole one or not. Tricky part of this assumption was that, if such a small excerpt enough to tell you about the whole book. However, users liked this approach and they said that they could choose some books based on this idea. Overleaf, they required that it would be nice, if I could incorporate possibility to share the excerpts with their friends who also like to read. Cause for these wishes is the fact that almost every tested user said, that he prefers to get recommendations about new books from his friends or relatives.

Due to above mentioned facts, scope of this project slightly changed during the process. Original idea remained the same, but project was oriented little bit more on comparison of this and classical "Amazon" way of recommendation. Overleaf, by this work I didn't want to show, that current recommendation approaches are wrong and should be replaced by random recommendation. Most likely, in the future this kind of system could evolve into the system build upon on the random recommendation combined with some algorithm. It is really complicated to predict what users want, due to the fact, that in many cases, they also don't know, what they really want.

However, all these suggestions I get from the users made me to change my mind. I started to think about designing the prototype, based on the users' wishes and requirements. In four stages, I tested almost one hundred unique users, if I count in also the users, who visited my live web service. I collected more than thirty suggestions from them and based on these

suggestions I build my prototype. Unfortunately due to time and knowledge constraints I couldn't build the prototype, but as part of the future work, it is the number one on the list.

Process of gathering these suggestions was the most interesting and also important part of this project. I build up three different types of simple testing tool, first in a way of lo-fi paper prototype, where users had to just read excerpts on the paper. However, results and feedbacks from this session convinced me, that for better imagination of the idea, it is necessary to build the simple testing tool (prototype). Each stage, testing tool was more and more complex, due to the reason that I applied some of the users' suggestions in it. The least difference was between Stage 3 and 4, where I embedded just a few more functions, mainly on behalf of the fact, that Stage 4 was testing of live web service and suggestions at the Stage 3 became more complex.

In this type of project, where you are starting with kind of original idea, there is always plenty ways to go. My decision came out of beliefs that proper examination of something requires lot of different ideas and options. However, during the process, some of the assumptions and ideas weren't proved or not. The most crucial issue I couldn't solve completely was the way of choosing proper excerpts for purpose of use in the system. This one still requires a lot of time and effort to be solved properly.

Finally, this project report reflects effort embedded to find answer of main questions and all sub questions. I think, that I answered properly on this question, which implications were analyzed in chapter "Discussion". I also presented conceptual solution of the system in the chapter "Prototype" together with some sketches and technologies, which can be used for building such a system. However, as one of the most important chapters can be considered chapter "Analysis of user tests", where I analyzed and summarized the results and outcomes of the tests. This project was built mostly on the primary research, due to the reason, that there was a problem with finding proper literature, fitting to this topic.

I tried to make this report as good as possible. I mentioned some possibilities for expansion in the Future work chapter. In the end, I would like to tell, that I'm proud, that I could work on such an interesting project, whose main purpose was to build and test an innovative approach of the book recommendations.

Future work

This project is still in its quite early stage of development, there is a lot of work just to finish the whole system I'm describing in the report. Most of the work was done in the area of "idea" development, when users were asked to test different stages of the prototype and suggest some features they would like to see at the final prototype. Users suggested plenty of features of which many couldn't be used in the final prototype. Therefore except of finishing this service, there are still a lot of opportunities to expand. These ideas are concerning mainly about expanding the functionality, expanding the scope of the project and expand to other platforms (e.g. mobile phones, tablets).

Tool for young authors

One of the user's suggestion was that this kind of portal could be also used as tool for young authors to present their works to the others. Although this idea looked promising, in the end I haven't included it into the final prototype. Thus it could become part of the future development to extend functionality of such a service. For this purpose, special field for the authors under the user account will be created and if any young author would like to upload his own work, he can do it there. Then if any other user reads his excerpt, he can contact directly that specific author and ask him for the rest of story. In this way, authors can also collect some resources for publishers, if they would like to issue their books. It can also help to present new (not issued yet) books for already known authors. People can read an excerpt from the book here and pre-order it.

Paging

Paging is another suggestion, which came out from the Stage 3. She argued that for better orientation and better understanding the excerpt, there should be written a page number next to the excerpt to let user know, from which part the excerpt is coming from. However, even if this suggestion looks quite reasonable, I decide not to include it into the final prototype. The reason for this was to keep level of surprise as high as possible and by using this feature, user can get more information than necessary. On the other side after some time and more tests, this suggestion can become more realistic and useful, thus I would like to continue with testing this feature. Paging can be then displayed right under the excerpt (above the buttons) in a classical way, we know from the books, e.g. 203/368.

More social networks

There are much more social networks currently in use, then those three I mentioned in the "Prototype" chapter, e.g. most of the Russians are using social network vKontakte.com [31] and so on. Due to this fact, with possible future extension with other language options (e.g. Russian, Chinese, etc.) it would be good to add possibility to share excerpt on other, more less local (national) social network. Also in a case, that new type of social network emerges in a future, system should be ready to adapt changes in a situation that significant group of

users will migrate to that social network. There is also possibility to connect this service with other book recommendation portals like Goodreads, Booklamp, etc.

E-shop

In a chapter about the prototype I mentioned, that system doesn't have its own e-shop. Thus in a future, if system will attract reasonable amount of users and become viable, it would be an advantage to build your own e-shop. Main reason for this is to prevent losing potential customers who would like to buy a book after reading excerpt. Current situation requires cooperation with already working and known book recommendation portal or e-shop, but in a future it would be more than preferred to build own e-shop and cover all the issues connected with affiliate marketing and redirecting the users to another shops.

News, charts...

System could also include some kind of news service from the literature field, e.g. new issued books, information about the literature festivals, new trends in literature, famous authors' visits and so on. This news should be displayed on the homepage, as it is typical for other well-know portals like IMDB or Goodreads. Homepage could also include some charts, like top ten bestsellers this month, most favourite novels from the critics' point of view, most favourite novels from the users' point of view, and so on. However application of these suggestions would change the homepage interface rapidly, so it will require a lot of effort to implement such a feature.

Forum

Users should be allowed to discuss their opinions on the forum. Forum used to accompany many famous webs about books like Amazon, Goodreads and so on. Discussion here can be divided in same way like it is typical for other forums. In some threads users can discuss technical issues or report bugs of the portal, while in the others they can discuss new trends in literature or share their opinions about specific excerpts. Users can trade their old book in the forum as well. On the other side, this can become tricky feature, due to the fact, that group of users can discuss some excerpt and if someone, who haven't read this excerpt yet will read it here, system lose its beneficiary.

Rating system

Rating system is fundamental part of many recommendation systems. Many services offer the option to rate their products or good they are selling. Thus this feature can be also applied here, although users wouldn't rate stuff or goods, but they would rate the excerpts. This feature could help to increase quality of service, simply by recognizing which excerpts are attractive for the users and which not. However, this feature also has a tricky part. If there will be someone, who rates every excerpt from specific book with maximum rating (let's say 5 stars), he can confuse the user and influence his decision process. Based on the

fake rating, user can buy the book and later on become frustrated with the service, if book is not good as he expected based on the rating. On the other side, if user really doesn't like the excerpt, he probably doesn't buy a book, even if he sees a good rating there. This assumption has to be proved by the tests.

Mobile version (application)

As I already mentioned in the chapter "Prototype", this kind of system would perfectly fit to the smartphone (or tablets) platform. However, the original idea was to build such a service on a PC platform, so I decided to keep on the track and describe this feature in the future work. Some of the users suggested, that they would like to use this kind of application on the smartphones due to the reason, that it can be a good tool for "pastime", especially when you are travelling in the public transport or even at the school, when you are bored. One of the user suggested, that he would like to use this application at the time, he enters a library or book store and he doesn't know what he wants to buy or borrow. "It is easier to open an application and go through the random excerpts, until something attracts you, then go around the shelves and pick every book, open it and read it" he said. Another important fact is that smartphone or tablet platform is still rising, while computer platform slowly declines [32], therefore there is a potential, that amount of users of mobile version will grow. Against this suggestion is fact, that it is more complicated and uncomfortable to read anything from the smartphone screens, than from the computer ones or tablet ones.

Another interesting feature on the mobile phones could be a game. It would be some kind of "quiz game", where users could send between themselves the excerpts and they should guess the facts about it. There should be different categories where they have to guess e.g. genre, author, book title, etc. This idea was inspired by another quiz game, where users had to draw something and send it to their friends, who were trying to guess what it is.

Summary

In this section I presented some of the possible future extension of the service. From my point of view, most promising of these future extensions is the mobile version – an app. However, it is necessary to finish development of the original idea and then process more iteration to find out, how such a system will work on the smartphones or tablets.

Business potential

Business outcome of this system is mainly in the potential to sell the books either for the other book e-shops (affiliate marketing) or on its own. Next option of business exploitation of this service is presentation of new books from contractual publisher houses or writers. Furthermore there is always a possibility to capitalize on advertising as it is typical for plenty of web services.

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Appendix

Free transcriptions of answers from the Stage 2: First HTML-based prototype

All answers are my translation:

Woman (52)

She said that she is using recommendation portals and she is using recommendation services for the reality right now, because she is going to buy a cottage soon. From my point of view, testing person doesn't know the difference between the search engine and recommendation portal – she also mentioned it, that she can't see or she doesn't know the difference between them. She is using recommendation portals for the inspiration mostly to look for the things, which are suitable to her according to her ideas. Her approach is to get plenty of recommendations, for example she is looking for a new cottage in a way that she opens more web pages from Slovak reality agencies and then she compares the offers from them. When I asked her about the books and book recommendation portals, she answered, that she is using them occasionally, mostly Martinus.sk (Slovak biggest online book store). About the other sources, she mostly asks her colleagues from the works or friends, mostly the younger ones, because they are more convenient with the recommendation portals. They used to recommend her some books and then she can just directly buy the book or find more information about it. She believes that primarily younger people are using the recommendation portals. By her, they are more convenient with the online world.

During the testing itself, she just asked some questions about the testing tool itself, but she was just mostly reading the texts and checking the authors/books names. She read all of the texts and she didn't point to the change from the Wikipedia to the book e-shop.

After she read all the texts, she said, that she found some interesting texts there, she could choose at least two or three books based on this. She added that it would be much easier for her, if there would be some genre specification on the beginning, but on the other side, without any genre specification, it can be more surprising, if the system would be without it and user can find something new, what he wouldn't find otherwise. For her, it is quite important to see a lot of information about the author, because his style and how he writes is more than the story itself. She also realized the problem of relevancy of the piece of the text presented to the users, but she couldn't give any suggestion how to choose it. She would prefer if the text would look like book page with the all paragraphs, alignments, and so on. In the end she added, that it can be good tool for the new writers and publishers or readers as well.

Man (26)

He is not using recommendation portals at all, but he thinks that people are using these systems for the inspiration or they want share their opinions with someone else (via rating).

He added, that he is not using these portals, because the recommendations never been very relevant for his taste and expectations. He is getting the recommendations from his friends or the books regarding his hobbies. He is not visiting the book shops very often, because he doesn't like to be crowded and hear a lot of noise, when he is choosing new book. Therefore he prefers to get some recommendations personally and the just order or directly buy that book. He usually don't care about the story so much, the author style of writing is the most important for him.

During the testing itself, he was mostly quiet and he read all the texts. He only stopped once and told me, that he prefers to read books in English or Czech language and he doesn't like to read the books in Slovak language (although he is Slovak). He thinks that Slovak language is too soft and funny for writing.

When he finished readings, he started to talk by himself; he hadn't had to be encouraged to say some feedback or suggestion. He appreciates the idea itself, but what was problematic for him, was the language. As he said before, he doesn't like to read books in Slovak language, so he would be grateful, if there would be some language options or some kind of check box, where he can choose the language of recommendations. What he liked on the idea, was the style of author's writing. He believes that for the frequent readers it is the most important things and he said, that general description of the story, can be misleading, because if someone writes a book with the same story like in Kafka's Trial, it doesn't automatically mean that it has got same quality like the original one. In the end I asked him about the genre specification and about the text visibility and structure. He gave me a truth, that these are the mandatory things in this project, because he would like to avoid some types of books, he doesn't like (e.g. detective stories, historical novels) and as well, the structure of the text is the thing, that makes a lot of impression on the reader (e.g. poems). Later on, he send me a message on the chat, that it is a good idea and I should continue with it, but I should definitely change the look of it.

Man (26) and Man (25)

These two users were interviewed simultaneously due lack of time. For the background questions, they answered, that they are using the recommendation portals quite often; especially the ebay.com and sometimes they are looking for the electronics on the internet through the portals like PriceRunner.co.uk. For the books recommendations, they are mostly getting the information from the friends or relatives because they know their taste and preferences, therefore they usually recommend them something relevant. They think, that biggest problem of the recommendation portals is the relevancy of recommendation. Although they are using them quite often, there are still some confusing and useless recommendations from the system.

During the testing itself, I let the first one to read the texts and during that time, I was talking with the other one about the routine daily stuff. When the first one finished reading, the

other one went to read and I did a debriefing with the first one. They didn't have any questions during the reading; both are quite well technically skilled, so they understood the system from the first moment.

Debriefing of the first one: He said that the system is very simple right now and he would like to see more functionality there. He also mentioned the thing with the e-shops and Wikipedia and he told me, that I should unite it, preferably to some e-shop, because of the business potential. He was missing the genre distribution on beginning, because as he said, he doesn't like all types of the books. He would make it as a homepage menu, where you could choose the styles you like on some kind of check box. On the page with the text I should have three basic buttons – I like it and I want to know more, I don't like it and show me next and the biggest button, It's amazing, I want to buy it. He also recommends me to connect it with social media – if I know that one of your friends could like this text, you can send it to him. His overall feeling about this idea was that I should make it as some kind of Affiliate marketing (some kind of motivation for reading).

Debriefing of the second one: His first thoughts about the text choosing was, that if it would be possible, that author itself or the publisher/editor (or some marketer) would choose the part of the book, which will be presented. Next option by him would be that user could choose if he wants to see random part of the book, or the one from the publisher/editor or just the general description. His other suggestion was that there could be some kind of pop-up window, where the user could see, just few sentences and then he clicks on it and whole page would appear. He said that I should contact some book sellers, when it will be more suitable for commercial use. His last thoughts were that I could use the same text, which is usually on the back side of the book cover (some part of the story).

Man (83) – This testing persons said that he doesn't know what are the recommendation portals, so instead of asking background questions, I explained him how the recommender systems work and how he can use it. The questions about the other sources of recommendations, he said that he is reading a newspaper articles about the new books or going to the libraries/book shops, where he is searching for something new and interesting.

During the testing itself he was reading around ten books, some of them he found interesting.

After the testing session, he said, that description of the story is most relevant for him; he usually chooses new book based on it. He added, that reading from the webpage was quite difficult for him, he would prefer if it looks like normal page from book. In the end he said, that he is not very frequent user of the internet and he would rather stay with his old fashioned way of book discovering. For him, it is quite important to have more information about the book, before the purchase.

Woman (79) – The same situation like with the person before happened here. The testing person told me, that she is not using recommendation portals at all, because she barely can

turn on the computer. She is having same approach with the new books like the person before. She is reading newspapers and listen radio, where she is getting an inspiration for a new book. She also used to go to library a look for something new, but she is quite old and she can't go there as often as she would like to.

During the testing itself, she read through all of the books, some of them she found as already known and only one as interesting. She said that she has got very specific taste, so it is not so easy to please her. She was teaching Slovak and Russian literature, so she was talking a lot about the grammar and style of the writing.

After all of that, she told me, that it is very important for her to know about the author, how he writes, his style and if it possible to see some kind of book analysis from the critics. She added that this is probably some professional deformation from her work, so I should reckon with it. The other thing, what she was missing was the genre selection on the beginning. She already has her own taste and she is not willing to change it in such an old age. Generally she liked the idea, but she is bit afraid and confused of computing technologies, so she will rather stay with her approach.

Man (25)

He mostly uses the Facebook as some kind of recommendation portal; he is member of some groups, where different users are talking about the books, games or electronics. He uses them just for being informed or when he is looking for some good, which he would like to buy. He thinks that recommendations from the people are the most relevant (with quite same background). Sometimes he also uses the portals like PriceRunner.co.uk, where he finds prices of goods and then he goes through the different shops one by one. He used to choose new books based on the authors, whom he likes and then he is looking for the ones with common style or based on the his friends recommendations. His opinion about the recommendation portals is that people are using it differently for different goods. If it is more expensive, they rather consider many sources, if it is cheaper they don't care so much. And the books are not so expensive, so he likes to be influenced with something new.

His first thought was, that he would like to have this kind of recommendation portal especially on the mobile device, because he still has got his mobile phone with him and anytime he will get a taste to get an inspiration for the new book, he can get it. He sees the lot of potential in this idea and he would definitely put some genre differentiation on the beginning. But on the other side, some people believe that sci-fi or fantasy are for kids and they will never try something from this genre and if they can choose, they will always pick up classics or poetry. Then he suggested that the best way would be to have genre differentiation and something like Google button "I m feeling lucky" for completely random choice. He would also prefer to have some kind of structured text there with all the paragraphs instead of that word mess, but it would be much harder to read, if it would be on

smartphones. Length of the texts has to be considered as well, but he can't tell how much it should be. And some additional information – some pop-up windows placed on the web-page, which would reveal, if you would like to know more.

Woman (23) – Testing person is not using recommendation portals very often, although she is quite young, she rather asks someone for personal advice, e.g. boyfriend, friends, family. She added that she chose her mobile phone with her boyfriend and the new computer with her father. For the books recommendation, she sometimes uses Martinus.sk, but she's got a feeling, that they are deleting negative reviews. Once she wrote quite negative review about one book, but one week after, when she was checking it again, her review was gone. That's also the reason, why she doesn't trust so much to this portals. She believes that people are using recommendation portals, because they want to save time and something just to get some good inspiration.

She really likes the idea, she said, that she would use this system, especially as some kind of quiz version for herself, e.g. while sitting in the bus, she would just read parts of the books and try to guess, what it is. After that she added, that it could be some kind of game as well. Users could compete between themselves, who knows more books and so on. She would like to see the text in better shape – justify it. Due to fact, that she has got a lot of friends, who are reading, she would like to have some tool there, by which she can send that text to someone. She asked some questions about the interface, but I told her, that they are not so important right now. She hoped, that I won't finish this idea, before she will finish her studies, because she already knows that she would spend a lot of time with guessing.

Man (22)

This testing person is using recommendation portals almost daily, especially the ones for the restaurants and electronics. He told me, that when he wants to buy something, he is going through as many pages or portals as possible and based on the reviews there, he decide to buy or not. The very good sources for him are the pages where you have some kind of chart of the top products and the chart with the worst ones. He believes that the reviews from people are more relevant than ones from the companies. He discovers a new book from plenty hipsters blogs, where people are writing about new books or what they read. As a student, he thinks, that using recommendation portals is saving time for the people, who doesn't have so much time to go through different sources of information and evaluate each product. He is the layman, and if there are other hundred other laymen with same opinion he is rather willing to believe them.

He would like to suggest, that texts should have same length and if the user would like to see more, he could click on some button, which would show him more – if he has not decided yet. He would like to have some kind selective filter for those random choices; user would choose which types of recommendations (genres) he wants to see. He also asked about the languages – if there would be some language choice – he only wants to see the books in

Czech/Slovak /English/German/etc language. He thinks that it is a good idea, especially today, when people are overflow with too much precise information and sometimes, they just want to be surprised. His last thought was about the charts – like top ten and so on, but I told him, that it doesn't fit very well into the concept.

Woman (23) - Her first answer was that she is using the recommendation portals mostly for music recommendations – Spotify, Last.fm, but sometimes also Amazon for books. She is mostly looking for bands with quite similar sound and her recommendations are quite relevant as she said. She is using a plenty of web page for book recommendations, especially the specific ones about the literature and new books. Friends are also relevant source by her opinion. She thinks that people use recommendation portals, because they still want to find new things and they are willing to try new ways and methods.

After the testing itself, she said, that idea is very interesting, because she is very curious and she always wants to know more about it. She also asked about the parts of the books, which were used and how I chose them. Genre differentiation would be also very important for her, because she doesn't like some at all. She was curious about the search engine on the webpage, if there is a plan to add some. She could choose a book from this type of portal, but she would also like to see more information – about the author, book, etc. She just likes to have more information about the product, before she is going to buy it.

Man, (27)

Testing person is using mostly ebay.com and Heureka.sk (something like PriceRunner) for recommendations. He is looking for the good prices and comparing the different products of everything he needs – clothes, electronics, books, etc. He is quite satisfied with the recommendations, which is getting, because Slovak market is not so huge and he always can find something relevant. For the books he is also using Amazon.com and Martinus.sk, because he doesn't know any others. Most relevant sources for new books, he is mostly using one fantasy magazine, where they are promoting new books every month. Then he checks some other reviews on the internet and if he is satisfied, he buys or read the book. He thinks that the recommendation portals are mostly used by the companies to sell their products and people are in need to shop, so they are visiting them and getting the inspiration from it.

He expected from the first moment, that it will be boring or useless, but his expectation wasn't fulfilled and he recognized one book there, which he already read. He didn't have to read whole article, because after few sentences he already knew if he is interested or not. He said that would be the most important things to choose proper piece of text to attract the reader. He said that he read eleven texts there and he liked four of them already. As suggestions he would like to add some genre differentiation, because it is important for him to know what type of literature he reads and some additional information about the book on the webpage, which would pop-up if you would click on them. And some hidden pictures as

well – cover or if there are some pictures inside the book. He also had some reservation against the interface of testing webpage.

Man (29)

Testing person answered, that he is using recommendation portals for some books, articles for his studies or some things of daily use like electronics, clothes and so on. Unfortunately he is very seldom satisfied with the results, therefore he had to go to other pages to prove these findings and after all of this he buys that good. For the book recommendations he mostly uses Amazon.com, Martinus.sk or Google, he combines searches, based on what he is looking for. Likewise the other testing persons he is also influenced by his friends or family recommendations. He thinks that people are using recommendation portals, because they are constantly looking for a better quality or the closest choice.

After reading all texts, he said that some of them were quite well and he would like to read them. He thinks that half of the page would be enough, because the primary sense is the most important here. He would also prefer some genre differentiation, because people will feel more comfortable when they see some structure and not only pure chaos or random. He would also rather read some texts from genre he likes and not to go through plenty of totally irrelevant texts. He added that this could be solved by accounts for users. They would have their preferences saved in the profile and they would see the recommendations based on this.

Transcriptions of the interviews from Stage 3: Comprehensive HTML-based prototype

All answers are my translation:

Do you know what Recommender systems (RS) are? Do you use them?

Interview 1: I m using the internet in general, but recommendation services not very often.

Interview 2: I use recommender systems very seldom. Actually I m not sure if I understand what are recommender systems.

Interview 3: I use recommendation services quite often. I would say that almost on daily bases. Sometimes they can even surprise and I find something really great.

Interview 4: I started to use Spotify as RS. Due to my wide musical interest, recommendation used to fit into my expectations, but I think that if I would have more specific one, it would be more difficult.

Interview 5: I use recommender services for any kind of goods I m going to buy through the internet. I always check reviews.

Interview 6: I think that recommendation service is a place where people can share their opinions about specific things, e.g. e-shops. I don't have very good experience with it. Once I bought something through it and they didn't deliver that good and we couldn't get the money back.

Interview 7: If it is possible I shop online, but I m not sure if I understand the term "recommender service". I have a small baby right now, so when I m buying a new toys for her, I used to check reviews on the internet.

Interview 8: I m not sure, what are recommendation services. Is it something like "Challengest.com"? Or the pages, where you get some instructions?

Interview 9: I don't know what RS are. I don't think so, that I ever used them.

Interview 10: RS services are offering some advices and recommendations to the users. When I look for something, I like to read or see other options. It depends on the goods, if I trust their comments or not. Sometimes, when comments are relevant, I can reconsider my view.

Interview 11: I know a lot of portals, where people recommend books among themselves. I m not sure if I answered correctly.

How and for what are you using them? What are you expecting as a result? Do you feel satisfied with it? For what kind of goods are you looking for the most?

Interview 1: Most often I use Bookfan.eu fan page on Facebook as a recommendation service. (I couldn't find this fan page on the Facebook.) It is some kind of database of books, where you have information about authors, contents and so on. There is also a five star rating system and anyone can comment a book as well. I found this service through the Facebook advertisement and I think that this is the only one recommender system I use right now. I expect that there will be right and proper information about the books. This is what is mandatory for me. Honestly I don't care so much about the comments and evaluation from other users. Book reading is very subjective activity. I prefer to see ratings and comments, if I'm going to buy something else like electronics or things of daily use. The reason for this is, that if you are going to buy a fridge, you will probably going to use it in a same way as someone else and if there are plenty of users, who recommends it, it is probably good. But it is completely different with a book. Thousand people can like and recommend it, but you don't.

Interview 2: Ah, now I understand what it is. I used to choose electronics or other good through these kinds of portals. I don't use them for books definitely.

Interview 3: Mostly I look for Warhammer miniatures (table top game) and books. For books I usually use Martinus.sk. I think that they have quite precise service.

Interview 5: Usually I buy electronics through the internet and that is where I use RS.

Interview 6: Electronics, but sometimes it is difficult to take in consideration all opinions, because one can write three sentences about the product and the other can write two words.

Interview 7: As I said before, mostly toys now. It happened in the past that I was nicely surprised, when I wasn't looking for anything specific on the internet and I get interesting recommendation.

Interview 8: Results are usually relevant for me, but many times they are overwhelmed with nonsense or too many options. I usually look for inspiration on these kinds of services. There are some portals, where I go usually to check, what is going on and what is new.

Interview 10: I like these portals for books. I read reviews on Martinus.sk or on the other webs as well. There is literature section every weekend in newspapers I read, so I always check that one. I'm conservative type of person, I used to know what I'm looking for. I use them mostly for ordering items.

Interview 11: I used to be satisfied with those recommendations. I like to look for an inspiration there. Unfortunately there are too more opinions from both sides of river. It is difficult to fit in everyone taste.

Have you ever used RS, when you were looking for a book? If yes, which one and did you find something relevant? Which other kinds of information sources are you using, when are you going to buy new book? Do you ask you friends, family or are you looking for the information in the newspapers, media or just go to book store and randomly buy a new one?

Interview 1: Usually I look for the inspiration in the libraries or bookshops. Or sometimes, when I hear about something interesting from my friends or family, I tend to read it.

Interview 2: I prefer my family and friends recommendations, maybe some internet review, which I find by coincidence or some blogs.

Why friends or family? I trust them that are why. They know a lot about me, they know my preferences and when I read something on behalf their recommendations, we can discuss about the book later on.

Interview 3: If I look for inspiration for a new book, it depends what kind of genre I would like to read. For example, if I want to read fantasy book, I visit some specific web pages and decide upon the description of story and so on. As I said, it depends on the genre. Friends and relatives are also very important.

Interview 4: I can't remember if I ever used this kind of portal for book recommendation. But I ordered some books through Martinus.sk, does it fits into your question?

If I want to read some new book, I used to go to second-hand bookshop. I really like smell of the old books. There is a big antiquarian bookshop near to my house, so I usually visit that one, if I want to read something new. Sometimes if I want to know more about that book, I look for on the internet some additional information about it.

Interview 5: I never used it for buying book; I don't know any portal, which can help me in this way.

I check Martinus.sk, when I m looking for an inspiration for new book. Especially I look for new books on their webpage or I m browsing through specific genre.

Interview 6: I don't trust very much book recommendation portals; I think that they only want to sell most popular books. They don't care about the quality of recommendation.

I always trust my family in area of book recommendations. They always suggest me something good. Also I have some specific authors, which I really like to read and if they publish something new, I buy it.

Interview 7: I already bought some books through internet, but I can't remember which ones and where was it.

When I m looking for a new book, I always consider my hobbies and interests and based on these I m trying to find a new book. Or sometimes it comes by coincidence. You are not looking for anything, but somewhere, some book is mentioned and you will buy it or read it.

Interview 8: I like libraries. I think that most of the books I have read I found in libraries, and from friends as well. They are very important source of inspiration. I don't use the internet for this.

Interview 9: I m checking the reviews on my favourite blogs or web sites, when I m looking for a new book. Friends are also important in this area.

Interview 10: When I m looking for an inspiration, I used to check "top ten" or "news" or I m checking if my favourite authors are going to publish something new. Reviews in the newspapers are also quite informative for me.

Interview 11: I m checking book e-shops regularly and then, if there is something interesting there, I will read more about it, sometimes I go to the book store, where I read few pages from the book and if it is still interesting for me, I usually buy that book.

There are some authors, which I like the most. I buy everything from them.

Please, tell me your opinion about, why the people are using RS?

Interview 1: I think that people are using RS services, because they want to choose right things. They don't have a time to go through all the possibilities; therefore they have a tendency to trust positive feedbacks from large amount of people.

Interview 2: I think that people are using those systems due to lack of time. They like to see other options, not only their ones and who has got a time to ask personally everyone around you, if you like these thing or not. And sometimes they can even find something better, than their original pick.

Interview 3: People are using RS services, because they are lazy to look for something specific. It is very simple for them.

Interview 4: I think that people are using RS, because they are looking for the people, who has got some interest as they and they are subconsciously copying their behaviour. Bigger the portal is more chance you have that you will find something relevant.

Interview 5: They were created, because people sometimes need advice and they want to share their experience with others.

Interview 6: People use RS, because they don't want to buy "pig in a poke".

Interview 7: I like RS and I think that people like them too. That is the reason why they are using it.

Interview 8: People are using RS services, when they don't have any inspiration and they don't know how else to get it.

Interview 9: I think that people are using RS, because they want be influenced in a positive way. More users you have, easier you can see the patterns of shopping and then suggest right item to them.

Interview 10: I think that people want to make sure themselves, that they are right. If thousand people bought some product and gave highest rating to the item, there is a big probability, that it will be good.

Interview 11: It is very simple to use these RS. There are too much of goods on the internet that you need to structure it in some way and make it easier for users to choose.

Source code embedded into my webpage from Google Analytics

(Due to security issue, I replaced my personal number provided from Google Analytics for string of X letters)

```
<script type="text/javascript">
```

```
var _gaq = _gaq || [];
```

```
_gaq.push(['_setAccount', 'UA-XXXXXXXX-X']);
```

```
_gaq.push(['_trackPageview']);
```

```
(function() {
```

```
var ga = document.createElement('script'); ga.type = 'text/javascript'; ga.async = true;
```

```
ga.src = ('https:' == document.location.protocol ? 'https://ssl' : 'http://www') + '.google-analytics.com/ga.js';
```

```
var s = document.getElementsByTagName('script')[0]; s.parentNode.insertBefore(ga, s);
```

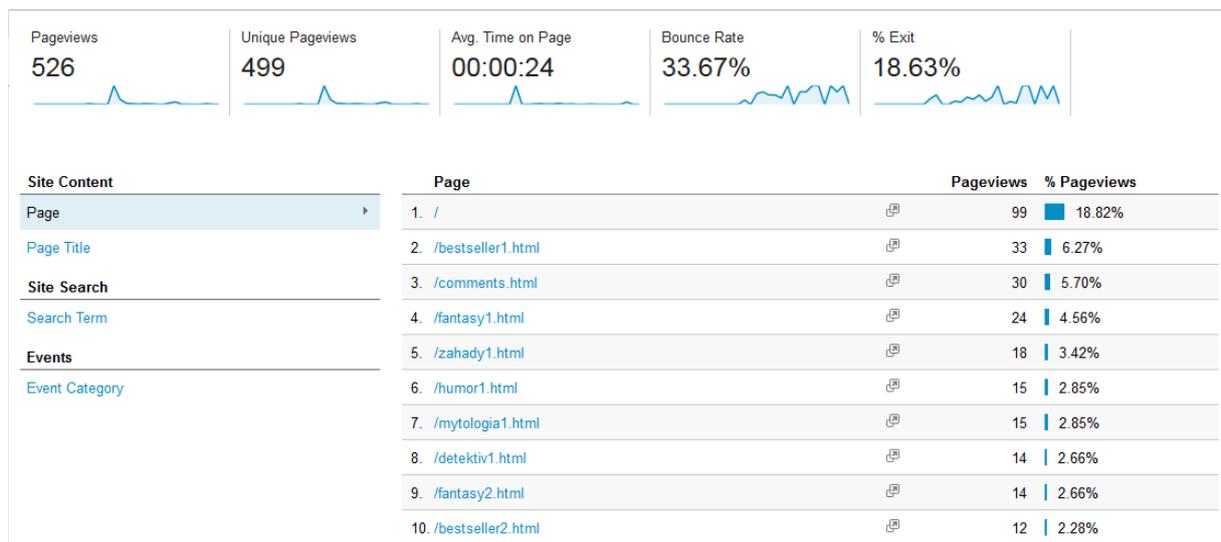
```
})();
```

```
</script>
```

Screen dumps with other reports from Google Analytics

Page ?	Exits ?	Pageviews ?	% Exit ?
	98 % of Total: 100.00% (98)	526 % of Total: 100.00% (526)	18.63% Site Avg: 18.63% (0.00%)
1. /	34 (34.69%)	99 (18.82%)	34.34%
2. /comments.html	8 (8.16%)	30 (5.70%)	26.67%
3. /bestseller1.html	6 (6.12%)	33 (6.27%)	18.18%
4. /fantasy1.html	4 (4.08%)	24 (4.56%)	16.67%
5. /mytologia1.html	4 (4.08%)	15 (2.85%)	26.67%
6. /test2.html	4 (4.08%)	12 (2.28%)	33.33%
7. /fantasy10.html	3 (3.06%)	5 (0.95%)	60.00%
8. /roman1.html	3 (3.06%)	9 (1.71%)	33.33%
9. /zahady1.html	3 (3.06%)	18 (3.42%)	16.67%
10. /bestseller2.html	2 (2.04%)	12 (2.28%)	16.67%

Exit pages



Overview of behaviour of the users

Page ?	Pageviews ? ↓	Unique Pageviews ?	Avg. Time on Page ?	Entrances ?	Bounce Rate ?	% Exit ?	Page Value ?
	526 % of Total: 100.00% (526)	499 % of Total: 100.00% (499)	00:00:24 Site Avg: 00:00:24 (0.00%)	98 % of Total: 100.00% (98)	33.67% Site Avg: 33.67% (0.00%)	18.63% Site Avg: 18.63% (0.00%)	\$0.00 % of Total: 0.00% (\$0.00)
1. /	99 (18.82%)	93 (18.64%)	00:01:08	92 (93.88%)	32.61%	34.34%	\$0.00 (0.00%)
2. /bestseller1.html	33 (6.27%)	30 (6.01%)	00:00:24	0 (0.00%)	0.00%	18.18%	\$0.00 (0.00%)
3. /comments.html	30 (5.70%)	28 (5.61%)	00:00:42	0 (0.00%)	0.00%	26.67%	\$0.00 (0.00%)
4. /fantasy1.html	24 (4.56%)	22 (4.41%)	00:00:14	0 (0.00%)	0.00%	16.67%	\$0.00 (0.00%)
5. /zahady1.html	18 (3.42%)	16 (3.21%)	00:00:09	0 (0.00%)	0.00%	16.67%	\$0.00 (0.00%)
6. /humor1.html	15 (2.85%)	12 (2.40%)	00:00:12	0 (0.00%)	0.00%	0.00%	\$0.00 (0.00%)
7. /mytologia1.html	15 (2.85%)	14 (2.81%)	00:00:03	1 (1.02%)	0.00%	26.67%	\$0.00 (0.00%)
8. /detektiv1.html	14 (2.66%)	13 (2.61%)	00:00:10	0 (0.00%)	0.00%	7.14%	\$0.00 (0.00%)
9. /fantasy2.html	14 (2.66%)	13 (2.61%)	00:00:10	0 (0.00%)	0.00%	0.00%	\$0.00 (0.00%)
10. /bestseller2.html	12 (2.28%)	12 (2.40%)	00:00:16	0 (0.00%)	0.00%	16.67%	\$0.00 (0.00%)

Show rows: 10 Go to: 1 1 - 10 of 89

Site content

Transcriptions of comments and suggestions from Stage 4:

Timestamp	Name	Your Contact Info	Feedback	How many books do you read per year?	
4/9/2014 18:58:15				10/25/2014	Samotný koncept úryvkou je veľmi zaujímavý a jednoznačne si viem predstaviť ako by dokázal "ukecať" niekoho kto ani nemal v pláne si niečo kúpiť aby si danú knihu kúpil. Ako negatívum vidím to, že stránka je slovenská ale navigačné tlačítka sú v angličtine, neposobi to dobre. Aj grafické prevedenie stránky by zniešlo jemné skvalitnenie. Ale to sú len kozmetické vady.
4/9/2014 19:07:01				30	Zdravím. Pekná myšlienka, ale myslím, že by som zaradila niekoľko ďalších členení (slovenská literatúra, cudzojazyčná literatúra a pod) a ku textom by som pridala aspoň názov a autora, nech človek vie, aký úryvok číta. Inak super. :)
4/9/2014 20:14:02				15-20	Jakubko, je to super nápad celkovo riešiť niečo takéto, mega palec hore odomňa, keďže teraz už ani tak nemám času, no prečítal som veľmi veľa kníh. dať tam úryvky a preklikom sa dostať na stránku martinusu, no z mojho uhla pohľadu je to nie moc prehľadné a praktické. Nevieš o akú knihu sa jedná a nemáš v podstate možnosť nejakého výberu tej a tej knihy. možno by som zriešil niečo do štýlu ČSFD s komentármi a popismi od autora + priestor na kritiku a hodnotenie, komu sa ako tá ktorá kniha páčila - nejaká možnosť kritiky priemernú slovač poteší až až. Taktiež možno nejaký "Search"... viem že to je strašne na dlho a na moju kritiku si možno ani neni zvedavý no robím to z dobrej vôle, lebo dobré nápady mega cením a toto veru je každopádne držím palec a bodaj by si sa dostal aj ku nielen "školskému projektu" :) išiel by som do toho kludne s tebou :D Rižo Kopač
4/9/2014 22:13:05				5	good job
4/9/2014 23:18:39					nazdar,chyba mi tam este dalsie olenenie napr podla autorov.tie uryvky su fajn ale ked si choem precitat nejaky konkretny zivotopis tak podla uryvku tazko zistim o koho ide :) budo mohol tam byt index tych nazvov predpokladam ze to tam mas natvrdo nahadzane a nie ze mas skript co cekuje zanre z martinusu ci odkial ? A ten button next by som dal tak aby neskakal ked klikas nanho , myslim hore,dole podla velkosti textu . potom musim stale hybat myskou a to sa mi nechce Okrem ineho ten styl stranky je hrozny, myslim tym to menu nalavo, ktore vlastne tvori VSETKO, dal by som tam aspon nejake stylovanie nech su odkazy neni modre a podciarknute jak v roku 1998. treba si uvedomit aký je rok , keby som sem zabludil
4/10/2014					

Google forms comments

- Hi,
an interesting idea, but somehow I miss here more things which would have to be interesting. For now, it offers just random excerpts and a hyperlink to Martinus? Will it know something more in a future?
- The very concept of excerpts is very interesting and I can imagine how you could "rope in" someone who did not plan to buy something to buy a book. As a negative I see aspect that the site is Slovak but the navigation buttons are in English, it does not operate well. Well as graphic design site would withstand gentle improvement. However these are just cosmetic damages...
- Greetings. Nice idea, but I think I would include several other genres (Slovak literature, foreign literature, etc.) and to the text I would add at least the title and author, let man knows what he reads. Otherwise great. :)
- It's a great idea to solve something like this, mega thumbs up from me, now I have not so much time, but I read a lot of books. It is nice to put there excerpts and click through to get to the page Martinus, but from my point of view it is not much insight and practical. You do not know what book it is and you do not have basically any possibility of the choice about the book. I might have something with comments and descriptions from the author + space for critique and evaluation of the person as the one who liked the book - any possibility of criticism average Slovaks pleased enough. It can also be a "Search" ... I know it's awful for a long time, and my critics are not even curious but I do it out of goodwill, because I appreciate good ideas and this one truly is.
Anyway Good luck and I wish you'd just go further than the "school project" :) I would go for it : D

5. Good job
 6. Hello, I miss there still further subdivision e.g. by authors. Those snippets are fine but when I want to read some specific biography so according to excerpts it is difficult to know who they are about :)
 7. There could be an index of those names. I suppose that everything there is hard-thrown and not scripted from Martinus or from anywhere?
And the “next button”, why it is jumping, when you click on it? Think it up by the size of the text and I still have to move the mouse and it made me not want to.
Among other things, the website style is horrible, I mean the menu on the left, which actually consists of all, I would give there at least a matter of styling, and links are blue and underlined as in 1996. Important to realize what is the year, if I would lost here, I would think that this page have died minimum 10 years ago, while its date of production is 2014.
 8. Great site. I would add the study literature and it is perfect :-)
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List of genres

- Bestseller
- Detective stories
- Romance
- Novel
- Mythology
- Humour, Satiric
- Poetry
- Short stories
- Sci-fi
- Fantasy
- Horror
- World classics
- Thriller
- War theme
- Biographies, reports
- Mysteries and curiosities
- Drama
- Travelogue
- (Slovak literature) – depends on the language option
- Miscellaneous