Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Information Technologies

Bachelor Thesis

Website UX

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

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BACHELOR THESIS ASSIGNMENT

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Thesis title

Website UX

Objectives of thesis

The thesis focuses on user experience when working with websites. The main objective is to experimentally evaluate UX of a chosen website based on user feedback in a specific scenario. Side objectives are the following:

- study and analyze available scientific literature and online sources regarding UX and website development
- create a scenario of using chosen website for experimental testing
- conduct UX testing with participants, measure the results and gather their feedback
- evaluate the website's UX, discuss results and propose recommendations

Methodology

The theoretical part the thesis will consist in literature review, analyzing available information sources regarding website UX. The practical part of final thesis will include specification of website usage scenario, testing the website's UX using selected testing methods with participants, and evaluation of the results such as measurements and user feedback. Based on obtained information, possible recommendations for UX improvement will be proposed. By combining the results of both the theoretical and practical parts will be used to formulate thesis conclusions.

The proposed extent of the thesis

40-50

Keywords

website, user experience (UX), usability, visual design, website layout

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Recommended information sources

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Prague on 11. 03. 2024

Declaration

I declare that I have worked on my bachelor thesis titled "Website UX" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on 15.03.2024 _____

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Website UX

Abstract

Nowadays websites are incredibly important tools for any actions. High-quality websites always pay much attention for it's user experience. The thesis focuses on user experience when working with websites. The main objective is to experimentally evaluate UX of a chosen website based on user feedback in a specific scenario. The theoretical part the thesis will consist in literature review, analyzing available information sources regarding website UX. The practical part of final thesis will include specification of website usage scenario, testing the website's UX using selected testing methods with participants, and evaluation of the results such as measurements and user feedback. Based on obtained information, possible recommendations for UX improvement will be proposed. By combining the results of both the theoretical and practical parts will be used to formulate thesis conclusions.

Keywords: Website, user experience (UX), usability, visual design, website layout

Uživatelská zkušenost webu

Abstrakt

V dnešní době jsou webové stránky neuvěřitelně důležitým nástrojem pro jakékoli akce. Vysoce kvalitní webové stránky vždy věnují velkou pozornost uživatelské zkušenosti. Práce se zaměřuje na uživatelskou zkušenost při práci s webovými stránkami. Hlavním cílem je experimentálně vyhodnotit uživatelské prostředí vybraného webu na základě zpětné vazby od uživatelů v konkrétním scénáři. Teoretická část práce bude spočívat v rešerši literatury a analýze dostupných informačních zdrojů o UX webu. Praktická část závěrečné práce bude obsahovat specifikaci scénáře použití webu, testování UX webu pomocí vybraných testovacích metod s účastníky a vyhodnocení výsledků, jako jsou měření a zpětná vazba od uživatelů. Na základě získaných informací budou navržena možná doporučení pro zlepšení UX. Spojením výsledků teoretické a praktické části budou využity k formulaci závěrů bakalářské práce.

Klíčová slova: Web, uživatelská zkušenost (UX), použitelnost, vizuální design, vzhled webu

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1 Introduction

At the present digital stage websites have become a vital tool in our daily life. They are operating as the main interface though which people can have access to the information, services, various online activities, studies and even work. This technological ecosystem modified not only the way we communicate with technology but also enhanced the importance of the user experience (UX) when interacting with the website.

Every day a tremendous quantity of websites are encountered by users from electronic business platforms to educational portals and social media networks. The interaction with these websites directly influences to overall online experience of user. It encompasses not only comfort of consuming information and navigation of website, but also pleasure and emotional affect user extract from online engagements. That's why the quality of user experience has a major importance in creating a website.

The concept of User Experience (UX) regarding websites includes a spectrum of factors that impart to these interactions. It consists of visual design, load efficiency, data organization, functionality, accessibility, and others. All these categories should be into consideration during the design of website to make user satisfied and have a positive experience throughout process.

This bachelor thesis sets out to explore versatile world of website UX by analysing available corresponding information and to formulate recommendations for UX improvement by evaluation of results of different testing of selected website's UX.

2 Objective and methodology

2.1 Objectives

The thesis focuses on user experience when working with websites. The main objective is to experimentally evaluate UX of a chosen website based on user feedback in a specific scenario. Side objectives are the following:

- study and analyse available scientific literature and online sources regarding UX and website development
- create a scenario of using chosen website for experimental testing
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2.2 Methodology

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3 Literature review

3.1 User Experience (UX) Defined

The way a user interacts with a system, product, or service is known as the user experience, or UX. It includes an individual's views on practicality, usability, and effectiveness. When creating and developing products, most companies and designers prioritize improving the user experience because a poor user experience can reduce the product's use and any intended positive effects; on the other hand, designing for profitability frequently conflicts with ethical user experience objectives and even causes harm.(www.nngroup.com).

UX of website refers to user's perception and responses during interaction with website. It includes diverse principles and elements directed for building a comfortable communication between users and the website. The primary goals of website user experience (UX) to make a site useful, usable, desirable, accessible and credible.

User Experience is not about the service or working of the product, it is about outside work between person and product. (Garrett, 2011)

3.1.1 Historical development of UX

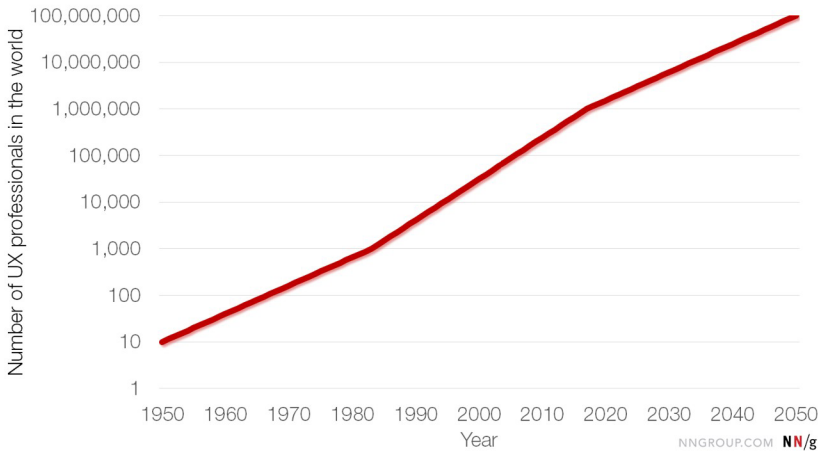
According to the Nielsen Norman Group article "A 100-Year view of User Experience", in 1945 first hired designer of telephone system Bell Labs did UX work concretely to design touchtone keypad. However, the term 'User Experience' was invented by Don Norman for his group at Apple Computer in 1993.

For the overview about the growth of the UX there are chart, that shows number of professionals from 1950 to 2050, with the future forecasting:

Here we can notice three different slopes:

1. 1950 to 1983 – Grow from 10 to about 1000 UX professionals.
2. 1983 to 2017 – increased from 1000 to about 1 million.
3. 2017 to 2050 – expected to grow till 100 million.

Figure 1 - UX Development Chart



Source: https://www.nngroup.com/articles/

The extra fast increase of UX professionals happened from the three factors: PC revolution, web revolution and press coverage.

1. PC revolution – Computer industry from the 1980s started to focus on their usability and user interface, that directly interlinked to user experience (UX).

considered further. Next, overall evaluation of the first page before interaction with the site also crucial condition for success. At last, favourable impression of an interaction with website increases the chance that user will return to this site.(Schaik, Ling, 2009)

2. Web revolution – era of the improving the quality of interaction, in particular websites set the user experience on first and payment second. For that reason, demand of UX professionals enhanced.

3. Press coverage – this period when User Experience was getting popular thanks to press interviews and newspapers.

(www.nngroup.com, 2017)

3.1.2 The Importance of the UX

In today's fast-changing online world, UX is a crucial part in a product development. Effective user experienceof website, or UX, is a key for successful website. UX includes everything from ease of use, accessibility, how quickly it works, aesthetic appearance. It's all about making sure the website isn't just pretty but also easy and enjoyable to use.

Successful UX design helps users find what they're looking for, whether that's information, services, or products. It means understanding users' need and how they use the website, then making everything straightforward and natural for them. This is crucially important in today's world, as people lacks of patience and have plenty of other choices. A website with awesome UX keeps people's attention, helping them do what they came for, like buying something, signing up, or just getting info.

Also, having a great UX makes people trust your website more. If your site is easy to use and looks professional, users are more likely to stick around and come back. This trust is key for keeping customers and getting them to support your brand. With so many options online, a good UX can be why someone chooses your website over another.

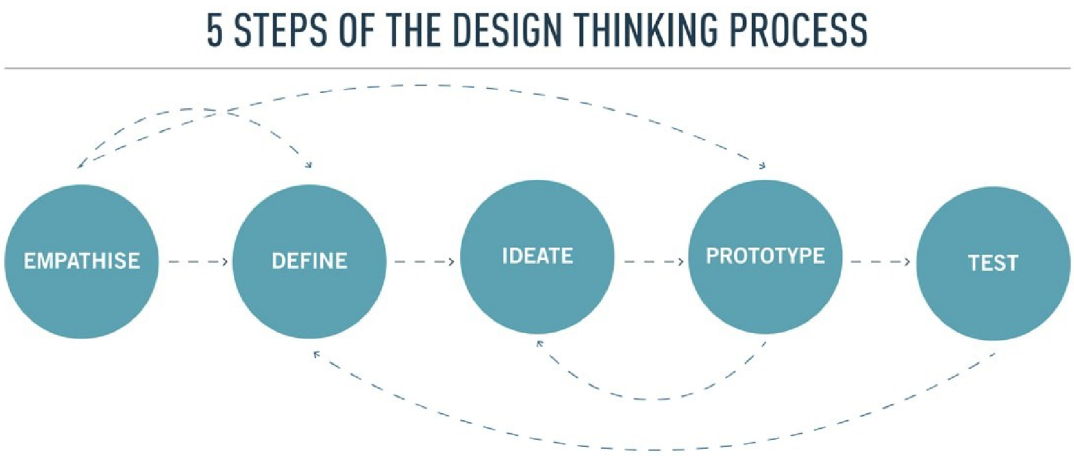
UX is also big for getting noticed by search engines like Google. Websites that are easy and enjoyable for people to use get ranked higher. So, investing in UX is not just about making your visitors happy but also about getting more people to see your site.

In short, UX in website design is about making sure users have a smooth, enjoyable experience. This leads to more engagement, trust, and loyalty to your brand. Ignoring UX is not just missing out on a chance to be better; it could actually harm your business's online success.

3.1.3 Design thinking

Design thinking focuses on a comprehensive understanding of the individuals for whom products or services are being developed. It enables the cultivation of empathy towards intended users. This approach facilitates the process of questioning: identifying the primary issue, challenging preconceived notions, and rigorously evaluating the outcomes. Design thinking is notably beneficial in dealing with problems that are ambiguous or unfamiliar. It achieves this by reinterpreting the problem from the viewpoint of those affected, fostering the creation of numerous ideas during brainstorming sessions, and embracing a hands-on approach in prototyping and testing. Moreover, design thinking promotes continuous experimentation through activities such as sketching, building prototypes, testing, and investigating various concepts and ideas. (Mads Soegaard, 2002)

Figure 2 - Design thinking process



Source: Mads Soegaard, 2002

There are a lot of options of design thinking process phases from three to seven stages. According to Hasso-Plattner Institute of Design at Stanford there are five phases of design thinking:

- **Empathize** – is a phase of observing and contacting with real users, in particular conduct interviews, watching on their interactions, emotional reactions and other.
- **Define** – determine a user problem and analyse how it can be solved, understand user needs.
- **Ideate** – brainstorming a clear solution, analysing the previous stage results.
- **Prototype** – finding best possible solutions, making a prototype.
- **Test** – examination of the solutions and conclusions, testing prototypes.

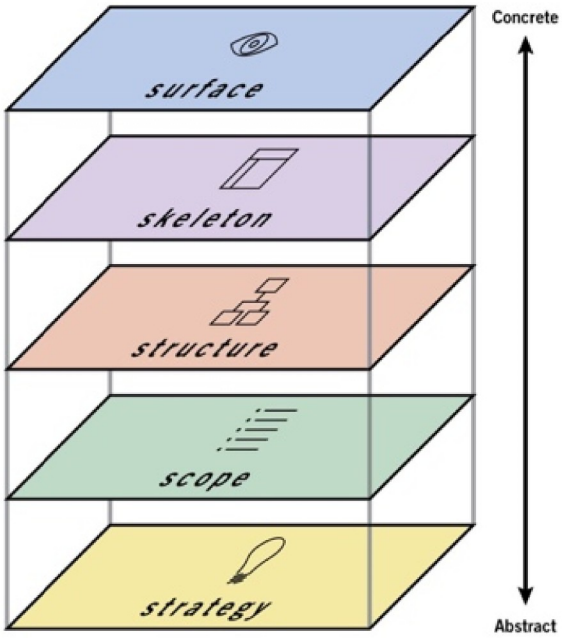
Feedback drawn from the testing stage always creates some insights that can be useful for new ideas and solution for problems in developing new prototypes.

All these stages are not always have to be sequential. The main thing is to understand the overview of the phases and it's results. (Mads Soegaard, 2002).

3.1.4 The five planes

The user experience consists of the various user's decisions, which are interrelated and build each aspect of the UX. The way people use websites usually has the same algorithm for

Figure 3 - UX design elements



Source: Garrett, 2010

example find the product to buy, connect the credit card, fill personal information and the product will be shipped to buyer. The five elements of the UX design offer a theoretical structure related to user experience issues.

1. **Surface** – this layer generally consist of visible components presented to user, in particular images and text.
2. **Skeleton** – Under the surface there are skeleton, that operates with optimization of the elements for the best effectiveness. It controls buttons, photos and blocks of text.
3. **Structure** – the middle layer defines more abstract part of UX. For instance it determines the user's route for getting some pages, while the skeleton operate the placement of elements on interface.
4. **Scope** – this layer determines how different features of the site can harmonize. For example saving information from previous operations to have an ability to use it again for next operations on the site.

5. **Strategy** – the last layer focuses on the scope of the whole site. The goals of the strategy are concentrated on the business objectives of the product and user's needs.
These five elements provide an abstract organization of the user experience and how it works. All layers are dependent from the under one, for example the surface relies on the skeleton, which depends from structure. Overall, the results of all planes show not the final shape of the site or product, but the way the site suitable for the strategy. (Garrett, 2011)

3.2 User Research

To understand what our users need, a sense of who they are must first be obtained. The collection of data required to develop that understanding is devoted to by the field of user research. The gathering of information about the general attitudes and perceptions of your users is best suited for by some research tools, such as surveys, interviews, or focus groups. Understanding specific aspects of user behaviour and interaction with your product is found to be more appropriate for by other research tools, such as user tests or field studies. (Garrett, 2011).
There are 3-dimensional frameworks:
1. Attitudinal vs. Behavioural
2. Qualitative vs. quantitative
3. Context of Use

Attitudinal vs. Behavioural dimension focuses usually on access individuals' expressed convictions, yet its scope is constrained by what individuals are conscious and willing to disclose. Such self-reported information can be useful for designers. (www.nngroup.com)
For instance, **card sorting** – method to understand how users categorize information elements. Users are given a bunch of cards with names, descriptions, or pictures of things from our website. They subsequently organize these cards together based on what makes the most sense to them. Examining the results of card sorting can provide insights about conceptualization the information on the website. (Garrett, 2011)
Surveys measure collection of attitudes of people for discovering various problems and searching for solutions. Also, there are dimension that focuses on behaviour for example A/B testing display random alterations in website's design from site visitors, but keeping all else the same in order to see the impact of different website design selections on behaviour.
At last, the most popular methods are usability studies, that includes both self-reported and behavioural data. (www.nngroup.com)

Qualitative vs. quantitative. Qualitative research is a method that mainly involves gathering information through direct observations and conversations. This approach allows us to delve into the "what," "how," and "why" of intricate real-world situations, providing a detailed view that captures the complexities of human behaviour and experiences. On the other hand, quantitative research is an approach that focuses on collecting and analysing data that can be measured or counted. This type of research relies on numerical data, typically obtained through large-scale surveys, experiments, or other standardized data collection methods. While quantitative research can give precise and objective answers regarding "how much" or "how many" within specific parameters, it may not capture the richness of human experiences and behaviours that qualitative research can reveal. (Cooper, et al., 2014)

The context of product use

This dimension focuses on how and whether users are operates with product or service in question.

They are:

1. Natural use of the product
2. Scripted use of the product
3. Limited
4. Not using

Goal of the **natural usage** is to understand real-life behaviour and attitudes without interfering much with the study. It offers high external validity but less control over the topics studied. It provides less control over the topics, but more external applicability.

Scripted usage focuses on specific areas, like a product redesign. The level of scripting varies, with bench-marking studies being tightly controlled, then it can generate dependable measurements of usability by maintaining uniformity among participants.

Limited methods is a simplified version of the product to explore specific aspects of the experience. For instance, participatory design allows users to rearrange design elements to discuss their preferences and the intentions of their choices, while concept testing assesses the core appeal of an idea. Card sorting and tree testing focuses on optimizing the organization of information architecture to enhance participant comprehension and navigation.

Some studies explore broader issues, like brand perception or aesthetic attributes, unrelated to product use.

Many methods can blend these approaches to achieve multiple goals. For instance, field studies may emphasize interviews or observations, and eye-tracking can be natural or scripted (www.nngroup.com)

3.2.1 User interview

User interviews are a critical component of user experience research in website development. The structure of a typical user experience interview follows a pattern, beginning with broad, general questions before focusing on more specific details and then broadening out again for a retrospective view.

Introduction: The goal is to establish an environment where interviewees feel comfortable sharing feedback.

Warm-up: The warm-up phase is designed to shift the participants' focus from their daily routine to the specific subject of the interview. This transition is crucial for preparing the participants to think and respond in the context of the product or website in question.

General Issues: Before delving into specifics about the product or website, this phase explores the users' overall experiences, attitudes, expectations, and assumptions.

Deep Focus: In this critical phase, the specific product, service, or website is introduced. Here, the interview dives into the details of functionality, usability, and the immediate experience of the user.

Retrospective: After focusing on specifics, this phase allows users to evaluate the website in a broader context. It revisits the general issues but with a new perspective shaped by the detailed discussions of the deep focus phase.

Wrap-up: The final phase of the interview involves summarizing the discussion and addressing any administrative aspects. This closure is important for leaving participants with a sense of completion.

Non-directed interviewing is very important point in the process. The goal is to minimize interviewer preconceptions, allowing for an exploration of the user's true thoughts, feelings, and experiences. This involves a neutral stance by the interviewer, avoiding leading questions, and focusing on the user's immediate experiences and perceptions.

In summary, user interviews in website UX are a structured yet flexible approach to understanding the user's experience. This method is essential in creating websites that are not only functional and aesthetically pleasing but also deeply understands user's needs and expectations. (Elizabeth Goodman, 2012)

3.2.2 Surveys and questionnaires

Surveys and questionnaires are effective type user research, providing insights through sets of structured questions. These can be either open-ended, offering a detailed answers, or closed-ended, limiting answers to specific choices. Calculating the required number of responses involves considering sample size, margin of error, and confidence level. Distribution methods vary based on the target audience, with options like online platforms or physical distribution for less computer-literate groups. While surveys offer quantifiable data, especially with closed-ended questions, open-ended questions provide qualitative insights but require more effort in analysis. Pre-testing surveys with a small group helps refine the questions and structure for better accuracy and relevance.

3.2.3 Job Shadowing

Job shadowing in User Experience (UX) design includes a learning method where individuals, typically aspiring UX designers observe and closely follow experienced UX professionals in their daily work. This experience gives important insights into the practical aspects of UX design.

Such questions are usually considered as helpful guidelines for taking notes during job shadowing session:

- What do users have to do?
- What do they want to do?
- How do they perform their tasks?
- What knowledge about the tasks do users need before performing them?
- What aspects of the tasks are simple or difficult?
- How do users use products, or how would the products be used to perform particular tasks?
- What do users navigate, confront, or mitigate while completing tasks? Are there distractions? Is the user multitasking?
- Do users like the tasks? (Still, et al., 2016)

3.2.4 Diary studies

Diary studies are a qualitative research method widely used in user experience (UX) research and social sciences. In diary studies, participants are asked to maintain a journal or diary over a specified period, recording their thoughts, experiences, and activities related to a particular topic or research question. Diaries can be structured with specific prompts from the design team or unstructured, allowing users more freedom in their entries. Various media like paper, audio, and mobile apps can be used for diary keeping, each offering different advantages. Mixed-method approaches are also effective. Diary studies are valuable for gaining deep insights into user interactions in their natural environments without direct researcher intervention. (Still, et al., 2016)

3.2.5 Contextual inquiry

Contextual inquiry is a user research method that involves observing and interacting with individuals in their real-life environments to understand their tasks, needs, and behaviours. This technique, rooted in ethnographic principles, helps designers and researchers gain deep insights into users' experiences by immersing themselves in their context. During a contextual inquiry, researchers ask questions, observe actions, and collect data to uncover user challenges and preferences. This approach is particularly valuable in user-centered design, where it informs the creation of products and services that better align with users' actual needs and workflows. (Unger, et al.,2012)

3.2.6 Card Sorting

Card sorting is a research technique, that in past time used in psychological studies. The notion is to inquire the user to sort special cards, that have written some words or elements relevant to the product or website. After the procedure, it is possible to comprehend how users categorize information and concepts. The advantages of this technique are simplicity to understand for user, comparative inexpensiveness and less endeavour to implementation. (Mads Soegaard, 2002)

3.2.7 Personas

Personas are essential tools in user experience (UX) design, serving as a reminder that the users we actually have often differ from those we imagine, and that not all users are the same.

Developed and utilized correctly, personas can significantly influence the design and development of a product, a redesign, or a new feature set.

Personas are most valuable before the development process begins, providing a detailed understanding of the users' behaviours and goals, rather than just demographic attributes. They serve as a shared reference point for various stakeholders in a project, allowing for a unified approach to design and strategy.

The process of crafting these personas starts internally, with interviews and discussions within the organization to gather existing insights about users. This step is crucial in capturing the perceived understanding of the user base. But the real essence of personas comes from outside the office – through qualitative research involving interviews and interactions with actual or potential users of the website.

Once the data is collected, the task is to find patterns and commonalities among users. It involves identifying attributes that are critical to the user's interaction with the website – their goals, their behaviours, and their challenges. From here, personas begin to take shape, not as mere statistical representations but as vivid, realistic characters with names, backgrounds, occupations, and specific technological preferences.

These personas are then documented and shared across the team, not as static profiles but as living documents that guide and influence every aspect of the design process. They become familiar faces in meetings and discussions, helping teams to make user-centric decisions. By asking, "How would this feature work for 'Persona A'?" or "What would 'Persona B' think about this design?", the team ensures that the website caters to its real users.

The personas are not set in stone; they evolve as the understanding of the user base deepens. Regular updates and refinements ensure that they remain accurate and relevant. The effectiveness of these personas is often reflected in how frequently they are referenced in design and strategy discussions.

Personas in website UX design are far more than fictional characters; they are essential tools that bring user-centric clarity to the design process. (Elizabeth Goodman, 2012)

3.2.8 Storyboards

Story-boarding in user experience design is a method to visualize and plan the user's journey with a product. It's similar to story boarding in advertising or film, but focuses on a user's interactions with a design. Storyboards are created using data about actual users and their needs, providing a narrative from the user's perspective. This narrative includes their initial

interaction with the product, emotional responses, actions taken, and the eventual outcome of using the product. By visually depicting each step, storyboards help designers empathize with users and identify gaps or issues in the design. They can be created using tools like PowerPoint, InDesign, or even simple paper sketches, and often evolve as more user data is collected. The goal is to make the storyboard as representative of the user experience as possible, providing a useful guide for further design refinements.

3.2.9 Competitive analysis

Competitive analysis begins with the recognition that every product, including websites, exists in a dynamic and complex market environment. Each competitor in this space approaches user needs. Small differences in functionality or presentation, which might seem trivial at first, can have a significant impact on user perception and preference. Thus, the essence of competitive analysis in UX is not just to examine what competitors are doing but to understand why certain strategies work and others don't, and how these insights can shape our product.

Competitive analysis consists of multiple stages, starting with identifying who the real competitors are. This step goes beyond the obvious choices and requires an understanding of the broader market. It's about recognizing all possible options that users might consider, even those that differ significantly in their approach or presentation.

The next step is to create a comprehensive profile of these products and their users. This profile includes more than just a list of features; it involves understanding the value these products bring to their users, the typical user demographics, their technological preferences, and their lifestyle or psychographic attributes.

An integral part of competitive analysis is defining key dimensions for comparison. These dimensions, focused on user perspective like usability, visual appeal, or brand perception. The goal here is to establish a framework that allows for a meaningful comparison of products, focusing on aspects that truly matter to users.

Employing various user research methods, such as interviews, usability tests, and surveys, brings forth rich insights into how users interact with competitor products. This process illuminates strengths and weaknesses from a user-centric viewpoint, offering a nuanced understanding of the competitive landscape.

The analysis of this collected data is where the real value of competitive analysis lies. It's not about creating a simplistic scoreboard of features but about understanding the fundamental strengths and weaknesses of competitors from the users' perspective. This understanding helps

in identifying opportunities for differentiation and areas where our product can uniquely meet user needs.

As with any dynamic process, competitive analysis is not a one-time activity. It requires regular updates and reassessments to stay relevant. The digital landscape is ever-changing, with new competitors emerging and user preferences evolving. Continuous competitive analysis ensures that our product remains not just competitive but also resonant with the changing needs and desires of users. (Elizabeth Goodman, 2012)

3.2.10 Sitemaps

A sitemap is a crucial component in web design, primarily used for organizing and structuring the content on a website. It visually represents the layout of the site's pages and their interconnections, often designed through a hierarchical diagram of nodes. Each node is a sign of webpage or content element, with connecting lines or arrows depicting the relationships between them. This hierarchical structure typically includes various tiers of information, making the sitemap an essential tool for planning and understanding the website's information architecture (IA). While generally not visible to website users and mainly employed for internal planning, some sites might display a simplified version of the sitemap to aid navigation. This practice, however, has become less common with complex navigation systems. (Nielson Norman group, 2023)

3.2.11 Information architecture

The creation of information architecture consists of the development of classification schemes that lines up with website's goals, expected user needs, and available content. This process can be spread in two different ways: a top-down approach and a bottom-up approach. In a top-down approach, the architecture is developed from an understanding of the strategic goals of the product and user needs. This method begins with broad categories of content and functionality derived from these strategic objectives, which are then broken down into logical subcategories. This hierarchy serves as a framework into which content and functionality are integrated.

Conversely, the bottom up approach begins with the existing or content and functional requirements. Here, content items are grouped into low-level categories, which are then aggregated into higher-level categories, eventually shaping a structure that reflects both the product objectives and user needs. (Garrett, 2011)

3.3 Prototyping

Prototyping is a critical step in the design process, allowing designers to create simple, models or mock-ups that offer crucial insights into how the design will play out in the real world. Prototyping serves multiple purposes: it aids in visualizing and evaluating ideas, learning from these evaluations, and improving the design specifications before the final product is developed.

There are three primary types of prototyping: concept, throwaway, and evolutionary. Concept prototyping is all about rapid and cost-effective exploration of initial design ideas. This stage might include sketches or storyboards that help in developing the aesthetic and feel of a product, much like character sketches do in animation. These early prototypes facilitate communication of ideas, reveal early design requirements and potential problems, and allow for preliminary evaluation. However, concept prototyping can sometimes create an illusion of feasibility, where a design appears viable in the model but might not hold up in reality.

Throwaway prototyping, as the name suggests, involves creating prototypes to gather information about certain aspects of a system, which are then discarded. This approach is particularly useful in understanding and improving specific functionalities or performance aspects.

Evolutionary prototyping is a more iterative and adaptive approach. It's especially useful when design specifications are uncertain or subject to change. In this method, an initial prototype is continually developed and evaluated. This process continues until the prototype develops into the final product. It's a method commonly seen in software development, where rapid and ongoing changes are the norm. However, this approach can sometimes lead to a narrow focus, where designers become too fixated on refining existing specifications rather than exploring alternative designs. (Lidwell, W., 2010)

3.3.1 Wireframes

Wireframe is like a blueprint for page layout that contains information design, interface design, and navigation design. They provide a skeletal representation of a page, detailing the arrangement of various elements like navigation systems, interface components, and content organization. Wireframes vary in detail, often heavily annotated and referring to related documentation for clarity. They are crucial for visualizing how different aspects of a project

will come together, aiding in collaboration between user experience and visual designers. The level of detail in a wireframe depends on the project's complexity and the team's needs, ranging from simple pencil sketches to more formal documents. They serve as a reference point for strategy, scope, structure, and implementation, ensuring the final product aligns with project goals. (Garrett, 2011)

3.3.2 Low-fidelity prototyping

Low-fidelity prototyping is a basic model of product or design, that is typically simple and inexpensive. Such prototypes are quicker to create and modify, making them ideal for initial design stages. They facilitate early exploration of design concepts and prompt user feedback, which can be especially valuable in the iterative design process. Low-fidelity prototypes are focused on underlying design ideas such as form and structure, key functionality and navigation. (Still, et al., 2017)

3.3.3 Paper prototyping

Paper prototyping is a low-fidelity method used in early design stages to simulate and test a product's interface. It allows designers to quickly create and modify representations of a product, like a website or app, using simple materials like paper, pens, and post-it notes. Users interact with these prototypes, providing feedback that reveals insights into their mental models and expectations. This method is particularly useful for identifying intuitive aspects of a design and encouraging user participation in the design process. Paper prototypes, while not functionally operational, offer a valuable and cost-effective way to explore design ideas and user interactions before committing to more detailed, high-fidelity prototypes. (Stll, et al., 2017)

3.3.4 High-fidelity prototyping

High-fidelity prototypes in UX design are detailed and interactive, closely resembling the final product. They provide realistic responses to user actions, enabling more accurate user testing, clickable buttons and operational forms, but they can not be fully functional in terms of absence of backend processes. They are particularly useful when the design is in a more advanced stage, where detailed feedback on visuals, interactions, and user flow is crucial. Tools

like Azure, Figma, Balsamiq and so on can be used for creation high fidelity prototype. (Still et al., 2017)

3.4 Usability testing

After developing a prototype, it's essential to conduct usability tests to obtain authentic feedback from users. This process checks if the prototype allows users to successfully complete tasks and assesses its user-friendliness. Usability testing should align with the design team's objectives, user goals, and the product's effectiveness in meeting these targets. Adopting an iterative design method, the design evolves through constant testing and feedback analysis, progressing from the initial prototype to a final version. The key aspects examined in usability testing include memorability, efficiency, errors, learnability, and satisfaction, each addressing different facets of user interaction. Memorability assesses task recall, efficiency looks at task completion time, errors examine mistakes and their severity, learnability evaluates users' learning curve with the system, and satisfaction gauges users' overall contentment with the product. Usability testing is broadly categorized into summative (experimental, large sample sizes for statistical significance) and formative (smaller samples, frequent testing during design). This approach is instrumental in refining and improving a product's design to meet user needs effectively.

3.4.1 Metrics of usability

Usability metrics for website user experience (UX) are quantitative measures used to access how effectively a website can be used by its visitors. They let you track progress between releases, assess your competitive position among other companies, make a stop or conversely go regarding decision making and create bonus plans for design managers and high-level executives.

3.4.2 Script

Writing a procedure, conversation guide, or script for usability testing is essential to standardize interviews and make sure all relevant subjects are addressed. You start by introducing yourself, setting the scene and walking participants through the steps.

The primary portion of the script, known as the detection phase, is going over each image and posing pointed questions in order to elicit information. Understanding participants' viewpoints and how they interpret the photos is the main goal of this phase. (Elizabeth Goodman, 2012)

3.4.3 A/B testing

A/B testing in usability is a method used to compare two versions of a product, such as two different designs, to determine which one performs better in terms of user interaction and satisfaction. It includes testing two variants, A and B, with a substantial number of users (at least 20 for meaningful results). The goal is to gather quantitative data to see which version yields better usability metrics, such as task completion rates or navigation efficiency. However, A/B testing primarily focuses on quantitative aspects and may not fully capture user behaviour patterns, suggesting the need to complement it with other qualitative usability testing methods. This approach helps in making informed decisions about which design or product version to proceed with, based on statistical significance and user preferences.

3.4.4 Heuristic evaluation

Heuristic evaluation in UX design is a technique to identify potential usability issues in various interfaces, such as prototypes or physical products. It's especially useful early in the design process and can be a cost-effective way to find issues. Heuristic evaluations include a team of evaluators who independently assess an interface against established heuristics or usability principles. The process typically includes three main steps:
Preparation: Form a team of evaluators who are familiar with usability principles. These evaluators independently examine the interface.
Independent Evaluation: Each team member evaluates the interface, identifying elements that violate established usability heuristics. The evaluation is often time-boxed to ensure manageability.
Identifying of Issues: After the independent evaluations, the team comes together to identify and discuss the findings. This include identifying common issues, disagreements, and determining the impact of these issues on the user experience and business goals. This method helps in developing strong UX instincts and is crucial for identifying major usability issues. However, it's not a replacement for user research, as user experiences are highly contextual and require testing with real users. Heuristic evaluations are guidelines rather than strict rules, and

exceptions may occur based on context. Regular practice of these evaluations can enhance the ability to quickly recognize usability problems.

3.5 Visual design

3.5.1 Layout and grid system

In the context of UX design, the layout and grid system are fundamental concepts that shapes the visual and functional structure of a website. Essentially, a grid is a series of intersecting horizontal and vertical lines that designers use as a guide for placing various elements on a webpage. This systematic approach ensures that elements like text, images, buttons, and forms are aligned consistently, creating a harmonious and balanced visual composition.

The grid system offers several advantages. Firstly, it brings a sense of order and predictability to the page layout, making it easier for users to navigate and interact with the site. Secondly, it aids in creating responsive designs. By using a flexible grid layout, designers can ensure that the website adapts seamlessly to different screen sizes, enhancing the overall user experience across various devices.

Moreover, the grid system allows for creative flexibility within a structured framework. Designers can experiment with the size, position, and arrangement of elements while maintaining a cohesive overall design. This balance between creativity and structure is key to crafting user-friendly and aesthetically appealing websites.

In summary, the layout and grid system in UX design is a crucial tool for organizing content in a visually appealing and functionally efficient manner. It helps in creating user-friendly interfaces that are both aesthetically pleasing and easy to navigate. (Plovdiv, 2022)

3.5.2 Colors and typography

Color choices can significantly influence user behavior and perception. The theory behind the use of color in UX design highlights its ability to attract attention, create coherence, and convey meaning. Colors can enhance or detract from a design's functionality and effectiveness. The introduction of colors must be thoughtful and aligned with the objectives of the design, keeping in mind its impact on usability and the overall user experience.

Key points from the chapter include:

Number of Colors: Use a conservative number of colors, ideally around five, to maintain clarity

and accommodate color vision deficiencies.
Color Combinations: Utilize color wheel strategies (like analogous or complementary colors) for harmonious designs. Warmer colors are recommended for the foreground and cooler ones for the background.
Saturation: Choose between saturated colors for attention and desaturated for a professional, efficient look. Be mindful of the psychological impact and eye strain.
Symbolism: Recognize that color symbolism is not universal and varies across cultures. Research the target audience's perceptions before finalizing color choices.
The integration of these color principles, alongside effective typography, is essential for creating a user-friendly and visually engaging website. (Lidwell, 2003)

3.5.3 Hierarchy

In the context of UX design, hierarchy is a fundamental principle for organizing and presenting information in a clear and understandable manner. Hierarchical structures help in visualizing complex systems by defining the relationships between different elements. The primary methods of representing hierarchy include tree structures, nest structures, and stair structures. Tree structures are used for moderate complexity, showing relationships through positioning and connecting lines. Nest structures are effective for simple hierarchies and group elements within larger ones, like Venn diagrams. Stair structures are suited for complex hierarchies, stacking child elements in a sequential order, often used in outlines.
Each structure has its unique applications and limitations. The choice depends on the complexity of the information and the intended user interaction. Effective use of hierarchy in UX design ensures that users can easily navigate and understand the system, enhancing the overall experience. (Lidwell, 2003)

3.5.4 Mapping

In the context of user experience (UX) design, "mapping" is a principle that focuses on the relationship between the controls in a user interface and their effects. Effective mapping is achieved when this relationship is intuitive and predictable. For instance, if a control's movement or behaviour corresponds logically to the outcome, it is considered to have good mapping. This can be through physical layout (e.g., a control's position mirrors its effect in the real world), behaviour (e.g., moving a control in a direction that mirrors the intended effect), or symbolic representation (e.g., using universally recognized symbols or colors). Good mapping

simplifies user interaction, making it easier for users to understand and navigate the interface without confusion or errors. In UX design, it's crucial to position controls in a way that aligns with the natural behaviour or expectations of the user. This includes avoiding multifunctional controls which can complicate the user's understanding of the interface and considering cultural or contextual differences in interpreting control symbols or actions. (Lidwell, 2003)

3.5.5 Consistency

Consistency affects how users interact with and perceive digital interfaces, such as a website or app. It is key for creating a continuous product regular, intuitive, and user-friendly user interface and. UX Position in order includes several dimensions: Aesthetic Consistency: This feature requires consistency. Includes features such as color scheme, font, general layout, to ensure the visual language is consistent across parts of the product Functional compatibility: This feature ensures that the communication elements of the interface function exactly in the product. For example, if a button performs a particular function in one part of the application, it should ideally perform the same function in other parts. Internal consistency: This type of consistency is to remain consistent in the same system. This ensures that all components in an application or website behave and look consistent. External Consistency: This extends the concept of consistency beyond a single product, specifically aiming to be the same across multiple products or platforms within the same brand or ecosystem A consistent UX design brings many benefits, including improved usability and learning, increased usability at higher levels of interaction, increased trust and confidence in the product, and brand recognition and improved identity Following a consistent design, networks of such designers build predictable and easy to navigate, thus enhancing the overall user experience (Lidwell, 2003)

3.5.6 Accessibility

Accessible design in UX is about creating experiences that are inclusive for all users, including those with disabilities. This inclusive approach isn't just a niche requirement; it's a fundamental aspect of good design practice, ensuring that products are usable by the widest possible audience. Designers achieve this through:

Perceptibility: Ensuring the design is perceivable to all users, through various sensory methods and compatibility with assistive technologies.

Operability: Designing for usability, regardless of the user's physical capabilities. This includes easy interaction with controls and adaptability for assistive physical technologies.

Simplicity: Aiming for straightforward, easy-to-understand designs that cater to different levels of experience, literacy, and attention spans.
Forgiveness: Forgiveness in design is about reducing the frequency and impact of errors. This involves incorporating design elements that intuitively prevent mistakes from occurring. For example, using affordances and constraints ensures that actions and controls can only be used correctly, thereby minimizing user errors. Additionally, integrating confirmations and warnings can help users avoid unintended actions. In cases where errors do occur, having reversible actions and safety nets is crucial. These features allow users to undo actions or recover from errors with minimal consequences, enhancing the overall user experience and accommodating a wider range of abilities. (Lidwell, 2003)

3.6 Website development

3.6.1 HTML

HTML stands for Hyper Text Markup Language for Web pages creating. It is not a programming language, but it let organize documents in a similar way to Microsoft Word without dynamic functions. First version of HTML was invented by Tim Berners-Lee in 1989, when he created a 'www', then in 1991 Tim Berners-Lee invented HTML.

Generally, the standard website consists of multiple HTML pages like home page, normal page, contact page, that are separate HTML documents.

HTML consists of a series of elements, that tell the browser how to display the content. An HTML element is defined by a start tag, some content and end tag: <tagname> Content…</tagname>.

The elements label pieces of content such as 'this is a heading', 'this is a paragraph', 'this is a link', etc. An example of simple HTML document:

<!DOCTYPE html>

<html>

<head>

<title>Page Title</title>

</head>

<body>

<h1>My first Heading</h>

My first paragraph.

</body>

</html>

HTML documents are read and displayed correctly by web browsers (Chrome, Edge, Firefox, Safari). A browser display only the content without HTML tags. (www.w3schoolsua.io)

3.6.2 CSS

CSS or Cascading Style Sheets, a W3C standard, transforms the presentation of documents written in HTML and other XML languages by defining visual and audio presentation. This dividing allows HTML to concentrate on structure, semantics, developing document accessibility and consistency across various devices like screen readers, cell phones and computers. Basically, CSS is a file that specifies how each of the page elements will look like. It is possible to make a design by writing the visual properties for each element in HTML document, but in case if there are hundreds or even more pages, the method is troublesome. For this reason CSS is a gold standard for website design. (Duckett, 2011)

CSS provides:

- Accurate type and layout controls. CSS helps to achieve print-like accuracy.

- Less effort. CSS requires only one style sheet, where changes of appearance could be done for entire site, that also ensures consistency of formatting whole website.

- Site accessibility. Marking up content meaningfully and making it more accessible for all types of devices easier when all concerning presentation are handled by one tool – CSS.

The key understanding CSS working method is to imagine an invisible box around every HTML element, where CSS treat each element by creating rules. A CSS rule consists of two parts: a selector, that indicates which element the rule applies to and a declaration, which defines how the elements referred to the selector should be styled. Declaration are split on a property and a value and are separated by a colon.

Example: ‘p {font-family: Arial;}’,

where ‘p’ – selector,

‘font-family: Arial;’ - declaration. (Robbins, 2018)

3.6.3 JavaScript

JavaScript – is a client-side programming language, that enriches interactivity and custom behaviours to websites. It is originally called ‘LiveScript’ and created by Brendan Eich at Netscape in 1995. But later became ‘JavaScript’ for the sake of marketing since ‘Java’ was all the rage around that time, therefore JavaScript have nothing to do with Java.

JavaScript is dynamic and loosely typed programming language, that running on the user’s machine, not on the server. Loosely typed means that JavaScript recognizes numbers as variables and there are no need to programmatically specify that variable is a number.

It is incredibly powerful scripting language, that covered everything from simple applications to eBooks to PDFs. It is possible to interact with web pages elements in real-time, leveraging the Document Object Model to manipulate content, style and behaviour based on user interactions.

Also, JS can be used for these purposes:

- Demand information from the server and input it into the document as needed, without updating the entire page.

- Test independent features and capabilities of browser.

- Add some features in newer browsers or older. These usually called ‘shims’ or ‘polypills’.

- Load an image in a custom-styled ‘lightbox’ – after a user hit a thumbnail version of the image. (Robbins, 2018)

Basics

JS is case-sensitive, that means a variable with name ‘myVariable’ and a variable named ‘myvariable’ will be absolutely different objects. Also, whitespaces are ignored unless it is inside the string of text and enclosed in quotes.

Statements - are script containers, that tell the browser what to do. For instance, statement to display on browser an alert with the phrase ‘Thank you’:

alert (‘Thank you’);

Semicolon at the end of the statement signs the end of the command like a period in sentence.

Comments – JS allows to leave comments, that will not affect anyhow, therefore it is possible to provide explanations throughout script. There are two methods to use comments: two slash characters (//) at the beginning for single comments and for multiple-line comments everything inside '/* */' characters would be comments.

Variables – information container, that has name and value, that assigned by user. Value can be a number, text string, an element in DOM, or a function. Example:

```
var foo = 5;
```

Where 'var' is variable, 'foo' is name of variable, '=' is assigning a value, '5' – is a value.

Datatypes. The values are assigned to variables fall under several datatypes: undefined, null, numbers, string and Boolean.

Undefined – when variable have name but no value.

Null – like undefined, it defines the value, but gives no inherent value.

Numbers – numeric values, but as JS is loosely typed, it does not require defining this value.

String – basically a line of text, that must be enclosed in single or double quotes.

Boolean – this variable use 'true' or 'false' keywords, quotation is not necessary. It helpful for all manner of advanced logic in JavaScript.

3.6.4 PHP

"PHP is an open-source popular general-purpose scripting language that is especially suited to web development. Fast, flexible, and pragmatic, PHP powers everything from your blog to the most popular web sites in the world." (www.php.net)

The language evolution has made it possible for programmers to use both procedural and object-oriented programming approaches to swiftly create well-formed, error-free applications. It offers the usage of several pre-existing code libraries that may be loaded separately or are included in the basic installation inside the PHP framework.

PHP do not use compiler unlike programming languages, it's code interpreted line by line as the program is executed, that does not make the process slower than compiled code. (Prettyman, 2016)

Also, some advantages of PHP scripting language are: PHP is available for the most operating systems like Linux, Windows, Mac OS, Risc OS and many more; It is working with queries, databases tools; No need of special software's for programming, a normal text editor is enough.

3.6.5 WordPress

WordPress is a content management system that gives possibility to develop website with simple web interface instead of scripting and coding. It is popular as a blogging system, but the way it makes posts and pages is equal. It is suitable system for various types of sites: business, university departments, artist portfolio and of course personal or group blogs.

Some point about WordPress from the book 'WordPress for Web Developers':

- WordPress has two versions .com for hosted and .org for self-hosted sites, offer options for users at different technical levels.

- Media library. Any files like images, audio, video, documents and so on can be inserted into post and page editing screens.

- WordPress users have 4 possible roles: Subscriber, Contributor, Author, Editor and Administrator.

- WordPress have URLs search engine.

- Akismet plugin provides free filtering of spam comments for personal sites.

- WordPress shows a notification of new released available versions for core system. It can be updated with click button.

- WordPress has a popular TineMCE editor, that allows import content and remove embedded styles from Office documents, because the interface like Microsoft Office products.

4 Practical part

4.1 Practical Part Description

The practical part of the bachelor thesis is focused on in-depth user experience evaluation of the chosen website. While choosing website for UX testing the goal was to find one with diverse and international user base and variety of User Experience elements to study. 'Coursera' educational platform's website was chosen, because the interface is multi-faced and complex enough, which make it an ideal candidate for a detailed User Experience study and it has direct relevance to the educational sector, where target audience – students. The choice not only reflects the thesis's academic objectives, but also encompasses the practical intention to contribute something to the development of User Experience of educational platform's websites.

Coursera offers a wide range of online training courses, specializations, certifications and degree programs. It has numerous partnerships with top universities and organizations worldwide to provide high-quality educational content. Also, it has a free taking courses mode without certifications and with some fee for certifications.

The process of the practical part with start from general examining of 'Coursera' website's interface, then detailed usability study with participants using specific scenarios, quick questionnaire from participants to get deeper insights about their impression from interaction with website, gathering and measurement of results and possible recommendations for developing 'Coursera' website's User Experience.

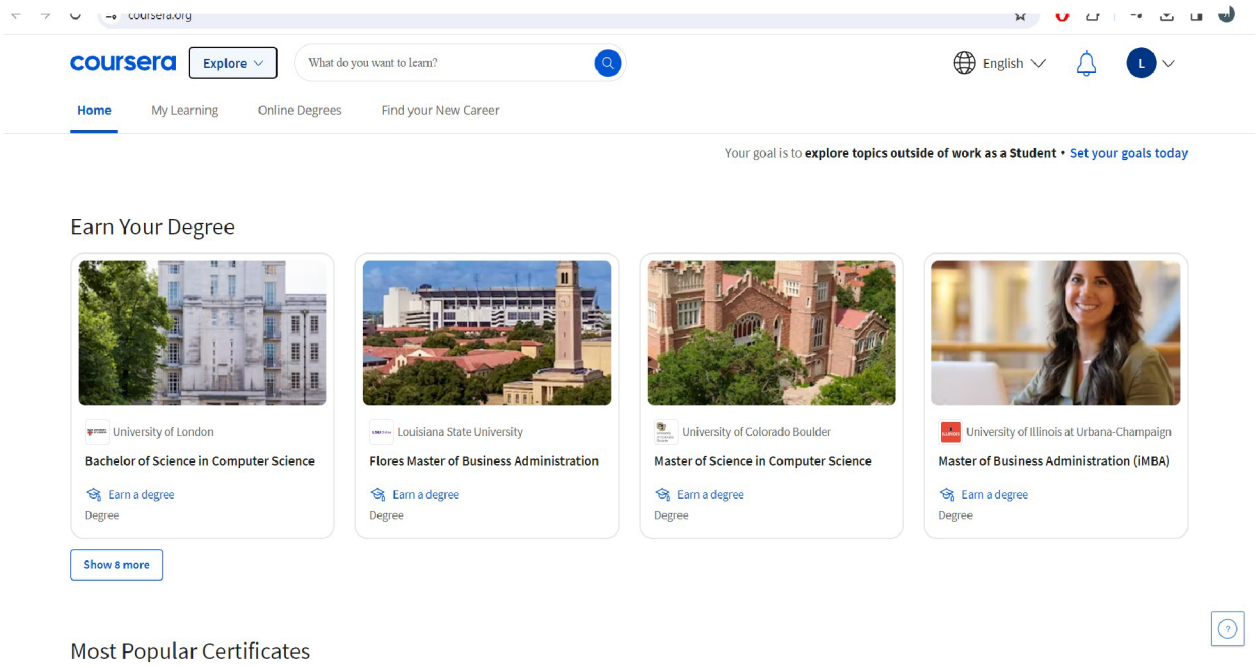
The main activities in the practical part will revolve around typical user interactions with Coursera: searching features, courses review, help center. Afterwards questionnaire will include open questions about participant's points of view regarding design and layout of website, ease of navigation, their experience with other educational platforms and how they could compare them with Coursera, overall rate of satisfaction and possible recommendations for improvement. Gathering and analysing feedback from participants will provide an information for making results and conclusions of the practical part.

4.2 Coursera website's interface overview

Coursera's website interface is a prime example of user-centric design principles in action. To analyse the overall layout of the chosen website several key aspects are focused:

- Homepage structure: The layout of 'Coursera' educational platform's website is typically features a clear and inviting design, enhancing readability with a balanced color scheme and distinct typography, with a focus on easy navigation.

Figure 4 - "Coursera" website's homepage



Source: Coursera.org

Key elements like search bar, course categories, and user sign-in options are displayed on the top as most of websites do.

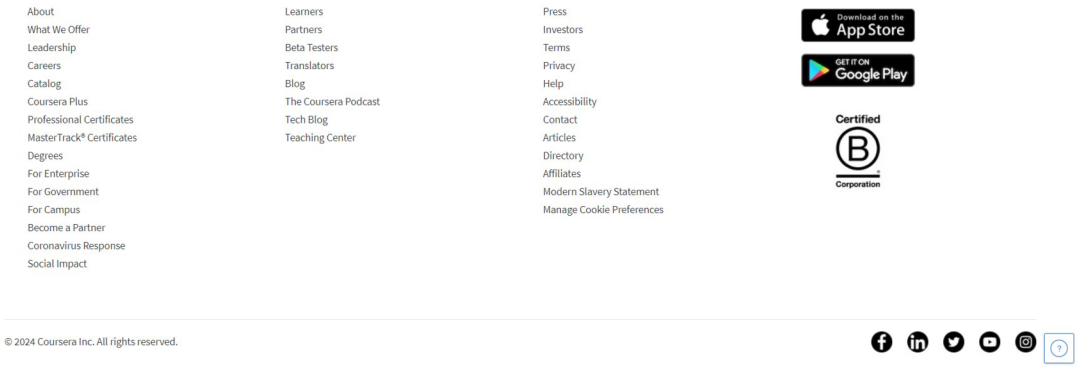
As it visible on the screenshot, 'Coursera' website mainly uses white and blue colors, with a greater focus on white. The use of white as a dominant color makes the website look clean and organized, setting a serious tone for studying. The addition of blue shades increases a feeling of trust and calmness.

- Content organization: Courses and information are organized logically, categorized by subject, language, learning products, level, duration, skills, subtitles, educator or partnerships with universities. This helps users quickly find courses relevant to their interests. On the list of courses page there are bunch of courses and each course card

has main information about it: name of the course, skills you'll gain, rating from students, level and duration. It is very convenient for user to see course essentials in advance during selection of the course.

- Visual hierarchy: There are big, bold fonts for the name of courses and titles, which helps highlight important parts. Also, for the buttons like 'Enroll' Coursera uses bright blue color for the background, making these buttons grab user's attention.
  The website also has lots of open white space around the text and buttons. This makes the website look cleaner and help user to focus on goal without feeling cluttered. The regular text like course's details is visually looks smaller on much of white space, therefore could for some people harder to read.
- Footer section: The footer generally contains additional navigation links, support resources, and legal information, structured for easy access. There is also small question mark icon at the bottom right, that leads to 'Help and Support'.
- Accessibility: The layout is designed to be responsive, ensuring a seamless user experience across different devices and screen sizes.

Figure 5 - Website's footer



4.3 UX testing methods

For the UX testing of the Coursera website, the following methods will be employed:

- Usability testing: The type of testing chosen because of it ability to reveal real-time interaction issues and directly observe user behaviours, which is crucial for identifying usability challenges and areas for improvement.

- Questionnaires: These options allow getting efficiency in understanding user's feedback. They are particularly effective in quantifying user satisfaction and various preferences.

4.4 Scenario

For a comprehensive analysis of a Coursera educational platform's website 3 distinct scenarios are created. Each scenario targets a different aspect of the website.

Exploring course offerings:

- Visit Coursera's homepage
- Click to 'Explore' button
- Select a 'Take a free course' category
- Review the offering list of courses

  Questions:

  1. Was it easy to navigate through categories?
  2. Was the layout of the listed courses clear and understandable?
  3. How would you rate the overall interface in list of courses page? (1-10 and why)

Advanced Search features:

- Find filters in the list of the courses page and in subject section click to 'Computer science'.
- Select "Beginner' in level section
- Click to first offered course in the list
- Review the course description page

  Questions:

  1. Was the search feature easy to use?
  2. How effective the search filters in narrowing down your search results?
  3. Overall, how satisfied were you with functionality in these steps?

Seeking help

- Find 'Help' on the footer of the website and click
- Scroll until you see 'Payments and subscriptions'.
- Click on 'Coursera Plus'

  Questions:

  1. Was it easy to find 'Help' section?

2. Were you able to find 'Payments and subscriptions' easily?

3. Rate the overall layout and functionality of the experience you had in this action (1-10 and why)

4.5 Usability testing

Research goal: The purpose of the usability testing was to evaluate the user experience based on participant feedback and identify any unclear aspects while interacting with the website.

Participants:

- There are 8 participants and most of them are students.
- 78% of participants are 19-21 years old.
- 22% participants are 29-30 years old.

Scenario 1 (Feedback):

General observations:

- **Ease of navigation**: All participants found the navigation through categories easy and understandable, reflecting well-structured and user-friendly interface for course exploration.
  'The navigation is easy and pretty straightforward.' commented Participant 5.
  'Simple and understandable navigation' noted Participant 6.
- **Layout clarity:** The course layout was generally found to be clear and understandable, with positive remarks on the presentation and accessibility of information.
  'I feel like the layout is very user-friendly. I liked that each course card has all of the key information: the rating, the «skills you'll gain», duration and the level.' commented Participant 6.
- **Information Overload:** Participant 1, Participant 2 and Participant 4 noted the presence of too much information in course listings, suggesting for mote streamline information presentation. Participant 1 noted: 'Courses in the list seems to have redundancy of information, it is better to put it on the course description page'. Also, Participants 2 and 4: 'Too much information on the list which is confusing users.'

For example, on the list of courses page there are thousands of courses offerings, and each course card has course name, skills you will gain, that actually takes much space, ratings, level and so on. At first glance it is convenient to see this essential information at once, but at the same time with the bunch of courses it looks overloaded and hard to read.

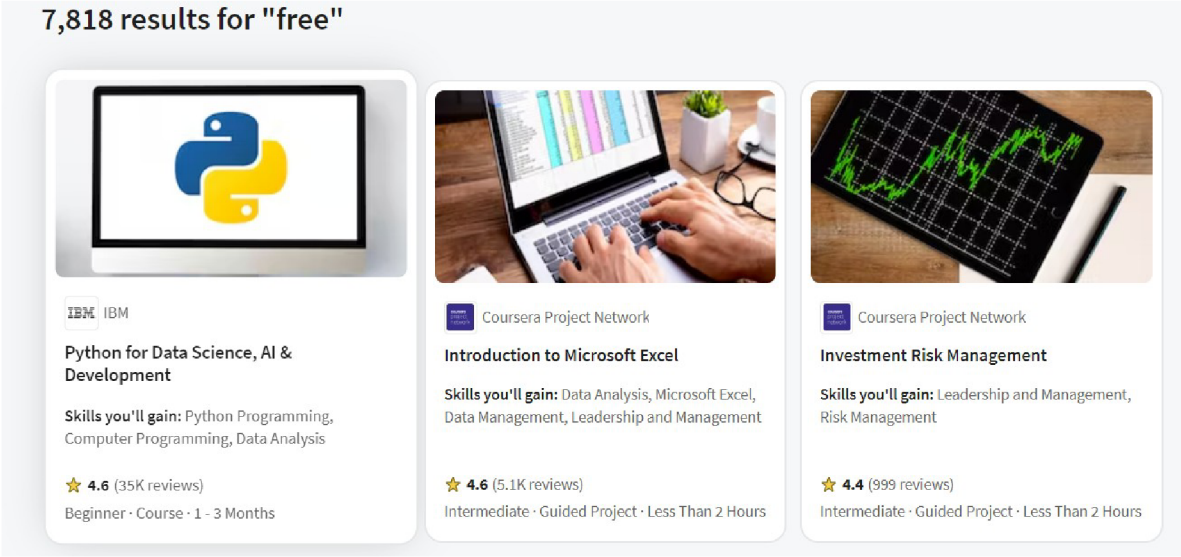
Scenario 2 (Feedback):

- **Ease of Use:** Almost all participants found the filters easily beside participant 6, that noted: 'too many filters, i got lost at first. The "level" section could be located higher'.
- **Effectiveness of filters:** All participants found filters effective, understandable and easy to use.
- **Overall feedback:** Everything was clear and effective for all participants; overall interaction was with no challenges and pain points. Usability of these functionalities is perfect.

Scenario 3 (Feedback):

Accessibility of 'Help' Section: The feedback on reaching 'Help' section was mixed,

Figure 6 - List of Courses page



Source: Coursera.org

while half of participants easily found it, other half experienced difficulties due to the font size and placement.

- Participant 1: 'The font size is quite small, have taken longer time to find'.
- Participant 3: 'Easy to find but could have been bolded or added to the top of the site for improvement'.

- Participant 5: ‘The ‘Help’ section should be placed somewhere else to be more noticeable. But other than that, everything works as it's supposed to.’
- Participant 6: ‘The "help" button could have been in a form of an icon, that follows you anytime you scroll the website. It is located ti far away, and even there it is not on the first line. The text could have been at least bigger than it is.’
- Participant 7: ‘It was quite challenging to find it due to the numerous sections in the footer.’
- Participant 8: ‘The platform is intuitive and fulfils all its purposes. In my opinion, those pages that can be found in the footer (like help) are not often needed, so the difficulty in finding them is not a disadvantage for me’.

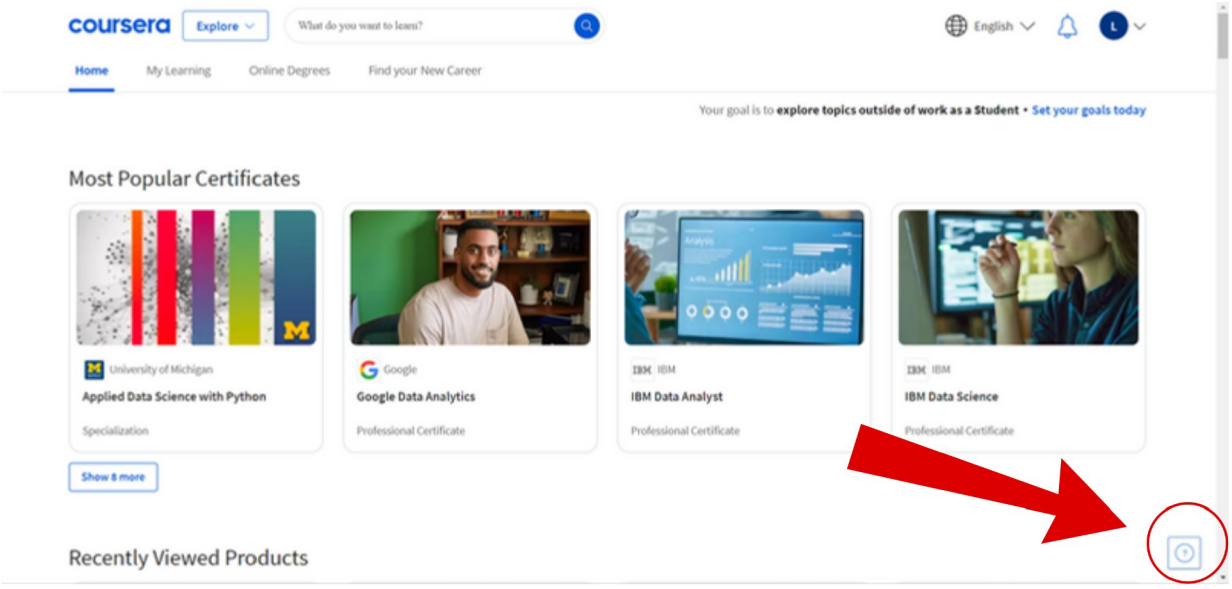
Analysing participant’s feedback regarding to the ‘Help’ button shows that 50% of participants experienced confusions while reaching this button and have recommended such improvements:

1. To make it bolded or relocate to the top of the site
2. To increase font size
3. Button have to be in a form of an icon, that follows you anytime you scroll the website.

Notably, Coursera does incorporate a help icon, positioned at the bottom right of the screen, symbolized by a question mark within a square frame.

However, the feedback indicates that this icon fails to sufficiently capture users' attention, with many participants overlooking it entirely while searching for assistance in the footer. This finding suggests that, despite its presence, the help icon's current design lacks the visibility and impact necessary for effective user assistance.

Figure 7 - 'Help' icon



Source: www.Coursera.org

4.6 Questionnaire Feedback

After conduction of the usability testing with participants using scenarios and gathering feedback, a questionnaire is created to get deeper insights and make broader analysis. Google Forms was chosen as a tool for gathering feedback from participants because it is suitable for conducting questionnaires from multiple participants, it is user-friendly, flexible question formats and accessible.

There are 7 open questions in the questionnaire, that had conducted using google forms tool:

1. How old are you?
2. Do you often use online educational platforms?
3. What are your thoughts on the Coursera's website's design and layout? How do you think it contributes to or detracts from your overall experience?

4. How intuitive did you find the navigation?
5. Have you used other online learning platforms? How does Coursera compare to these platforms in terms of user experience and content quality?
6. Overall, how satisfied are you with your experience on Coursera? Rate it out of 10
7. Is there anything else about your experience that you'd like to share or any final suggestions you have for Coursera?

Participants:

There are 8 participants.

- 22.2% of participants use educational platforms often, they are university students.
- 66.7% of participants use educational platforms quite rarely.
- 11.1% of participants totally do not use educational platforms.

Answers:

Question 3: What are your thoughts on the Coursera's website's design and layout? How do you think it contributes to or detracts from your overall experience?

1. 88.8% of participants based on their feedback found Coursera's website design minimalistic, simple and clean. For example, answer from participant 3: 'The design is simple and does not cause any distraction.'
2. 45% of participants based on their feedback pointed out that they would add something like interesting icons, contrast on background of some parts on the Coursera's website design. It would possibly increase user's visual satisfaction. For example, answer of participant 1: 'The design is very minimalistic, which I generally like, but here I would like to add for example illustrations or icons to make it more interesting. Something colourful immediately attracts attention'.
3. 22% of participants found the interface a bit overwhelming due to the amount of information on the listed courses and description page also, for example participant's 5 feedback: 'The design and layout sometimes feel a little overwhelming. There are a lot of information that is not structured enough. But overall it's not bad, it does detract from the experience a little.'.

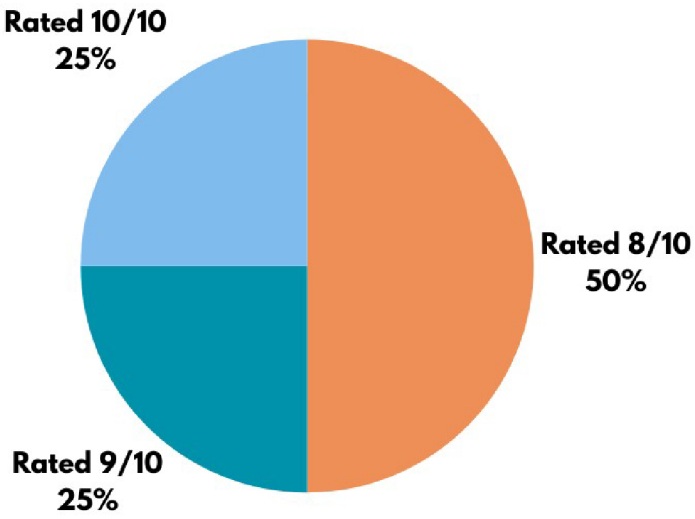
Question 4: How intuitive did you find the navigation?

- 90% of participants answered that navigation was easy and intuitive.
- 10% of participant found the navigation not very intuitive, the hard thing was to find needed sections and buttons sometimes as mentioned participant 4: 'The navigation is not very intuitive because sometimes it was hard to find needed sections and buttons.'

Question 5: Have you used other online learning platforms? How does Coursera compare to these platforms in terms of user experience and content quality?

1. 10% of participants mentioned 'Alison' educational platform and found the Coursera's website simpler to use and more understandable.
2. 22% of participants used 'Udemy' educational platform and that is how the participant 3 compared 'Udemy' and 'Coursera' websites: 'I had experience with Udemy. In comparison Coursera provides too much information at once that overloads user. Also, font size quite small in Coursera that reduce readability.' and feedback of participant 5: 'Udemy. I feel like the platform is very similar to Coursera. For example, the main page layout is almost identical. Udemy also offers less professional and in-depth content in comparison to Coursera'.
3. Other 68% have nothing to compare.
4. Question 6: Overall, how satisfied are you with your experience on Coursera? Rate it out of 10.

Figure 8 - User Satisfaction Pie Chart



Source: own processing

Question 7: Is there anything else about your experience that you'd like to share or any final suggestions you have for Coursera?

Participant 1: 'Overall, I think Coursera balance usability and efficiency, enhancing the overall learning experience for users.'

Participant 2: 'It would be good if they made the navigation more intuitive.'

Participant 3: 'Add more colourful elements.'

Participant 4: 'The Coursera's library can be quite overwhelming, my suggestion for the platform is to add a more detailed filter. That way users can easily find what they are looking for.'

Participant 5: 'My possible recommendations are to make font size and search bar bigger; It would increase readability; to highlight some parts of the site like footer, course offer cards with background color (blue – as it is main color of the website)'

Participant 6: 'Yes. It's better to change the search bar. Also partly change white background on blue for example to create some contrasts, it will increase readability and overall impression.'

Participant 7: 'I think it's beneficial to explore user reviews and feedback for specific courses to ensure they align with company expectations.'

Participant 8: 'The only negative thing about the website is that you can get a bit lost in this amount of information. Overall, satisfaction.'

5 Results and discussion

Gathering outcomes from both usability study using scenarios and comprehensive questionnaire feedback, it is possible to examine and make some results and possible recommendations for development of 'Coursera' Website's User Experience.

Generally, participants positive findings:

- **Easy navigation and clarity of layout:** All participants agreed that Coursera's navigation and understanding of layout was straightforward, that shows that Coursera has done an excellent job in designing a user-friendly website.
- **Design aesthetic:** Clean and minimalist design received positive feedback for not causing distractions and creating proper environment for learning.
- **Quality content:** Comparing with other educational platforms Coursera was praised by participants for high-quality educational content and various options of certifications and even degrees.
- **Functionality of Search and filters:** Search and filters functionalities were generally found to be effective by users.
- **Other notions**: Good accessibility of information on the courses, Key information of the courses is provided in the list of course offerings.

Participant concerns:

- A 22% of participants specified that the course listing contain too much information leading to user's overwhelming.
- While the minimalist design was praised, more vibrant visual components were wished ин 37% of participants in order to improve both the platform's aesthetic appeal and user engagement.
- The accessibility of the 'Help' section was observed to be variable in terms of how simple it was to find. 50% of participants found the 'Help' section not very easy to reach. Options for improvement are to increase the 'Help' icon to make it more noticeable or relocate to a more visible place.

Possible Recommendation:

According to comprehensive feedback from participants and overall analysis of 'Coursera' website, it is clear, that Coursera's platform is well-regarded for its usability, content quality and design simplicity. The overall satisfaction level was high with ratings from 8 to 10, that also confirms the high quality of interface of the website.

The possible recommendations for further improvement that were collected from participant's feedback include:

- **Reducing the density of information in the course listing** was recommended by some participants. It would diminish feelings of overloading users and discovery process would be more accessible.
- **Adding more visual elements:** For example, more colorful icons or some parts of website with colored background would enhance users' visual satisfaction.
- **Developing 'Help section:** As the half of participants were struggling with the 'Help' section, it is recommended at least to increase 'Help' icon at the bottom right, that was invisible for all participants and additionally, to overall font size, that also would evolve readability.

6 Conclusion

The main objective of this final thesis was to evaluate User Experience of a chosen website based on user feedback in a specific scenario. The theoretical part focused on studying available sources including various books and online sources regarding UX and website development.

'Coursera' educational platform's website was chosen for UX testing and was analysed using methods of testing with scenarios and questionnaire. Three different scenarios were created, that covered exploring course offerings, advanced search filters and seeking help on the website.

After the completion of the testing and questionnaire, 'Coursera' website was found as highly user-friendly and effective in contributing to online learning. Participants rated overall interface from 8 to 10, praised the clean navigation and straightforward layout, minimalist design, relevant environment for studying. Effective functionality of search and filters and high-quality educational content were also mentioned by participants.

The research brought possible recommendations for UX improvement of 'Coursera' platform's website, that include reducing information overload, that felt by some users, adding engaging visual elements, and increasing 'Help' section, that would enhance the visibility. The recommendations proposed based on analysis of users' feedback are not critiques of Coursera's existing UX, but rather consideration of how it might continue to improve in response on user needs.

The practical part focused on testing and analysing User Experience of the chosen website and the objectives were achieved. The findings of the thesis emphasize the critical role of the developing websites' UX.

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