

User Experience in Development of the Web Applications

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I. INTRODUCTION

UX doesn't mean one thing. One of the greatest pitfalls for newcomers is trying to understand UX as a field separate from other related fields (like web development, technical communication, etc.)[2][3].

UX is an interdisciplinary field. UX is a way of looking at the world that involves making decisions beyond data with humans firmly in mind.

User experience is the overall experience a user has with a company's products or services. Good and bad user experience design is determined by how easy or difficult it is to interact with each element or aspect of a product or service.

“User experience is determined by how easy or difficult it is to interact with the user interface elements that the UI designer have created.[2]”

Is the user flow smooth, seamless, and intuitive, or is it confusing and unwieldy? Does the button color and position encourage people to click, or make them hesitate? Does adding more detailed steps to the onboarding process add clarity? Does improving the content of a page increase conversion? UX design is responsible for answering questions like these. But how?

UX design mainly involves research to understand things like customer pain points, potential market gaps, and competitor analysis. Besides focusing on a deep understanding of users and unmet market needs, UX also takes into account the business goals and objectives to build products that align with the company's visions and missions. UX best practices improve user

interactions and perceptions of products and services as desired by the company.

II. PRINCIPLES

Principles of user Experience are well known as Strategies for simplicity[3]. There are four strategies:

- Remove
- Organize
- Hide
- Displace

III. STAGES

There are 5 main stages of every UX process, they are:

- Empathize
- Define
- Ideate
- Prototype
- Testing

Often this cycle is repeated, with each iteration bringing the product closer to perfection. Moreover, the stages are always one after another. Testing should be done intermittently with design to incorporate the results in later designs

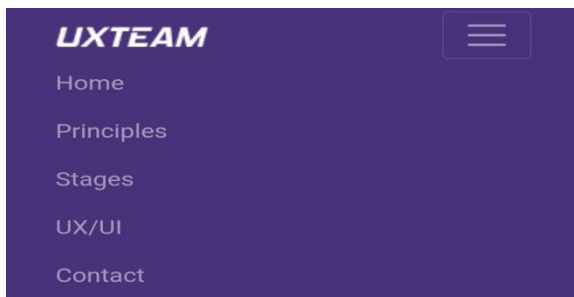
IV. UX IN DEVELOPMENT

Creating ultimate User Experience is not a simple task. So **first step** is to understand users needs, to empathize with user. ” Empathy is crucial to a human-centered design process such as design thinking because it allows you to set aside your own assumptions about the world and gain real insight into users and their needs.[5]”

In **second step** user's problems need to be defined. These definitions are called problem statements.

Next step, **the third**, is to start drawing, create wireframes. Brainstorming is “well accepted” in this stage.

Creating landing page – Designers nightmare. Landing or home page is what user see when start to interact with your web app. Landing is position where user need to feel comfortable, that is starting position for research of web site. Everything what user don't really need must be hidden or displaced. Like links to other pages, place it in “hamburger” menu. They still be easy to find but won't be in users way to find informations.



Different sizes and weights of fonts will represent principle of organisation. Also users need to have navigation all the time on screen. For that is used special Bootstrap class called sticky-top.

```
<nav class="navbar navbar-dark sticky-top">
```

Creating Principles web page

For start it's easy to see principle of organization and grouping. Elements are easily displaced on page. Clear section brakes giving user feel of achivmnet when finish reading one of sections.

Creating Stages web page

Comparing to Princples page users have images as background. Images giving closer feel what's happening in selected stage



Research

Stage 1: Empathize—Research Your Users' Needs
Here, you should gain an empathetic understanding of the problem you're trying to solve, typically through user research. Empathy is crucial to a human-centered design process such as design thinking because it allows you to set aside your own assumptions about the world and gain real insight into users and their needs.

2. Stage 2: Define—State Your Users' Needs and Problems
It's time to accumulate the information gathered during the Empathize stage. You then analyze your observations and synthesize them to define the core problems you and your team have identified. These definitions are called problem statements.

You can create personas to help keep your efforts human-centered before proceeding to ideation.



Design

Stage 3: Ideate—Challenge Assumptions and Create Ideas
Now, you're ready to generate ideas. The solid background of knowledge from the first two phases means you can start to “think outside the box.”

Look for alternative ways to view the problem and identify innovative solutions to the problem statement you've created. Brainstorming is particularly useful here.

Stage 4: Prototype—Start to Create Solutions
This is an experimental phase. The aim is to identify the best possible solution for each problem found. Your team should produce some inexpensive, scaled-down versions of the product (or specific features found within the product) to investigate the ideas you've generated.

This could involve simply paper prototyping.

There are 3 sections and five Stages. Some section contain more then one stage because they are similar, so they are grouped.

Creating UX vs UI web page

The core of understanding difference between User Experince and User Interface is here. There are definitions for UX and UI. With pointed out differences. Also, user can read why are UX and Ui so important. Why they are critiical components that can make or break a product. And how important is to work closely together to decide how a product looks and functions.

Creating Contact page

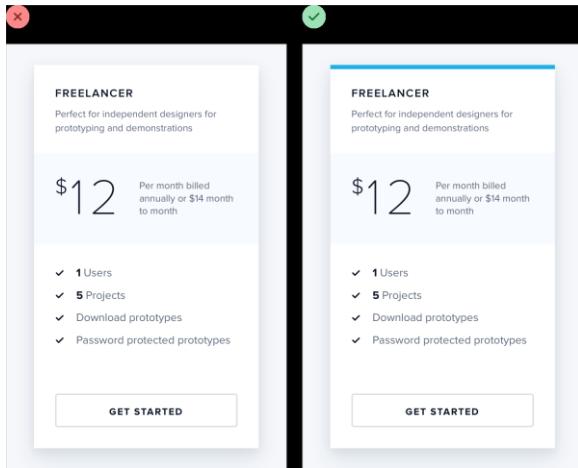
Email address

We'll never share your email with anyone else.

Your name

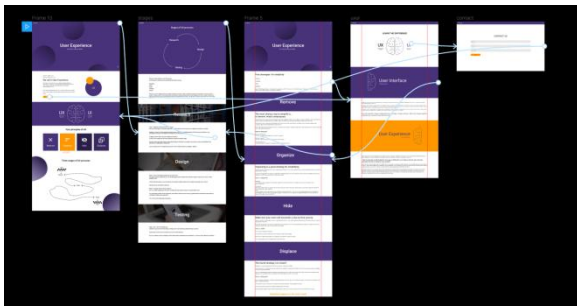
Your message

One of the easier task but need to be take cared of. Most users hate forms, they don't want to spent more than few minutes on filling the blanks[7].



Most of visual design was created by advices from Refactoring UI[6]. With few modifications to make it to fit design better.

Fourth step creation of the prototype. Developers never make complete app in this step. Prototype need to have some functions.



After prototype is developed the next step, the fifth step is testing. Tester need to click on every single button, to interact with every design element. Some testers test not just functionality, they test more and find proper solution how something can be better done. That is called Quality Assurance[8].

V. USED TECHNOLOGIES AND SOFTWARES

Figma

One of the most powerfull software for designers. Figma is a vector graphics editor and prototyping tool which is primarily web-based, with additional offline features enabled by desktop applications for macOS and Windows. [9].

HTML

“Stands for "Hypertext Markup Language." HTML is the language used to create webpages. "Hypertext" refers to the hyperlinks that an HTML page may contain. "Markup language"

refers to the way tags are used to define the page layout and elements within the page[10].”

CSS

“Stands for "Cascading Style Sheet." Cascading style sheets are used to format the layout of Web pages. They can be used to define text styles, table sizes, and other aspects of Web pages that previously could only be defined in a page's HTML.”[11]

TypeScript

TypeScript is an open-source language which builds on JavaScript, one of the world's most used tools, by adding static type definitions. Types provide a way to describe the shape of an object, providing better documentation, and allowing TypeScript to validate that your code is working correctly. Writing types can be optional in TypeScript, because type inference allows you to get a lot of power without writing additional code[12].

Angular

Angular is an application design framework and development platform for creating efficient and sophisticated single-page apps.



Angular is a TypeScript-based open-source web application framework led by the Angular Team at Google and by a community of individuals and corporations. Angular is a complete rewrite from the same team that built AngularJS [13]

Bootstrap

Bootstrap is a free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains CSS- and JavaScript-based design templates for typography, forms, buttons, navigation, and other interface components.[14]

Visual Studio Code

Visual Studio Code is a free source-code editor made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git.[15]

VI. CONCLUSION

Goal for this paper were to show all processes and stages that need to be done before showing product to users. And importance of User Experience when designing and developing web sites and web applications.

UX designers need to be up to date with modern technologies and best practices. They need to think like designers and like everyday users. Therefore their criticism on developers workv need to be strict. Because users demand

“top shell” product. In era when “Time is money” users don’t have time for bad products.

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