

# UX/UI ADVISOR – AN IMPLEMENTATION OF MAYUI TOOL IN THE EDUCATION

**Maya Stoeva, Stefka Chavdarova**

**Abstract.** Recently, the term UX/UI (User Experience/User Interface) design has a great significance in the various interface application development types: web, mobile, desktop, and hybrid. Therefore, each designer or front-end developer must be aware of the current principles and visual requirements. No matter if you are a worker, teacher, or student, one of the easiest ways to learn all of them and keep you well-informed is to use a tool, which can provide you the most important and relevant information in one place and allow you to test your knowledge regularly. UX/UI advisor is a tool, which can help in these activities. This paper presents the web platform's idea, model, and development. It could be used by everyone working or studying in this area.

**Key Words:** *user experience, user interface, wireframing, interactive application, interactive tests, responsive design, UI/UX design, UI/UX development, UX/UI advisor.*

## Introduction

The best way to test software interfaces, and base functional specifications, without huge expenses, is to create wireframes and prototypes. At the moment, a plethora of tools helps users quickly to create interface wireframes – Figma, AdobeXD, Sketch, InVision, Balsamiq, and Moqups [5]. None of the listed define how exactly that process should be accomplished in a compliant way. Users need another additional instrument to assist them in the creation of a fully functional and compliant user interface, which follows the last UI/UX principles [1, 2, 3, 4]. The MayUI web application is a good example for such kind of software [6]. The authors of this paper used MayUI as a basis for the described below UX/UI advisor creation.

## Motivation and purposes

“UX/UI Advisor” is a web-based platform. The system functions both as an assistant and advisor. “UX/UI Advisor” helps in the study of UX/UI principles and techniques in building interfaces for mobile and web applications, desktop and hybrid software solutions. Therefore, the tool is focused at people who want to understand what is UX/UI design and what are the main methods and practices for building a good user experience [8].

The user experience is directed on the user's feelings while interacting with a software system. Its goal is to create an easy, effective, relevant, enjoyable, and versatile user interface. A good user experience responds to the needs of a particular user in a given context in which he or she uses the product. It helps users get much easier access to software functionality. This is determining condition for the final overall evaluation of the product. Each application must be designed in a user-friendly way. In "UX/UI Advisor" users will find information about:

- the main elements of UX, terms, and concepts;
- UX/UI principles and methods;
- factors, describing the user experience;
- the process in steps, while building a good interface design;
- good practices that contribute to good user experience;
- the leading trends in the user experience and why UX is so important.

The main goal of "UX/UI Advisor" is to assist students, teachers, and developers in building programming interfaces, as well as to test users' mastered knowledge in the field of UX/UI design.

The following tasks below have been defined to achieve the goal:

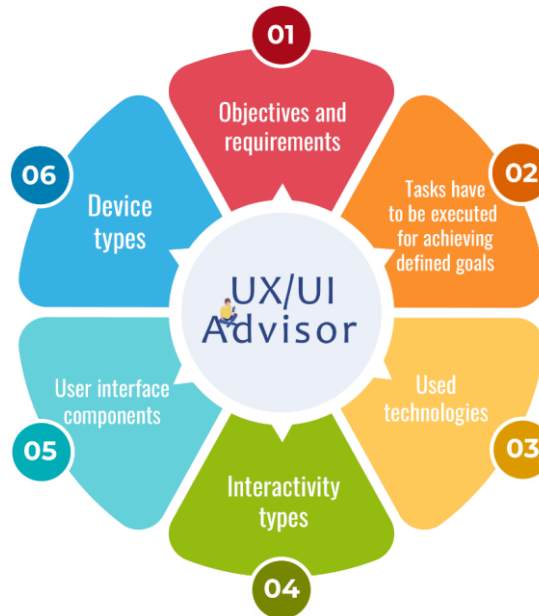
- Analysis and evaluation of existing similar web systems;
- Selection of appropriate technologies and tools for platform development to ensure intuitive and efficient operation of the system;
- Modeling of the system;
- Implementation of custom design;
- Build an adaptive design of the application to ensure the proper operation of the platform under different devices and browsers;
- Providing an opportunity for easy upgrading of the platform by dividing the application into modules;
- Ensuring system speed and efficiency.

### **Modeling of UX/UI advisor**

The UX/UI advisor modeling process is based on the "Generalized model for interactive multimedia tools development" [7] because the application nature belongs to this type of system. Its purpose is to cover all of the processes of building new software. Concerning this model, the full development of one application speeds up and is well defined. For each implementation step, it is

possible to be made the necessary adjustments without significantly affecting the whole program.

The Generalized graphic model of the UX/UI advisor tool is adapted to its needs and contains the following six processes, illustrated in Figure 1:



*Figure 1. UX/UI advisor model*

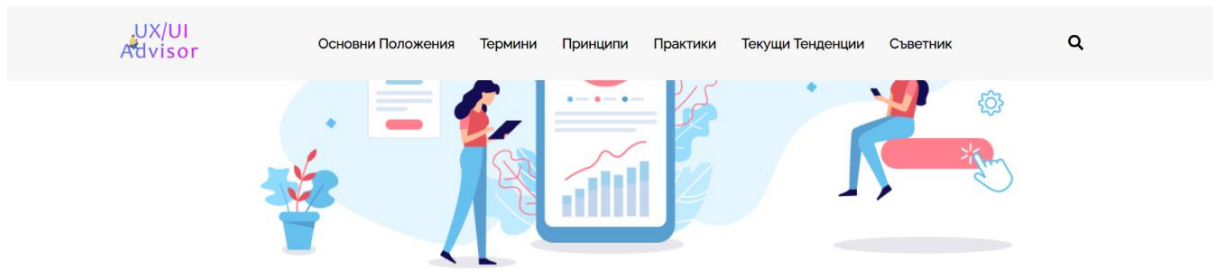
1. *Domain area with UX/UI advisor purposes and requirements:* The web platform should be available in English and Bulgarian languages. This program has planned to work on different mobile and desktop devices and is accessible online, without installing [11]. Its responsive vision follows the last principles for that. UX/UI advisor is implemented using the technologies HTML5/CSS3/JavaScript and PHP. It helps workers and students in learning which are the current UX/UI design principles, tendencies, and techniques, and after that to test themselves via available additional Questionnaire tools. The development of the application must follow some essential requirements to meet these objectives:
  - **Informativeness** – it should contain the latest information about the basic UX/UI principles and techniques.
  - **Advanced solutions** – ready-made questions/answers that allow users to test themselves in various UX/UI requirements to build a compatible interface that is independent of the type of program.
  - **Usability** – all functions of the platform should be easily accessible, understandable, and readable.
2. *Domain area with tasks that need to be performed to achieve certain goals:* Create a model of the interactive application using a generalized model. The UX/UI Advisor must be implemented using modern technologies for these purposes, described in the next chapter.

3. *Domain area with technologies used:* The authors use Adobe Photoshop CC, Adobe Illustrator CC, and Figma for design, and for the implementation – HTML5/CSS3/JavaScript, PHP/MySQL in the Wamp Server environment.
4. *Domain with types of interactivities used from the interactive tool:* Drag and drop with a mouse, keyboards shortcuts, scroll, when we are talking for desktop machines with a mouse; sweep, pinch zoom, tap or slide on the mobile device or touch screen displays.
5. *Domain with user interface components, which include controls, implementing the interactivity:* The UX/UI advisor uses web controls like sensitive interactive areas, buttons, pop-ups, text areas, and text fields, web forms, dropdowns, checkboxes and groups, radio buttons and groups, list boxes, labels for visual separation of the interface space, scroll bars (horizontal or vertical and others), especially in the additional test part section.
6. *Domain with device types used by the interactive tool:* The UX/UI Advisor must be used for all device types. Users should be able to open it in a standard web browser or mobile device.

### **Development of UX/UI advisor**

The development of the UX/UI Advisor was divided into two phases: design and development. The first was created using Adobe Photoshop CC, Adobe Illustrator CC, and Figma [5].

The web platform is developed by the custom programming code, without the usage of an external framework. This approach slows down the development itself, but the final code turned out to be much lighter and more flexible. UX/UI advisor contains a visual and administrative part. The last one controls the visual aesthetic and content of the system. For the pages' structuring is used HTML language. For styling and shaping the visual part – CSS. The platform offers a responsive design that adapts to large screen variety, and the web layout was implemented by CSS-technique Flexbox (a flexible one-dimensional container layout). This method allows automatic loading on the responsive elements in the container, with the inscription of minimum quantitative media requests [9]. To build the menu and some behavior effects is used JavaScript language. To develop all forms, the additional Questionnaire tool and platform administration is used the PHP programming language. UX/UI advisor uses MySQL together with phpMyAdmin to build the database. The admin dashboard is designed according to Content Management Systems (CMS) principles [10]. Down below are shown some of the essential screens from the visual part of the UX/UI advisor:



UX е общ термин, който може да бъде разделен на четири основни дисциплини: Стратегия за опит (ExS), Дизайн на взаимодействието (IXD), Изследване на потребителите (UR) и Информационна архитектура (IA).

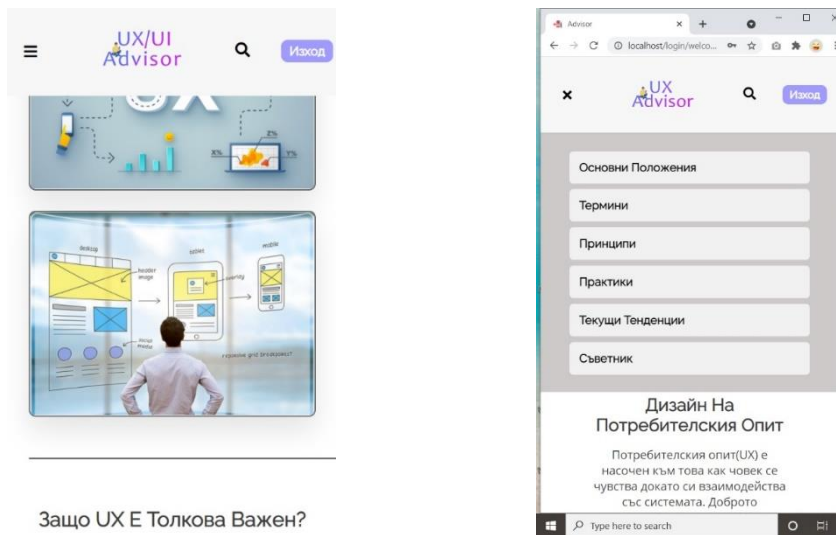
### Стратегия за опит (Experience Strategy)

UX дизайнът не се отнася само до крайния потребител; това също носи огромна стойност за бизнеса, предоставящ продукта или услугата. Стратегията за опит се състои в изготвянето на цялостна бизнес стратегия, включваща както нуждите на клиента, така и нуждите на компанията.

### Дизайн на взаимодействието (Interaction Design)

Дизайнът на взаимодействието разглежда начина, по който потребителят взаимодейства със системата, като се вземат предвид всички интерактивни елементи като бутони, преходи на страници и анимации. Дизайнерите се стремят да създават интуитивни дизайни, които позволяват на потребителя без усилия да изпълнява основните задачи и действия.

Figure 2. Visual design of UX/UI advisor



Защо UX Е Толкова Важен?

Figure 3. Mobile visual designs of UX/UI advisor

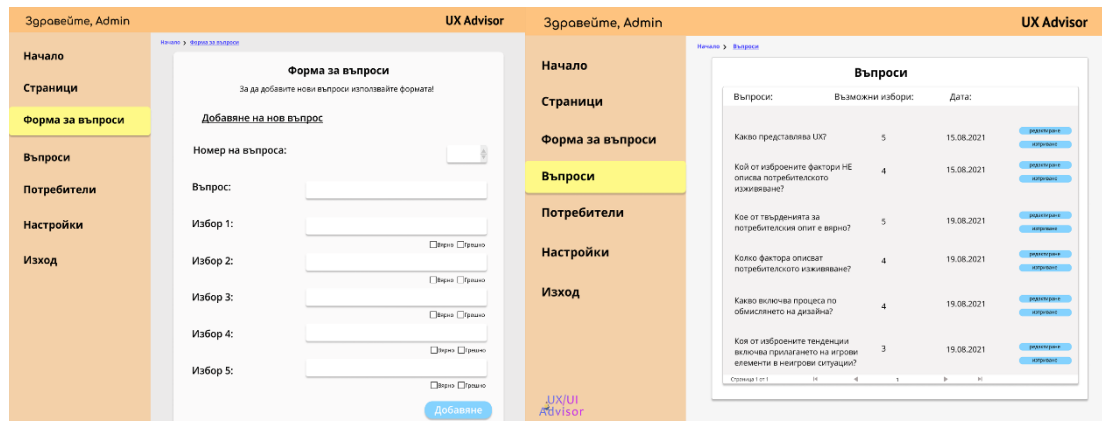
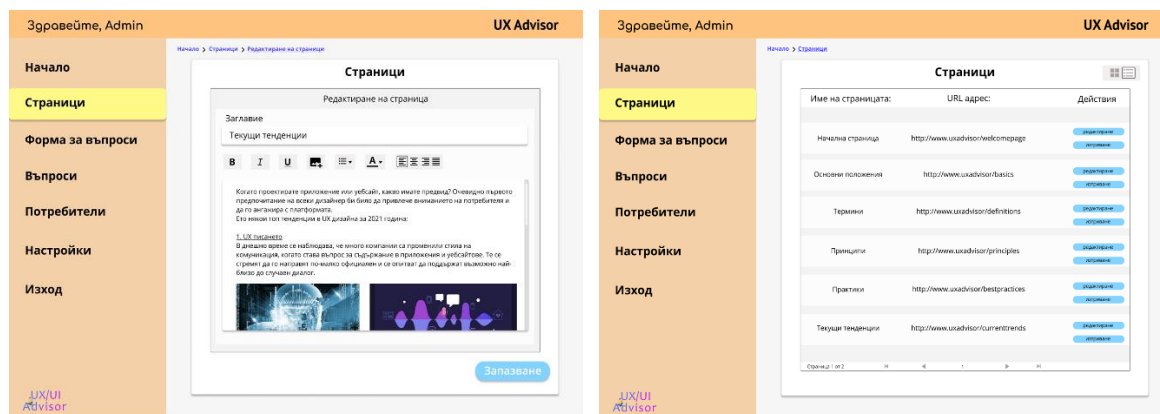


Figure 4. Administration design of UX/UI advisor (left: questions form view / right: list of questions view)



**Figure 5. Administration design of UX/UI advisor**  
(left: WISING editor of main pages / right: list of all pages in the system)

## Future steps

The development of the UX/UI advisor tool has been completed. It is available now in the Internet space [11]. Its future planned steps are:

1. Complete the first stage of the development process.
2. Enter more UX/UI questions/answers in the application database.
3. Regularly update the database with the latest UX/UI tendencies.
4. Make a detailed plan for the future mobile application.
5. Create more different types of tests.
6. Translate the whole system in English.
7. Make a detailed plan for the future development of mobile applications.
8. Add open questions to the tests.
9. Make a detailed plan for the future integration of Artificial Intelligence (AI) into the Questionnaire tool. It can help to check the open questions in the tests.

## Conclusion

The purpose of this paper is to describe the modeling and development of a simple and useful web application, called UX/UI advisor. It helps students, teachers, and developers learn the latest UX / UI principles, techniques, and trends in building software interfaces and test their knowledge. The idea for the web platform is based on the MayUI tool.

UX/UI advisor is available only in the Bulgarian language for now. It is accessible on different types of devices via an easy-to-use responsive interface

design. At this stage, the developed interactive tool meets the given goal and is available online.

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## References

- [1] S. Krug, *Don't Make Me Think: A Common Sense Approach to Web Usability (Voices That Matter)*, New Riders, 2013, ISBN-13: 987-0-321-96551-6.
- [2] J. Maeda, *The Laws of Simplicity (Simplicity: Design, Technology, Business, Life)*, The MIT Press Cambridge, Massachusetts, London, England, 2006, ISBN-13: 978-0262134729.
- [3] S. King, K. Chang, *Understanding Industrial Design: Principles for UX and Interaction Design*, O'Reilly Media, Inc., 2016, ISBN-13: 978-1491920398.
- [4] E. McKay, *UI is Communication: How to Design Intuitive, User Centered Interfaces by Focusing on Effective Communication*, 1st Edition, Elsevier, Inc., 2013, ISBN-13: 978-0123969804.
- [5] Best wireframe tools for 2021-year research, <https://blog.adobe.com/en/publish/2017/11/29/prototyping-difference-low-fidelity-high-fidelity-prototypes-use.html#gs.16d3y1>, <https://thedigitalprojectmanager.com/wireframe-tools/>, <https://www.guru99.com/best-wireframe-tools.html>, <https://cliquestudios.com/wireframing-tools>, last accessed 2021/09/12.
- [6] M. Stoeva, Model and prototype of interactive assistant for compliant interface development – MayUI tool, *Proc. of IEEE International Conference "Automatics and Informatics'2021"*, Varna, Bulgaria, 2021, 30 September – 02 October, in print.
- [7] M. Stoeva, Generalized model for Interactive multimedia tools development, used for software interface implementation, *International Journal of Recent Development in Engineering and Technology*, Vol. 2, Issue 5, May 2014, 22–27, ISSN: 2347-6435 (Online).
- [8] UX/UI database knowledge, <https://uxplanet.org>, <https://www.interaction-design.org>, <https://www.usability.gov>, <https://uxdesign.cc>, <https://userguiding.com>, <https://uxmag.com>, <https://www.uxbooth.com>, <https://www.uxmatters.com>, <https://www.smashingmagazine.com/2010/10/>

what-is-user-experience-design-overview-tools-and-resources, last accessed 2021/09/12.

- [9] B. LaGrone, *HTML5 and CSS3 Responsive Web Design Cookbook*, Packt Publishing, Kindle Edition, 2013, ISBN: 978-1-84969-544-2.
- [10] CMS systems, <https://kinsta.com/knowledgebase/content-management-system>, <https://www.icn.bg/bg/help/spodelen-hosting-linux/kakvo-e-cms-sistema>, last accessed 2021/09/12.
- [11] UX/UI advisor tool, <http://www.uxuiadvisor.website/>, last accessed 2021/10/05.

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