UI/UX Design Using Design Thinking Method for the Information Service Chat Bot Application at Widyatama University

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ABSTRACT

Information system services are very important to support lecture activities and student learning. Good, reliable services and an accurate and always available system can make lectures run well too. Unclear information and the unavailability of services that can be accessed 24 hours make students confused about the information they want to know. By utilizing the latest technology, we designed a chat bot application called Utama Assistant as an answer to the problems experienced by most students. In this study, we used the design thinking approach which consisted of empathize, define, ideate, prototype, and test. At the empathize stage, we made observations and identified existing problems, so a new idea as a solution to these problems was to design a Utama Assistant chat bot application to make it easier for students to access accurate information 24 hours a day. It is hoped that students will no longer experience confusion when they want to know the information services provided by the academic, IT, and Finance departments.

Keywords: Information System, User Interface, User Experience, Design Thinking, Chat Bot.

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INTRODUCTION

Information is important in the implementation of administrative functions in rapidly changing situations and conditions [1]. In this digital era, technology is used to support human activities to stay informed [2]. However, the use of information technology through websites or applications to support human activities must ensure a User Experience (UX) that meets user needs and provides a pleasant experience [3].

Most universities in Indonesia use web-based information technology to convey information [4]. Similarly, Widyatama University uses several media for information dissemination, including the official university website and social media like Instagram. However, students sometimes need detailed information about university activities, academic services, financial services, and IT services. To meet these needs, Widyatama University currently provides information search services through contact centers like WhatsApp, email, and telephone services. These current information services have limitations, preventing students from obtaining information quickly. Information service administrators/operators have limited time and capabilities.

Therefore, to address these issues, it is necessary to create a technology-based information service that allows students to access information quickly at any time. Based on this, researchers decided to design a chat bot application prototype.

LITERATURE REVIEW

Designing a prototype requires a good User Interface (UI) to achieve a good User Experience (UX). User Interface (UI) is the interaction mechanism between users and the system interface in an application or software [5]. User Experience (UX) is the interaction mechanism between users and the program, focusing on the user experience [6]. In designing the UI/UX prototype of this application, the Design Thinking method is used. This method has the advantage of encouraging innovative ideas to create products that meet user needs [7].

According to Candra Wardana & Gusti Lanang Putra Eka Prismana (2022), the Design Thinking method can produce prototype designs that meet user needs [8]. The application of the Design Thinking method starts with the implementation of Empathize, Define, Ideate, Prototype, and Testing. For developers accustomed to rapid system development (agile), the Design Thinking approach is the right choice [9].

The application of the Design Thinking method results in optimal performance for prototype application designers because the stages present a process that brings UI/UX designers closer to users, allowing them to understand pain points well, making subsequent stages easier. Priorities can be easily determined with the Design Thinking method because user complaints are well accommodated [10].

METHODOLOGY

In redesigning the UI/UX of Widyatama University's information service system, the Design Thinking approach is used. This method is known to provide good solutions because it can deeply explore user desires. There are five stages in the Design Thinking method, starting with the empathize process, which is the initial stage to identify and study existing problems to obtain problem values aimed at finding solutions. Then, the Define stage analyzes the information obtained to find the core of the problem and user needs.

From the identified problems, ideas are developed in the Ideate stage. The ideas are then visualized into a Prototype. The prototype is tested based on scenarios to get user feedback. The test results are evaluated as the final design to be further developed.
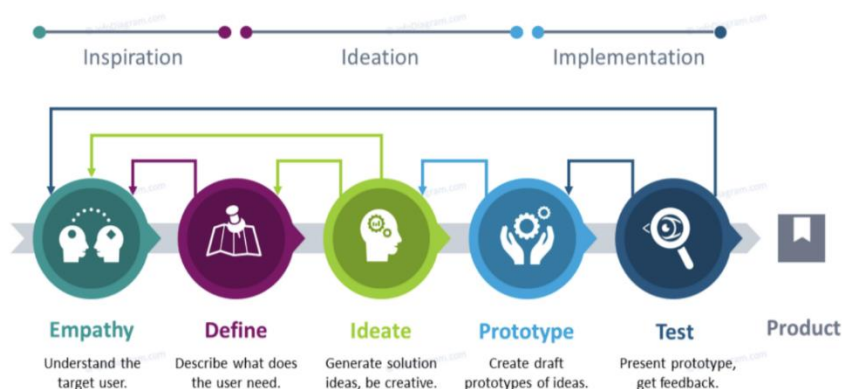

Figure 1 - Design Thinking Stages (Juniantari et al., 2023)

RESULTS AND DISCUSSION

Widyatama University's academic information system provides various information services, including academic, financial, and IT-related information. The redesign process of the UI/UX of Widyatama University's information system is expected to solve user problems. The result of this research is a prototype developed using the Design Thinking approach.

1. Empathize: The initial stage is the empathize stage, which involves data collection to identify user problems and needs through questionnaire surveys and literature studies with the following results. The Likert scale score from respondent assessments is 74.19% in the "Disagree" category (disagree that the information service is good). Based on the questionnaire survey results distributed to several students, it can be concluded that students want information that can be accessed 24 hours a day with quick, accurate, and easy feedback. After the empathize stage, several problem statements are expected to be obtained based on user problems for further processing in the next stage.

2. Define: In this stage, the define process is carried out after identifying the main problems experienced based on user needs from the questionnaire survey results in the empathize stage, which is that all students want an information system that provides 24-hour services. After identifying the needs of Widyatama University's information system users, the define process is carried out by compiling a list of service needs for Widyatama University's information system and determining user goals. This will result in ideas/concepts for an information system service that meets user needs.

3. Ideate: In this stage, the idea collection process is carried out through brainstorming to generate ideas for solving existing problems. The collected ideas are then selected and prioritized based on their impact on users and the development of Widyatama University's information system services. One of the main ideas is a chatbot-based information system that can provide 24-hour information services. The following is the initial sketch of the application to be designed:
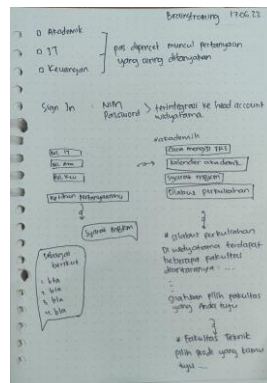

Figure 2 – Initial Ideate Sketch

4. Prototype: The next stage is the prototype application development process. In this stage, we create an application prototype to test the results of the ideate stage. The prototype development starts with creating the application user flow. Then, a mockup of the application prototype to be built is created. In the prototype application development stage, we use the Landbot application platform in the design. This allows the application to be easily integrated.
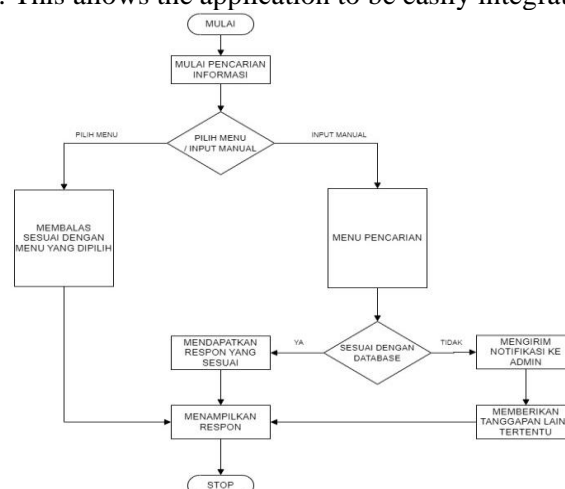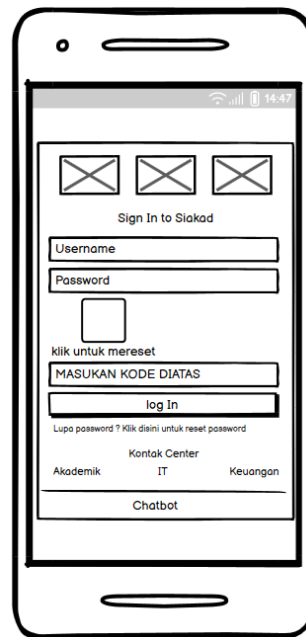

Figure 3 – User Flow Diagram

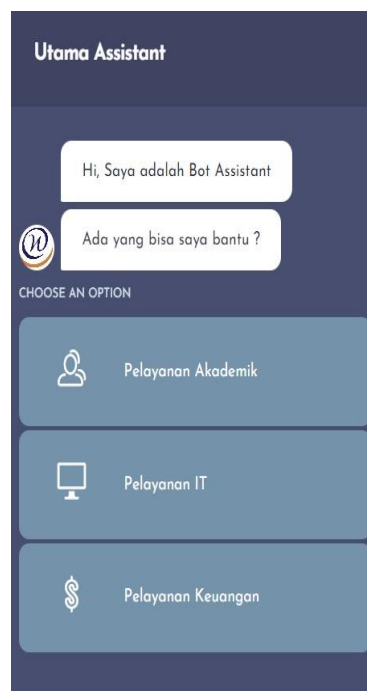Figure 4 – Chatbot Menu Mockup in the Information System Application

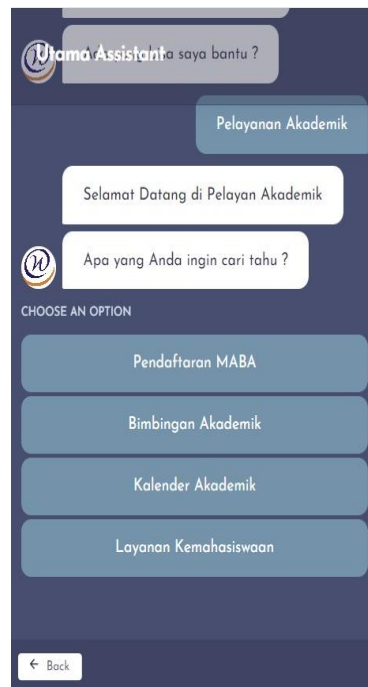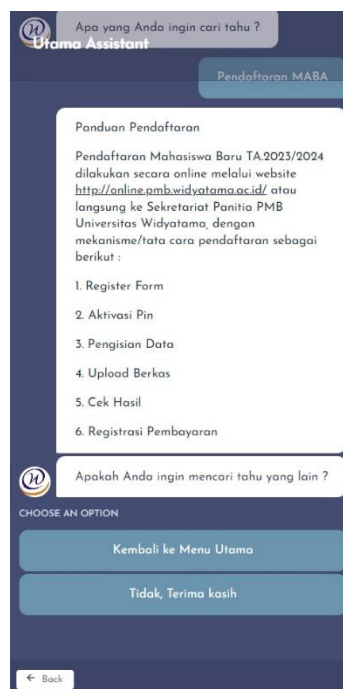Figure 5 – Initial Chatbot Display

Figure 6 – Chatbot Menu Display

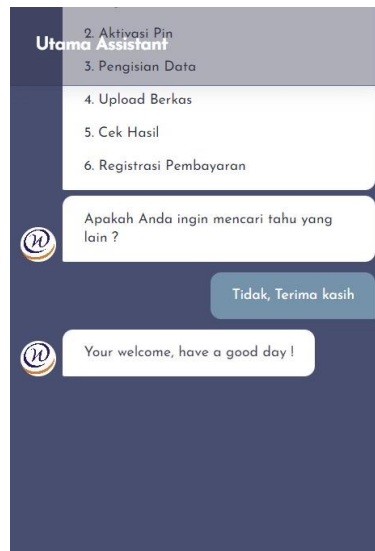Figure 7 – Chatbot Menu Information Display

Figure 8 – Final Chatbot Conversation Display

5. Test: The next stage is the testing process, which will be conducted with several students. This testing stage involves testing the prototype to get feedback and validate the prototype according to user needs. This stage also aims to improve and develop the prototype into a better product. The results of this application testing stage are that 15 out of 30 respondents expressed interest, 8 respondents were neutral or indifferent, and 7 respondents were not interested because the application was not yet perfect.

CONCLUSION

The application of design thinking has helped identify various problems experienced by students in the services provided, including academic, IT, and financial services. Users want information services that are always available 24 hours a day and accurate. Therefore, we provide a new solution by designing a chatbot application called Utama Assistant. It was proven during the testing stage that most respondents were interested and found that this chatbot application made it easier for students to access and obtain information related to academic, IT, and financial services. With this application, students no longer have difficulty accessing the information they need 24 hours a day. Suggestions for future research include designing a new multiplatform interface with a better design. Additionally, adding more and more complex data dictionaries to make the application more accurate, and possibly integrating it with machine learning. Furthermore, expanding the scope of respondents to gain deeper insights.

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