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**User Interface/User Experience Design for Mobile-Based Project Management  
Application Using Design Thinking Approach**

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**Abstract**

This study aims to design a mobile-based project management application design. User Interface/User Experience has become an important part of doing activities in digital media. Including facilitating study activities or certain jobs. This research is a User Interface/User Experience design for an information system that helps users manage projects and tasks. This application's design refers to the design thinking method to gain user experience, especially those with high mobility. Furthermore, in User Experience, a flat design is used, so it is easy to capture and use. Design thinking provides search directions about user needs, and flat design complements the ease of user experience. This research aims to create a User Interface/User Experience design that is user-friendly and attractive. This study concludes that users are helped by the application and have benefits for managing projects and tasks.

**Keywords:** User, application, android, design

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**INTRODUCTION**

With the growing human need to settle demands in various fields, regulating them is needed. In the current condition, it is common that a person does several activities simultaneously. An employee of a company may have another side job, which also requires timing. Similarly, a student who also has hobbies outside of his studies. The presence of an information system that can organize work or tasks is important to be mentioned.

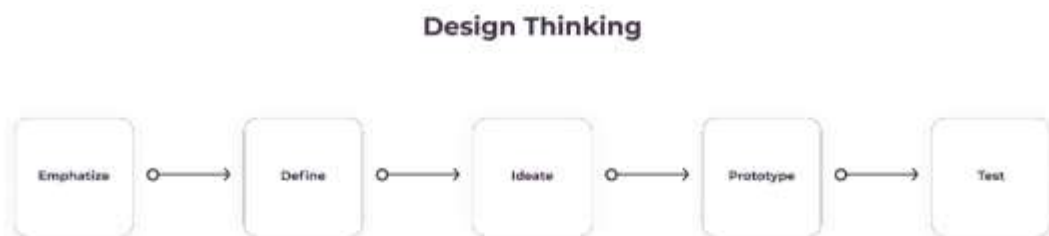
Based on the current problem, this study's first benchmark is an information system that makes things easier for people to do their jobs and tasks. Which also helps alleviate the many complex problems that users experience (Jovanovic and Beric, 2018). A good project management information system must function under its objectives (Bibarsov et al, 2017).

Besides, information systems are indispensable in making project management applications (Fachrizal et al, 2020). Moreover, with the rapid development of technology in various aspects of life, people are increasingly facilitated by a wide variety of application innovations. Based on this reason, we aim to create a management information system to facilitate people in the work jobs and tasks, also useful to avoid risks to the management of their work and duties (Sadriiddinov et al, 2020; Mardiani, 2018).

## RESEARCH METHOD

This research used the design thinking method. This method is based on the solution to the user experience of the studied object. The design emphasizes solving problems related to the relationship between humans and the objects used. To get closer to the product used, it is necessary to get input from the user experience.

The design sees a holistic approach to the problem. It not only prioritizes at the function but also the user's social experience. Design is very important in innovation, including developing information systems that keep up with the times (Matthews and Wrigley, 2017). Humans interact with products, supported by the ability to respond to the current trends. It means that the concept of using the product also follows the development of science and technology. Design thinking accommodates responses outside the product related to user adaptability. Design thinking also brings a higher level of complexity in architecture as problem-solving (Tepavčević, 2017) and adapts to society's needs through technological developments by designing UI / UX to solve problems (Liedtka, 2018). This method has several stages, as shown in Figure 1.



**Figure 1.** Design thinking

As in Figure 1, the first stage, Emphasize, data searches are carried out through participants using a questionnaire system. The Define stage looks for pain points from participants to be used as material for observation in designing this information system. To the Ideate stage, as a result of observations to find a solution, create a flow of this project management information system and a user interface display. At the Prototype stage, we implement interacting with the information system display. The last stage is Test, the information system that has been completed for several participants to get feedback according to the participants' experience and know the research results.

## RESEARCH RESULTS AND DISCUSSION

### *Emphasize*

This stage aims to determine what features will most help participants in the information system that will be built later and how important the project management application is to help their work and tasks. After to achieve this goal, the following questions are asked:

- What do you do? (employee or student)

- Does the presence of a project management information system help facilitate your work and tasks?
- What features would you like to have in a project management application?

This stage is knowing the participants more deeply by determining their affective and cognitive mental states (Riess, 2017). Moreover, the results of this stage obtained the following data:

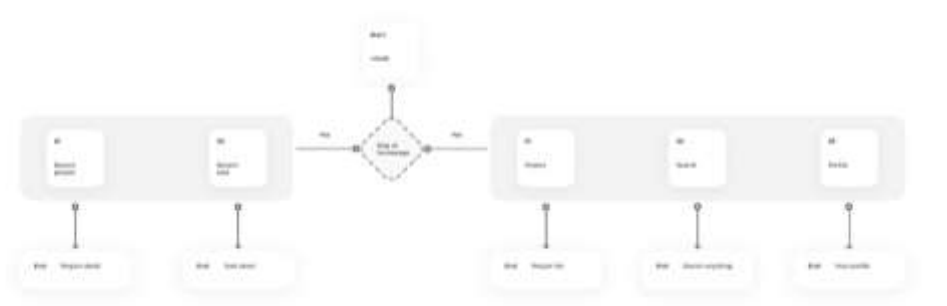
- Participants are divided into two types; namely, there are 50% of employees and 50% of students.
- 80% of participants feel helped by a project management information system to help with their work and tasks, and 20% do not feel helped.
- Almost all participants with jobs as employees use project management applications as a tool to ease their work and tasks in managing the division of time. Moreover, partly, students use this application as an assistance tool provided by their teacher.
- The feature most needed from the total participants is the task management feature based on the work timeline.
- A simple and attractive interface helps users operate the application more easily and makes the app pleasing to the eye.

### *Define*

Define is an important stage in the design thinking method. According to Walter Brenner, Falk Uebernickel, and Thomas Abrell, Design Thinking is also a mindset approach in the human thinking process (Brenner et al, 2016). Solution to the problems obtained from the empathy stage, namely participants use this application to facilitate their work and tasks, and participants need task management features. Participants also care about a simple and fun appearance, so that using the application is easier.

### *Ideate*

To create a good information system, a good and strong system design must be made from various aspects of appearance and user experience. Therefore, a site map design is created so that the information system's flow is clear and structured so that a site map is made, as shown in Figure 2.



**Figure 2.** sitemap flow

From this sitemap, the flow of the application display later, there are two options for users to access the main features of this application, namely through the homepage and navbar the user can directly use this project management feature, and on the homepage, the user can see the latest projects and current tasks. In developing the ideal concept for users, a visual approach improves the User Experience (UX). In the context of a responsive display, the media must be easy to use. The display refers to the Swiss Style of the 1950s, which prioritizes simplicity so that users focus on its function. As Jony Ive, head of design at Apple explains, "... there was an incredible liberty in not having to reference the physical world so literally. We

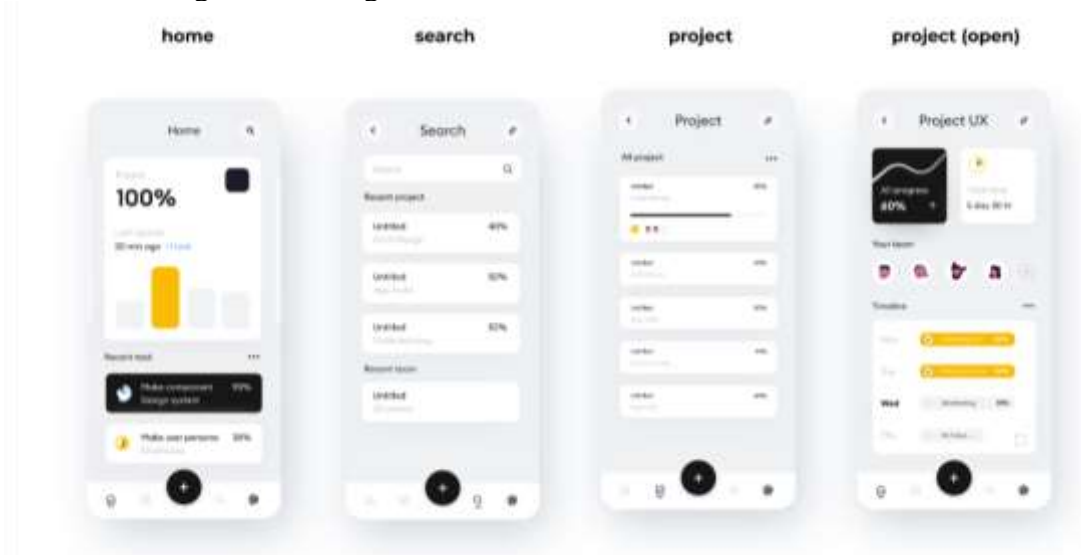
were trying to create a less specific environment. It got design out of the way" (Downs, 2019). The basic flat design principle means that the computer screen represents a self-contained two-dimensional digital environment in which there is no place for anything replicating three-dimensional objects of the real world (Banga and Weinhold, 2014). The user interface elements are simplified: abstract graphic forms are used, and spaces are filled with bold colors (Burmistrov et al, 2015).

Next is to make a wireframe or rough appearance of the information system design that will later be made, as shown in Figure 3.

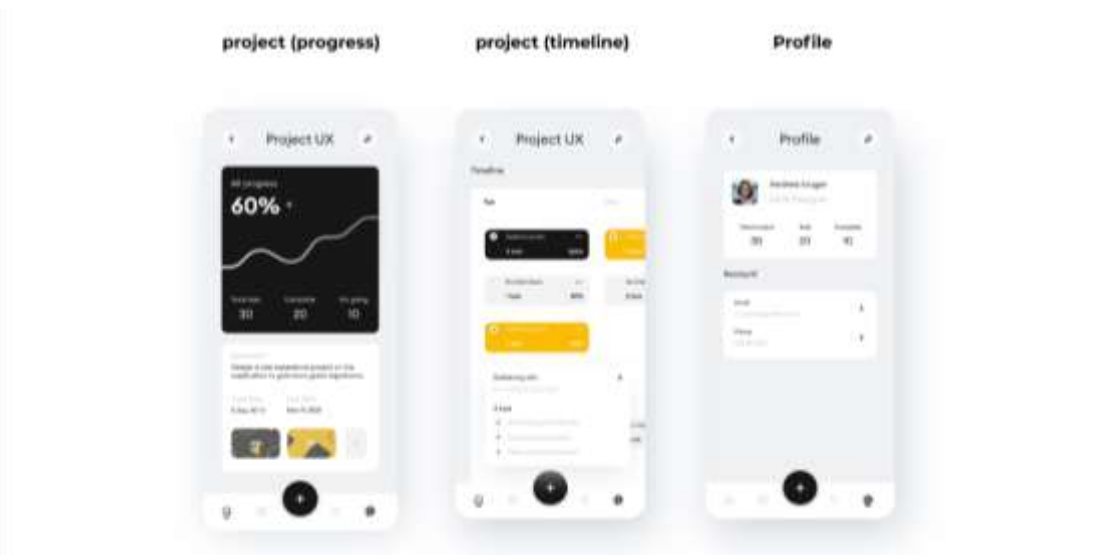


**Figure 3.** Wireframe 2

The final stage in the ideate process is to make the final appearance of this information system, as shown in Figure 4 and Figure 5.



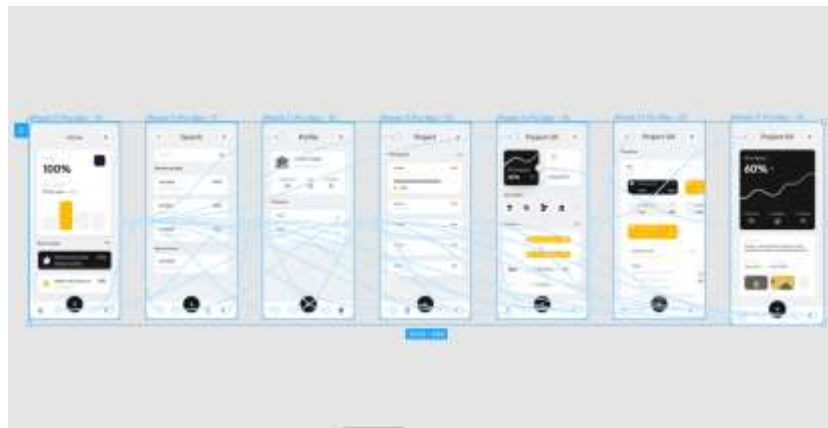
**Figure 4.** Final Design 1



**Figure 5.** Final Design 2

*Prototype*

The next step after making the information system's design is to make a prototype, which aims to make interactions from this information system, using applications that support prototyping see Figure 6.



**Figure 6.** Prototype

*Test*

The last stage in the design thinking method is to test a usability test using qualitative data retrieval, which is only done to a few people through short message media. The testing method is that the participants are given a brief, namely the purpose of the test and the way the information system is tested, then some questions need to be answered, participants were asked to disclose their experience when using the application honestly, the objectives of this test are to:

- Participants are easy to use the application.
- Participants like the user interface of the application.
- Participants understand every function of each application feature.

**CONCLUSION**

The resulting digital media display considers the user experience based on ease of use and understanding of functions. The visual aspects that are applied make the information

easier to use. It is evidenced from the results of the responses after this application is operated

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