UI/UX Design of Mobile-Based Human Resource Management Applications Using the Design Thinking Method (Study Case: Habibi Garden)

Ucha Aprilia[1], Nia Kumaladewi[2*], Abdul Mutholib[3], Amart Sulong[4]

Abstract—**Habibi Garden is a company operating in agricultural technology. The current issue at Habibi Garden is the absence of a human resource management application. COOs and Agronomists face operational challenges. COOs struggle to track project progress in the field and sometimes forget to log their attendance. Agronomists have difficulty organizing team tasks as some employees forget to submit assignments, and various assignments, reports, and projects are jumbled in Google Drive. Additionally, employees have to search for reimbursement links mixed with other assignment links, leading to potential errors. This research aims to develop a UI/UX design for a mobile-based human resource management application for Habibi Garden to aid employees in operational activities. The method used is Design Thinking which consists of 5 stages, namely Empathize, Define, Ideate, Prototype, and Test. The results show that the interface design performs well. The effectiveness parameter scored 93.75% for COOs and 91.25% for Agronomists. The efficiency parameter achieved 0.04 goals/sec for COOs and 0.06 goals/sec for Agronomists. User satisfaction, measured using the SUS questionnaire, averaged 88 for COOs, categorized as excellent and graded B, and 77 for Agronomists, categorized as good and also graded B. Design Thinking enables designers to create application solutions that truly fit user expectations and needs by understanding user problems, needs, and behavior through the empathize stage. Based on the prototype design that has been designed in this study, the UI/UX generated can serve as a foundation for the development of mobile applications based on Human Resource Management.**

Index Terms—**Design thinking, habibi garden, human resources, mobile, UI/UX.**

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I. INTRODUCTION

Human resources are all people involved in an organization in seeking to realize the organization's goals [1]. HR management is the science and art of managing the process of utilizing human resources and other resources effectively and efficiently to achieve a certain goal [2]. To increase effectiveness and efficiency, an organization can introduce an integrated HR management system, which includes features such as schedule management, leave and absence management, task management, and employee development [3]. By adopting this approach, organizations can effectively optimize the use of HR and improve overall performance. HR management concerns the design and implementation of planning systems, employee management, employee development, career management, performance evaluation, employee compensation and good employment relations [4].

In today's digital era, human resource management is becoming increasingly complex and requires the right tools to be able to overcome various challenges. One of the proposed solutions is the use of human resource management applications that allow companies to monitor and manage human resource activities in real-time.

PT. Habibi Digital Nusantara or Habibi Garden is a company operating in the agricultural technology sector. PT. Habibi Digital Nusantara was founded in 2016, then officially established in 2017. Habibi Garden aims to pioneer the agricultural digitalization process in Indonesia by creating a digital integrated agricultural technology system utilizing Internet of Things services and real-time sensors that are collected in the form of information and data. displayed in the smartphone application.

The problem currently facing Habibi Garden is that there is no human resource management application in it. There is no control regarding work in the field and there is no system that monitors the performance of human resources. Habibi Garden employees, especially the COO and Agronomist as departments that work together to ensure that the company's agricultural operations run well, often experience problems in

operational activities. COO has difficulty knowing the progress of a project in the field, sometimes forgetting to be absent while on duty in the field. Agronomists have difficulty recapping team tasks, because there are several employees who forget to collect assignments, are confused about collecting assignments because various assignments, reports and projects are combined in Google Drive. Not only that, employees at Habibi Garden also have to look for reimbursement application links which are mixed with assignment links and other links which allow employees to click on the wrong link.

The problems that occur are summarized in a fishbone diagram, which aims to break down large problems into smaller, more manageable parts, so that the root cause of the problem can be identified and resolved more effectively. The fishbone diagram can be seen in Fig. 1.
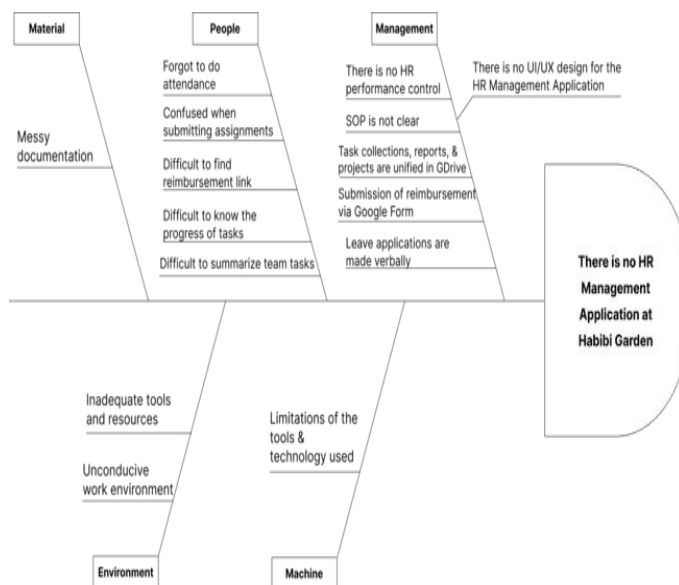

Fig. 1. Fishbone Diagram.

Figure 1 depicts a fishbone diagram with the main problem located in the fish head, namely the absence of human resource management applications at Habibi Garden. The main causes consist of materials, humans, management, environment and machines. Based on these problems, there is a need for information media to facilitate problem solving at Habibi Garden, namely in the form of human resource management applications, especially the attendance, reimbursement, pay slip and assignment features. The application built is mobile-based so it can be used anywhere [5]. Mobile applications created using the Android operating system.

However, in creating an application, the first thing that must be done is to design the UI (User Interface) and UX (User Experience) which can help make it easier for users to understand the functions of the application. UI and UX are interconnected with each other. UX is the user's experience when using or interacting with a product [6]. The UX of an application is influenced by the UI because the UI is the link between application users in interacting. UI is a term used to describe the appearance of a machine or computer that interacts

directly with the user [7].

To answer these problems, the researcher intends to design the UI/UX for the Human Resource Management Application at Habibi Garden up to the high-fidelity stage. This UI/UX design will later be used to provide UI recommendations to developers so that the application is made attractive and meets user needs optimally. In the UI/UX design process, researchers use the Design Thinking method. Design thinking is used to find very efficient solutions to solve complex problems [8]. This method can produce solutions that can be visualized in the form of interface design. Usability measurements in this study used the System Usability Scale (SUS) assessment. SUS is a questionnaire that can be used to measure the usability of a computer system according to the user's subjective point of view [9].

Similar research that carries out UI/UX design using the design thinking method is research conducted by [10] regarding the UI/UX design of the Banten Online Application using the design thinking method. The research results show that the design desired by prospective users is in accordance with the empathy stage when distributing questionnaires online. In accordance with the SUS formula used, the final score is 80.00, including grade B with the predicate excellent. Previous studies have shown that using mind-thinking methods is effective in UI/UX design for products and services, such as websites and mobile applications. Using the design thinking approach, the study aims to develop mobile-based human resource management applications. Using design thinking, it is expected to increase convenience and create systems that are tailored to needs.

II. LITERATURE REVIEW

A. Human Resource (HR) Management

HR management is a process that involves receiving, utilizing, developing and maintaining workforce or employees to support organizational activities [11]. This process is established by the organization to achieve predetermined goals.

HR management is the science and art of managing the process of utilizing human resources and other resources effectively and efficiently to achieve a certain goal [2]. To increase effectiveness and efficiency, an organization can introduce an integrated HR management system, which includes features such as schedule management, leave and absence management, task management, and employee development [3]. By adopting this approach, organizations can effectively optimize the use of HR and improve overall performance.

B. UI (User Interface)

UI (User Interface) is a term used to describe the appearance of a machine or computer that interacts directly with the user [7]. Apart from that, UI itself can be interpreted as a link between a user and an operating system. UI components according to [12] are consistency, hierarchy, personality, layout, typography, colors, imagery, and control and affordances.

C. UX (User Experience)

UX is an indicator that measures the extent to which users feel comfortable and satisfied in using a system, service or product [13]. In UX, there are 6 important components that need to be known, namely user research, content strategy, information architecture, interaction design, visual design, and usability [14].

D. Design Thinking

Design thinking is an approach method that focuses on human needs in creating innovation, by combining concepts from design to align user needs, technological potential, and the business goals to be achieved [15].

There are five stages in design thinking, including the following [16]:

1) Empathize
Empathize is a stage to get a user's behavior, emotions, experiences and situations.

2) Define
Define is the data collection stage obtained at the empathize stage. The collected data will be analyzed to identify problems that must be resolved.

3) Ideate
Ideate is a collection of ideas that become solutions to answer problems that have been found.

4) Prototype
Prototype is the stage for implementing ideas that have been created into a product or application to produce a usage scenario according to user needs.

5) Test
This stage is tested in a real context by the user using a prototype.

III. RESEARCH METHODOLOGY

A. Research Approach

This research uses a combined research approach, namely a research approach that combines qualitative research with quantitative research to solve research problems [17]. In qualitative research, researchers use data collection methods with literature studies, interviews and observations as well as design thinking methods in the form of empathize, define, ideate, prototype and test stages. The test stage in design thinking is supported by quantitative research in the form of distributing SUS questionnaires so that the results of UI/UX design can be measured using numbers.

B. Determination of Participants

According to [18] in their book entitled "Handbook for Team-based Qualitative Research" stated that problems in research can be found after interviewing only 6 informants. Then [19] recommends taking the number of samples until the saturation point or redundancy is reached. It is called saturation, that is, if the next informant has provided the same information

as the previous informant, then no new information is obtained [20].

Therefore, the researchers decided to involve 6 participants consisting of 1 COO (Chief Operating Officer) and 5 people from the Agronomist department at Habibi Garden. The number of participants was determined at 6 based on information saturation. The author assumes that additional informants are no longer needed because no new information will be obtained.

In this research, the participants conducted interviews and usability testing. The criteria for participants in this research are:

- Have a smartphone with the Android operating system.
- Employees at Habibi Garden from COO (Chief Operating Officer) and Agronomist departments.
- Can provide information regarding the attendance process, reimbursements, salary slip, and assignments while being an employee at Habibi Garden.

C. Design Thinking Method

The following is an explanation of each stage of design thinking used by researchers.

1) Empathize
At this stage the researcher focuses on finding problems experienced by users. At this stage researchers also find out more about user needs. This data was obtained in the data collection process carried out by researchers, namely observation and interviews.

2) Define
At this stage the researcher collects information from data obtained during interviews. From the data of respondents who have been interviewed, a user persona will be created. Problems obtained from existing data will be made into pain points and how might we.

3) Ideate
In the ideate stage, mapping of the application framework will be carried out in the sitemap and user flow processes.

4) Prototype
At this stage the researcher implements the ideas that have been created into a product or application to produce a usage scenario according to user needs. At this stage the researcher will create a low-fidelity wireframe and a high-fidelity wireframe.

5) Test
At this stage, testing is carried out on the design prototype that has been produced and feedback from users is collected. Usability measurements are carried out on three parameters, namely effectiveness, efficiency and satisfaction.
- Effectiveness
- Researchers measure effectiveness by giving tasks to users. Tasks were created by researchers to find out what percentage of tasks were successfully carried out. According to [21] task success indicators are divided into 3 parts:

- Direct (*D*): Respondents complete the task according to the specified path.
- Indirect (*in*): Respondent completes the task but does not follow the specified path.
- Failed (*F*): Respondent failed to complete the assigned task.

The effectiveness calculation formula can be formulated as follows: [22]

$$Effectivenss = \frac{(D + (in \times 0.5))}{Total\ Tasks} \times 100\% \qquad (1)$$

- *Efficiency*

Efficiency measurement is carried out using the task analysis method, where the aim of using this method is to find out how much time is needed to achieve goals. The efficiency calculation formula can be formulated as follows: [22]

$$Time\ based\ Efficiency = \frac{\sum_{j=1}^{R} \sum_{i=1}^{N} \frac{n_{ij}}{t_{ij}}}{NR} \qquad (2)$$

where

N = Number of tasks
R = Number of respondents
n_{ij} = If the task is completed successfully then $n_{ij} = 1$, if it fails then $n_{ij} = 0$
t_{ij} = Time required to complete a task or give up

- Satisfaction

User satisfaction is measured using the SUS (System Usability Scale) method developed by Brooke. The SUS is a questionnaire consisting of 10 question items as shown in the Table 1 [23].

Table 1.
SUS Questionnaire Questions [23]

No.	Questions
1.	I think that I want to use this app more often
2.	I found that the app didn't have to be this complicated
3.	I think this application is easy to use
4.	I think that I will need help from a technical person to be able to use this application
5.	I found several functions in this application to be well integrated
6.	I think there are too many incompatibilities in this application
7.	I imagine that most people will be able to learn this app very quickly
8.	I found this app very difficult to use
9.	I feel very confident to use this application
10.	I need to learn a lot of things before I can start

The formula for calculating the SUS score for each respondent can be formulated as follows: [23]

$$\begin{aligned} SUS\ Score = \big(&(P1 - 1) + (5 - P2) + (P3 - 1) + (5 - P4) + \\ &(P5 - 1) + (5 - P6) + (P7 - 1) + (5 - P8) + \\ &(P9 - 1) + (5 - P10)\big) \times 2.5 \end{aligned} \qquad (3)$$

IV. RESULTS AND DISCUSSION

A. Empathize

The techniques used by researchers at the empathize stage are observation and interviews.

1) Observation

Researchers conducted observations using direct observation at the Habibi Garden office located in Bandung City, West Java. This observation aims to observe routine activities carried out by human resources at Habibi Garden.

2) Interview

Researchers used the recording feature in the Zoom application to record interview activities. Based on the results of the interviews, it was found that problems were often experienced by respondents in carrying out company operational activities. The problems obtained will be discussed at the define stage for further identification.

B. Define

At this stage the author creates user personas, pain points and how might we on FigJam. Then it was analyzed and the following results were obtained:

1) User Persona

Based on the data obtained from the results of previous interviews, analysis was then carried out and produced user personas for each person interviewed, both COO and Agronomist. User persona can be seen in Fig. 2–3.

Biodata
Mustika ensures that company operations run smoothly and efficiently. Mustika's ability to lead teams and manage projects has helped create a collaborative and innovative work environment, thereby strengthening a shared vision and achieving company goals.

Pain Point
- Difficulty knowing the progress of a project
- Sometimes forget to be absent when on duty in the field
- Sometimes it is difficult to find the reimbursement link because it is mixed with assignment links and other links

Goals
- Can find out the progress of a project
- There are reminders for absences
- Ease of applying for reimbursement without via the gform link

Name Mustika
Age 27 Years
Job COO at Habibi Garden

Fig. 2. COO user persona.

Biodata
Yolanda is an employee at Habibi Garden, more precisely part of the Agronomist team. She is always looking for ways to improve productivity, quality and sustainability of agricultural practices.

Pain Point
- have to ask for the gform link first to be able to apply for reimbursement

Goals
Can directly fill in reimbursement data without having to ask for a link

Name Yolanda
Age 23 Years
Job Agronomist at Habibi Garden

Fig. 3. Agronomist user persona.

2) Pain Points

After creating a user persona, next create pain points. Pain points are created based on problems experienced by users. These pain points will then be summarized and prioritized based on their level of importance.

| Difficulty knowing the progress of a project | Sometimes forget to be absent when supervising in the field | Sometimes it is difficult to find the reimbursement link because it is mixed with assignment links and other links |

Fig. 4. Pain points user COO.

Based on Fig. 4, the problems experienced by COOs are the difficulty of knowing the progress of a project, sometimes forgetting to be absent when supervising in the field, and the difficulty of finding reimbursement links because they are mixed up with assignment links and other links.
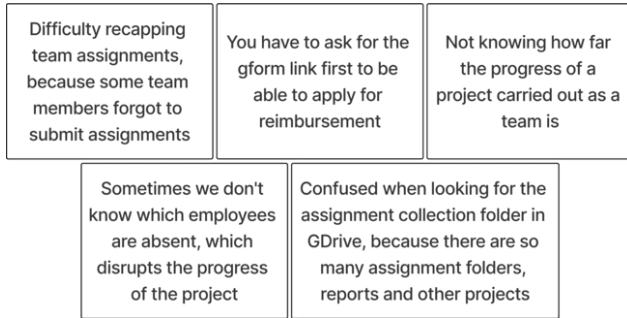

Fig. 5. Pain points user agronomist.

Meanwhile, based on Fig. 5, the problems experienced by Agronomist users are the difficulty of recapping team assignments because there are several team members who forget to submit assignments, having to ask for the google form link first to be able to apply for reimbursement, not knowing the progress of a project being carried out as a team, sometimes not finding out that employees are absent, thus disrupting the progress of the project, confused when looking for the task collection folder in Google Drive because of the large number of task, report and other project folders.

3) How Might We

After identifying the problems experienced by the respondents and creating pain points, then HMW (How Might We) was identified. HMW is created based on the pain points created in the previous stage.
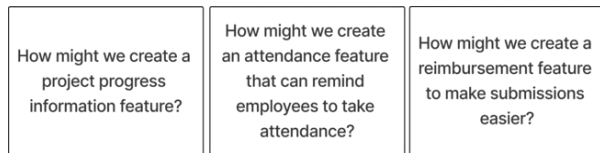
Fig. 6. How might we user COO.
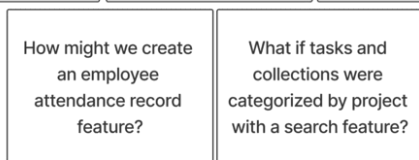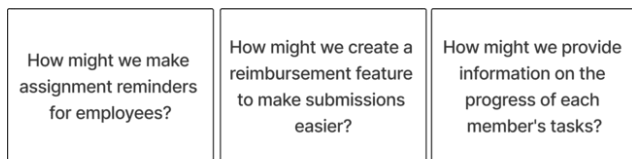
Fig. 7. How might we user agronomist.

C. Ideate

At the ideate stage, the author created a sitemap and user flow for COO and Agronomist users respectively. Before creating a sitemap and user flow, the researcher created a rich picture of the current situation so that operational activities could be depicted at Habibi Garden. The rich picture of the running situation of each activity can be seen in the Fig. 8.
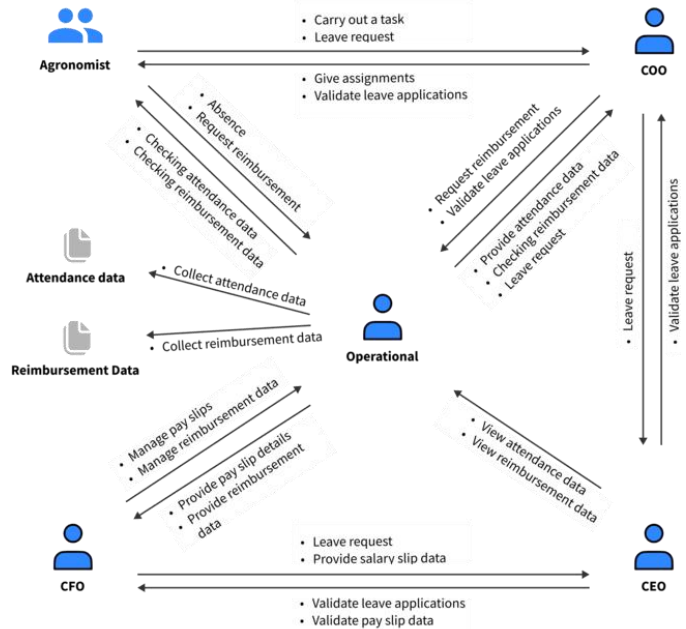
Fig. 8. Rich picture current situation.

After creating a rich picture, the author then created a sitemap and user flow for COO and Agronomist users respectively. Sitemap and user flow created using FigJam.

1) Sitemap
a). Sitemap User COO
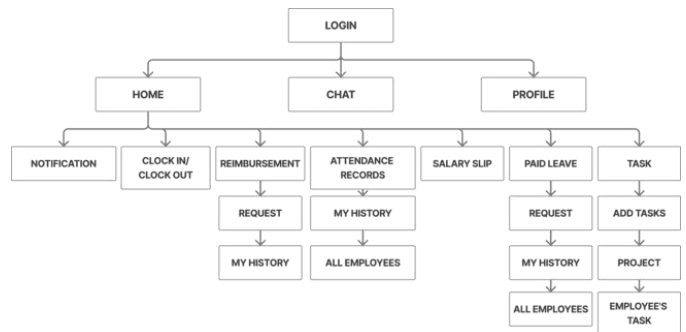
Fig. 9. Sitemap for user COO.

Figure 9 shows that the sitemap for COO users consists of 3 main menus, namely Home, Chat, and Profile.
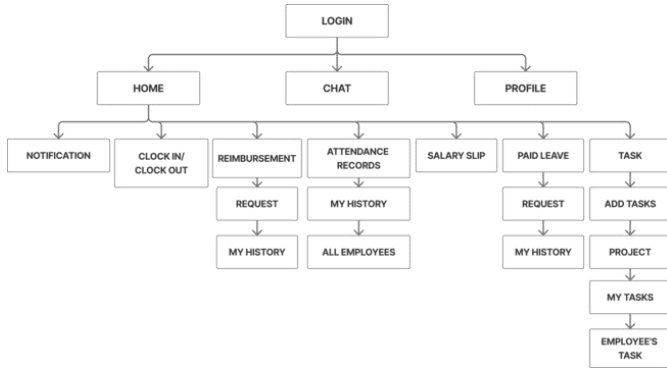
b). Sitemap User Agronomist

Fig. 10. Sitemap for user agronomist.

Figure 10 shows that the sitemap for Agronomist users consists of 3 main menus, namely Home, Chat, and Profile.

2) User Flow
a). User Flow COO
• Clock In

Fig. 11. User flow clock in for COO.

Figure 11 shows that COO must be on the Home page first to be able to do attendance clock in. Data entered into Clock In attendance, namely photo, location and description.
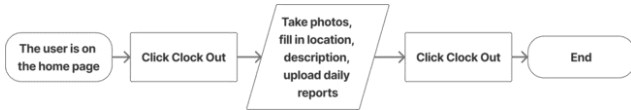
• Clock Out

Fig. 12. User flow clock out for COO.

Figure 12 shows that COO must be on the Home page first to be able to do the Clock Out attendance. The data entered into the Clock Out attendance are photos, location and description, and daily reports.
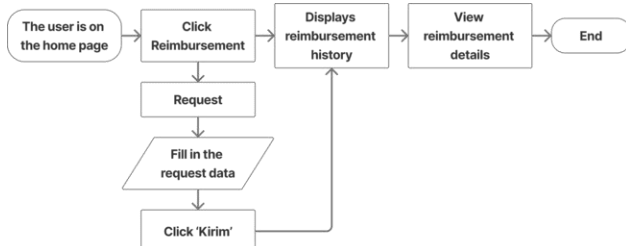
• Reimbursement

Fig. 13. User flow reimbursement for COO.

Figure 13 shows that COO must be on the Home page first to be able to submit and view reimbursement history.

• Attendance Records
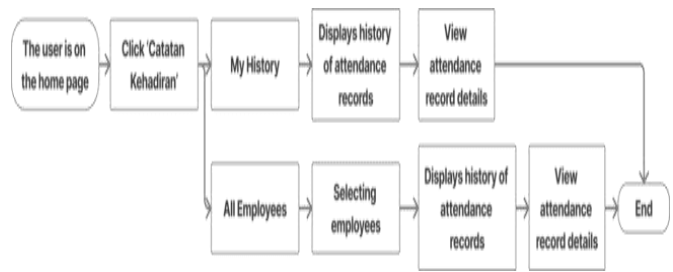
Fig. 14. User flow attendance records for COO.

Figure 14 shows that COO can view the attendance history of both individuals and all employees.

• Salary Slip

Fig. 15. User flow salary slip for COO.

Figure 15 shows that COO must be on the Home page first to be able to see the salary slip based on the selected period.
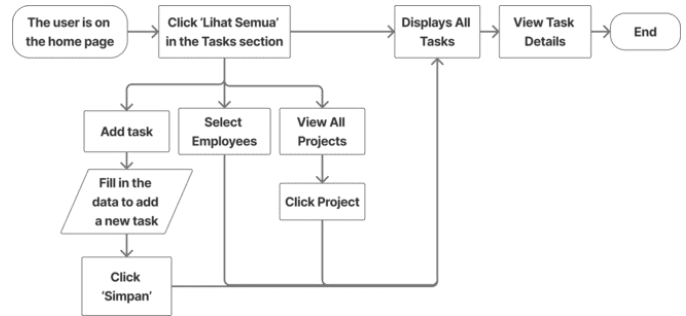
• Task

Fig. 16. User flow task for COO.

Figure 16 shows that COO can create new tasks and view the tasks of all employees as well as ongoing projects.

3) User Flow Agronomist
• Clock In

Fig. 17. User flow clock in for agronomist.

Figure 17 shows that Agronomist users must be on the Home page first to be able to Clock In attendance. Data entered into the Attendance Clock includes photos, location and information.
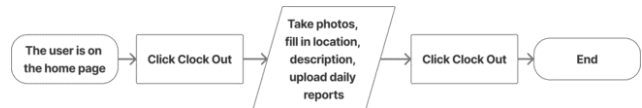
• Clock Out

Fig. 18. User flow clock out for agronomist.

Figure 18 shows that the Agronomist user must be on the Home page first to be able to perform Clock Out attendance. The data entered into the Clock Out attendance are photos, location and description, and daily reports.
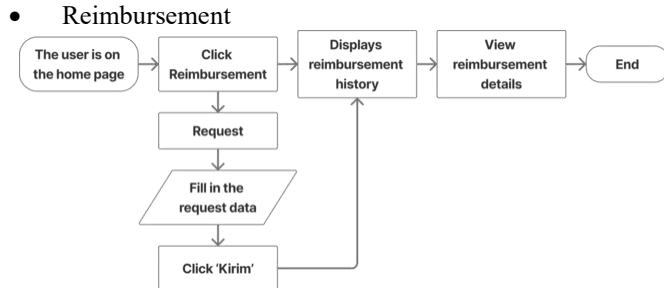
- Reimbursement

Fig. 19. User flow reimbursement for agronomist.

Figure 19 shows that the Agronomist user must be on the Home page first to be able to submit and view reimbursement history.
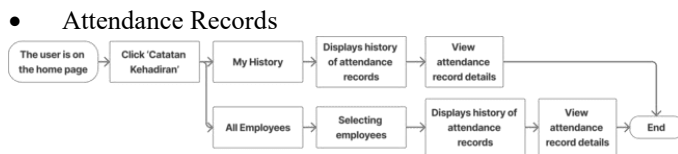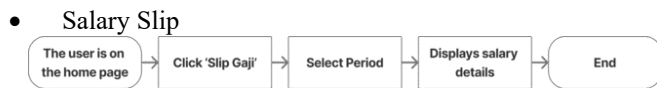
- Attendance Records

Fig. 20. User flow attendance records for agronomist.

Figure 20 shows that Agronomist users can view the attendance history of both individuals and all employees.

- Salary Slip

Fig. 21. User flow salary slip for agronomist.

Figure 21 shows that the Agronomist user must be on the Home page first to be able to see the pay slip based on the selected period.
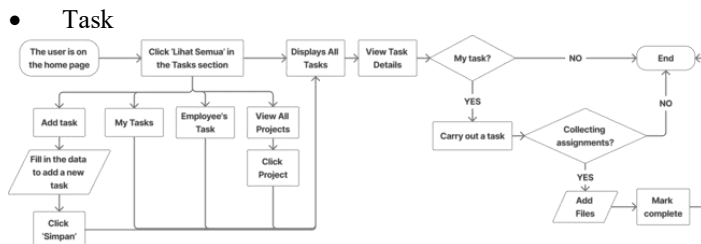
- Task

Fig. 22. User flow task for agronomist.

Figure 22 shows that Agronomist users can receive tasks from the COO and assign tasks to other Agronomist users if they are appointed as the person responsible for a project. Users must be on the Home page first to be able to create a new task. Users can also see the tasks of all employees and ongoing projects. If the user has a task, the user can collect the task by

adding files and marking complete.

D. Prototype

At this stage, 2 types of prototypes are created, namely low-fidelity wireframe and high-fidelity wireframe. Prototypes were made for COO and Agronomist users respectively. Making this prototype using Figma. Before making a prototype, the researcher created a rich picture of the proposed system in order to illustrate how the desired system operates after the HR management application at Habibi Garden. The rich picture of the proposed system can be seen in the Fig. 23.
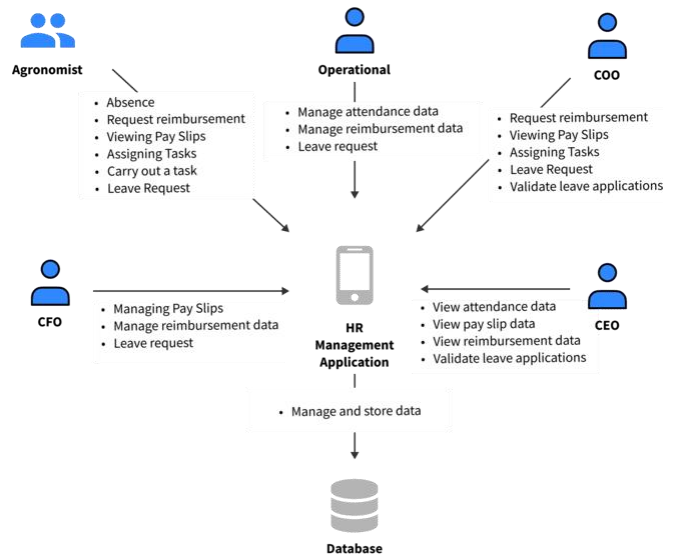

Fig. 23. Rich picture proposed system.

After creating a rich picture of the proposed system, the researcher then created a low-fidelity wireframe and a high-fidelity wireframe for COO and Agronomist users respectively. The wireframe created is mobile based with the Android operating system. Later, the resource management application at Habibi Garden can only be used on the Android operating system with a minimum version of Android 4.1 (Jellybean) and higher versions up to Android 10.
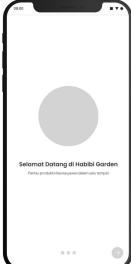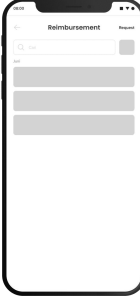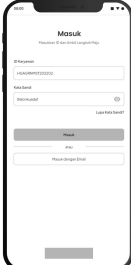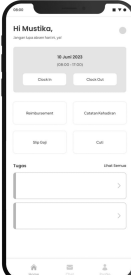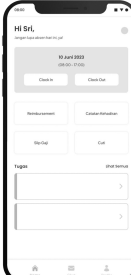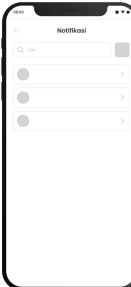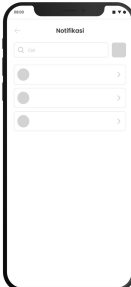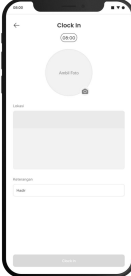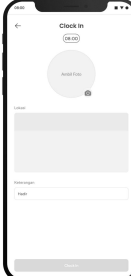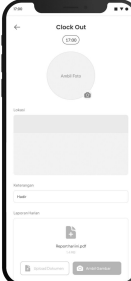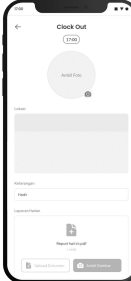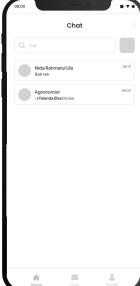
1) Low-fidelity Wireframe

The low-fidelity wireframe of the human resource management application at Habibi Garden can be seen in the Table 2.

2) High-fidelity Wireframe

The high-fidelity wireframe of the human resource management application at Habibi Garden can be seen in the Table 3.

Table 2.
Low-fidelity Wireframe

Page	COO	Agronomist
Splash screen		
Login		
Home		
Notification		
Clock in		
Clock out		
Reimbursement		
Attendance records		
Salary slip		
Paid leave		
Task		
Chat		

Profile

Clock in

Clock out
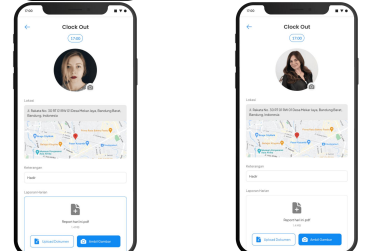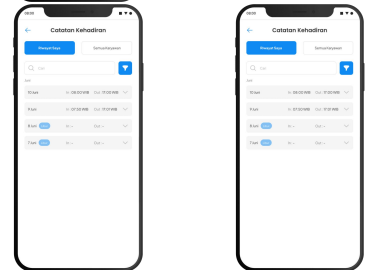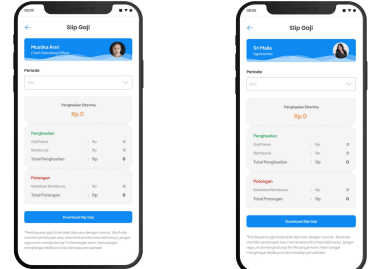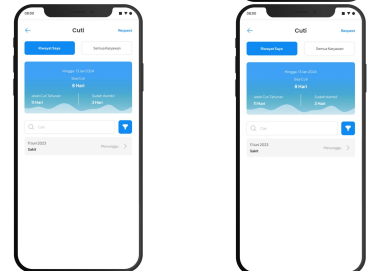
Table 3.
High-fidelity Wireframe

Page	COO	Agronomist
Splash screen		
Login		
Home		
Notification		

Reimbursement

Attendance Records

Salary slip

Paid Leave

Task

Chat

Profile

E. Test

At this stage, testing was carried out on the solution design prototype that had been created on previously determined prospective users, namely 6 participants consisting of 1 COO (Chief Operating Officer) and 5 people from the Agronomist department at Habibi Garden. Because the implementation of this application will be implemented using a gradual approach, testing will be carried out on the features the company needs first. In the initial stage, the features that will be implemented are the features that the company needs. Based on the company's needs, Habibi Garden currently only requires attendance, reimbursement, salary slip and task features. So, in this research, the features that will be tested first are the four features, namely attendance, reimbursement, salary slip, and task.

For the next stage, researchers propose a leave feature. Researchers added the leave feature considering that applications for leave at the Habibi Garden company were still not effective because the application was still made verbally to the COO. This process is considered ineffective because the process is slower when both parties have to meet. Testing uses usability testing where task scenarios are given to users to work on which will be used to calculate the parameters of effectiveness, efficiency and satisfaction.

1) Task Scenario

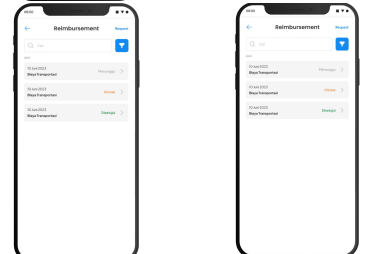The task scenario given is created for 2 groups of users, namely COO users and Agronomist users. Task scenario testing is assisted with the Maze Application.

Table 4.
Task Scenario for User COO

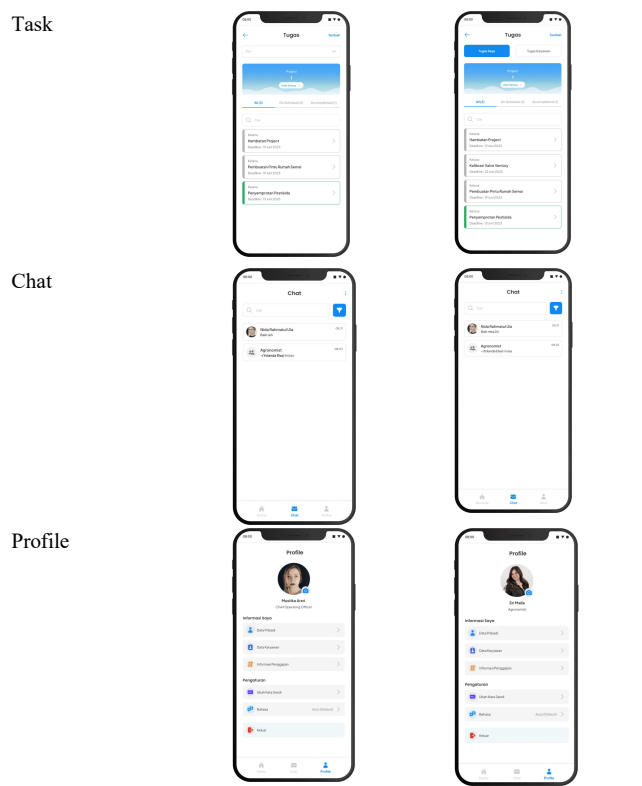| No.	Code	Task	Scenario
1.	TC1	Log in	You are asked to login to the application.
2.	TC2	Clock in	You are asked for clock in absence.
3.	TC3	Clock out	You are asked for Clock Out attendance.
4.	TC4	Reimbursement	You are asked to submit a reimbursement and see the details of the reimbursement history.
5.	TC5	Attendance records	You are asked for: 1. Enter my history in the attendance menu. 2. Click "Filter" and filter based on the date. 3. See the details of Clock In & Clock Out on June 10. 4. Enter all employees. 5. Select the employee "Bintang Nurramadhan". 6. See the details of Clock In & Clock Out on June 10. 7. Click "Filter" and Filter based on the "Today" time and the presence "does not enter". 8. See detailed clock in & clock out.
6.	TC6	Salary slip	You are asked to see and download your salary slip this month.
7.	TC7	Task	You are asked for: 1. See tasks. 2. Add tasks. 3. See employee duties. 4. See Project and Add Project.
8.	TC8	Profile	You are asked to access the profile to log out.

Table 5.
Task Scenario for User Agronomist

No.	Code	Task	Scenario
1.	TA1	Log in	You are asked to login to the application.
2.	TA2	Clock in	You are asked for clock in absence.
3.	TA3	Clock out	You are asked for Clock Out attendance.
4.	TA4	Reimbursement	You are asked to submit a reimbursement and see the details of the reimbursement history.
5.	TA5	Attendance records	You are asked for: 1. Enter my history in the attendance menu. 2. Click "Filter" and filter based on the date. 3. See the details of Clock In & Clock Out on June 10. 4. Enter all employees. 5. Select the employee "Bintang Nurramadhan". 6. See the details of Clock In & Clock Out on June 10. 7. Click "Filter" and Filter based on the "Today" time and the presence "does not enter". 8. See Clock In & Clock Out details.
6.	TA6	Salary slip	You are asked to see and download your salary slip this month.
7.	TA7	Task	You are asked for: 1. See my task. 2. See details and submit tasks. 3. See employee duties. 4. Add tasks. 5. Select the employee "Bintang Nurramadhan" and see their

duties.
6. Enter the Project page.
7. Add Project.
8. Enter the Kelana Project.

| 8. | TA8 | Profile | You are asked to access the profile to log out. |

2) Effectiveness

Measuring effectiveness is seen from the percentage of tasks that are successfully carried out. The value is obtained from the formula in the Maze tool.

Table 6.
Measuring The Effectiveness of COO User Prototypes

Resp.	Task Success							
	TC1	TC2	TC3	TC4	TC5	TC6	TC7	TC8
R1	D	D	D	D	D	D	*In*	D

Based on the Table 6, it is known that from the 8 tasks given, the COO user succeeded in completing tasks according to the specified path for 7 tasks and completed tasks but did not follow the specified path for 1 task. The effectiveness testing results are then entered into a formula to determine the level of effectiveness of using the application. The calculation of effectiveness value for COO users according to (1):

$$Effectiveness = \frac{(7 + (1 \times 0.5))}{8} \times 100\%$$
$$= \frac{(7 + (0.5))}{8} \times 100\% = 93.75\%$$

Based on these calculations, the COO user effectiveness parameter value is 93.75%.

Table 7.
Measuring the Effectiveness of Agronomist User Prototypes

Resp.	Task Success							
	TA1	TA2	TA3	TA4	TA5	TA6	TA7	TA8
R1	D	D	D	D	D	D	*In*	D
R2	D	D	D	D	*In*	D	*In*	D
R3	D	D	D	D	D	*In*	*In*	D
R4	D	D	D	D	D	D	*In*	D
R5	D	D	D	D	D	D	*In*	D

Based on the Table 7, it is known that of the 40 tasks given, Agronomist users succeeded in completing tasks according to the predetermined path for 33 tasks and completed tasks but did not follow the predetermined path for 7 tasks. The effectiveness testing results are then entered into a formula to determine the level of effectiveness of using the application. The calculation of effectiveness value for Agronomist users accroding to (1):

$$Effectiveness = \frac{(33 + (7 \times 0.5))}{40} \times 100\%$$
$$= \frac{(33 + (3.5))}{40} \times 100\% = 91.25\%$$

Based on these calculations, the agronomist user effectiveness parameter value is 91.25%.

3) Efficiency

The measurement of efficiency is seen from the time it takes respondents to complete the task. Researchers can find out how much time respondents need to complete the task using the Maze tool which is connected to Figma.

Table 8.
COO User Prototype Efficiency Measurement

Resp.	Tasks (s)							
	TC1	TC2	TC3	TC4	TC5	TC6	TC7	TC8
R1	27,2	16,2	13,1	46,7	57,3	14,3	102,2	29,4

Time based efficiency

$$= \frac{\frac{1}{27.2} + \frac{1}{16.2} + \frac{1}{13.1} + \frac{1}{46.7} + \frac{1}{57.3} + \frac{1}{14.3} + \frac{1}{102.2} + \frac{1}{29.2}}{8 \times 1}$$
$$= \frac{0.33}{8} = 0.04$$

Based on these calculations, the COO user efficiency parameter value is 0.04 goals/sec.

Table 9.
Agronomist User Prototype Efficiency Measurement

Resp	Tasks (s)							
	TA 1	TA 2	TA 3	TA 4	TA 5	TA 6	TA 7	TA 8
R1	37,1	15,1	9,2	15,1	74,6	7,9	121,1	33,6
R2	21,0	7,0	7,1	8,9	33,6	6,2	111,4	45,5
R3	23,6	13,7	19,0	41,4	66,3	7,6	117,4	47,9
R4	13,5	9,0	7,0	11,0	43,3	7,7	63,9	32,1
R5	55,9	44,7	28,2	50,1	111,4	28,8	178,0	67,6

Time based efficiency

$$= \frac{\frac{1}{37.1} + \frac{1}{15.1} + \frac{1}{9.2} + \frac{1}{15.1} + \frac{1}{74.6} + \cdots + \frac{1}{178} + \frac{1}{67.6}}{8 \times 5}$$
$$= \frac{2.24}{40} = 0.06$$

Based on these calculations, the Agronomist user efficiency parameter value is 0.06 goals/sec.

4) Satisfaction

Satisfaction is an aspect that expresses user satisfaction after using the system. Satisfaction is calculated using the score obtained from the SUS questionnaire that users fill out after completing all tasks. The results of the questionnaire for which the data has been taken are then calculated using a predetermined formula to obtain the SUS score.

Table 10.
SUS User COO Score Calculation Results

Resp.	Questions	SUS Score

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	
R1	5	2	5	2	5	2	4	2	4	3	88
Average SUS Score											88

The average SUS score for COO user interface design is 88, which based on the letter grades in Fig. 24 is included in the excellent category and is at grade B.
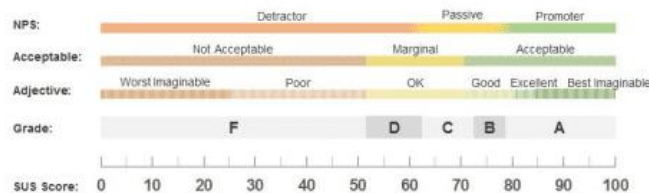

Fig. 24. Letter Grades

Table 11.
SUS User Agronomist Score Calculation Results

Resp.	Questions										SUS Score
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	
R1	5	2	4	2	4	2	4	2	4	3	80
R2	5	3	4	2	4	2	4	1	5	2	80
R3	5	3	4	1	4	2	4	2	4	1	75
R4	5	2	5	2	4	2	4	2	4	1	78
R5	4	1	4	2	5	2	4	1	4	2	73
Average SUS Score											77

The average SUS score for the Agronomist user interface design is 77, which based on the letter grades in Fig. 24 is included in the good category and is at grade B. This assessment explains that the human resource management application that has been designed has good usability and can accepted by the user.

V. CONCLUSION

This study creates a UI/UX design for a mobile-based HRM application in Habibi Garden. The design thinking methodology guided its creation, incorporating user-specific features such as assignments, pay slips, attendance, and reimbursement. We test the application using the usability method.

The UI/UX design for Habibi Garden's human resource management application included consistency, hierarchy, personality, layout, typography, colors, imagery, and control. UX components included user research, content strategy, information architecture, interaction design, visual design, and usability testing. The process involved user interviews, content strategy, sitemap, user flow, wireframe prototypes, and visual design elements.

Design thinking produces effective interface designs, with 93.75% effectiveness for COO users and 91.25% efficiency for agronomist users. Efficiency parameters are 0.04 goals/sec for COO users and 0.06 goals/sec for agronomist users. User satisfaction is high, with an average of 88 for COO users and 77 for agronomist users.

REFERENCES

[1] S. Hasibuan, *Manajemen Sumber Daya Manusia: Pendekatan Non Sekuler*. Surakarta: Muhammadiyah University Press, 2000.
[2] M. S. P. Hasibuan, *Manajemen Sumber Daya Manusia*. Jakarta: Bumi Aksara, 2008.
[3] G. Dessler, *Human Resource Management*. New York: Pearson, 2019.
[4] S. Tsauri, *MSDM (Manajemen Sumber Daya Manusia)*. Jember: STAIN Jember Press, 2013.
[5] A. M. Lukman & D. Aryanto, "Aplikasi Edukasi Ekosistem Pengenalan Dunia Hewan Untuk Anak Usia Dini Berbasis Android," *Jurnal Sains Dan Manajemen*, vol. 7, no. 2, pp. 58–65, 2019.
[6] Amimah, "Evaluasi User Interface (UI) dan User Experience (UX) aplikasi JRku menggunakan User Centered Design (UCD)," B.S. Thesis, Dept. Information Systems, UIN Syarif Hidayatullah Jakarta, Indonesia, 2021. [Online]. Available: https://repository.uinjkt.ac.id/dspace/handle/123456789/56457
[7] M. N. E. Ghiffary, T. D. Susanto, & A. Herdiyanti, "Analisis komponen desain layout, warna, dan kontrol pada antarmuka pengguna aplikasi mobile berdasarkan kemudahan penggunaan (studi kasus: aplikasi olride)," *Jurnal Teknik ITS*, vol. 7, no. 1, pp. 143–148, 2018.
[8] R. A. Almayda, "Perancangan UI/UX aplikasi ayo beraksi (belawan bersih anti korupsi) dengan metode design thinking," *Automata*, vol. 3, no. 2, pp. 1–8, 2022.
[9] J. Brooke, "SUS: A retrospective," *Journal of Usability Studies*, vol. 8, no. 2, pp. 29–40, 2013.
[10] I. G. N. D. Paramartha, et. al, "Perancangan UI/UX aplikasi banten online menggunakan metode design thinking," *Jurnal Teknologi Informasi dan Komputer*, vol. 9, no. 2, pp. 166-177, 2023.
[11] Hasmin & J. Nurung, *Manajemen Sumber Daya Manusia (MSDM)*. Solok: Mitra Cendekia Media, 2021.
[12] T. Schlatter & D. Levinson, *Visual Usability: Principles and Practices for Designing Digital Applications*. Waltham: Elsevier, 2013.
[13] D. D. Maharani, "Perancangan user experience menggunakan metode design thinking pada prototype website sedekah jumat barokah," B.S. Thesis, Dept. Informatics, UIN Syarif Hidayatullah Jakarta, Indonesia, 2021. [Online]. Available: https://repository.uinjkt.ac.id/dspace/handle/123456789/64966
[14] J. J. Garrett, *The Elements of User Experience: User Centered Design for The Web and Beyond*, 2nd Edition. Berkeley: New Riders, 2011.
[15] D. Kelley & T. Brown, *An introduction to Design Thinking*. Institute of Design at Stanford, 2018.
[16] H. Plattner. "An Introduction to Design Thinking PROCESS GUIDE." Standford.edu. https://web.stanford.edu/~mshanks/MichaelShanks/files/509554.pdf (accessed Sep. 14, 2024).
[17] J. W. Creswell, *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative*. Boston: Pearson Education, 2012.
[18] G. Guest & K. M. Macqueen, *Handbook for Team-Based Qualitative Research*. New York: Altamira Press, 2008.
[19] N. Muhadjir, Metodologi Penelitian: Paradigma Positivisme Objektif, Phenomenologi Interpretif, Logika Bahasa Platonis, Chomkyist, Hegelian & Hermeneutik, Paradigma Studi Islam, Matematik Recursion, Set-Theory & Structural Equation Modeling dan Mixed Edisi VI Pengembangan (6th Ed.). Yogyakarta: Rake Sarasin, 2011.
[20] S. J. Gentles, et. al, "Sampling in Qualitative Research: Insights from An Overview of The Methods Literature," *The Qualitative Report*, vol. 20, no. 11, pp. 1772–1789, 2015.
[21] F. S. Hamza, H. Tolle & I. Arwani, "Perancangan pengalaman pengguna aplikasi percetakan pt. ajitama berbasis mobile dengan metode design thinking," *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer*, vol. 5, no. 10, pp. 4645–4657, 2021.
[22] T. K. Situmorang, H. M. Az-Zahra & A. D. Herlambang, "Evaluasi usability pada aplikasi m-kantorpos dengan menggunakan metode usability testing," *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer*, vol. 3, no. 5, pp. 4349–4356, 2019.
[23] F. Fariyanto & F. Ulum, "Perancangan aplikasi pemilihan kepala desa dengan metode ux design thinking (studi kasus: kampung kuripan)," *Jurnal Teknologi dan Sistem Informasi (JTSI)*, vol. 2, no. 2, pp. 52–60, 2021.