



Designing a mobile sales application at Setra farma pharmacy in the era of the covid-19 using the goal-directed desing method

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ARTICLE INFO	ABSTRACT
<p><i>Article history:</i></p> <p>Received Aug 8, 2022 Revised Aug 25, 2022 Accepted Sep 17, 2022</p>	<p>Setra Farma Pharmacy is a company that handles product and servicesn by providing services in the form of pharmaceutical servies. Setra Farma pharmacies like the accumulation of queues of buyers and the absence of queue numbers especially in Covid-19 is very prone to infection. With this, Apotek Setra Farma wants to develop a mobile-based sales application to assist patients in finding and ordering drugs. This study uses the Goal-Directed Design method with prorotype testing using the single ease question method. When testing the user will be given a task that is rated on a 1-7 point linkert scale. The result of this research is the user interface application mobile that can be used at the Setra Farma Pharmacy. The final results obtained after testing the prototype with 5 users showed a score of 6.6 on the linkert scale of 1-7 points,which means the application is easy for users to use.</p> <p style="text-align: right;"><i>This is an open access article under the CC BY-NC license.</i></p>
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1. INTRODUCTION

Over time, technology will become more sophisticated and developed. One of them is selling *door to door* or door to door, then face to face between buyers and sellers. Currently, almost all sales are digital and online so that buyers and sellers no longer need to meet but use digital media. The current change is caused by the increasing use of digital media. The use of digital media can provide users with the convenience of online shopping, which can be done anytime, anywhere. In addition, digital media allows users to interact in more detail with the products offered, especially in the form of *mobile* (Ayni et al., 2020)

However, since the beginning of 2020, the whole world including Indonesia has been affected by the *Covid-19 pandemic*. Since then, the Indonesian government has announced policies to restrict the movement of its citizens.data from the *Ministry* on March 11, 2020, the World Health Organization (WHO) has officially announced the

Covid-19 as a pandemic. From January 3, 2020 to March 18, 2022, there were 5,948,610 cases of *Covid-19* in Indonesia and a total of 153,411 people died. With so many cases of *Covid-19*, business people can use technology such as *mobile* and *smartphone* to sell *online*. applications *Mobile* very useful and can be a solution for business people to achieve sales during the pandemic (Kom et al., 2021).

Based on the advantages offered by *mobile* and the current state of the *Covid-19*, Setra Farma Pharmacy is also considering the need for a *mobile application*. The Setra Farma application is a place to sell medicines, products that are usually available at pharmacies and can also mix doctors' medicines. Setra Farma Pharmacy is located on Jl. Veteran No. 22 Kec. Purwakarta Kab. Purwakarta West Java 41115. Setra Farma Pharmacy wants a *mobile* to make it easier for patients to find and order drugs at Setra Farma Pharmacy. In addition, Setra Farma Pharmacy experienced a buildup of queues of buyers and the absence of queue numbers. In this *Covid*, if you have to gather with many people, it is possible to get infected. The buildup of the queue makes buyers wait to buy the necessary drugs and also to mix drugs, buyers are asked to wait first, waiting to mix drugs for a long time for buyers who are in a hurry.

Based on these problems, researchers will create a *user interface* application *mobile* Setra Farma Pharmacy

2. METHOD

According to Cooper (2007), *Goal-Directed Design* is a system interaction design approach that focuses on the needs and goals that users want to achieve when interacting with the system (Putri et al., 2020).

According to Nielsen (2012), *Goal-Directed Design* is a method aimed at users and is based on observing user behavior and providing design insights (Ayni et al., 2020).

According to Cooper, et all (2012), the *goal-directed design* also provides detailed steps in each process so that ambiguity in *user interface* can be eliminated so that the objectives can be described as best as possible. This approach is needed to create the right design solution, because there are still many products that are not presented to users because the company does not focus on meeting user needs and creating products. Design solutions are quite difficult to use and control (Ayni et al., 2020). This study uses an Objective-Driven Design approach. The concept of goal-directed design is to emphasize user goals in interface design, so it is hoped that the system created will be easy to use (Alan, Reimann and Cronin, 2007) in (Pamungkas, 2021). The *goal-directed design method* has several *phases* including:

2.1 Research

The research is a *phase* to get all the needs and conditions desired by the user. In *the research phase*, direct observations are made to the field to identify user needs and also to be able to complement the results of the literature study. The results of *phase* are the results of research that has been carried out. At this stage, observations and interviews were carried out, the researchers would go directly to the location, namely the Setra Farma Pharmacy which is located on Jl. Veteran number 22 Nagri Kaler. Researchers interviewed *stakeholders* and users. Stakeholders here are pharmacists and pharmacy technicians, and users are people who buy drugs from setra pharmacies and people who know the design well.

2.2 Modelling

The modeling phase is carried out to create a model based on who the users are and how they interact with the product. The result of *phase* is the modeling of user characteristics and modeling the interactions that the user builds with his environment. In *the modeling phase*, *user personas are created* Personas can help researchers understand the goals of users who will use the product as well as provide an overview to users of how users

behave when using products or services in the future (Kusuma et al., 2020). At this modeling stage, the user's personality is divided into 2 according to their roles, namely stakeholders and users. Personality can be determined from demographics, skill sets and backgrounds, activities, motivations and goals, needs, and pain. The purpose of user personality is to define user personality to be used as an approach in designing a system. In the user interaction modeling stage, the goal is to visually describe the steps a user takes to achieve a goal.

2.3 Requirements

The requirements phase is carried out to determine the needs of each existing personality. data obtained from images when the person uses the system. The result of *the requirements phase* is a requirements definition that weighs the user, business, and engineering requirements of the required design. In *the requirements phase*, the scenario context definition, drug purchase scenario and prescription redemption scenario are made. Then do a tag sort to get a list of needs and tag sorting results, such as getting content and categories. The result of tag classification will be described as Hierarchical Task Analysis (HTA). This HTA will be used by researchers as a reference for the next step.

2.4 Framework

The framework phase is carried out to design framework interactions using visual tools. In the framework phase, define existing functionality elements, such as *wireframes*. *Wireframes* describe how users interact with the system. *The framework phase* leads to a stable design concept and provides a detailed formal structure. In *the framework phase*, defining the interaction of the framework, and the design is stable but still a low fidelity wireframe or drawing design to define the layout before moving on to design and requires high fidelity.

2.5 Refinement

The refinement phase is carried out to refine the design details by making prototypes with high accuracy. Improvements were made to design details, such as adding colors and adding details so that the system can interact with users.

2.6 Support

The support phase is carried out to test and evaluate the user interface carried out to obtain valid values that are applied to the development or implementation phase. Develop user interface that was developed to test prototypes, evaluate prototypes with a single ease question, analyze test results and determine whether there is an increase in usability and to measure the ease felt by users (Muliawati et al., 2021)

2.7 Single Ease Question

Single Ease Question (SEQ) is a test method used to measure the ease felt by users after completing a given task (Sauro and Lewis, 2012) in (Romadhanti & Aknuranda, 2020). Simple questions consist of 1 question with a Likert scale from 1 to 7 choices, namely: very difficult, difficult, not easy, enough. Not difficult, not easy. And very easy (Romadhanti & Aknuranda, 2020)

Single Proficiency Question is a test that is carried out after the test taker completes each task given. Examiners will ask participants to rate globally their ease of performing a given task on a seven-point scale (Sauro and Lewis, 2012) in (Ramadhan et al., 2021)

When testing simple questions, documents that stimulate user research and data profiling are performed. The user stimulus contains a list of questions. The purpose of making user research stimuli is to help and facilitate researchers when testing prototypes, what researchers need to do is the availability of user research stimuli.

Furthermore, the data record contains user data such as name, age, occupation and place of residence, as well as several questions that will be asked during prototype testing. By testing the prototype, the researcher prepared 5 tasks to which the user would respond and gave a score from 1 to 7. The Likert scale has 2 ends which are represented from left to right, which is very difficult to have a Likert score of 1 and very easy to have a Likert value of 7 from the average. average for each task.

3. RESULTS AND DISCUSSION

3.1 Research

At the Research stage, it begins with observing and collecting data obtained from interviews with the Setra Farma Pharmacy Pharmacists and Pharmaceutical Technical Personnel as Stakeholders and patients or buyers as users. The results of the interviews will be used as a basis for needs analysis for application design and determine the scope of the expected development results.

In gathering information on needs, interviews were conducted with the Setra Farma Pharmacy Pharmacists and Pharmaceutical Technical Personnel as stakeholders and 5 patients or buyers as well as people who understand the design as users. The results of this interview gain an understanding of the limitations and objectives of the application that the researcher will develop. The following are the results of interviews from stakeholders and users

Table 1. Results of interviews with stakeholders

No	Topic Question	Conclusion Answers
1	The beginning of the establishment of the Setra Farma Pharmacy	The beginning of the establishment of the Setra Farma Pharmacy in 2003. From 2006 until now, Mr. Dedy is in charge of the Setra Farma Pharmacy
2	Number of employees at the Setra Farma Pharmacy	Employees who working at the Setra Farma Pharmacy totaling 12 employees
3	Apart from drugs, what is there at the Setra Farma	Pharmacy Apart from drugs Setra Farma Pharmacy also provides medical devices, blood checks, cholesterol, uric acid and prolans prescriptions
4	Business process flow at the Setra Farma	Pharmacy Like the pharmacy in generally, come to the pharmacy to buy drugs or products needed or to redeem prescription drugs. In terms of redeeming prescriptions, the Setra Farma Pharmacy also cooperates with the puskesmas, where the puskesmas will collect all the prescriptions which will later be delivered or taken by the Setra Farma Pharmacy. In addition, Setra Farma Pharmacy cooperates with manufacturers in terms of meeting their drug needs or to redeem drug prescriptions. Cooperation with this factory is called <i>inheatt</i> .
5	Does the Setra Farma Pharmacy already have an online application for purchasing drugs?	For now, Setra Farma Pharmacy does not yet have an application, but we want to speed up the project for making the application.
6	Your opinion, if the purchase of drugs is done online	It can make it easier for pharmacy employees and can make work time efficient
7	Do you like the queue	Yes, you like the accumulation of buyers

8	Features what must be available in the application	The redeem prescription feature, because it can help buyers, making it easier and not having to queue at the pharmacy
9	Suggestions for design	The dark blue color is the color of the Setra Farma Pharmacy
10	Are there complaints from patients who buy drugs in stores	Sometimes the drug needed by the buyer is not available at the Setra Farma Pharmacy
11	Hope	Is that it can be developed again into a finished application and can be used at the Setra Farma Pharmacy

Table 1. Results of interviews with users

No	Topic Questions	Conclusion Answers
1	Do you like using online applications?	<ol style="list-style-type: none"> 1. Like it, because it is more practical and easier if the purchase is made online 2. Like it, because it can be used anywhere
2	If the purchase of medicine is made online, can it help?	<ol style="list-style-type: none"> 1. It can help, because buying drugs online is very helpful in an emergency 2. Very helpful, because we don't have to wait long in line at the pharmacy
3	What kind of application do you want	<ol style="list-style-type: none"> 1. An application that can remind you to take medicine and can redeem prescriptions automatically online 2. User friendly application, comfortable to use, easy to understand by users, and uncomplicated flow of application usage
4	There is a need for an assessment in the drug	<ol style="list-style-type: none"> 1. It is necessary, so that the next buyer knows the drug and makes it a reference 2. It is necessary, so that users can know the quality of the drug and find out information available in the drug
5	Expectations in product use	<ol style="list-style-type: none"> 1. The hope is that it can be redeveloped into a ready made application that can be used 2. Can be more helpful when there is an emergency
6	Suggestions On	<ol style="list-style-type: none"> 1. Application design that is easy to understand 2. Displays that are simple and comfortable to see 3. Can get voucher for the next drug 4. Illustration of images that don't take up a lot of places, are interesting and match the color of the application to make it comfortable to see 5. Categories of drugs according to the disease to make it easier to search
7	Goals	<ol style="list-style-type: none"> 1. To get health services 2. Purchase drugs
8	Motivational	<ol style="list-style-type: none"> 1. Informative application 2. Easy to understand 3. Easy to use

4. User friendly
5. Complete features or services
6. The quality of the medicine given is using the best quality

3.2 Modelling

At the Modeling stage, namely the creation of a user persona. This step analyzes the data obtained from the results of the Research step.

Making user personas to classify users based on data obtained by researchers during interviews at the research stage. User Personas contain six variables that describe user characteristics, namely demographics, device and platform expertise, activities, motivations and goals, needs, and pain.

	Nama : Wanda Rachmawati Tempat, Tanggal Lahir : Subang, 14 Desember 1998 Umur : 28 Tahun Tempat Tinggal : Maracang, Purwakarta Jenis Kelamin : Perempuan Pekerjaan : Tenaga Teknis Kefarmasian
Activity Wanda merupakan karyawan dari Apotek Setra Farma, selain menjadi karyawan di Apotek, wanda juga merupakan seorang mahasiswa semester 6 di universitas terbuka. Penumpukan pembeli kerap terjadi di Apotek Setra Farma yang membuatnya kewalahan dan kurangnya waktu istirahat. Dengan adanya aplikasi online yang mudah dimengerti dan nyaman ketika digunakan serta dapat mengefisienkan waktu	
Device & Platform Expertise 1. Dapat menggunakan aplikasi online 2. Dapat menggunakan handphone	
Motivation & Goals 1. Aplikasi online yang dapat membantunya 2. Aplikasi yang mudah dimengerti dan nyaman ketika digunakan	
Need Aplikasi online yang mudah dimengerti dan nyaman ketika digunakan	Pain Suka adanya penumpukan pembeli di Apotek Setra Farma

Figure 1. User Persona Skaholder


	Nama : Rita Sartika Tempat, Tanggal Lahir : Bandung, 03 Juli 1972 Umur : 49 Tahun Tempat Tinggal : Maracang, Purwakarta Jenis Kelamin : Perempuan Pekerjaan : Ibu Rumah Tangga
Activity Selain menjadi ibu rumah tangga, rita kerap kali membuat kue untuk dititipkan ke warung-warung sekitar rumahnya. Rita berjalan kaki dari 1 warung ke warung lainnya. Yang membuat kakinya terasa sakit namun terkadang rita melupakan jadwalnya untuk meminum obat, sehingga jadwal meminum obat tidak teratur. Rita menginginkan aplikasi yang dapat membantunya namun mudah dimengerti	
Device & Platform Expertise 1. Dapat menggunakan aplikasi online 2. Dapat menggunakan handphone	
Motivation & Goals 1. Dapat membantu untuk mengingatkan jadwal meminum obat 2. aplikasi yang mudah dipahami	
Need Aplikasi yang dapat mengingatkan jadwal meminum obat dan aplikasi yang mudah dimengerti	Pain Suka lupa untuk meminum obat, terkadang tidak ingat sudah meminum obat atau belum

Figure 2 User persona user

3.3 Requirements

After creating user characters in the modeling phase and then in the requirements phase, context scenarios, tag categorization, and hierarchical task analysis are performed. Creating a scenario context that is useful for tag classification is useful for getting a list of user requirements and the results of tag classification will be described as a hierarchical task analysis.

This stage defines the context of the scenario and defines the content requirements that will describe the functionality based on the results of user personality and interviews from the previous step. The result of the request creates a scenario context.

Table 2. Definition of content requirements

No.	Description of content requirements	Domain / Content
1	Provides services to change profiles, passwords and add recipient addresses	Account Settings
2	Provides chat services on the setra farma mobile	Chat
3	Displays information about the application	Privacy policy
4	Displays information about questions asked not understood by users when using the	FAQ
5	Provide complete and clear drug-related information	Details of the drug
6	Provide information about the user	Profile
7	Provide information on the latest information in the setra farma mobile	Notification
8	Display what users are looking for in the setra farma mobile application	Search bar
9	Displays the user's recipient address information Recipient	Address
10	Displays information on the drug or product that has been selected and will be paid	Details of the drug that has been selected
11	Provides service points to be collected and can be exchanged for vouchers er	Point
12	Provide information on the status of drug or product	Orders. Drug order status
13	Provide online prescription redemption services on the Setra Farma mobile application	Redeem prescriptions
14	shipping costs	Voucher
15	Display information about drugs or products that have been previously purchased	Drug order history
16	Providing information on drug taking schedule Drug	Schedule
17	Providing services for logging in to accounts	Entering accounts

Then, from the list of content requirements, the open card technique was applied to 2 stakeholders to determine the appropriate content categories, and the close card technique was applied to 5 users to identify the appropriate information structure components. The results of the application of card sorting produce a hierarchical task analysis. The following is a hierarchical task analysis in the form of a diagram which aims to produce an information structure design that will be used as a reference.

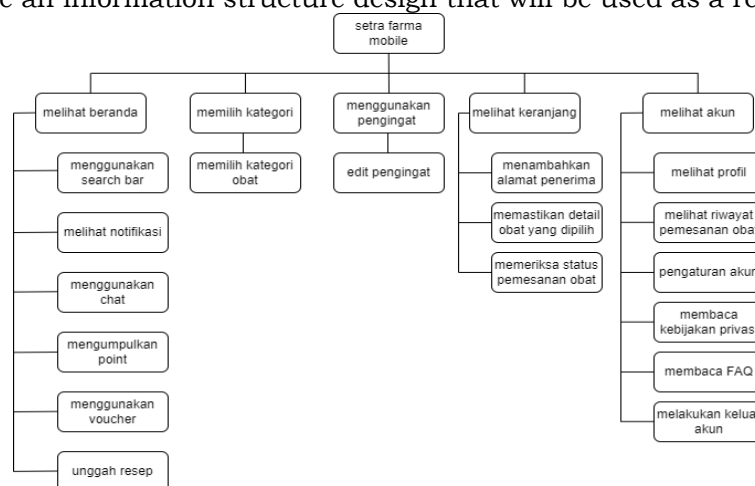


Figure 3. Hierarchical Task Analysis Application

3.4 Framework

The purpose of interface design is to explain how the arrangement obtained in the previous step becomes information in the form of a sketch or wireframe. Interface design will be done according to the compiled domain or content. The following is the result of the framework, which is in the form of a wireframe of information that has been obtained and presented in the form of an interface design. The wireframe interface provides a wide range of applications by prioritizing the placement of existing functionality. Wireframe includes landing page, account login page, account list, code verification, redeem prescription, home page, overall category, drug category, medication details, medication schedule reminder, and shopping cart.

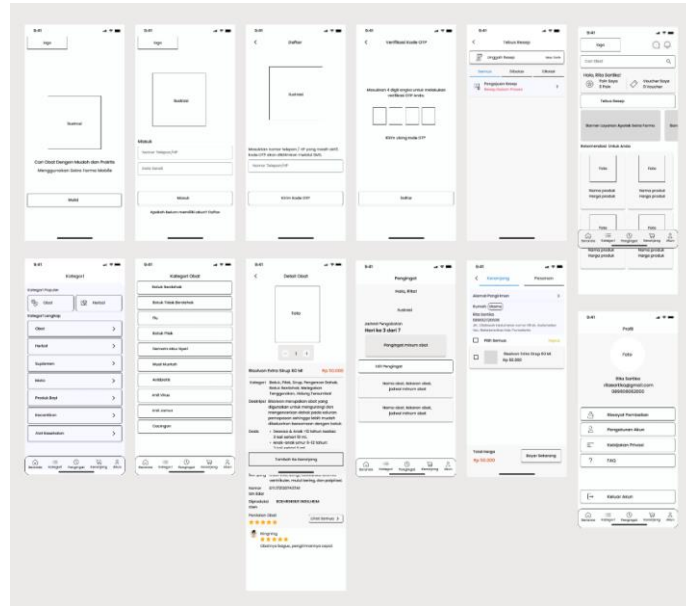


Figure 4. Wireframe Application

3.5 Refinement

Wireframe that has been made in the previous stage is continued to the design refinement stage, which is to become a prototype. The result of this step is a high fidelity prototype. A high-fidelity prototype is a refined design that approximates the shape of the final product and is fully interactive or describes the overall core functionality of the product.

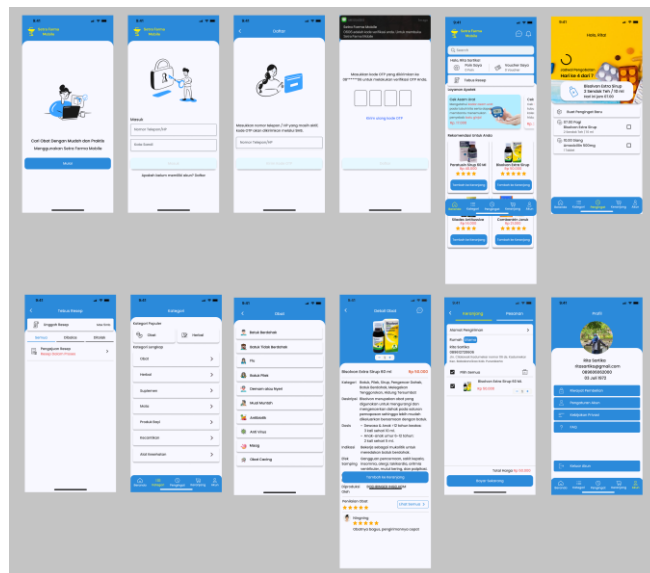


Figure 5. User Interface Application

3.6 Support

The entire interface is then designed in detail and produced in prototype form with high precision. At this final stage, the evaluation is carried out using a simple single question technique to obtain valid input and evaluation that can be used as a basis for the development or implementation stage. To conduct the evaluation, the researcher used five users as respondents for the user test. It gives a score from 1 to 7 on the Linkert scale. The results of the test using a single ease question are:

Table 4. Results of Single Ease Question

Task	Responden					Rata-rata
	Kanitha	Rita	Youky	Berliana	Najmi	
T1	7	7	7	7	6	6,8
T2	7	7	6	6	5	6,2
T3	6	7	7	6	7	6,6
T4	6	7	7	7	6	6,6
T5	7	7	6	7	6	6,6
Rata-rata skor SEQ						6,6

In testing this single ease question using a 1-7 linkert scale, according to Sauro (2012) in (Aditya et al., 2020) the SEQ score is 5.5. a task is said to be difficult if the score is below the number 5. Figure 6 states that the Setra Farma application is in the easy category.

4. CONCLUSIONS

Based on the research that has been carried out by the researcher, the conclusion that can be drawn is that the UI/UX design research for the Setra Farma Pharmacy Application uses the Goal-Directed Design method by testing the Single Ease Question to get the final result with a score of 6.6 which means it is easy and has fulfilled user needs. The UI/UX design of the Setra Farma Pharmacy Application has gone through several phases in Goal-Directed Design starting from the research, modeling, requirements, framework, refinement, and support phases. In the research phase, it produces interviews from stakeholders and users regarding information and drug data available at pharmacies and user needs in the use of the application, then the data that has been obtained is processed in the modeling phase with the creation of user personas of stakeholders and users. In the requirements phase, making context scenarios, card sorting, and hierarchical task analysis, the final result in this phase is an overview of the Setra Farma Mobile Application, then the framework phase produces a rough draft design of the Setra Farma Mobile Application user interface. The next phase is the refinement phase which increases the details from the previous phase. The results in this phase are in the form of a high-fidelity prototype user interface design and the last phase is testing the prototype designed to determine the level of convenience of the Setra Farma Mobile Application.

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