



# Implementation of Goal Directed Design in Website Based Customer Savings Data Processing System

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**Abstract.** Bank Sampah Sakura Palembang focuses on handling environmental problems and improving customer service through a data management system. Goal-Directed Design (GDD) is a solution to overcome these challenges, focusing not only on design but also functionality and user experience. GDD can improve user experience, accelerate technology adoption, and improve decision-making within organizations. Implementing GDD at Bank Sampah Sakura Palembang can increase operational efficiency, reduce operational costs, and improve customer service. Implementing GDD can also increase interaction between users and the system, thereby contributing to improvements in the Bank Sampah Sakura Palembang. Stages for data management with GDD include research, modeling, requirements, framework, refinement, and support. Implementing GDD can help in identifying user needs, motivations, and requirements, enabling the development of user-centered systems. The research findings can be used to improve the efficiency and user experience of the website-based Bank Sampah Sakura Palembang customer data management system.

**Keywords:** Goal Directed Design, Data processing, Website.

## 1 Introduction

In an era of increasingly rapid digital transformation, the small and medium enterprises (SME) sector faces significant challenges in terms of data management and utilization of digital technology. Especially in the social and environmental fields, such as the Bank Sampah Sakura Palembang, which has an important role in overcoming environmental problems and empowering the community through a waste-based savings system. However, one of the main obstacles faced is the lack of efficiency in managing customer data in the operational performance process. In line with the development of web-based technology, the application of effective system design methods has become very important to ensure that the system being built can answer user needs more optimally.

The goal-directed design (GDD) method can be a solution for designing a system. GDD focuses on developing systems that are not only based on features but also on

the real goals and needs of users, thereby allowing the development of more appropriate interfaces and functionality. This approach involves a deep understanding of user behavior, motivations, and goals, expressed in the design of effective interfaces. The GDD approach can help in designing a website-based customer savings data processing system that not only makes it easier for customers to access and manage their savings data but also helps Bank Sampah Sakura Palembang improve efficiency and service quality. Apart from that, the implementation of GDD shows its effectiveness in improving user experience and the success of implementing web-based systems [1], the use of GDD in developing business applications can increase usability, speed up technology adoption, and support better decision making in organizations. Apart from that, GDD can also reduce the gap between user needs and the features provided system [2], thereby increasing user satisfaction better.

The adoption of digital technology, such as web-based data processing systems, has been proven to play an important role in improving business performance and competitiveness. In this case, processing waste bank customer data by adopting digital solutions can increase operational efficiency by up to 30% [3]. with reduced operational costs and improved service to customers. Thus, the implementation of GDD in the customer savings data processing system at Bank Sampah Sakura Palembang is expected to be able to provide a significant positive impact in improving operational performance, data management efficiency, and customer satisfaction, which will ultimately support business sustainability and increase social contribution. environment.

This research not only focuses on the technical aspects of implementing a web-based system, but also examines how the GDD approach can change the way of interaction between users (customers) and the system, and how this contributes to improving overall organizational performance. Thus, it is hoped that this research can make a significant contribution in developing more adaptive and user-centered technological solutions for the Bank Sampah Sakura Palembang to improve its operations as a small and medium enterprise, especially in the field of waste management.

## **2 Material And Method**

### **2.1 Website Based System**

A system is a group of elements that are integrated with the same purpose to achieve a goal. Websites are pages that contain information displayed by browsers such as Mozilla Firefox, Google Chrome, or others. A website, or abbreviated as web, can be interpreted as a collection of pages consisting of several pages that contain information in the form of digital data in the form of text, images, videos. , audio, and other animations provided via the internet. A web-based information system is a set of

interconnected components that function to collect, process, store, and transfer information in the form of text, images, sound, and information presented in hypertext form and can be accessed by software to support the creation of activities within the organization in achieving goals.

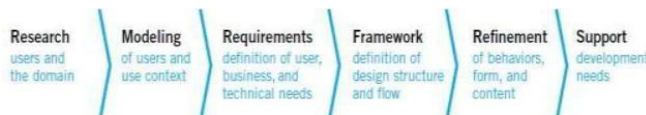
Web pages provide the function of presenting information in a changing web system Adding innovation to the web database system in the form of audio and even video can produce varied web addresses.

2.2 Waste Bank

A waste bank is a facility for managing waste using the 3R principles. A waste bank is a location where different types of waste are gathered [4]. a means of education, behavior change in waste management, and implementation of a circular economy, which is formed and managed by the community, business entities, and/regional government A waste bank is a collective dry waste management system that encourages the public to take an active role in it. This system will accommodate, sort and distribute waste of economic value to the market so that people get economic benefits from saving.

2.3 Goal Directed Design

Designing a website-based Bank Sampah Sakura Palembang data processing application with data processing into a database. Next, analysis is carried out to create a Bank Sampah Sakura Palembang application with features that can help Bank Sampah Sakura Palembang operators in processing data with a website-based data processing application that can be displayed by providing features. The data processing application development used is a goal directed design method approach



[5].

Fig. 1. Methodology

The following are the stages intended by the process framework approach:

1. Research, collecting data by conducting observations, interviews, and other data collection methods or literature studies.
2. Modeling. In this stage, the results of the research, a model is created. First, choose a target user persona who will be the main character in the website scenario. By using a user persona, you can describe the characteristics, motivation, activities and goals of the user in using the website.
3. Requirements. In this stage we will focus on the user persona that was determined in the previous stage. At this stage we will also define the

requirements needed by the website. The definition of needs will be obtained from scenarios from user personas.

4. Framework. At this stage we will focus on designing the website, by first creating a wireframe appearance.
5. Refinement, a continuation of the previous stage which carried out a more detailed design related to the general appearance.
6. Support. This stage evaluates and tests the design that has been created.

### 3 Result

The results of this research are presented in the form of a system that is run via a website. This helps Bank Sampah Sakura Palembang managers manage waste data and customers can view products and make deposit and withdrawal transactions for waste savings. With this customer data management system, the transaction process does not require coming directly to the Bank Sampah Sakura Palembang office. This system can also help potential customers to find out information about waste and the exchange rate of waste into rupiah.

#### 3.1 Research

Based on the results of research conducted through interviews, the Bank Sampah Sakura Palembang requires a platform to manage waste data, customers, and waste deposit transactions and withdraw savings balances.



**Fig. 2.** Data Collecting Process

#### 3.2 Modeling

The research results that have been collected are then subjected to a modeling process, namely modeling the research results into a persona model or user persona that contains supporting research information. The personas that have been collected are then defined into several variables including;

- a) Bank Sampah Sakura customers
- b) Transactions
- c) garbage
- d) delivery
- e) Goals and needs

3.3 Requirement

The adjustment phase between the user persona and the user's specific goals and needs so as to create a balance between needs and goals with the expected user interface design.

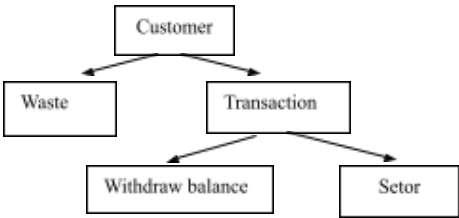


Fig. 3. User Personas

3.4 Framework Definition

Next is the framework definition, namely processing the results of research, modeling and requirements, which are then defined into a user interface design sketch that has stages and interactions. The result of this phase is a wireframe that has a layout, information used, and work steps that can provide initial interaction. This will show a general overview of the Open Library website design, including the informational sections, content, and structure of the website [6].

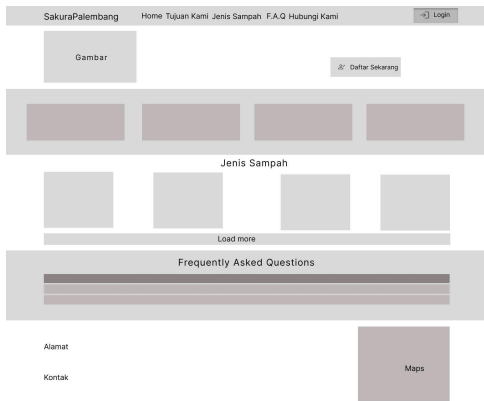


Fig. 4. Dashboard Page Design

3.5 Refinement

After the wireframe is created, in the refinement phase, actual application of the Framework Definition stage [7]. The user interface is refined into a mockup that has the highest level of similarity to the designed system or high-fidelity. Improvements to the user interface are made, such as providing coloring and adding information so that the system can provide more detailed interactions and, in accordance with the system being created or referred to as a prototype, then the finished prototype is evaluated by stakeholders in the next phase.



Fig. 5. Page Dashboard

| # | Foto | Jenis         | Harga(Rp/Kg) | Deskripsi              | Aksi |
|---|------|---------------|--------------|------------------------|------|
| 1 |      | Kresok        | 2000         | Plastik Kantung Kresok |      |
| 2 |      | Botol Plastik | 2500         | Botol plastik          |      |
| 3 |      | Gelas Plastik | 1500         | Gelas plastik          |      |

Fig. 6. Page Fitur in Dashboard Admin

3.6 Support

Finally, in the support stage, testing of the system is carried out. The Support testing phase involves users using a questionnaire method [8]. The results of testing using black box testing show that the system runs well, according to the function of each feature because in the testing process all features were successfully executed.

4 Conclusion

Based on the description of the stages in the research, as well as referring to the process and results of the system, it can be concluded that the customer data processing system is in accordance with needs and the system can run well. Future that can help Bank Sampah Sakura operators make processing data with data processing applications based on the website also makes it easier for customers to get information.

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