DESIGN OF SYSTEM INFORMATION MANAGEMENT FOR TOKO BERLIAN PARFUME WEBSITE

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Abstract

Berlian Parfume itself is a micro, small, and medium-sized enterprise (UMKM) located in Tamalate, Makassar, South Sulawesi. Berlian Parfume still utilizes conventional methods for its operations, finances, advertising, and business systems. Everything from sales, purchases, record-keeping, employee management, to marketing is still carried out in a conventional and manual manner. Therefore, the author aims to transform Berlian Parfume into one of the UMKMs with an efficient system to sustain future challenges, both internally and externally, by creating an information management system in the form of a dashboard website. The main goal of this program is to streamline the business processes and operational procedures of Berlian Parfume by developing an information management system comprising a cashier and inventory website. The solution approach used is the waterfall method SDLC, consisting of requirement gathering, designing, development, integration, and uploading. The program will encompass a user interface and a backend database, with the user interface being developed as a prototype and the backend using programming languages such as HTML, CSS, PHP, and SQL. The existing program will serve three types of users: administrators, staff, and customers. Administrators and staff will have access to the cashier and inventory systems, while customers will only have access to view the website containing product data and catalogs.

Keywords: umkm, information system management, website, database, dashboard

1. PREFACE
Introduction

Micro, Small, and Medium-sized Enterprises (MSMEs) are one of the crucial driving forces for the economy, especially in Indonesia. The role of MSMEs in the growth of Indonesia's economy is significant, with approximately 99% of all business units contributing to this growth. As of 2022, the contribution of MSMEs to the Gross Domestic Product (GDP) has reached 60.5%, aligning with their effectiveness in providing employment opportunities in Indonesia. Out of the entire national workforce, around 96.9% are involved in the world of MSMEs. However, the existence of MSMEs has been threatened, particularly during the recent times due to the COVID-19 pandemic [1].

During the pandemic years of 2020-2021, many MSMEs experienced a decline in quality, functionality, income, and various other aspects. According to a survey conducted by the United Nations Development Programme (UNDP) and the Institute for Economic and Social Research of the University of Indonesia (LPEM UI) involving 1180 MSME respondents during that period, more than 48% of units faced raw material issues, 77% experienced a decrease in income, and 88% witnessed a decline in product demand, with a staggering 97% reporting a decrease in asset value [1]. Several of these challenges were caused by both external and internal factors. External factors were primarily due to the pandemic and were felt by all stakeholders, including suppliers, operators, and customers. The internal factor exacerbating the situation was the lack of effective business management. Many MSME entrepreneurs felt that they did not need to implement information system management, particularly in accounting, as they believed their businesses did not require system integration and could still be managed manually.

Berlian Parfume itself is a micro, small, and medium-sized enterprise located in Tamalate, Makassar, South Sulawesi. Berlian Parfume continues to rely on conventional methods for its operations, finances, advertising, and business systems. This encompasses conventional and manual approaches in terms of sales, purchases, record-keeping, employee management, and marketing. This situation has contributed to the negative image often associated with MSMEs in society because they frequently appear and disappear due to inadequate management. Therefore, the author aims to transform Berlian Parfume into an MSME with a robust system to sustain future challenges, both internal and external.

Problem Formulation

Based on the background above, the collapse of a business can be caused by various factors. Therefore, this program must be able to meet the needs of users in providing useful information and data to address both internal and external challenges, thus becoming a tool for the growth of a business and creating a business that is resilient to internal and external issues. In addition to being a functional and useful tool, the program must also be easy to use to create an efficient and effective transactional experience.

2. RESEARCH METHOD

The creation of this program will use the waterfall method. The waterfall method, also known as the classic or traditional method, is an old and classic approach, often referred to as the classic life cycle. The waterfall method was first introduced by Winston Royce in 1970. Despite its age, the waterfall method remains one of the most widely used methods, especially in the field of software engineering. This method or model is originally named the Linear Sequential Model, meaning it describes a systematic and sequential approach to software development [2].
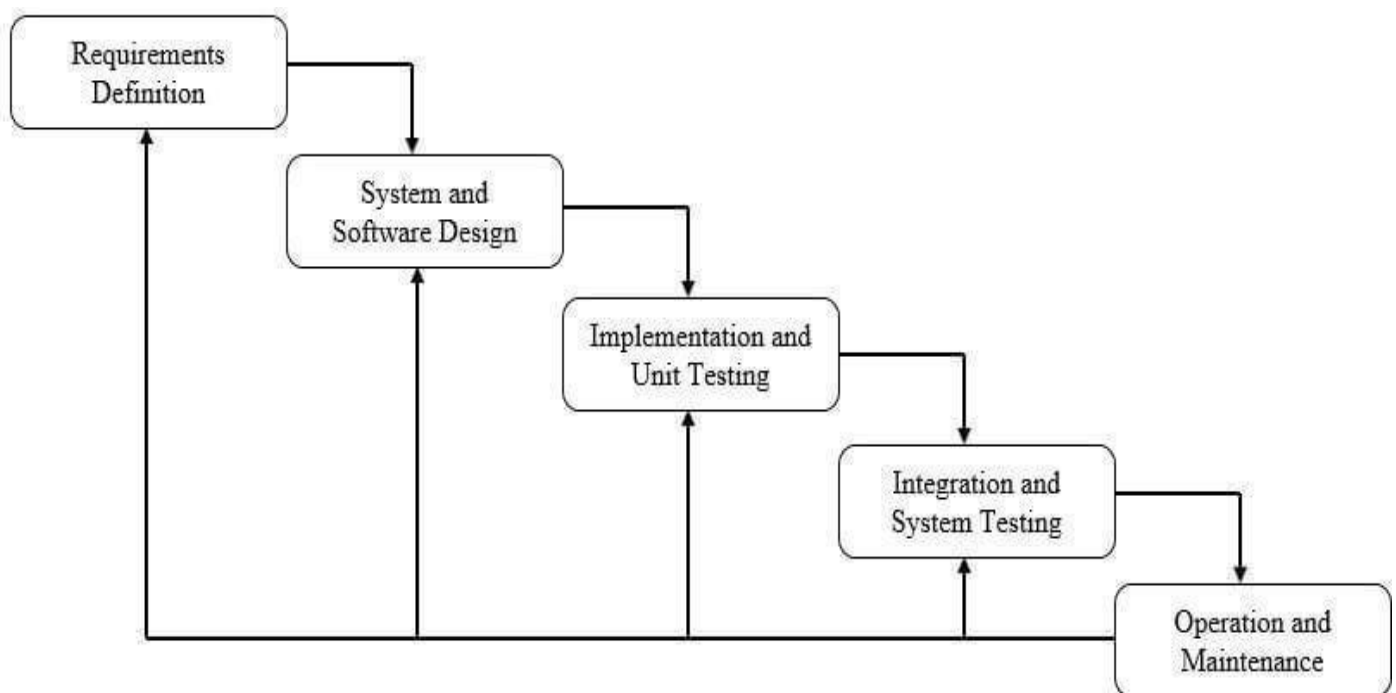

Figure 1 Waterfall Method SDLC
Image Source: https://ranahresearch.com/metode-waterfall/

1. Requirements Definition

This stage involves developers communicating with users to understand their desires and expectations for the program, as well as discussing the program's constraints. This information can be obtained through interviews, discussions, or surveys.System and Software Design

In this stage, the development team creates a system design that helps define the system's constraints and requirements, aiding in the overall system architecture definition.

2. Implementation and Unit Testing

During this stage, the implementation of code begins based on the previously discussed requirements and designs. Testing also takes place, but it remains within the realm of small unit testing. Each small unit or program is developed and tested for functionality.

3. Integration and System Testing

This stage involves integrating all the unit modules created in the previous stages into one program. Testing is conducted based on several categories, including unit testing (performed on specific modules or sub-programs), system testing (conducted on the entire program after each module is integrated), and user acceptance testing (performed by developers and/or users to determine if the program meets user requirements).

4. Operation and Maintenance

The final stage of this method encompasses the formal operation of the program and ongoing maintenance. Maintenance includes program development and debugging in case of errors or the emergence of bugs.

3. RESULT & DISCUSSION

In creating a program, it is essential to design a plan for what the program will look like in the future. The same applies to the creation of the Berlian Parfume website, where the design plan is depicted in the form of a use case diagram, activity diagram, sequence diagram, class diagram, and database design.

Use Case Diagram

The use case for the Berlian Parfume website consists of three actors. The Administrator, who acts as the website's admin and can manage every feature within the program. The Staff, who are store employees and have access to certain program features. The final actor is the Customer, who will not have access to the system management program but will be provided with a website where they can view product data in the form of a catalog along with its availability. The use case for Berlian Parfume can be seen in the **Figure 2.**
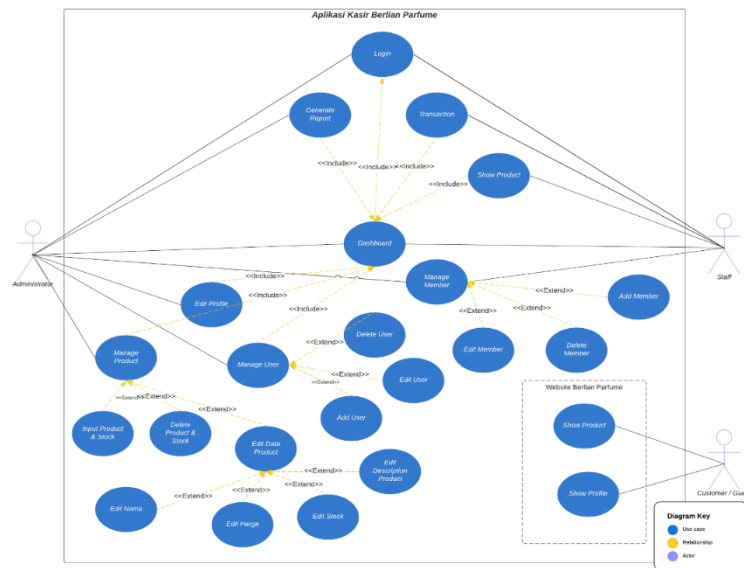
Figure 2 Use Case Diagram Berlian Parfume Image Source: Personal Documentation

Activity Diagram

An activity diagram is a design that represents the flow of activities used in a running system. Activity diagrams are also used to define the flow of a system's operations [3]. An example of an activity diagram in the Berlian Parfume Program is the "Login," which can be seen in the **Figure 3**.
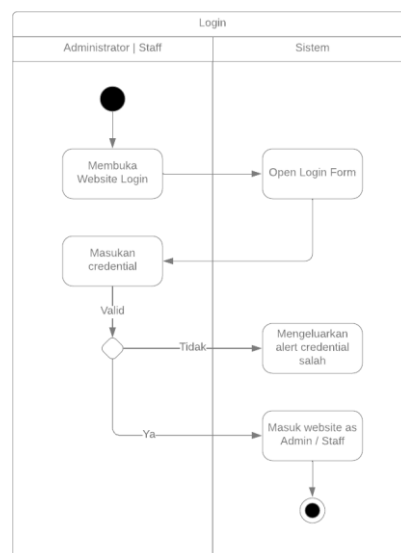

Figure 3 Activity Diagram Berlian Parfume – Login Image Source: Personal DocumentationSequence Diagram

A sequence diagram is a diagram used to explain and display all interactions between one object and other objects within a system in detail [4]. An example of a sequence diagram in the Berlian Parfume Program is the "Login," which can be seen in the **Figure 4**.
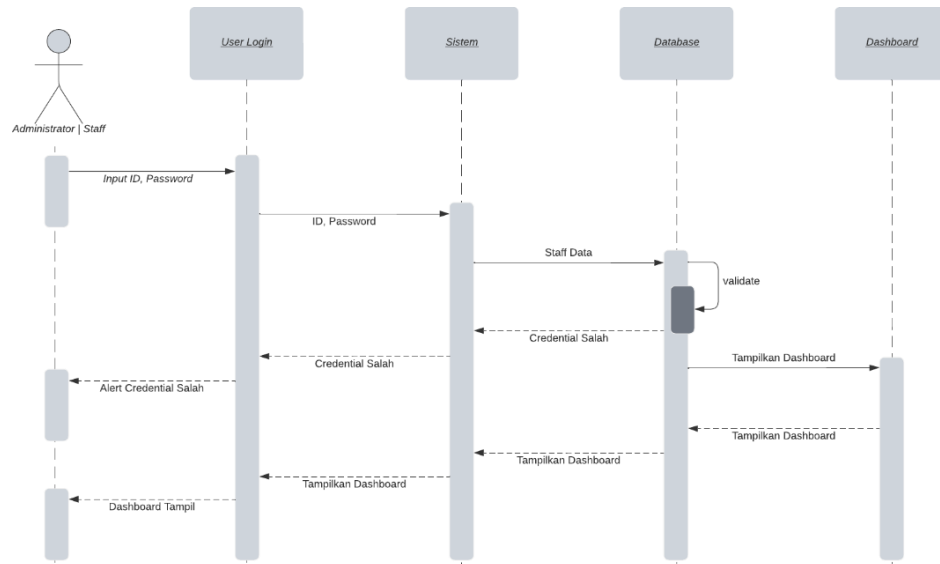

Figure 4 Sequence Diagram Berlian Parfume – Login
Image Source: Personal Documentation

Class Diagram
A class diagram is a type of structural diagram in UML that provides detailed information about the structure, including the description of classes, attributes, methods, and relationships of each object. Unlike the previous diagrams, a class diagram does not describe a process that occurs but instead explains the relationships that exist [5]. The class diagram for the Berlian Parfume Program can be seen in the **Figure 5**.
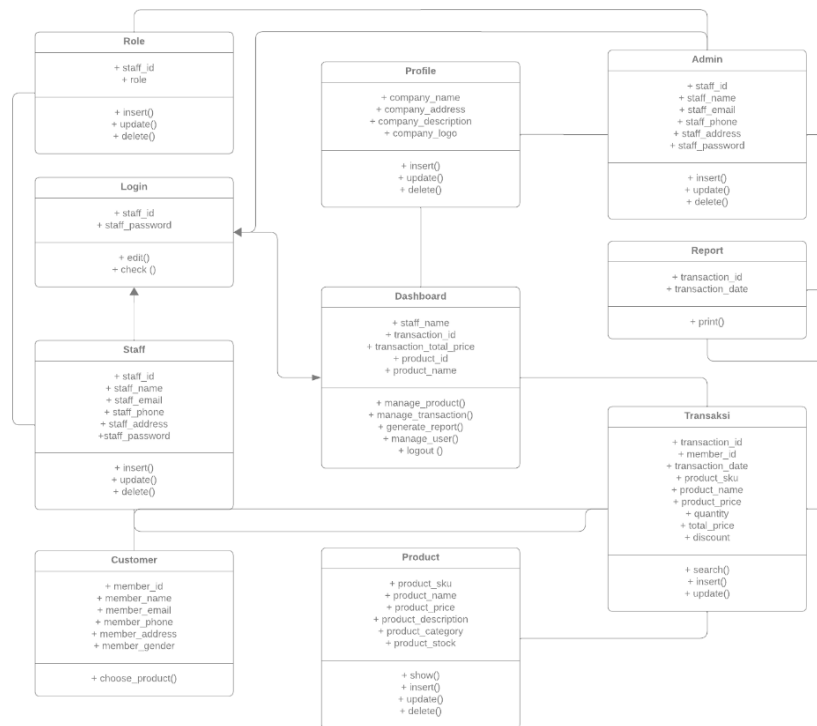
Figure 5 Class Diagram Berlian Parfume
Image Source: Personal Documentation

4. CONCLUSSION AND RECOMMENDATIONS

The information management system at Berlian Parfume in the form of a website is expected to simplify both business and operational processes. The website will be able to assist in processing transactions by calculating costs, automatically reducing inventory, and generating reports automatically. With the presence of this website, it is hoped that it can minimize human errors and contribute to more effective and efficient business processes. Therefore, the author acknowledges that there are still many shortcomings in this program and welcomes feedback, suggestions, and criticism for the future improvement of this program.

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