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# Software Development Life Cycle Method Design and Build Inventory Information System at Deriana House Coffee Shop Based Website

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**ABSTRACT**

The industrial era 4.0 makes business competition in the industrial world increasing tight. in
maintaining their business, business actors cannot be separated from managing inventory data (inventory) of goods. So that it can record the stock of incoming goods, available goods and outgoing goods. Inventory of goods in a business is very important, such as at the Deriana House coffee shop there is an inventory of managing raw material supplies. Currently, data processing is still done manually by the owner of the Deriana House coffee shop. Therefore, from the data that has been collected, the author conducts research to create a design of a raw material inventory information system using the Software Development Life Cycle Prototype method which can make it easier for coffee shop owners to record stock inventory, data collection of incoming and outgoing goods.

## 1. INTRODUCTION

Technological developments are growing very rapidly in the industrial era 4.0 making human work can be done quickly and accurately. As the industrial era 4.0 progresses, business competition in the industrial world is getting tougher. In maintaining their business, business actors cannot be separated from managing inventory data (inventory) of goods. So that it can record the stock of incoming, available and outgoing goods. Inventory of goods in a business is very important. Therefore, business actors must be able to process the inventory of goods effectively and appropriately, so that business goals can run according to the desired goals.

Deriana House is a coffee shop located in the Sepatan area of Tangerang Regency. In the current system, Deriana House is still carrying out data recording of raw material inventory using a manual method by the coffee shop owner. Includes data collection of raw materials for coffee drinks purchased from suppliers (incoming goods), data collection on the stock of coffee drink raw materials used (outgoing goods), and data collection on coffee drink transaction orders. Based on direct observations and data that has been collected by the author, therefore the authors conduct research to build a website-based raw material inventory information system using the Software Development Life Cycle Prototype method which makes it easy for shop owners to record stock inventory.

## 2. MATERIAL AND METHODOLOGY

### Needs Analysis Method

In this research, an analysis method is applied, namely Software Requirements Specification (SRS). According to Hartono 2018: Software Requirements Specification is a document created to

explain the various needs that must be met by a software. This document is created by the developer after the process of analyzing information from the user. Developers are required to follow existing standards and are most recognized by software engineering practitioners in the world, namely the Institute of Electrical and Electronics Engineers (IEEE).
Software Requirements Specification there are three constraints called triple constraints in a system requirements analysis process, namely time, cost and quality or specifications of the software to be made. And there are five things that must be considered in the analysis of the Software Requirements Specification, including:

1) Functions of the software. What will the software do and what are the main functions that are expected to appear in the SRS.
2) External interface. How is the relationship between the software and the user, the hardware to be used and the impact on other software.
3) Performance. How is the expected performance of the software, both in terms of security, speed, capability and response time to problems caused?
4) Attribute. What about the attributes associated with the software, in terms of maintenance or the correctness of the expected inputs and outputs.
5) Design Constraints. Are there any special limitations that must exist in software design, such as cultural issues, organizational regulations and hardware limitations.

**System Development Method**

According to Rosa and Salahuddin 2014: The prototype model can be used to connect customer misunderstandings about technical matters and clarify the specifications of customer needs to software developers. The prototype method is a method that allows users or users to have an initial picture of the software to be developed, and users can do early testing before the software is released. This method aims to develop the model into the final software. This means that the system will be developed faster and the costs incurred are lower. This prototype method has stages that must be carried out in software development.
The following are the stages of software development using the prototype method:

1) **Needs analysis**. At stageIn this case, the developer identifies the software and all system requirements that will be made.
2) **Making prototypes**. Namely making a temporary design that focuses on the flow of the program to the user.
3) **Evaluation of prototypes**. Evaluation is done to find out whether the prototype model is in line with expectations.
4) **Code system**. If the prototype is approved it will be translated into the appropriate programming language.
5) **System testing**. Once the software is ready, it must pass testing. This test is usually done with White Box Testing, Black Box Testing, and others.
6) **System evaluation.**Userevaluate whether the software is in accordance with what is expected or not. If yes, do the next step. If not, repeat the system coding and system testing stages.
7) **Using the system.**Tested and approved software is ready to use.

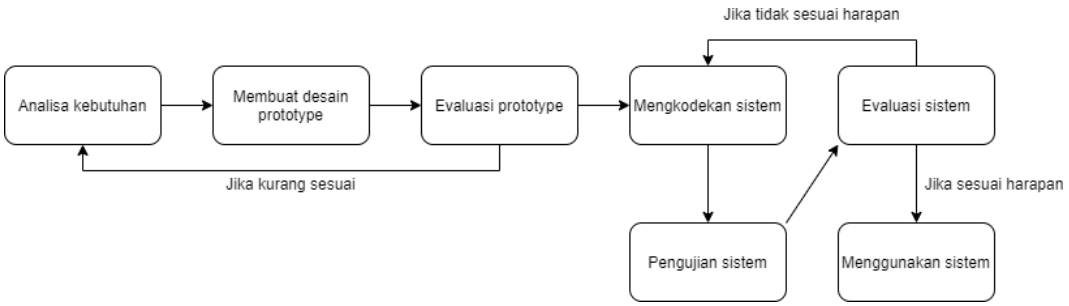


Figure 1. Stages of Software Development Life Cycle Prototype

**Running System Analysis**

Afterobserving and observing directly at the Deriana House Coffee Shop, it can be seen that the system that runs on the store's raw material inventory data collection is less effective because it is still done manually using a ledger. The following is a flowchart of the system running at the Deriana House coffee shop to explain in more detail the activities that occur in the data collection of Deriana House coffee raw materials.

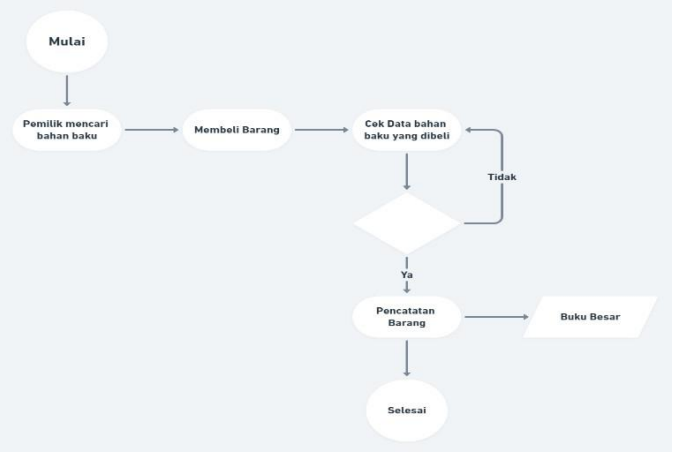


Figure 2. Flowchart of the running system

Figure 2. Explains that the shop owner purchases goods from the supplier, then the shop owner will check the data for the purchased goods, if it is appropriate, the data for the goods purchased will be recorded in the ledger.

## 3. DISCUSSION

**Proposed System Design**

Based on the results of the analysis of system requirements created, this system can only be accessed by one user, namely the administrator, which is managed directly by the owner of the Deriana House shop. The following is an explanation of the proposed system for the Raw Material Inventory Information System at the Deriana House Coffee Shop:

1) The shop owner is an administrator who can fully manage the access rights of the shop inventory information system.
2) Administrator has an account to do system login.
3) After logging in, Admin is directed to the dashboard menu.
4) There are 5 menus in the Deriana House coffee shop inventory information system, namely: Supplier Menu, Goods, Incoming Goods (Stock), Transactions, and Reports.
5) Admin can manage data with Create, Read, Update, and Delete commands.
6) There is a Report Menu that can be printed using a printer.
7) In the transaction menu, every transaction that is processed will affect the amount of stock items.
8) There is a warning notification of the number of items in stock if they are nearing the end of stock.

Procedure for the proposed system of raw material input:

1) Admin Login to enter on the dashboard menu
2) Admin Enter supplier data
3) Admin Entering item data
4) Admin Inputting stock of goods data

Procedure for the proposed transaction input system:

1) Admin Login to enter on the dashboard menu

2) Admin Perform transaction input

Procedure for printing reports:

1) Admin Login to enter on the dashboard menu
2) Admin Can print reports on the report menu

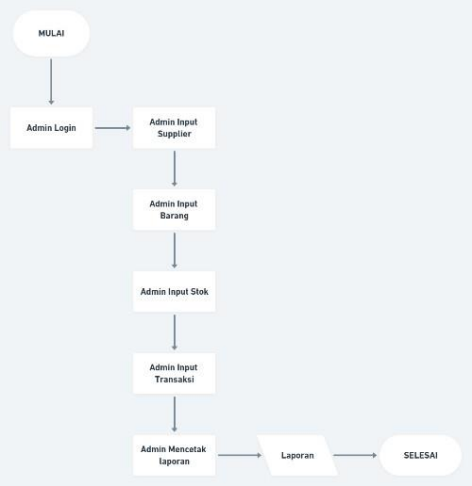


Figure 3. Flowchart of the Proposed System

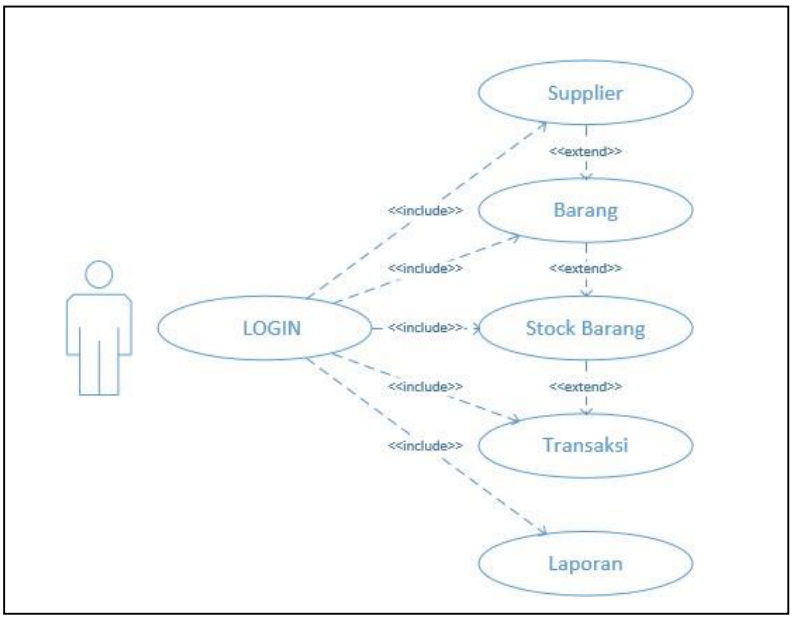


Figure 4. Use case of the Proposed System

**Proposed System Configuration**

Designing Apps

1) Whimsical
2) Figma
3) Microsoft Visio

Access Rights

1) Deriana House tavern owner as Administrator

**Proposed App Mockup**

1) Main View Login
   Main Page Before User Accessing the Dashboard menu on the Deriana House coffee shop inventory information system

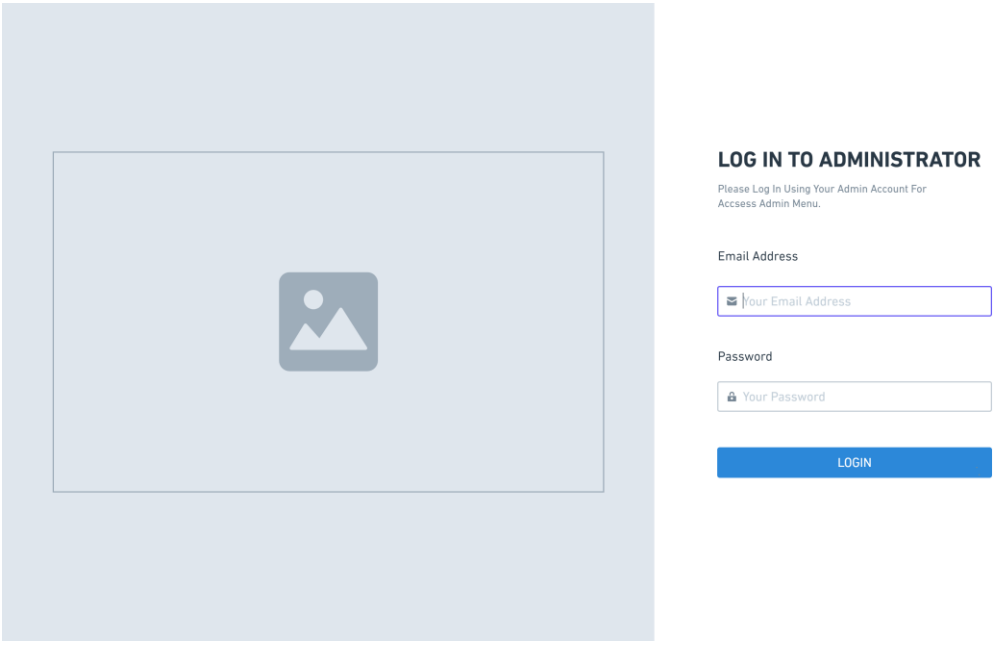


Figure 5. Login Display

2) Dashboard Menu Display

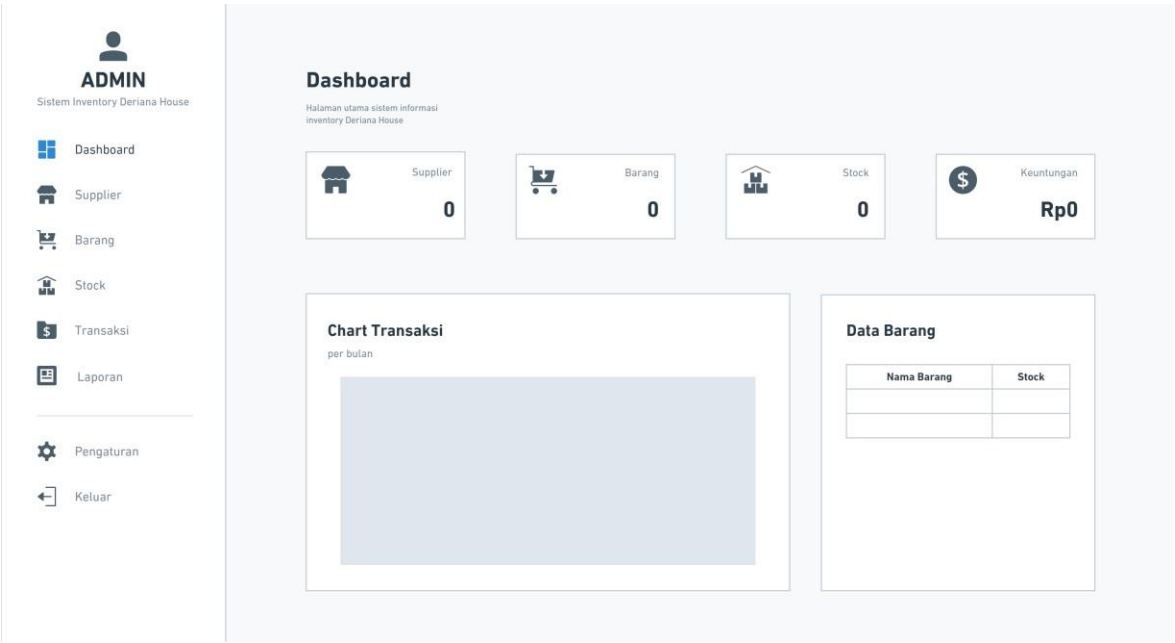


Figure 6. Dashboard menu

Figure 6. Dashboard menu is the main menu after the user logs in to the Deriana House coffee shop inventory information system.

3) Supplier Menu Display

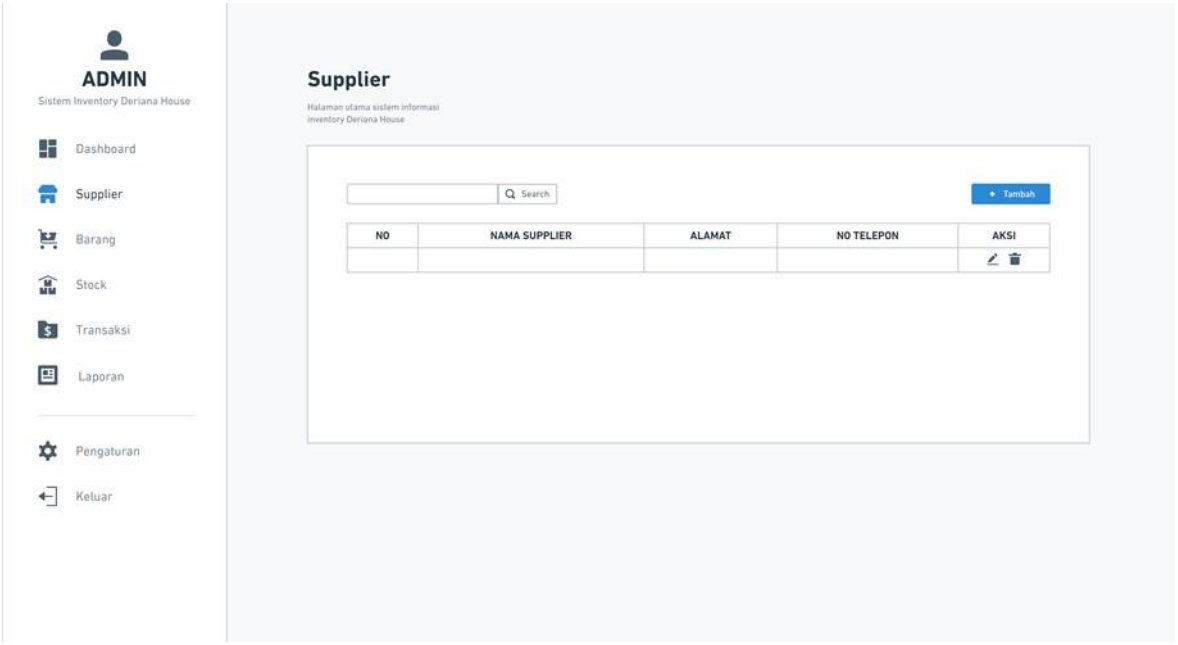


Figure 7. Supplier menu

Figure 7. Supplier menu is a menu that functions to perform supplier data CRUD activities.

## 4. CONCLUSION

Based on the results of the research that the authors did, the conclusions that the authors took were, as follows:

1) With the design of this inventory information system, it can make it easier for Deriana House coffee shop owners to manage coffee raw materials.
2) With this system the shop owner can find out the stock of used goods according to the composition that is set according to the recipe determined by the coffee shop owner.
3) Coffee shop owners can get quick and accurate reports.

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