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Modeling of Inventory Application of Goods Islamic University of Kuantan Singingi

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ABSTRACT

Kuantan Singingi Islamic University is located in Riau Province, Kuantan Singingi Regency, where currently inventory data processing has not used an application. Inventory data processing carried out by the BPAUK Section is still done manually so that the data processing becomes ineffective and inefficient. With the application, it can facilitate the BPAUK Section in processing inventory data. The method used in this research is observation, interview, literature, analysis, design or design using UML (Unified Modeling Language) modeling. The results of this study are an inventory data processing application at the Kuantan Singingi Islamic University which is expected to be implemented into the program, so as to increase the effectiveness and efficiency of work.

1. Introduction

The development of technology today is very helpful for human work in the world of government, companies, individuals and so on. progress is not spared from human invasion where humans can create new and sophisticated technology. one technology that can help one of human work is a computer, where computers can facilitate human work in processing data where data processing is done manually can be done by using an application. An application is software found on a computer that directly utilizes the computer's ability to perform tasks the user wants.

Kuantan Singingi Islamic University is located in Riau Province, Kuantan Singingi Regency, where currently inventory data processing has not used an application. Inventory data processing carried out by the BPAUK Section is still done manually. From the observations made there are several problems that occur in the process of inventory data processing done by this manual, namely :

a. No inventory of lost or damaged inventory results in slow updating or repair of inventory data.
b. Archiving inventory data has not been stored properly so that when needed it takes a long time to find the data.
c. The inventory data collection process is carried out by recording the items in the inventory book so that the problem that often occurs is the book about inventory of goods at the Kuantan Singingi Islamic University is often lost and damaged.
d. The lost / damaged book will be re-collected in stages so that it takes a long time.
e. The process of monitoring inventory items has not been carried out properly. This is because the supervision of goods so far has only been carried out when procuring new goods, namely by means of regular recording, as well as direct physical checking by the BPAUK Division of the Kuantan Singingi Islamic University.

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From this problem, the authors took the initiative to help the BPAUK Section to create applications that can facilitate the processing of existing inventory data at the Kuantan Singingi Islamic University with this application the data can be stored properly into a database.

2. Literature Review

2.1 Model Definition

The model is a representation of an object, objects, or ideas in simplified form of conditions or natural phenomena. Model contains information about a phenomenon created with the aim to study the actual system phenomenon. Models can be imitations of an object, system or actual event that only contains information deemed important to study. [1]

The purpose of modeling studies is to determine information which are considered important to collect, so there is no unique model. One system can have various models, depending on the point of view and the interests of the model maker.

System modeling is a collection of activities in the making model where the model is a representation or an abstraction of an object or the actual situation of a simplification of a complex reality.

TABLE 1
MODEL CLASSIFICATION

Type of Classification	Model criteria
Mekanistik	Based on the underlying mechanism / phenomenon.
Empiris	Based on input-output, trial or data Experiment.
Stochastic	Contains elemental models that are probabilistic in nature
Deterministik	Based on a causal analysis
Lump parameter	The dependent variable is not a function of position spatial.
Variabel parameter	Distributed bound is a function of spatial position.
Linear	The Linear Superposition Principle applies
Non-linear	The principle of nonlinear superposition does not apply variables dependent.
Kontinyu	Defined more sustainable space-time
Diskrit	Defined for time and / or discrete values room.
Hybrid	Contains continuous and discrete behavior

2.2 Application

The application is an instruction / statement that is on a hardware (hardware) be it a computer or smartphone that is designed so that it can process an input (input) into output (output). [2]

2.3 Inventory

Inventory is a purposeful activity to manage inventory of office assets or assets company owned. In this Writing explained a desktop-based application for assist officers in inventorying goods at Department of Population and Civil Registration and useful for officers in conducting data collection become more effective and efficient. [3]

2.4 SDLC (Sofware Development Life Cycle)

SDLC or software development life cycle or often called the system development life cycle is the process of developing or changing something Software systems using models and methodologies that people use to develop software systems previous. [4]

The development model used in the design of this application is the waterfall model.

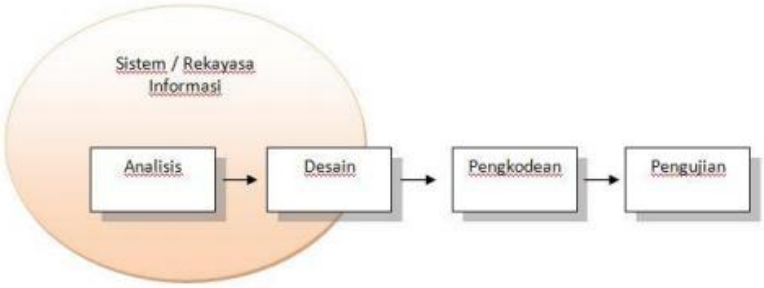

Figure. 1 Waterfall Model [4]

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Jurnal Mantik
Volume 3 Number 4, February 2020, pp. 700-705 E-ISSN 2685-4236
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3. Research Methodology

The following is a flowchart of the final research

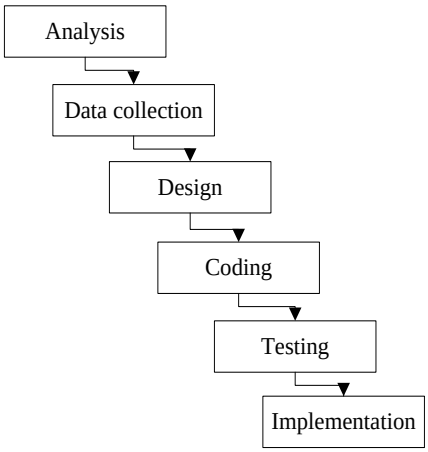

Figure. 2 Flowchart

3.1 Data Collection Techniques

The method used in research for data collection is as follows :

a. Observation
Conduct direct observations at research sites to find out clearly and in detail the existing problems. Direct observations were made at the BPAUK Section of the Kuantan Singingi Islamic University.

b. Interview
Conducted to obtain information or data needed by conducting direct interviews at the BPAUK Section of the Kuantan Singingi Islamic University.

c. Literature Study
In this method information is collected by reading journals and books related to research to support in analyzing the data and information to be obtained.

4. Results and Discussion

4.1 Modeling of Proposed Systems

1. Use Case Diagram
Use Case Diagram are the highest part of the system's functionality that will describe how a person or actor will use and utilize the system. Below is the use case of Modeling Application Of Goods Ersediaan Islamic Kuantan Singingi University.

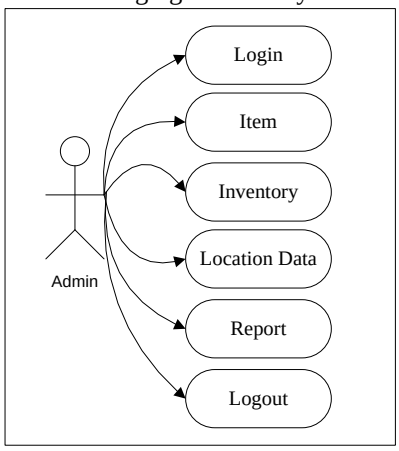

Figure. 3 Use Case Diagram

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2. Activity Diagram
Activity diagram is part of the system's functional description describing logical processes or functions that are implemented by program code. Activity Diagrams model the events that occur in a use case and are used for modeling dynamic aspects of the system.

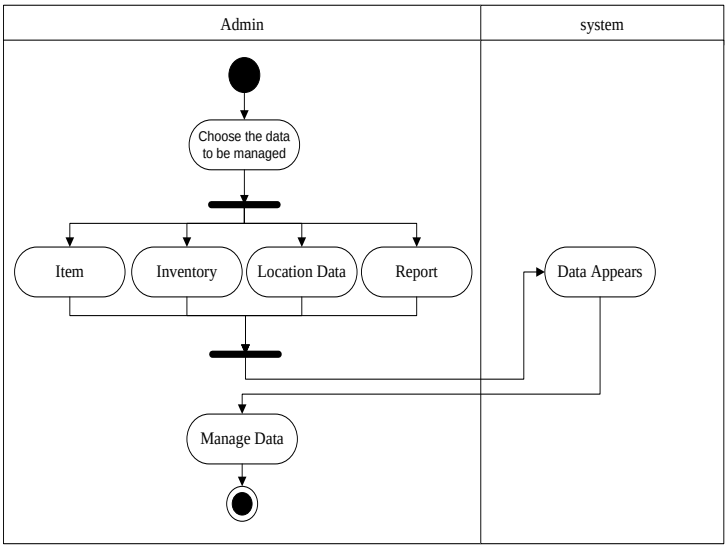

Figure. 3 Activity Diagram

3. Sequence Diagram
Sequence Diagram describe in detail the sequence of processes performed by the system to achieve the Use Case, the interactions that occur between classes, what operations are involved, the sequence between operations and the information required by each operation.

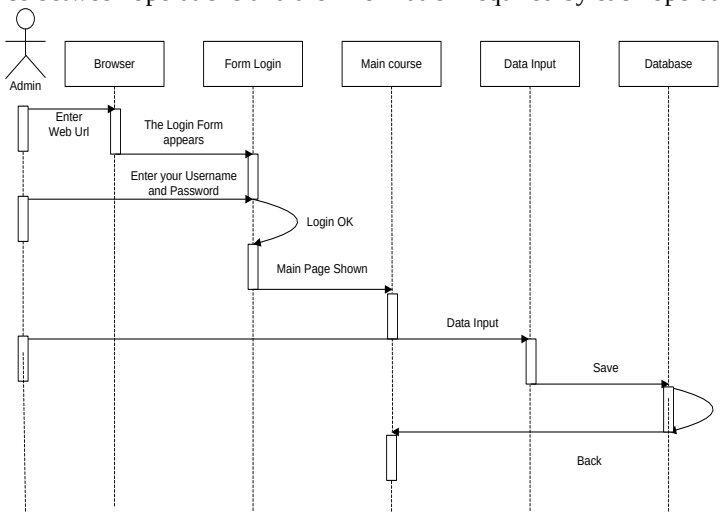

Figure. 4 Sequence Diagram

4. Class Diagram
Class Diagram is a description of the state of attributes or properties of the system that manipulates the function or method.

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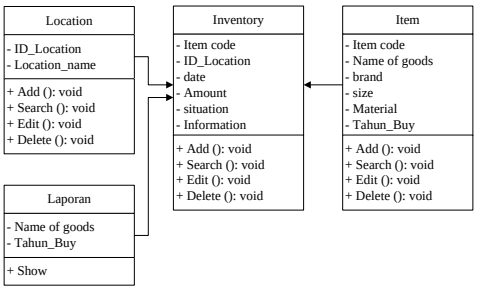

Figure. 5 Class Diagram

4.2 Interface Design

a. Main Page Display Design

On the main page there are six menu choices in this application including the home menu, Item, Inventory, Location Data, Report, and Logout.

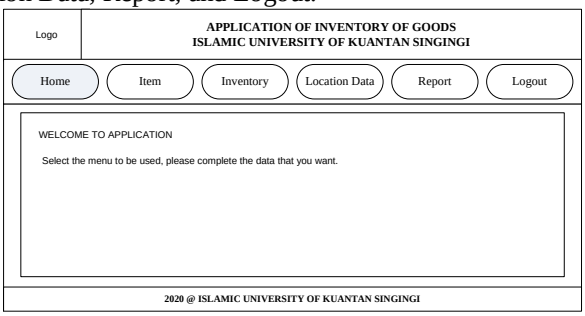

Figure. 6 Main Page Display Design

b. Input page

This page can be used by the admin to add data that will later be stored in the database.

1. Form Item

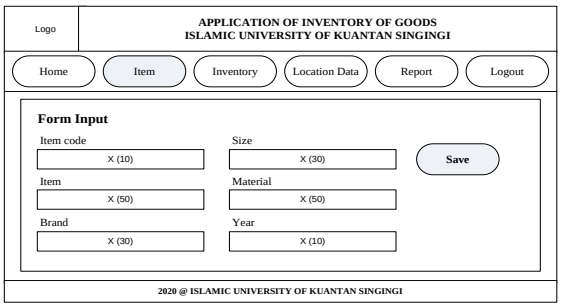

Figure. 7 Form Item

2. Form Inventory

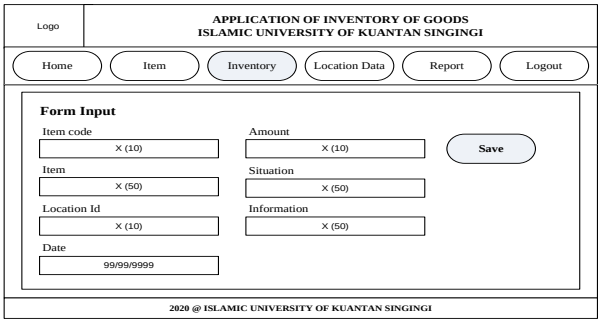

Figure. 8 Form Inventory

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Jurnal Mantik
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3. Location Data

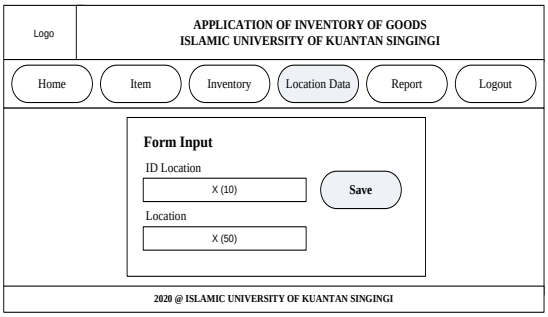

Figure. 9 Location Data

4. Inventory Report

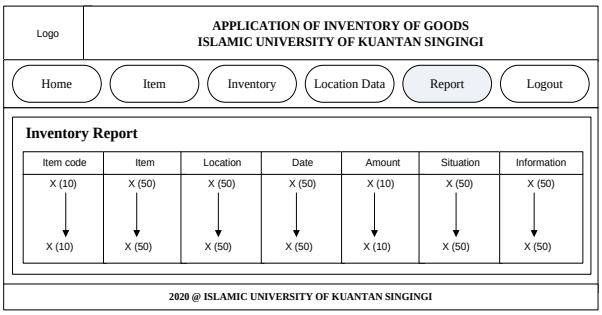

Figure. 10 Inventory Report

5. Conclusions

Based on the analysis and design of Item Inventory Applications Islamic University Of Kuantan Singingi, the following conclusions can be drawn :

The inventory process carried out is still conventional, until now the inventory process at Kuantan Singingi Islamic University still uses the inventory master book, resulting in a slow process of inventory data processing. This research produces an application that can be further implemented so as to produce a more effective and efficient system.

6. References

[1] Achmad, Mahmud. 2008. Tehnik Simulasi dan Permodelan. Yogyakarta : Universitas Gajah Mada. (online).
[2] Gunawan, I., & Haswan, F. (2019). Sistem Informasi Pendaftaran Pembuatan KTP Elektronik Di Dinas Kependudukan Dan Pencatatan Sipil Kabupaten Kuantan Singingi. Jurnal J-Click, 6(2), 153-160.
[3] Indah Sataria, dan Dr. Ing. Kondar Siahaan. 2018. Analisa Dan Perancangan Sistem Informasi Inventarisasi Barang Milik Negara (Bmn) Kantor Dpd Ri Di Ibukota Provinsi Berbasis Web Pada Sekretariat Jenderal DPD RI. Jurnal Manajemen Sistem Informasi Vol 3, No.3, September 2018.
[4] A.S., Rosa dan Shalahuddin, M. 2015. Rekayasa Perangkat Lunak Terstruktur dan Berorientasi Objek.Bandung: Informatika Bandung.
[5] Widodo, Prabowo.P,Dkk, 2011, Pemodelan Sistem Berorientasi Obyek Dengan UML, Graha ilmu, Yogyakarta.
[6] Haswan, F. (2018). Perancangan Sistem Informasi Pendataan Penduduk Kelurahan Sungai Jering Berbasis Web Dengan Object Oriented Programming. Jurnal Teknologi Dan Open Source, 1(2), 92-100.