STOCK MANAGEMENT SYSTEM (SMS)

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DECLARATION

I hereby declare that this project report entitled

Stock Management System

Is written by me and is my effort and that no part has been plagiarized without citations

STUDENT: _____ **Date:** _____

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DEDICATION

To my God, Allah SWT

To my beloved parents, En Kholil Bin Ahmad and Pn Zaharah bt Salludin

To my supervisor, Pn Azlianor bte Abdul Aziz

To all my friends

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Alhamdulilah, praise to Allah s.w.t. I am very pleased and grateful of being able to finish my final project.First and foremost, I would also like to thank my beloved parents who have been giving me support and motivation throughout my project I would like to thank my family especially my parents, En Kholil bin Ahmad and Pn Zaharah bt Salludin for the support, love and encouragement that they provide me through my entire life and in particular for this project as I would not have finish this thesis. I would like to express my gratitute to my supervisor, Pn Azlianor bt Abdul Aziz, who expertise, understanding, and patience, added considerable to my success of completing this thesis. I appreciate her vast knowledge and skill in many areas and her assistant in writing and completing this report. I also would like to thank my friends in and outside KUTKM for their exchanges of knowledge, skills, and venting of frustration while completing my final project program which helped enrich the experience. Although many people have contributed to this project and have helped to completed it, I take sole responsibility for errors found in this thesis and project. Wassalam.

ABSTRACT

The primary purpose of preparing this Projek Sarjana Muda is to fulfil Bachelor of Science Computer (Software Development) in Kolej Universiti Teknikal Kebangsaan Malaysia. This thesis contains a complete analysis about Projek Sarjana Muda . This thesis also discusses and describes all activity and process of development system. This thesis is divided into seven chapters; introduction Stock Management System, project background, problem statements, objectives, scopes, project significant and conclusion. The first chapter will go deeply into the objectives and scopes of the system and the second chapter describe about fact and finding, project methodology and project schedule. The third chapter is the analysis part. This chapter will describe all about the problem current system and problem solution. It also describes business flow, use case diagram and sequence diagram. The four chapters are for design; this part includes class diagram, user interface design and ERD for Stock Management System. The chapter five will describe about implementation for this system. The six chapters will deeply into the testing of the system. Last chapter will conclude the system.

ABSTRAK

Tujuan utama dalam menghasilkan Projek Sarjana Muda ini ialah untuk memenuhi syarat lulus Sarjana Muda Sains Komputer (Pembangunan Perisian) di Kolej Universiti Teknikal Kebangsaan Malaysia. Tesis ini mengandungi analisis penuh berkaitan Projek Sarjana Muda . Tesis ini juga membincangkan dan menerangkan keseluruhan aktiviti dan proses di dalam pembinaan system. Tesis ini dibahagikan kepada tujuh bab iaitu pendahuluan kepada Stock Management System, latar belakang projek, penyataan masalah, objektif, skop, kepentingan projek dan kesimpulan. Bab pertama menerangkan secara mendalam mengenai objektif dan skop projek dan bab kedua menerangkan mengenai kajian dan hasil kajian, metadologi projek dan penjadualan projek. Bab ketiga ialah mengenai analisi. Bab ini akan menerangkan mengenai masalah yang dihadapi sistem sedia ada dan cara mengatasi masalah tersebut. Bab ini juga menerangkan mengenai *business flow*, *use case diagram* dan *sequence diagram*.Bab keempat menerangkan mengenai rekabentuk. Rekabentuk sistem temasuklah *class diagram*, rekabentuk antaramuka , ERD untuk Stock Management System. Bab kelima menerangkan mengenai perlaksanaan system dam chapter keenam menerangkan secara mendalam kaedah yang digunakan dalam menguji system yang telah dibina. Bab yang terakhir akan membuat kesimpulan mengenai keseluruhan projek ini.

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CHAPTER I

INTRODUCTION

This first chapter will describe about the whole project briefly. It is very important in order to explain to the people who involve in this project. It also can help to understand and cover the topic that will be discussed in the next chapter. In this chapter will describe about the background of the project, the problems based on the previous manual system, the objectives, the scope and the project significance.

1.1 Project Background

The title of the project is Stock Management System (SMS). The main purpose of the system is for proper and efficient management of stock and inventory. The system is developed as a universal system where any organization can apply and use the system.

The Stock Management System (SMS) is designed to be more flexible then the existing systems where it will inherit the existing features from the previous systems with some enhancement features. The system will be designed as a flexible and easy adapt system where various organization can benefit from the system.

SMS focuses on computerizing all kind of work that involve storing includes manage document and receipt, record all stocks activities and search stocks. In this

system, each product will be divided according to the type of the product. SMS also have filing system which can manage all kind of activities that related to receipts and documents. All the activities that related will generate report every week in this to-be system.

1.2 Problem Statements

Warehouse is one of the important departments in a company that must be well managed to ensure all the activities conducted in it are up to the par. As we all know, a lot of companies in Malaysia that have warehouse is not equipped with computerized system. Therefore, the security level of all data, documents and anything that related to the activity of the storing is very low. A lot of paper work has to be done in a storing process which wastes a lot of time, paper and source. The product in the warehouse is not arranged properly and this will make life harder to search for the right product in specific time.

In order to generate report, in as-is system, the staff have to make the right decision in choosing the right forms. There is no proper guideline in making reports in the log book therefore many kind of report that different from each of the reports. The as-is system also waste a lot of time which the staff must collect and analyze all the related document and receipt.

Current system also is not efficient and effective. Time and cost to manage the stock are very high and also used a lot of staff to manage and control the warehouse. Many staff does a same work.

1.3 Objectives

The available existing systems provide limited function to the user. Therefore, in the SMS, all the existing functions will be enhanced and provide more flexible functions to the various organization. The objectives include:

a) Provide a function for the user to manage store in the effective way.
   - To provide basic functions such add, delete, and update for data management.

b) Generate weekly report for store activity.
   - To autamatically generate weekly stock activities.

c) Filing system for manages all receipt and documents are relevant to store activity.
   - To provide a one stop filing system that will aid the stock tracking routines.

d) To reduce the time and cost of stock management.
   - To reduce time and cost in order to control and manage the warehouse.

1.4 Scope

SMS consists of filing system, report, complaint, quality control, re-order stock, and stock allocation mode.

- Filing system – manages all the receipt or relevant document and file all the document at appropriate place.
- Report – generate daily and weekly report to know number of product in store and product or inventory activities.
- Complaint – manage complaint from or to vendor.
- Quality control (QA) – quality control is to check quantity and quality product.
- Re-order stock – one module to alert that the product quantity is not enough and need to re-order stock..
- Stock allocation – state the allocation of the stock.
- Activity - manage all the staff activity such as staff work and staff schedule.

1.5 Project Significance

In presenting computerise system form stock management; SMS can make all the work easier. SMS also make the entire user easy to work and make all the product activities can do in smooth movement. This project is also contribute benefit to all user that has use this system because this system can find all the product or inventory in faster way. All the works can be record automatically and all receipt or relevant document can be managed very well. This can make all the record will be stored in the appropriate place and user can find the document easily.

For the warehouse staff, this system is allowed to minimize their works. The product or inventory can be finding in no time and the entire product be stored in the right way. This system also makes the entire warehouse staff just must fulfill one data record and the system automatically manages the data.

1.6 Conclusion

As the conclusion, after this system fully completed, it will definitely help the user to manage their stocks effectively. The expected result of this project can be more flexible to help all the warehouse staff to manage their warehouse and increase their security level in warehouse.

After this, the next chapter that will be provided is Literature Review and Project Methodology. This part will review the previous project and make a comparison with project that has been proposed. Besides that, this chapter also explains about the methodology that will be used in this project.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

The literature study in the previous system could give more references in system development process. All the advantage in the previous system can be implemented in the system development. The characteristic of the previous system as module flow and process should be improve and enhance from the previous system.

The methodology that used in developing a project is the key of succeeding of finishing the project within time and able to satisfy users' requirements. Since there are many type of methodology, it is vital to select appropriate methodology that will be used. The method that will be used will determine speed of the project.

The main concept in this system is to improve stock management. Literature review in methodologies, strategies and project analysis should be done in order to gain more understanding on the project implementation study. It is important to establish solid principles first before design and constructing of the system.

2.2 Fact on Finding

2.2.1 Stock Filing

Stock file is very important to ensure the controls are adequate. Stock file must be complete and accurately created. This stock file must has compulsory fields such as discount, delivery costs, cash discount, and etc. The stock file also must identify obsolete and potential obsolete stocks in respect of date code and expires stocks.

2.2.1.1 Stock Control

Each order or consignment (including contributions in kind), should be tracked using a pipeline report. This records all stages of stock movement from the initial request for goods through, as applicable, requests for tenders, placing of order, notification of shipment, planned delivery time and place, actual time of arrival, and distribution details. A simple board where progress can be monitored visually is likely to be very useful and can be set up at once.

2.2.1.2 Source Document

Purchase order. This defines the order: specifications, number of units ordered, price/unit, total price, packaging, date of purchase, supplier, destination etc. It should make reference to the legally enforceable standard conditions of contract. A form giving similar information to a purchase order is needed to track the goods until final distribution in order to account to the donor.

2.2.1.3 Certification Documents

i. Waybill/Air Waybill/Bill of Lading. This is the shipping document and contract with the transporter showing the destination and accompanies the goods from the port of loading to the contracted destination in duplicate. This document is the basis for customs

clearance and enables staff to check goods actually received against those loaded. Duplicate copies are also used by procurement staff to verify goods dispatched against those ordered (i.e. against the purchase order form). Where the movement is between warehouses under control of the same programme, use the delivery note.

ii. Release Note. This is used when goods are collected at the warehouse and the goods leave the stock control system - the person (driver or consignor) who collects the goods certifies that goods have been received in good order.

iii. Delivery Note. The delivery note is sent with the goods when they are transported (under your control) to another location (for example another warehouse). The receiver of goods signs the delivery note to certify that the goods have been received in good order, and a signed copy is returned to the sender. It is used when the goods have been sent by rail, road or barge (an "Aircargo Manifest" is used where the goods have been transported by air).

iv. Receipt Note: Where goods have been received without a delivery note or waybill/bill of lading, a receipt note is signed by the receiver of the goods and sent to the sender for certification.

2.2.1.4 Warehouse Documents

Whatever the size of the warehouse or store and wherever it may be located, the minimum recommended book-keeping controls are those outlined below. They must be complemented by routine inspection to ensure goods are properly stored and protected, and by a periodic audit.

i. Daily Incoming Shipment Log Sheet. This is used to record basic details of all inward consignments - description of goods, quantity, supplier, name of person receiving and date of receipt, with cross reference to waybills (above).

ii. Daily Outgoing Shipment Log Sheet. This is used to record basic details of all outward consignments - description of goods, quantity, destination, and date of dispatch, (with cross reference to waybill, delivery or receipt note)

iii. Stock card (sometimes called a bin card). One stock card for each different commodity in the warehouse is used to record every in and out movement of that particular commodity, with cross reference to the appropriate entries in the incoming/outgoing log sheets. It gives a running balance. Where possible those actually receiving and issuing the goods should not also be responsible for maintaining the stock card.

iv. Daily stock report. This gives basic details of goods in stock and the quantity, value, weight of these commodities for each warehouse location.

v. Loss/damage report: to report loss or damage to stock (whether incurred during transport or storage

2.2.2 Stock Allocation

Stock allocation is a one of the problem in stock management. Stock allocation is most important because it can make the shortest way to find stock. It also can make the stock management effectively. To make stock allocation easier, stock must be classification order by type or section. The entire product in one type must follow first in first out (FIFO) rule. This is to make sure all products that allocated earlier will be used first.

2.2.3 Secures Store Support

Secure stocks support is very important which are accessible by authorize person. This is particular useful if there is requirement to keep restricted stocks such as drugs, firearms, chemical, specialist equipment and computer equipment. The system

also must provide security to make sure only system admin can configure and manage organization data. Only authorize person can used this system.

2.2.4 Previous System

This previous system is about *Sistem Inventori AVA (SIA)* owned by Multimedia Centre, Politeknik Kota Melaka. SIA is developed to aid the users in using, handling and keep track the items and products in the particular Multimedia Centre.

SIA is a web-based system. Functions available in the SIA are limited in many aspects. SIA is developed for requisition of items that they wanted to use or borrow in which the user will need to key in the type of the item and the date of borrowing it. The SIA doesn't provide any functions that will enable the user to know their request status whether their request has been approved or not. This is one of the drawbacks of the system where users found difficulties in knowing their request status.

2.2.4.1 System Constraint

SIA is not a fully perfect system although it can perform its major function. Some of the SIA's constraints are as described below.

- Lack of request status checking
  The SIA doesn't provide the requestor's status on their request and this makes the requesting process incomplete where users have to check their request status manually.

- Lack of request management
  The SIA is also lack in request management functions where the user requests are not managed probably. The lack of sub functions like update and delete makes the system less efficient. .

- Lack of help and support for new users.

  Lack of help and supports functions may bring problems to new users where the user might not know how the flow of the system goes.

Figure 2.1: The SIA Interface

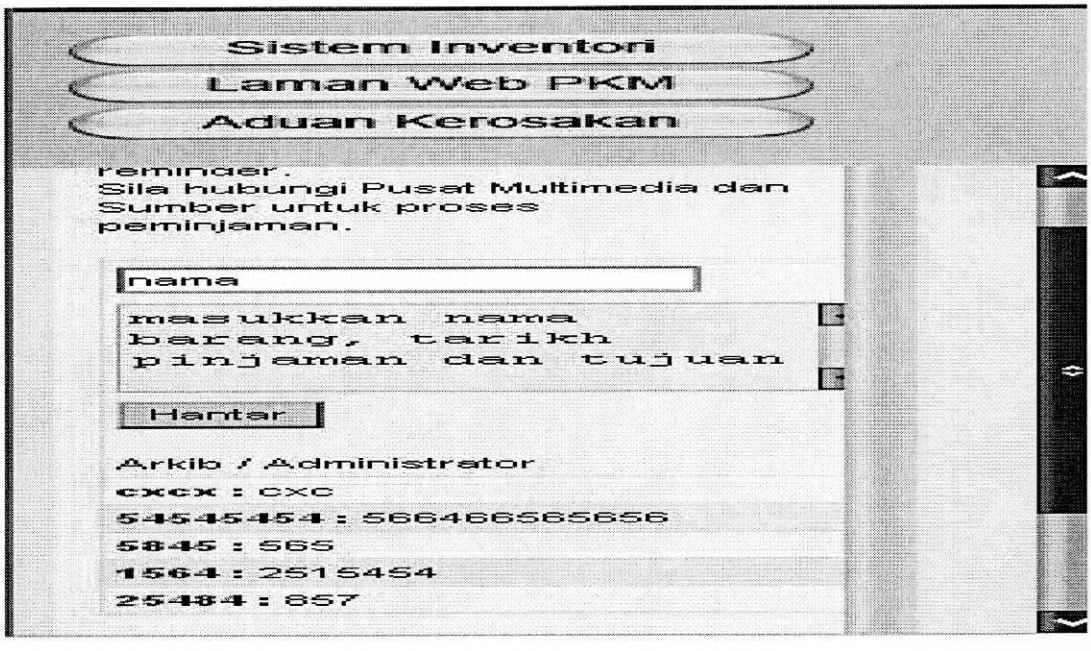

Figure 2.2: The SIA Register Loan

2.3 Project Methodology

A methodology is a process where the activities are primarily intellectual. Typically only the end goal of the process is manifested as a physical work product. In software the analysis and design activities are normally governed by a specific methodology.

SMS is very suitable to use Object Oriented and Analysis Design (OOAD) methodology. The advantages of this method is it can be modified the process based on specific needs, characteristic, history of the organization, culture and their in which it is in used. This method gives a lot advantages to software development process.

Rational Unified Process (RUP) is a software development methodology from Rational. It is actually hybrid of process framework and design framework because it includes elements of both process and methodology. RUP unifies the activities of four software development phases (Inception, Elaboration, Construction and Transaction). This will be done refer to the phases of the RUP in below:

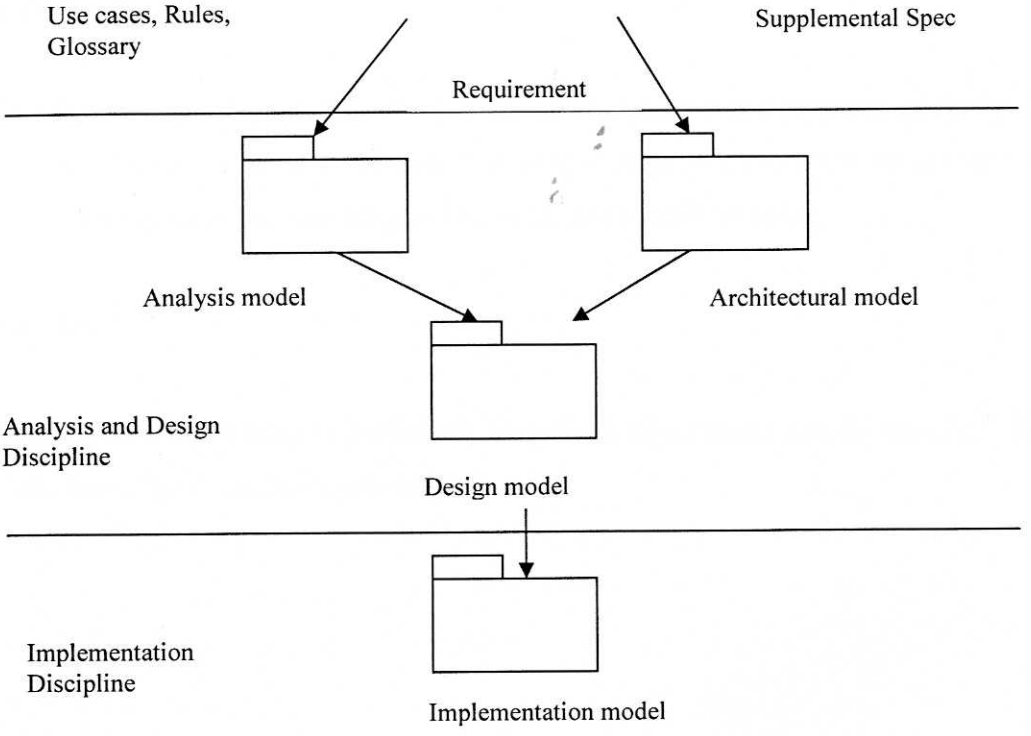

Figure 2.3: RUP Phase

a) Inception

In this stage, the project's business case is stated and the team decides if the project is worth doing or if it is even possible. It is important to the process to first formulate the scope of the project and also determine what resources will be needed.

b) Elaboration

In this stage, the developers take a closer look at the project to determine its architecture foundation and to evaluate the architecture in relation to the project. This stage is important to the RUP because it is here that developers analyze the risks associated with changing the scope of the project or adding new technologies along the way.