

PHARMACY INVENTORY TRACKING SYSTEM

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RS100 .N32 2006



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Pharmacy inventory tracking system / Nadirah Mustafa.

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**This report is submitted in partial fulfillment of the requirements for the
Bachelor of Computer Science (Database Management)**

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA
2006**

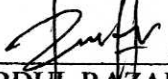
DECLARATION

I hereby declare that this project report entitled
PHARMACY INVENTORY TRACKING SYSTEM (PITS)

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

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DEDICATION

To My Family and Friends

ACKNOWLEDGEMENTS

I would like to thank to Dr. Abdul Razak Hussain for giving me guide and assistant in completing this project successfully.

I would also like to thank Mrs. Wendy Khoo who has spent her precious times to answer my interview.

My biggest thanks are dedicated to my beloved parents who have been giving me support and motivation throughout my project.

Not to forget, special thanks to all my friends who have share their idea and always help me when I am in need.

ABSTRACT

In healthcare industries, inventory management system is widely involve in their daily activities. The inventory is needed to be updated frequently. This project will focus on pharmacy inventory management system which involve few main activities that are, drugs registration, drugs ordering, stock balance calculation and report generation. All related information has been gathered from interview, facts and finding and Structured System Analysis Design Methodology (SSADM). Currently, only drugs ordering activity is done using a computerized system and the rest activities are done manually. Some problems have occurred such as human-errors in recording and calculating which lead to the lateness of the rest activities. A computerized pharmacy inventory tracking system (PITS) has been develop by including all the activities in pharmacy inventory management. The purpose is to speed up the daily activities. Besides, PITS is develop to increase productivity of the pharmacy departments.

ABSTRAK

Industri kesihatan merupakan sebuah industri yang melibatkan banyak inventori yang sentiasa perlu dikemaskini bagi memudahkan kegiatan harian. Projek ini menekankan kepada pengurusan inventori di dalam farmasi yang melibatkan beberapa aktiviti utama iaitu, pendaftaran ubat-ubatan, pesanan ubat-ubatan, pengiraan baki dalam simpanan dan juga laporan aktiviti. Semua maklumat berkaitan pengurusan inventori dikumpul melalui temuramah, fakta dan penemuan dan metodologi. Pada masa ini, hanya aktiviti pesanan yang dilakukan dengan menggunakan komputer manakala aktiviti-aktiviti lain dijalankan menggunakan kaedah manual dimana terdapat beberapa masalah yang timbul seperti kesilapan merekod, kesilapan mengira yang membawa kepada kelewatan di dalam aktiviti seharian. Sebuah sistem pengurusan inventori farmasi berkomputer akan dibangunkan dan akan merangkumi kesemua aktiviti didalam pengurusan inventori farmasi. Ini adaah bertujuan untuk melancarkan segala aktiviti harian di dalam sesebuah farmasi di samping meningkatkan lagi produktiviti mereka.

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LIST OF ABBREVIATION

Abbreviation	Description
PITS	Pharmacy Inventory Tracking System
DBMS	Database Management System
ERD	Entity Relationship Diagram
EERD	Enhanced Entity Relationship Diagram
DFD	Data Flow Diagram
GUI	Graphical User Interface
AIDC	Auto ID Data Capture
SSDAM	Structured System Analysis and Design Methodology
DBLC	Database Life Cycle
DDL	Data Definition Language
DML	Data Manipulation Language
DCL	Data Control Language
SDE	Software Development Environment
ODBC	Database Connection
KUTKM	Kolej Universiti Teknikal Kebangsaan Malaysia

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- K: User Manual

CHAPTER I

INTRODUCTION

1.1 Introduction of Project

Healthcare industries today are looking for opportunities to improve their daily operations efficiencies by reducing costs without effecting patient care. In addition, for these industries to function better they require accurate medical supply and equipment orders, tailored to the patient's needs, and delivered on-time.

Inventory is a subject in business that is hope can maximize profit. However, in many cases inventory has turned into a major cash flow constraint that cause necessary to optimize inventory using analytical and statistical methods in manual approach that is using papers. This will lead to paper wastage.

In healthcare industries, inventory management system can handle their inventory especially in pharmacy department. This includes all the activities that run in a pharmacy such as transaction, order items, items movement tracking, and generate reports.

1.2 Project Background

The study area for this project is Pharmacy in Pantai Medical Centre, Ayer Keroh. Currently, this pharmacy is using a computerized inventory management system. This system was built using DOS environment and it is use to handle their daily activities such as purchase order. But in the same time, some problems have been occurred.

It runs slow in terms of page navigation since users need to jump from one page to another page using hyperlink. The interaction between user and system is only using keyboard. Either to key in data or to using the system functions. Both situations will lead to time wastage. Since the current system was built using DOS platform, the interface screen is also in DOS environment (black screen). As the system is using by user through out the day, it must interactive and attractive yet still functioning as required.

The goal of this project is to develop a pharmacy inventory tracking system (PITS) by taking the current system in Pantai Medical Center, Ayer Keroh as guide. PITS is a computerized system that will be used to manage the inventory in a pharmacy. This system will have integration with database. This system will help the users to retrieve pharmacy information in more effective and better way.

PITS that is going to be develop will enhance some features of the current system that using DOS. PITS is a system that will be able to be used by many authorized users. It will be implement in a LAN network where two or more computers can run same activities in a same time. PITS will be develop in Windows operating system so that it will be more user friendly. The modules that will include in this system involve all the inventory management activities right from registration new medicine and supplier information till the report generation.

PITS is taking security issue as an important issue as user can login into the system only using different level of authorization. Specifically, the pharmacy's staffs can record all the transaction activities while admin can configure the system as he will be able to edit all the inventory information. Admin also will be able to create the purchase order using this system. Besides, admin can generate a various type of reports and will be able to view any activity history.

The tracking mechanism will be done internally and it is one part of system intelligence to auto-detects or check the stocks and give notification for the user, which product are reaching the re-order level. Therefore, the management and design of database must be performed in order to ensure the database growth and scalability. Furthermore, the system should allow the ease of the maintenance and allow growing in future enhancement.

1.3 Problem Statements

Those problems faced by the to-be pharmacy inventory system are:

- To identify the product that is reaching to reorder level, pharmacy clerk needs to check stocks. Since there are many products in the stock, it may cost a lot time for the user to look through one by one.
- Pharmacy clerks are unable to make right decision in both when to order and how to maintain the delicate balance between carrying too much and too little stock. Carrying too much stock results in high inventory operating cost and carrying too little may cause stock-outs and high order-cost.
- The current system cannot generate monthly reports; only generate daily sales transaction reports. Therefore pharmacy clerks will need to spend a lot of time to refer the daily reports for producing the monthly or yearly report.

- Inaccurate inventory report due to human error such as mistake in checking stock, mistake in changing product and so on. So they are unable to obtain accurate figure and the repetitive work will occur.
- Unattractive user interfaces and not user-friendly.
- Sales transaction is using manual ways has cause time consuming.

1.4 Objectives

The objectives to develop pharmacy inventory tracking system are:

- To help manage the re-order activities and control inventory stock balance.
- To help the pharmacist to do the decision making.
- To enable admin to review any activities history and then print-out various types of reports.
- To provide a better security for pharmacy inventory management system by develop a system with different level of authorization.
- To save man power and on the same time increase the daily activities by improve the graphical user interface (G.U.I).
- To build an inventory system that includes transaction process, so it will enable to calculate the stock balance.

1.5 Scopes

The system that is going to be develop is a LAN network based system where it will be placed on a computer in a pharmacy to help them manage their inventory. Here are the scopes for this system that can be divided into 3 group:

1. Users

The target user for this system is the department manager, pharmacy staff and Pharmacy manager who will use this system to manage their activities in managing pharmacies inventories.

2. Technology used

In transaction processing, sales transaction process is using bar code technology to calculate the total of payment and calculate the stock balance.

3. System

This is a LAN network based system which will be built using Microsoft Visual Basic 6.0 and Microsoft SQL Server 2000. It is able to run on specific computer. The modules that includes in this system are:

- Request medicine

Each department in the hospital can request for the medicine by inserting the information into the system.

- **Purchasing order**
Pharmacy's manager will be able to list the medicines that need to be re-ordered using this system. The order will be based on department requirements or depends on the stock balance.
- **Receive order**
When ordered medicines are received, all the medicine information will be recorded to control the stock balance.
- **New medicine/staff/supplier registration**
If there is any new medicine/staff/supplier available, the information can be added into the system database.
- **Sales transaction**
In order to manage the inventory stock, this system will be able to manage the system intelligence to auto detect or check the stocks and give notification for the user, which products are reaching the reorder level.
- **Inventory adjustment**
Adjust inventory returned or received by the pharmacy for a number of reasons: restocked / expired / destroyed
- **Report generation**
This system will be able to generate various types of reports.

1.6 Project Significance

The main purpose to develop this system is to help the pharmacists to manage their inventory information. This system will be able to replace existing file systems so it can help the pharmacy to improve their inventory. By using this system, users can solve most of their problems while using the current system.

1.7 Expected Output

The pharmacy inventory tracking system will provide expected function as:

1. **Authentication**
User can log in to the system by using different level of authorization.
2. **Purchase order**
Enter multiple medicine information as required.
3. **Request medicine**
Order multiple pharmaceutical/vaccine items by PO number and order date from a specific vendor and with a specific budget.
4. **Receive order**
Enter delivery information as items are received.
5. **Sales transaction**
As transaction happen, out-going items will be trace using bar code reader.
6. **Adjusting inventory**
Adjust inventory returned or received by the pharmacy for a number of reasons: restocked / expired / destroyed
7. **Registration new staff/ medicine/ supplier**
When new record exists, pharmacy manager will be able to add them into database.
8. **Report generation**
There are various reports that can be generate using this system. These reports will be monthly reports of the inventory system:

- i. Monthly inventory reports which include all the stock balance.
- ii. Transactions reports which include sales transaction receipt.
- iii. Report of medicine request made by each departments.

1.8 Conclusion

Today, most of the pharmacy management system in Malaysia is using file system. Some changes need to be done to help them manage their inventory with more effective. A computerized system is the best solution. By changing to this technology, pharmacy is hoped will be able to adapt to current requirement that increase from day to day.

Next phase will be literature review and methodology phase where the initial study of the PITS development will be start. All necessary and essential data will be gather throughout this phase for further understanding.