

**PHARMACY INFORMATION SYSTEM
(PIS)**

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**PHARMACY INFORMATION SYSTEM
(PIS)**

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This report is submitted in partial fulfillment of the requirements for the Bachelor of
Computer Science (Software Development)

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DEDICATION

To my beloved parents, your moral support is my greatest encouragement. To my respected supervisor, Dr. Mohd Khanapi Bin Abd Ghani, your advice and recommendations has truly been my source of inspiration in completing this project. To all my friends, your encouragement is the essence of my determination. And lastly to all who has involved during this project development, who always been there whenever I am in needs.

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ABSTRACT

This report discussed the requirement and process in developing Pharmacy Information System (PIS). This report includes the introduction of PIS which explains the PIS background, statement, objective, scopes, significance and expected output. PIS allow doctors to prepare drug order list and send it to pharmacists for dispensing to the patient. It is able to track waiting patients and updates dispense status. Chapter 2 of this report discusses the literature review and the methodology used for PIS. It includes project requirement such as PIS hardware and software requirement, and project schedule and milestone. Chapter 3 discussed the problem analysis and requirement analysis of PIS. It includes the PIS data requirement, functional requirement and non-functional requirement. Chapter 4 discussed the design of PIS, they are high-level design and detailed design. PIS architecture, user interface design and database design is include in high-level design. Chapter 5 discussed the implementation of PIS, which include environment setup, software configuration management and implementation status of PIS. Chapter 6 is the testing part of PIS, which discussed the test plan, test strategy, test design, and test results and analysis of PIS. Test case is design to identify PIS has met the business requirements. Lastly, chapter 7 is the conclusion of PIS. It discusses PIS strengths and weaknesses, propositions for improvements, and also the contribution of PIS.

ABSTRAK

Report ini membincangkan keperluan dan langkah-langkah membangunkan Pharmacy Information System (PIS). Report ini mengandungi pengenalan PIS yang menerangkan latar belakang PIS, kenyataan, objektif, skop, kepentingan dan output PIS yang dijangka. PIS membolehkan doktor menyediakan jadual ubat untuk dihantar kepada ahli farmasi bagi tujuan penyediaan dan pemberian ubat. Sistem ini berkeupayaan untuk mengenal pasti pesakit yang sedang menunggu dan update status pengambilan ubat pesakit. Bab 2 membincangkan kajian kesusasteraan dan metodologi yang digunakan untuk PIS. Ia termasuk keperluan projek seperti keperluan perkakasan dan perisian, serta jadual pencapaian. Bab 3 membincangkan penganalisan masalah dan keperluan PIS. Ia termasuk keperluan data, keperluan fungsian, dan keperluan bukan-fungsian PIS. Bab 4 membincangkan reka bentuk PIS, termasuk reka bentuk peringkat tinggi dan reka bentuk terperinci. Seni bina PIS, reka bentuk antara muka pengguna dan reka bentuk pangkalan data termasuk dalam reka bentuk peringkat tinggi. Bab 5 membincangkan pelaksanaan PIS yang mengandungi konfigurasi persekitaran, pengurusan konfigurasi perisian dan satus pelaksanaan PIS. Bab 6 adalah bahagian pengujian PIS yang membincangkan pelan ujian, strategi ujian, reka bentuk ujian serta keputusan ujian dan analisis PIS. Reka bentuk ujian disediakan untuk mengenal pasti PIS telah mencapai keperluan perniagaan. Akhir sekali, bab 7 merupakan kesimpulan PIS. Ia membincangkan kekuatan dan kelemahan PIS, cadangan untuk penambahbaikan serta sumbangan daripada PIS.

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CHAPTER I

INTRODUCTION

1.1 Project Background

Pharmacy Information System (PIS) is a computer system designed to meet the needs of pharmacy department in hospital. This system helps pharmacists in supervise medicine and have inputs on how drug is used. By using PIS, millions of drug's information can be reaches easily by pharmacists since they can search for particular drug information by just cluck in the drug name, and system will shown the information they need. Besides that, PIS ease the administrators in updating the latest drug code and information which provided by Malaysian Drug Code Cooperation (MDC) into system. PIS is designs to make the updating process simple, in which drug information given in Microsoft Excel file can be converting directly into system database. Moreover, doctors and pharmacists are able to search for a patient and prepare drug order list which is then send to the pharmacists, pharmacists then will be able to receive drug order from doctor and they can prepare drug list according to the drug order received. In the other hand, PIS enable pharmacists to record and check the drug dispenses status of a particular patient. In addition, PIS also have inventory management which can helps in stock management and alert the system administrators and pharmacists when the quantity of any item are below a set quantity. The PIS system could manage drug order processes efficiently and finally improve the delivery of healthcare services.

1.2 Problem Statements

Nowadays, there are still a numbers of hospitals or health care centers are still using manually process to record or managing their patients' information such as personal information or even the patient's medical history. Since the number of patients has reached a particular level which is now difficult to be manage by the staff, maintain the style of managing patients using paper and pen will only make the process harder and longer. Most of the Pharmacy Department in Malaysia's Hospital are now having difficulties in managing thousands of drug information and patient's drug dispense process since they are still using manual process to operate.

Currently, hospital staffs such as pharmacists and doctors always have to refer to the drug information provided by MDC in Ms Excel format to help them in managing the drug used. This action may cause them spend lots of time in searching the file and some time confusion will happen when there are lots of old and new file are located at the same location. Furthermore, pharmacists may need to refer and search the name of a drug which they want to refer from thousand of drug names in the list.

Besides that, all of the process which includes the process of doctor making a prescription orders and the drug prescription list sending to pharmacies department are all done manually. Currently, pharmacists may need to spend longer time to read doctor's writing and prepare drug list for a particular patient. In addition, sometimes pharmacists will have some problem in measuring weather the patient has taken the drug or in the other way round when there are too many patients to be handled.

Other than the problems stated above, most of the hospital in Malaysia also facing difficulties in managing the drug stock since all in and out of the drug are all noted and calculated manually where error in managing may occur. As the conclusion, to overcome the problems stated above, PIS will design suitable function to handle each difficulties faced by PIS administrators, doctors and pharmacists now a day. Besides that,

PIS will also enable the pharmacists to find out the prescription labels and instructions on how medication should be taken in easiest way.

1.3 Objective

Nowadays in Malaysia, medication management in most of the hospitals is still being done manually. Current manual system may cause pharmacists to spend longer time to get drug order, prepare drug list and to dispense drug for a particular patient. Besides that, because of the records are all note down by using paper and file, they are now facing the space consuming problems. In addition, some times the drug will run out of stock without notice by administrators and pharmacists because there are no alert which can mention them about the medicine quantity running down. To avoid and overcome the problems stated above, Pharmacy Information System (PIS) are planning to be developing.

Pharmacy Information System (PIS) are planned to be develop so that pharmacists can supervise and have inputs on how medication is used in a hospital. By using PIS, pharmacists will be able to work effectively. Drug information and dosage to prescribe can be find and measure by doctors and pharmacists in shortest time. Besides that, PIS ease the staffs in the process updating the drug code and drug information. Since the drug information provided by MDC are needed to updated for the staffs use every three month, PIS will design a function which will allow the staffs to directly converting the drug information from excel file into system database. The function above will save lots of time in the process updating drug information. In additions, the condition of short of any medication in store will not happening because the administrators and pharmacists will be mention about the lower quantity of any item in the store. Moreover, since all data and process are all design in computerize, thus the space consuming problem will

not happen. Lastly the medical analysis and report are easy to be managed and produce by pharmacists by using PIS.

1.4 Scope

Pharmacy Information System (PIS) is developed for hospital staffs in most of the hospital in Malaysia use, such as pharmacists and doctors. PIS is a system which is able to work online and standalone. System users are able to update latest information into system database in server when they are connected to the network. Otherwise, users can temporarily store data in local database when there is no network connection.

By using PIS, system administrators and pharmacists are able to view drug information, update the drug additional information and transfer the latest drug information into system from excel file which has been supplied by Malaysia Drug Code Cooperation (MDC). Besides that, doctors and pharmacists able to prepare drug order list to a particular patient and the pharmacists can use this system to load and view the drug order dispense by doctor for the patient. By using the drug order receives from doctor, pharmacist can prepare the drug list and records the patient dispenses status. Since the works can be done simultaneously, lots of time can be saved and staffs can work effectively and better services can be given to the patients.

Besides that, PIS are more secure then current manually system because only the PIS administrators, pharmacists and doctors who have user ID and password can access this system. PIS can help in achieving the objective in making the pharmacists and doctors' work easiest and the privacies of patients are highly protected.

The detail scopes for PIS are as follow:

1. Import and Manage Drug Code

- System administrators and pharmacists can directly convert data in Ms Excel file into system database and they are able to edit and add additional drug information.

2. Search Drug Code

- System will list down the possible drug name for user choose even user has just typed few alphabets.
- Pharmacists can search for drug information using drug name.

3. Prepare Drug Order List

- Doctors and pharmacists are able to prepare drug order list for the patient selected.

4. Receive Drug Order

- Pharmacists are able to view the prescription order making by doctor so that they can prepare medicine for patients.

5. Prepare Drug List

- System will able the staffs in pharmacy department to preparing drug list base on the prescription order making by doctor.

6. Manage Drug Dispense

- Pharmacists are able to view the dispense status of a particular patient since they are able to update the dispense status of patients after giving drug to them.

7. Manage Drug Stock

- Administrators and pharmacists are able to view the quantity of any item of drug in stock.
- System will alert the pharmacists about the low quantity of drug in store.

1.5 Project Significance

The development of PIS provides a lot of benefits and advantages to health workers especially pharmacists and doctors. By using PIS system, pharmacists are able to manage system in easy way where they can update the latest drug information into system by just clicking on the import button. Besides that, pharmacists can also manage drug code by using system function and they need not go to the database to edit when there is information needed to be managed. In additions, pharmacists can also manage the drug stock efficiently where system is design to mention the lower quantity of drug in stock.

Besides that, PIS ease the pharmacists work and enhance their working quality. By using PIS, pharmacists are able to work simultaneously. As example, pharmacists can load and view the drug order dispense by doctor to a particular patient and at the same time they are able to prepare the drug list and set the patient dispense status. In the other hand, pharmacists can search and view particular drug information easily from thousand of drugs in list. System able to list down related drug to choose by user when user key in related alphabet in the search drug function. This function can save lots of time when pharmacists need to refer to particular drug information which they are not sure with the drug name or drug code.

In additions, development of PIS also brings advantages to patients because they can get better service from hospital staffs. When the pharmacists are able to work faster and correctly, patients is the one who gain more benefits. It is because, time used to see doctor and get drug will become shortest. Besides that, PIS will only allow authorize user to access the system. This help in protecting the privacy of patients' information. As the conclusion, PIS help in managing the drug code, drug stock, ease the pharmacists in managing patients and ensure the patients get the best services and able to protect the patients' privacy.