BLOOD BANK MANAGEMENT SYSTEM

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BLOOD BANK MANAGEMENT SYSTEM

PAH ESAH BINTI SAYID AB RAHMAN

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

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

2011

DECLARATION

I hereby declare that this project report entitled

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

STUDENT : _____ DATE : 07 JULY 2011

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DEDICATION

To my beloved family especially my parents, my supportive supervisor (Prof. Madya. Norhaziah Bt Md. Salleh) and for those who had given me the inspiration and spirit to move on and not to give up in completing this project.

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ABSTRACT

Blood Bank Management System (BBMS) is a system developed to manage blood bank based on information of donor, patient and blood. It is developed to provide an efficient of blood bank management to Blood Transfusion Unit staff, Hospital Sultanah Nur Zahirah (HSNZ). This system was developed based on three sub modules, there are donor module, patient module and blood module. Beside that, this system also provided a faster report generation based on daily or monthly information for easier to Blood Transfusion Unit staff to update the stock of blood on time. BBMS also provide a simple reminder to staff on the blood expiry dates and blood under critical amount for more efficient management of blood bank.

ABSTRAK

Blood Bank Management System (BBMS) adalah merupakan sebuah sistem yang dibangunkan untuk mengurus bank darah dari segi maklumat penderma darah, penerima darah, dan juga stok darah. Ia juga dibangunkan bagi memudahkan pihak pengurusan Unit Transfusi Darah, Hospital Sultanah Nur Zahirah (HSNZ) di dalam pengurusan tabung darah. Sistem ini dibangunkan berdasarkan kepada tiga modul iaitu modul penderma darah, modul penerima darah dan juga modul darah. Di samping itu, sistem ini juga berfungsi menjana laporan harian dan bulanan kepada pekerja di bahagian Unit Transfusi Darah, HSNZ bagi memudahkan pihak pengurusan Unit Transfusi Darah, HSNZ untuk mengemaskini bekalan darah dari semasa ke semasa. BBMS juga mengeluarkan peringatan ringkas kepada pekerja untuk bekalan darah yang telah tamat tempoh dan juga bekalan darah yang berada di dalam kuantiti yang kritikal atau sedikit untuk melancarkan lagi pengurusan tabung darah.

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LIST OF ABBREVIATIONS

Universiti Teknikal Malaysia Melaka	**UTeM**
Blood Bank Management System	**BBMS**
Hospital Sultanah Nur Zahirah	**HSNZ**
Entity Relationship Diagram	**ERD**
Data Flow Diagram	**DFD**
System Development Life Cycle	**SDLC**
Data Definition Language	**DDL**
Data Manipulation Language	**DML**
Relational Database Management System	**RDBMS**
Database Life Cycle	**DBLC**
Database Management System	**DBMS**
Data Control Language	**DCL**
Structured Query Language	**SQL**

LIST OF ATTACHMENTS

ATTACHMENT	TITLE
1.1	Appendix A : Gantt Chart
1.2	Appendix B : Data Dictionary
1.3	Appendix C : User Manual

CHAPTER I

INTRODUCTION

1.1 Project Background

Blood is the component of the circulatory system that is responsible for carrying oxygen and nutrients to tissues and cells, removing waste and fighting infection. Blood is a tissue and is made up of 80 percent liquid and 20 percent solid, according to the Texas Heart Institute. Blood is made mostly of plasma, but also contains red blood cells, white blood cells and platelets. For each type of blood, it can only be used within a certain period.

Different components of the blood are responsible for carrying out separate body functions. Blood is responsible for carrying oxygen and nutrients from the digestive tract to the body's cells, as well as picking up waste and carbon dioxide and carrying them to the kidneys for filtration. Blood also helps regulate body temperature, carries hormones to the cells of the body, signals antibodies that fight infection and provides material for clotting, which helps wounds and tissue to heal.

Blood comes in four types: A, B, AB and O. Blood type is determined by the genes inherited by parents. Type A blood types carry only the "A" antigen, type B blood types carry only the "B" antigen, type AB blood types carry both "A" and "B" antigens and type O blood types carry neither antigen. Those with blood type O are considered universal blood donors because they can donate blood for any blood type.

Blood Transfusion Unit, Hospital Sultanah Nur Zahirah (HSNZ) located at Terengganu is the center that responsible in collecting, processing and supply blood for needs of the patient in hospital. Bloods are increasing every year. After the blood donation process carried out, blood will be sent to a laboratory to carry out testing process on that blood and separate into three categories: red blood cells, platelets and plasma. Red blood cells can survive for 35-42 days, platelets less than 5 days and plasma can be frozen and used within a year. Red blood cells are important for individual that involved in an accident and lost a lot of blood, patients undergoing major surgery that requiring a blood transfusion, anemia patients, and patients with thalasemia. Plasma is needed for provides material for clotting, which helps wounds and tissue to heal, while the platelets will be used to treat patients of dengue fever and patients with leukemia.

Blood Bank Management System (BBMS) is a system developed to facilitate the management of Blood Transfusion Unit, HSNZ. With the existence of this system, the blood bank management will become more systematic. In addition, the calculation of the total blood's stock can be more accurate than the calculation is done by manually. BBMS is a system that controls the three important modules (blood, patient and donor). For blood module, this system manage the types, quantity and expire date for each category of blood that stored in Blood Transfusion Unit. Blood module will automatically update the stock and expire date for each category of blood and will come up with a simple reminder for the blood that under critical amount and expired blood. For the donor module, it store the donor's health information and this module can calculate the total of donation for each donor, and display a simple reminder to give them awards. For the patient module, this module stored the patient's health information.

1.2 Problem Statements

Based on research that has been made about blood bank management in the Blood Transfusion Unit, HSNZ, there are some problems in managing the blood bank with existing system. Listed below are problems faced by the Blood Transfusion Unit, HSNZ.

i. Difficult to calculate amount of blood in stock.

The staff faced with problems to calculate the differents stocks of blood by manual and this situation can caused an error of calculation. The status of blood stock also not easier to update, means sometimes the blood is not exactly stock.

ii. Unable to make a report.

Before this, it was very difficult to make or get the report. It is because the staff must manually collect information on available records.

iii. Unsystematic record keeping of donors and patients.

Keeping records of donors and patients are not systematically will caused to difficulties to identify possible donor.

iv. Difficulty in identify blood expiry dates.

Difficulty for staff to remember the expiry date and the amount of blood stock for each category of blood.

1.3 Objective

BBMS is designed to meet several objectives outlined below:

i. Efficient management of blood bank.
ii. Easy retrieval of blood based on patient and donor information.
iii. Reduce data redundancy so that changes information will be update consistently.
iv. Ensure better security in managing the blood bank.
v. Ensure donors will get their awards based on the number of donation.
vi. Simple reminder to staff on the blood expiry dates and blood under critical amount.
vii. Staff can easily calculate stock of blood based on categories.
viii. Faster report generation based on daily or monthly information or requirements.

1.4 Scope

BBMS is developing for the main purpose to handle and maintain the management of Blood Transfusion Unit, HSNZ. The primarily target user is only a Blood Transfusion Unit staff. This system is combination of three sub-modules, there are blood module, patient module and donor module. Blood Transfusion Unit staff must login with valid username and password for the authorized to access each sub-module and can view the report.

Blood module can manage the types, quantity and expiry dates for each category of blood that stored in Blood Transfusion Unit. Blood module will automatically update the stock and expired date for each category of blood and will come up with a message for the blood under critical amount and expired blood.