

MEDICATION MANAGEMENT SYSTEM

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ABSTRACT

This project is designed as collection data centre that will use in one medical ward especially. Major objective of this project was to develop a system where a software using the approach Graphic User Interface (GUI) will be decommissioned perform. All information relating patient will be decommissioned record into the system. The details information including registration information, patient's record, bill payment, history medication of the patient and prescription in the pharmacy will be stated in one system to facilitate management data in hospital. As this start, every patient will fill the registration form and their detail is automatically saved into the system. All information relating stated patient will be decommissioned record by stay in the ward. Each patient has their own identities (ID number) that differentiate and will connect to the system. So, patient gave their ID number to staff hospital to get their record or history during they was in ward that has been kept in computer system. It is important if there was conflict which happened between patients and the hospital. New information can also be added in stated record and will always be upgrade in time. This project is help to create a better file management and mishandling patient's document especially in one large organization as hospital.

ABSTRAK

Projek ini adalah projek yang di reka sebagai pusat pengumpulan data yang akan di gunakan di sesebuah wad perubatan khususnya. Objektif utama projek ini adalah untuk membina satu sistem di mana satu perisian yang menggunakan pendekatan persemukaan grafik pengguna akan di laksanakan. Segala maklumat berkaitan pesakit akan di rekodkan ke dalam sistem. Maklumat-maklumat tersebut termasuk maklumat pendaftaran, rekod pesakit, pembayaran bil, sejarah perubatan pesakit tersebut semasa di wad dan preskripsi farmasi di gabungkan di dalam satu sistem untuk memudahkan pengurusan data di dalam hospital. Sebagai permulaannya, setiap pesakit akan mengisi borang pendaftaran semasa proses berada di wad. Segala maklumat berkaitan pesakit tersebut akan di rekodkan sepanjang berada di dalam wad. Setiap pesakit akan mempunyai no identity sendiri (nombor ID) yang berlainan yang akan di sambungkan kepada sistem . Jadi, pesakit hanya perlu memberikan nombor tersebut kepada staf yang bertugas untuk mendapatkan rekod mereka sepanjang mereka berada di dalam wad di mana telah di simpan dalam sistem computer. Ini adalah penting sekiranya berlaku konflik di antara pesakit dan pihak hospital. Maklumat-maklumat baru juga boleh di tambah di dalam rekod tersebut dan akan di kemaskini setiap masa. Projek ini membantu mewujudkan sistem fail yang lebih baik dan masalah kehilangan maklumat pesakit terutamanya di sesebuah organisasi besar seperti hospital.

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CHAPTER I

INTRDUCTION

Chapter 1 gives an overview of Medication Management System. The objectives of the project are stated clearly. There are few problem statements that explain about the existing problems which is eventually lead to this project development. The methodology explains briefly about the project flow from the beginning which is the literature review, the database and the software development, the database testing, the system testing, the troubleshooting and finally the thesis writing and the presentation. The scope of work which consisting of software development is being discussed in this chapter as well.

1.1 Introduction

Nowadays, the wards were used a pieces of paper as for documentation purpose. When the medical staffs are doing their routine, they recorded the details of the patients in the selected files. These piled papers will be kept in their old conservative way and will be extracted manually whenever needed. However, if the files were managed badly, the missing data from the file could causes medical negligence. Details of health information such as patient's record and medications are critical for the patients.

Therefore, this project is developed so that every details change is saved by the system and it is updated with the specific date and time. Thus, it will reduce error is probability by endorsing the right details into the system. Furthermore, the system integrates with the department within the hospitals.

For this project implementation, each patient is required to register and the medical staff will filled their details into the system. So, whenever they are in wards or not, all the data will be kept in the system.

To start a registration, the nurse must fill the form of patient's detail and so on when they come to the ward another time. The patients just only gave their id number and the staff will search the records. Each patient carries their own identity (ID number) that is assigned to a particular patient upon registration. When the information is added, an every log is uploaded. This event log about the patients will be display on the PC and can be changed/update by the authorized person only. This is to prevent any authorized person access the event log and might accidentally adjust or edit any information without permission. By having only restricted staff access, the confidentiality of data maintain as private viewing and only for medical purpose.

Once registered, all changes in health history from the moment the patients was in wards is recorded to the software system and saved. Later, any authorized person will have an access (password for the security purpose) to get a view of an updated medical information. So, all the patient data or information is saved in high security system of the software because that it was private and confidential.

1.2 Objectives

The objectives of this project are:

- i. To develop a software using Graphic User Interface (GUI)
- ii. To save time and increase the service efficiency
- iii. To develop the user friendly software that minimizes paper usage
- iv. To create a better file management system in wards where information about patient in ward
- v. To integrate database and software and ensure both of it working properly as planned
- vi. To create a standard of data security whereas only authorized medical staffs are allowed to access the patient's medical record, this is very private and confidential information.

1.3 Problem Statement

1. Set up certain security purpose for critical medical information, thus the information could be kept for monitoring purpose and medication schedule. This will protect the privacy of the patient as medical record is private and confidential.
2. Mishandling medical documentation in hospital. Reduces error in information of medical and registration records
3. Waste a lot of time, cost and energy. The medical staff would have been able to extract and saved the relevant details in system via a personal computer.
4. For -Doctor and Staffs are difficult to access information and make decision

1.4 Scope of Work

This medical management system project purpose is to integrate the medical management system better than before. Software that will be fully-developed in this project is use Visual Basic.Net and the database storage is Microsoft Access. The software will be displaying an event log of health information when the system is applying in the wards.

The system consist of registration for patient, prescribe new medicine, view the prescribe medicine before and view the payment record. The system is to be accessed by the medical staff only as they had the right username and password to access the system. The system is a platform of independent and a Stand-alone system that will be located in the ward (Registration Room).

1.4.1 Software

For the whole software development, it will use a Graphical User Interface via a Visual Basic.Net. this software are expected to be a user friendly programming as the user varies from nurses to medical doctor which had minimum exposure on the programming-based software. This programming is used to integrate with the reader, which act as input. The medical staff would have basic understanding of the event log and how to make use of it when they put particular card to be assigned reader. All the data is created in Microsoft Access. There are certain tables will specific names that will be link to Visual Basic.Net. All related data and information will be exported to Microsoft Access as data information. These information are saved in the system and may be extracted and being displayed in Visual Basic.Net graphic user interface. Once the database has been created, the software development were mainly focus on the software flow in order to produce a user friendly output.

1.5 Methodology

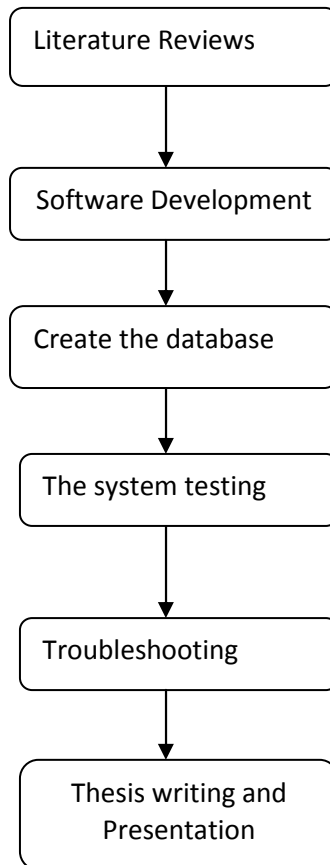


Figure 1.1 System Methodology

Literature reviews

- Collect information on hardware, GUI and database

The database and software development

- The database is designed according to the data required
- The appropriate GUI for the system is also developed

The database testing

- Once the database development work completed, the system is tested whether it is working successfully

The system testing

- The entire system is then tested
- Any errors will be modified and tested to ensure the system functions well

Troubleshooting

- If the system does not work, the troubleshooting has to be done to identify the problem

Thesis writing and presentation

- Prepare the thesis and present the project output for the seminar

CHAPTER II

LITERATURE RIVIEWS

Chapter 2 consists of theories and a brief explanation about Visual Basic and Microsoft Access which is the parts of the system, respectively the database software. This is followed by background study on RFID reader and RFID tags as the hardware that will be using in my future work or recommendation. The facts about RFID versus Barcode implementation and how the RFID may overcomes the barcode deficiency is discussed in this chapter too.

2.1 Literature Reviews

For the literature review contents, the brief explanations about the Visual Basic.net and the Microsoft Access 2007 will be discussed in detail. All the related theories and their function of the software also will be discussed in this part.

2.1.1 Visual Basic.Net

Visual Basic .NET (VB.NET), is an object-oriented computer language that can be viewed as an evolution of Microsoft's Visual Basic (VB) implemented on the Microsoft .NET framework. Its introduction has been controversial, as significant changes were made that broke backward compatibility with older versions and caused a rift within the developer community. The Microsoft .NET Framework is a software framework available with several Microsoft Windows operating systems. It includes a large library of coded solutions to prevent common programming problems and a virtual machine that manages the execution of programs written specifically for the framework. The .NET Framework is a key Microsoft offering and is intended to be used by most new applications created for the Windows platform.

Visual Basic is one of the most popular languages used in the software development industry. Its popularity comes from simplicity and efficiency. The new version of Visual Basic.NET builds upon these attributes and introduces the following useful new features:

- **namespace**

The namespace feature includes functions and properties to do a lot of complex things in a rapid manner. Think of this as shortcut syntax to get things done with less code. It groups commonly required information and functionalities for easier access.

- **partial classes**

Partial classes define a class in multiple files. This separation is useful when we want to have functionality of a class coded with different concerns and using inheritance might not be appropriate. Partial classes are used in Visual Studio.NET 2005 for auto-generated code. When we create a windows form. For example, the Visual Studio.NET 2005 IDE creates a lot of auto-generated code. In previous versions, this code is wrapped in regions in the same source file as

event-handling code. In Visual Studio.NET 2005, auto-generated code is separated from event-handling code by defining it in a separate source file as a partial class.

- **generics**

Generics enable the program to adapt itself to different types. The concept of generics is used in the implementation of collections in the new framework

- **operator overloading**

Operator overloading enables when to specify what operators such as + or – should do when invoked with objects of classes that have been defined.

2.1.2 Microsoft Access

Microsoft Access is a computer application used to create and manage computer-based databases on desktop computers and/or on connected computers (a network). Microsoft Access can be used for personal information management (PIM), in a small business to organize and manage data, or in an enterprise to communicate with servers. Microsoft Access, is a relational database management system from Microsoft that combines the relational Microsoft Jet Database Engine with a graphical user interface and software development tools.

Microsoft Access is part of the Microsoft Office suite and is the most popular Windows desktop database application. It is targeted for the information worker market, and is the natural progression for managing data when the need for a relational database arises or after reaching the limits of Microsoft Excel. Microsoft Access is used by programmers and non-programmers to create their own database solutions. Access tables support a variety of standard field types, indices, and referential

integrity. Access also includes a very intuitive query interface, forms to display and enter data, and reports for printing. The underlying Jet database which contains these objects is multiuser aware and handles record locking and referential integrity including cascading updates and deletes. Microsoft Access is very popular among non-programmers who can create visually pleasing and relatively advanced solutions on their own. It is also easy to place a database on a network and have multiple users share and update data without overwriting each other's work. Data is locked at the record level which is significantly different from Excel which locks the entire spreadsheet.

Database solutions created entirely in Microsoft Access are well suited for individual and workgroup use across a network. The number of simultaneous users that can be supported depends on the amount of data, the tasks being performed, level of use, and application design. Generally accepted limits are solutions with 1 GB or less of data (Access supports up to 2 GB) and 50 or fewer simultaneous users. This is appropriate for workgroup and department solutions where the total number of users number a few hundred.