

Development of clinic management system computer science



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Nowadays most of the clinic in Malaysia is using semi-systematic software to handle their daily activities. Doctor still need to write the symptom and prescription manually using paper and pen hence pass it to nurse for further process like recording, preparing and payment. This project known as ClinicOn is to develop a Clinic Management System exclusively designed to help all kind of clinic including traditional Chinese medicine clinic and western medicine clinic.

ClinicOn offers modules for management of client information including history, Doctor's appointments, administrative activities, billing and report. User will able to acces to different level of content based on the types of user log in. there are 3 types of user in the system which is doctor, staff and administrator. Doctor is valid to edit all the information of the user and access to database. Staffs are just able to edit the information of patients and store. Besides that, doctor is able to write prescription on the system while staffs are not allowed. Lastly, the administrator is able to log in too get full control on the system and edit the content and index in the database.

Apart from the standard features of other clinic management software, ClinicOn is develop by considering the end user in mind. ClinicOns' ease of use, multiuser functionality and manageability are exemplary compared to other. This system will be written in Java language using NetBean and the data will handle by a database in order to ensure all the clients can share the information or data that store in the server. The database will be created using MySQL language and will use the MySQL Connector/J in order to build the java application that can interact with MySQL.

The fully systematic software will be able to benefit doctors, staffs and clients.

Doctors are able to get benefits from this system because the manual activities like writing the patient's prescription are no longer needed. Patients also will gain advantages from this system because they do not have to spend more time on the process.

Objectives

No

Objectives

Date of Completion

1

To perform background study on existing clinic management system and the daily process for clinic.

To understand a clinic's management process and find out the problem for the process.

13 May 2010

2.

To determine a few possible solutions for the existing problem in the existing system and existing process.

To come out with a report illustrating the best approaches to solves existing problems.

15 May 2010

3.

To perform background study on similar clinic management system and compare the features between those systems.

To determine the benefits and limitation of the similar system and produce a study report based on the study.

17 May 2010

4.

To perform literature review on technologies and software that suitable for system development.

To generate a report on suitable technologies that use to develop the system.

21 May 2010

5.

To perform system analysis and determine the system requirements that need to be included in the new system.

To generate a series of system analysis report and features in the system.

2 June 2010

6.

To design the overall flow of the new system based on fact-finding from system analysis phase.

To build the logical model and flow chart.

13 June 2010

7.

To develop a fully functional system by using suitable development technologies and software.

To create Clinicon Clinic Management System.

18 June 2010

8.

To perform testing on the system and solve the possible problem, bugs.

To ensure the system is working perfectly and error-free.

1 July 2010

9.

To evaluate the system and gather user's feedback.

To come out a evaluation report about the system and future enhancement.

7 July 2010

10

To document the completed system.

To create a complete documentation on the system.

9 July 2010

System requirement

Hardware requirement

Minimum Requirement

Recommended Requirements

Intel Pentium III processor or equivalent

Processor

Intel Dual-Core processor or equivalent

128 MB

Memory

1GB

50 MB of free disk space

Hard Disk

100 MB of free disk space

CD-ROM Drive

Optical Drive

DVD-ROM Drive

LCD Monitor with minimum resolution of

1024 x 768

Display Devices

Widescreen LCD Monitor with minimum

resolution of 1280 x 800

Mouse and Keyboard

Input Devices

Mouse and Keyboard

Integrated Graphics

Graphics Processing Unit

Nvidia GeForce 6 series or above

ATI Radeon HD 2 series or above

10/100 Network Interface Card

Network Devices

10/100/1000 Network Interface Card

Broadband or dial-up internet access

Internet Connectivity

Broadband or dial-up internet access

Normal Printer

Miscellaneous

Color Inkjet Printer

Software Requirements:

Operating System

Microsoft Windows XP SP 2 and above.

Mac OS X 10. 5. 5 and above.

Ubuntu Linux(Any versions)

Java Runtime Environment

Java SE Runtime Environment 6 and above.

Student's Signature Supervisor's Signature

Date: Date:

Chapter 1: Background Study

Introduction

This chapter provides an introduction to and outline of the rest of the background study. This chapter made a background study on 2 existing similar system to define the advantages, disadvantages of those system. the advantages will be taken and disadvantages will be avoid to create a better version of ClinicOn Clinic Management system. The similar system that chooses to analysis are Vet Sys DB-Clinic Management System and Health Watch Pro Clinic Management system. This two system are free ware that used by small size clinic and popular with the simple and efficient function.

Study on general clinic operation system and process.

1. 2. 1General operating process of clinic.

The general operating process for small size clinic nowadays is most on manual and very troublesome.

When the patient process to the clinic, the nurse and staff have request patient's name or patient identification card number in order to get the full records of the patient. The patients records is stored manually by alphabets from A-Z or the years of birth of the patient according to the patient identification card number. After the records of patient is found, the nurse will put the patient records in the waiting place and wait for the doctor to attend the patient. If the patient is new and never visit the clinic before, the

nurses will present the patient a registration form. After patient completely fill in the registration form, nurse will fill in the new patient to a new patient records form and lastly put the patient records into waiting place.

The doctor will get the patient records that in the waiting place and start diagnosis the patient. the patient records will contain all information that needed by the doctor. after the doctor consult the patient, the doctor have to write prescription and decide the medicine for the patients. The prescription and medicine name will write in a paper manually. After the doctor finish consults the patient, the patient records which included the newest prescription will be hand's up to nurse or staff to collect the medicine and lastly payment process will be conducted. Nurses have to record down the medicine that sole and deduce manually from the total of the medicine records.

After the payment, the patient records will be placed according to categories either by alphabets or Identification card number. The nurse will be able to get the patient records easily every time the patient visits the clinic again.

1. 2. 2 Problem of existing general clinic management system

The process above is wasted lots of time. The time will be taken a lots when a nurse need to record the patients information from the patient registration form lastly just can put the patient in the waiting place. It is wasted time by doing the same things in two times. Besides that, lots of time also be used up when a nurse want to search a patient through categories by categories manually. after the doctor finish the prescription nurse have to reduce the total amount of the medicine manually from the medicine record and lastly

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payment by type in the total and required information for the payment receipt.

Beside of wasting the time, it also require large physical storage to store all the hard copy patient's records, employee records, medicine records and others.

1. 2. 3 Solution

Functional features and nonfunctional features.

1. 3 Summary of Background Study

Chapter 2: Literature Review

2. 1 Introduction

This chapter led the author to determine the suitable technologies that available that will be used to create the ClinicOn Clinic Management System. In this chapter, the author had made some studies on Programming language like java and C++, the developing software like JCreator, Visual Basic and NetBean. Beside that there are also some comparison between those studies and thus define the benefits and limitation of each technologies. After the studies, the author had chose the best and suitable technologies and software to develop the ClinicOn Clinic Management System.

1. 3 Study on similar system

1. 3. 1 Vet Sys DB- Clinic Management System

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1. 3. 1. 1 User Interface and process (screenshot of major features)

1. 3. 1. 2 Pros and Cons of the system

1. 3. 2 Health Watch Pro Clinic Management System

1. 3. 2. 1 User Interface and process()

1. 3. 2. 2 Pros and Cons of the system

2. 2 Study on suitable Technologies

2. 2. 1 Programming Language

2. 2. 1. 1C++

2. 2. 1. 1. 1 Advantages of using C++

2. 2. 1. 1. 2 Limitation of using C++

2. 2. 1. 2Java

2. 2. 1. 2. 1Java 2 Platform, standard edition 6

2. 2. 1. 2. 2 Advantages of using java

2. 2. 1. 2. 3Disadvantages of using java

2. 2. 2 Study on suitable development Software

2. 2. 2. 2 JCreator

2. 2. 2. 2. 1 Advantages of JCreator

2. 2. 2. 2 Disadvantages of JCreator

2. 2. 2. 3 NetBean

2. 2. 2. 3. 1 Advantages of NetBean

2. 2. 2. 3. 2 Disadvantages of NetBean

2. 2. 3 Study on suitable database Management System (DBMS)

2. 2. 3. 1 Microsoft Access 2007

2. 2. 3. 2 MySQL

2. 3 Client server architecture

2. 3. 1 What is Client Server Architecture

2. 3. 2 What is the advantage

Chapter 3: System Analysis

3. 1 Introduction

4. 1 Fact finding techniques

4. 1. 1 User requirements

4. 1. 2 Observation

3. 2 system requirement

3. 3 Use case diagram

4. 3 Logical Models

4. 3. 1 Class Diagram

4. 3. 2 relationship for Class Diagram

4. 4 Flowcharts

4. 4. 1 Overall Flowchart

4. 4. 2 Login Module Flowchart

4. 4. 3 Password Recovery Flowchart

4. 4. 4 Main Module Flowchart

4. 4. 5 Performance Flowchart

4. 4. 6 Time Improvement

Process Measured(maximum)

Average Time Used Without ClicnicOn

Expected Time used With CLinicOn

Intake Process

25Mins

5Mins

Patient Waiting Time(according to the number of patient waiting)

20Mins

10 Mins

Clinic Services

30 Mins

20mins

Payment

20 mins

5 Mins

Total Time in clinic

95 mins

40 mins

Chapter 4: System Design

4. 1 System Layouts

4. 2 System Design Features

Chapter 5 : Development tools

5. 1 JCreator

5. 1. 1 Advantages

5. 1. 2 Disadvantages

5. 1 Netbeans

5. 1. 2 Advantages

5. 1. 3 Disadvantages

5. 2 Netbeans IDE vs Jcreator

5. 2 MySQL Query Brower vs Command Prompt

Chapter 6 System Development

Chapter 7 : System Testing

7. 1 Performance testing

7. 2 Error handling testing

7. 2 compatibility testing

7. 4 security testing

Chapter 8 system Evaluation

Evaluation Criteria

Evaluation Result

System output

User interface

System engine

Summary of system evaluation

Chapter 8 conclusion

Chapter 9 references

Chapter 10 appendixes

A Gantt Chart

B1 Project Monitoring Report

C sample of Questionnaire Form

D Sample of Evaluation Form

E Print Screen

F Source Code