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E-health community services portal system / Azran Abdul
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TESIS^ APPROVAL STATUS FORM

JUDUL: E-HEALTH COMMUNITY SERVICES PORTAL SYSTEM

SESI PENGAJIAN: 2004 / 2005

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^ Tesis dimaksudkan sebagai Laporan Projek Sarjana Muda (PSM)

E-HEALTH COMMUNITY SERVICES PORTAL SYSTEM

AZRAN BIN ABDUL LATIF


This report is submitted in partial fulfillment of the requirements for the
Bachelor of Information and Communication Technology (Software Development)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA
2004

ADMISSION

I admitted that this project title name of
E-HEALTH COMMUNITY SERVICES PORTAL SYSTEM

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DEDICATION

To my God, Allah SWT

To my greatest idol, Rasulullah SAW

To my beloved parents, Abdul Latif Bin Md Juah and Rosnah Binti Ahmad

To my brothers, Mohd Fahmi and Mohd Tamimi

ACKNOWLEDGEMENTS

On the whole, Allah SWT, my God has made the success of this work possible. I must express my sincere appreciation to those who have contributed in one way or the other to full completion of the studying session in Kolej Universiti Teknikal Kebangsaan Malaysia and complete the Projek Sarjana Muda for Bachelor of Information Communication Technology.

I would like to acknowledge the following people for their kindness and support during my research session and during my system and project development. My gratitude goes first to our dean of FTMK, Prof. Dr. Ishak Desa, all lecturers in Faculty of Information Communication Technology, thankful for their invaluable insight into the challenges of designing, deploying, and supporting the system development process, especially Puan Syarulnaziah binti Anawar as my supervisor of Projek Sarjana Muda, they whose directions and efforts aided the outcome of this study and training session. Their invaluable contribution, encouragement and assistance throughout this study and training will always be remembered and appreciated.

My appreciation too goes to my parents, Abdul Latif Bin Md Juah and Rosnah Binti Ahmad for knowing to keep off your son's study. Finally, to those who have contributed but the names are not mentioned, the appreciation goes to them too. Their invaluable contribution, encouragement and assistance throughout this study and training will always be remembered and appreciated.

ABSTRACT

The main objective of E-Health Community Services Portal System is to fulfill the requirement of *Projek Sarjana Muda* task in 26 weeks. The project will involve the e-community concept and decision support. The problems, which have been analyzed in first phase E-Health System development, are lack of e-community services and decision support application. The community concept will involve the user interaction between doctors and patient. The user can get more benefit about health in easy ways from the interaction. The decision support functions are used to give responses among users that want to have some normal usual tips of health. The developer conclude that the healthcare industry faces significant challenges in closing the gaps of e-health services delivery to meet the desires and needs of a growing population of sophisticated healthcare consumers. The E-Health Community Services Portal System developments are focus the security authorization function, community services, virtual library facilities and decision support system. The entire problems that have been analyzed in the Feasibility Study and Analysis Requirement phase are applied the waterfall model and prototype model as the main method of solution. The research scope is focus to online health community services with facilities support for instances, virtual library and decision support system. The main requirements in E-Health Community Services Portal System are community services, virtual library facilities, decision support system and approve security level. All the information in the portal system is stored in a database that was developing by using Microsoft Access. The system is in English language firm as the main user requirement.

ABSTRAK

Objektif utama pembangunan Sistem Portal Kesihatan Berorientasikan Servis Komuniti ialah untuk memenuhi keperluan bagi kursus Projek Sarjana Muda dalam tempoh 26 minggu. Projek ini melibatkan konsep e-komuniti dan aplikasi sokongan keputusan. Masalah yang telah dikenalpasti pada awal fasa pembangunan Sistem Portal Kesihatan ini ialah kelemahan daripada konsep servis komuniti dan aplikasi sokongan keputusan. Konsep komuniti ini akan melibatkan interaksi pengguna antara doktor dan pesakit. Pengguna akan mendapat kelebihan tentang maklumat kesihatan daripada interaksi tersebut dalam cara yang lebih mudah. Aplikasi Sokongan Keputusan digunakan untuk memberi maklumbalas kepada pengguna di dalam memberi tips kesihatan yang normal. Pembangun sistem menyifatkan industri penjagaan kesihatan akan menerima cabaran di dalam memenuhi kehendak populasi masyarakat yang membangun pesat ke arah gaya kesihatan yang lebih baik. Sistem Portal Kesihatan Berorientasikan Servis Komuniti ini menumpukan fungsi keselamatan di dalam masuk sistem, servis komuniti, kemudahan perpustakaan maya dan aplikasi sokongan keputusan. Masalah yang dikenalpasti akan dianalisa di dalam fasa pertama kajian projek dan analisa keperluan sistem, dengan menggunakan pendekatan model air-terjun dan model prototaip sebagai metod pembangunan projek. Skop kajian adalah tertumpu kepada ruang kemudahan kesihatan secara online yang berkonsepkan e-komuniti dan kemudahan sokongan seperti koleksi maklumat dan aplikasi sokongan keputusan. Keperluan utama di dalam Sistem Portal Kesihatan Berorientasikan Servis Komuniti ialah servis komuniti, perputakaan maya, aplikasi sokongan keputusan dan ciri keselamatan data pengguna. Semua rekod sistem ini akan disimpan di dalam pangkalan data Microsoft Access. Sistem ini dibangunkan di dalam Bahasa Inggeris sebagai bahasa interaksi utama antara pengguna.

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LIST OF ABBREVIATION

KUTKM	-	Kolej Universiti Teknikal Kebangsaan Malaysia
FTMK	-	Faculty of Information Communication Technology
WBS	-	Work Breakdown Structure
PSM	-	Projek Sarjana Muda
SDLC	-	Software Development Life Cycle
CD-ROM	-	Compact Disk-Read Only Memory
CASE	-	Computer-Aided Software Engineering
ASP	-	Active Server Pages
DFD	-	Data Flow Diagram
ERD	-	Entity Relationship Diagram
STD	-	State Transition Diagram
DSS	-	Decision Support System
AI	-	Artificial Intelligence
SDLC	-	Software Development Life Cycle
ICT	-	Information Communication Technology
CM	-	Configuration Management
EP	-	Equivalence Partitioning

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CHAPTER I

INTRODUCTION

1.1 Overview

The word e-health describes the application of Internet and related technology to the field of health care. The scope of e-health can be envisioned as the use of Internet technologies to enhance the relationships between the actors in the healthcare system. Tele-health has been lauded as an answer to the problems of underserved populations, a lack of evenly distributed resources, and burgeoning health care costs (Bashshur, 1997).

There are three organizations, which it is in the research case study for the E-Health Community Services Portal System implementation. There are Subang Jaya Medical Centre, Sunway Medical Centre (SUNMED) and Pantai Hospitals Sdn Bhd. The scope of research is focus to e-community concept, virtual library and decision support application. The methodologies of project are based on waterfall model and prototyping model. The waterfall model is a time-ordered list of activities to be performed to obtain a system. In project analysis phase, the methods for collect information are interviews, observation and make research.

In the new millennium, Malaysians will expect and demand medical care of the highest quality. There has taken the chance to build a health portal with community services. Based on health portals or health information sites, the system provides empower users and doctor through customized education and on-line community experience. The main objective of E-Health Community Services Portal

System is to fulfill the requirement of Bachelor of Information Communication Technology in Kolej Universiti Teknikal Kebangsaan Malaysia for Projek Sarjana Muda. E-Health Community Services Portal System is based on health portal with enhancement in on-line community services and other support features for instances virtual library, events schedule and decision support application. The portal system is developing to take good opportunity to enhance the health services and community in online system in Malaysia.

1.2 Problems Statement

1.2.1 Problem Analysis

There are some problems in previous system operation, which can be state in the documentation. There are: -

i) Old Kind of Appointment

As usual, a patient should go to a medical centre to get some advice and tips about health from physician. Everyday, the physician has to explain many patients with the same tips and advice patiently and sometimes, patients cannot remember the advice or tips. Health communication literatures in this field documents that patients believe that doctor don't listen well and provide explanations that are confusing. As a result, many patients avoid seeing their doctor and postpone obtaining medical advice. (Harris and Associates, 1997)

ii) Lack of Health Community Services

Nowadays, health society is very essential for face in many challenges in life. The relationship between doctor and patient is still weak and the patient very hard to get advices from doctor every moment that they need especially the needy peoples.

iii) Not Interactive

Many of health portals in Internet are based on one-way communication only. It is just for explanation and gives information to users about their product and services of health in their medical centre. User cannot give their responses and administrator cannot get the user responses.

1.2.2 Methods of Solution

There are several types of solution for the problem statement of E-Health Community Services project All the specifications have referred to the problem statement below: -

i) Old Kind of Appointment

As usual, a patient should go to a medical centre to get some advice and tips about health from physician and they have to explain many patients with the same tips and advice patiently. The portal of E-Health Community Services System would solve the problem in efficient ways. The doctor can save their time from explain the same advices. The doctor only gives tips of health with the needy patient in appointment schedule. The doctor can arrange the appointment very well. The patient would receive the essential tips and advice from doctor and can download the files periodically.

ii) Lack of Health Community Services

Nowadays, health society is very essential for face many challenges in life. The relationship between doctor and patient is still weak and the patient very hard to get advices from doctor every moment that they need especially the needy peoples. User can contact with doctors and can join the community very efficiently.

iii) Not Interactive

Many of health portals in Internet are based on one-way communication only. It is just for explanation and gives information to users about their product and services of health in their medical centre. The best and interactive websites should have two ways communication between administration and portal users. The administration could have responses from user and user can give their best interaction for the portals. In e-Health portals, the two ways communications are very essential for community existence.

1.3 Objectives

The objectives of E-Health Community Services Portal System development are defined as follows: -

1. To fulfill the requirement of Bachelor of Information Communication Technology in Kolej Universiti Teknikal Kebangsaan Malaysia. The project is separated to two courses; Projek Sarjana Muda I and Projek Sarjana Muda II, which it is 3 credit hours for every course.
2. To create an awareness of the increasing role and potential of information technology and communications technology for effective and efficient health services, particularly for rural, remote and housebound users.
3. To provide health professionals and others with the theoretical and practical knowledge and this will enable them to take leading roles within the emerging field of Health Informatics.
4. Enhance the health services in online system and keeping track of the health services chosen by the patient and direct to the expertise in medical.
5. Monitoring the level of patient in diseases category periodically by the physician.
6. Increase the productivity of health services in online system.