

## BORANG PENGESAHAN STATUS TESIS<sup>^</sup>

JUDUL: DEVELOPMENT OF DENTAL MANAGEMENT SYSTEM FOR SCHOOL CLINIC

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**DEVELOPMENT OF DENTAL MANAGEMENT SYSTEM  
FOR SCHOOL CLINIC**

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


FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY  
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2006

## DECLARATION

I hereby declare that this project report entitled  
**DEVELOPMENT OF DENTAL MANAGEMENT SYSTEM  
FOR SCHOOL CLINIC**

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

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## DEDICATION

I would like to dedicate my appreciation to  
My beloved mother, Nor Azwah Alabakhash.

To my brother, Muhamad Izuan Khan,

And my sisters,

Nor Khaliza,

Ziana Zainal, Nur Amirah.

This dedication also goes to  
En. Mohd Suffian Sulaiman  
who act as my supervisor.

Not to forget my lovely friends.

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## ABSTRAK

Development of Dental Management System for School Clinic adalah sebuah sistem yang akan digunakan oleh bahagian pergigian di Poliklinik Ayer Keroh, Melaka. Sistem ini berupaya untuk menguruskan semua data berkaitan dengan maklumat pesakit yang berdaftar di klinik ini. Sistem ini juga dapat membantu doktor gigi untuk mengenal pasti serta mendalami masalah gigi pesakit dari masa ke semasa. Sistem ini membolehkan doktor gigi membantu pesakit meningkatkan tahap kesihatan serta kesedaran tentang penjagaan mulut mereka. Ini adalah kerana bagi setiap rawatan yang dilaksanakan, doktor gigi akan menyertakan penerangan serta jumlah mata yang diperolehi oleh pesakit tersebut. Dengan adanya maklumat ini, ianya akan memudahkan lagi proses rawatan lanjutan yang bakal dilaksanakan. Daripada data yang direkodkan, laporan akan dikeluarkan untuk merumuskan kesemua jumlah mata yang diperolehi pesakit. Selain itu, laporan statistik berkaitan jumlah pesakit yang datang untuk mendapatkan rawatan juga akan dipaparkan. Laporan ini dipaparkan dalam tempoh bulanan serta tahunan. Maklumat ini penting bagi klinik tersebut membuat analisis berkaitan jumlah kekerapan pesakit yang hadir untuk rawatan. Dengan adanya laporan tersebut, ianya akan dapat membantu pesakit untuk meningkatkan tahap kesedaran tentang kepentingan penjagaan kesihatan mulut. Jadi, dengan meningkatnya kesedaran untuk menjaga kesihatan mulut, banyak penyakit akan dapat dielakkan, kerana banyak penyakit bermula daripada mulut.



## ABSTRACT

Development of Dental Management System for School Clinic is a system which will be use in the dentistry department of Poliklinik Ayer Keroh, Melaka. This system able to manage all the patient record in the department. This system will help dentist to keep track the patient dental problems, from time to time. It will allow dentist to help patients to improve their awareness and take care about their oral health. This is because there is a treatment score and explanation made by the dentist after each treatment. By capturing all patient treatment data, it will help dentist to keep track patient condition and to confirm for next appointment. From the data, a report can be generating by this system to summarize all patient dental score. Besides that, the data regarding the patient dental information will also help the patient in order to apply for the next treatment and also to be use for the future. In addition, Development of Dental Management System for School Clinic able to come out with statistic report regarding the number of patient visits to the clinic in a month and a year period. This information is important to the clinic department, as they can do analysis based on the number of patient visits.

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## CHAPTER I

### INTRODUCTION

#### 1.1 Project Background

The Malaysian healthcare sector is currently valued at nearly U.S. \$900 million and is expected to grow to \$1.2 billion by 2005. The healthcare sector, which includes pharmaceutical products and medical devices, has grown at an annual rate of 6%. As this scenario had become a demand in our lifestyle, a system called Development of Dental Management System for School Clinic (DMS) is one of the solutions to fulfill the dentistry healthcare industry demand.

It is a system which will help dentist to keep track patient dental problems, from time to time. This system allow dentist to help patient to improve their awareness and take care about their oral health. The data regarding the patient dental information will help the patient in order to apply for the next treatment and also to be use for the future.

DMS can analysis the data that had been captured and come out with the analysis report to summarize the dental score for each patient. The reports able to summarize the patient dental healthcare performance from time to time according to the treatment made. Other than help the patient to upgrade their awareness regarding the oral health, these reports will also give benefits to patients as they can view their dental health performance.

## 1.2 Problem Statement(s)

As for this time being, there is no dental management system that had been applied to the Secondary School Dental Clinic. Usually, the dentist will use a dentist card to record all the dental information. This information can easily being cheated, as the information can be deleted and also change easily.

The manual paper-based method that had been used by the clinic can be viewed by anyone else. Patient dental information should be kept as a secret by the clinic as a policy of treatment. In addition, the dentist card has the possibility to lost, misplace or being taken by someone else.

By having the new Development of Dental Management System for School Clinic (DMS), all the record regarding the patient dental information will be kept in a secure database and can be easily keep track by the dentist. Dentist can figure out the best treatment for the patient by viewing the past dental history that had been recorded before.

Patient's data will have less possibility to lose; dentist can keep track patient last treatment and view the next appointment that had been set. In addition, there are statistics reports which will be generate by this system. It involves patient condition from time to time, and also the average score for each of the patients. The reports can display the number of patient's visits to the clinic.

### 1.3 Objectives

The goals that wish to be achieved are:

- i. System manages to save all the patient record accurately and computerized.
- ii. System able to avoid the data redundancy of patient dental information.
- iii. System manages to check the available date and time to make appointment between dentist and patient.
- iv. System able to display patient dental history and treatment that had been done.
- v. System provides an interactive tooth illustration charting to make the process of recording patient dental information easier.
- vi. Generate report of patient dental condition according to the treatment session.
- vii. Generate statistic report regarding number of patient visit for treatment at the clinic.



## 1.4 Scopes

### 1.4.1 Users

To make sure that all the users for this system will get the benefits. Users of DMS can be list as the nurse, dentist as well as the patients. Nurse will easily use this system to manage all the patient data and capture all the information regarding the patient details. The important information that should be included in this system is such as the patient details, appointment information, treatment information, patient treatment history, patient future history and others important information.

On the other hand, the second user of this system will be the patient themselves. Patient will be able to view their appointment date, time, and other appointment details.

DMS able to generate an analyze report regarding the patient oral health condition. The report can be viewed either by the dentist or nurse to keep track of patient health record. The report that will be generate including the over all oral health condition of the patients. The report can also be viewed the visit made by all patient in monthly and yearly period.

This system will be used by the management of a dental clinic in a Secondary School. This is because, nowadays, the most of individual had started to increase their oral health care. By starting this system in a secondary school, students (patients) will be able to understand each of the oral disease and they will take good care of their oral health.

As DMS will kept all the dental information for students in secondary school (for form 1 until form 5), each of the students may have the opportunity to view their oral health care from the report that will be generate by this system.



## 1.4.2 Platform

Development of Dental Management System for School Clinic will be use in the secondary school dental clinic. This system will be developing by using the application of Macromedia Dreamweaver, and ASP. While the database that will be used to save all the information and data is using the SQL Server 2005. The Operating System (OS) that will be use is Windows XP.

### 1.4.2.1 Module

#### i. Patient Registration

Patient Registration module will help user to register patient information accurately. All patient details such as the IC number, PDC number, and other important data will be saved in the database. User can also search the information about the patient easily from this module. The searching process can be done either by the PDC number or by IC number. The two options made to fulfill user requirement. This is because; some patient may forget their PDC number. So, by having another option of searching, patient's data can be search.

#### ii. Appointment

Nurse/Staff can set the appointment between the dentist and the patient. Appointment module help dentist and patient view their appointment schedule for the further dental treatment. Patients can view their appointment that had been made by the nurse.

iii. Treatment

Treatment module can make the capturing patient dental information easier. Nurse/staff can easily record the information through the tooth illustration interface. There are regions for each tooth, because the tooth illustration follows the traditional dental card image.

iv. Report

Report module able to display number of patient visit in monthly and yearly time. The report will help dentist to monitor patient condition in a year and their performance from time to time. The report also able to calculate the average treatment scores for the patient.

v. System Administration

System Administration module help administrator to manage the users of this system. Administrator able to set up the users that can access this system as well as see the entire module that included in this system.

## 1.5 Project Significant

In the process of developing this system, there are many things that need to be consider and do research. As this system is meant to be used by the dentist as well as the patients, there are many benefits that can be achieved by both of them.

### i. Dentist will get benefits

This system will make sure that the process of capturing data from the dentist be easier, as this system will provide an interface that will show all the tooth structure of each patient. The dentists just need to click the appropriate teeth and insert the treatment that he/she have done. The dentist can also view the past treatment that the patients done.

So, the dentist can figure out the best treatment to be done towards the patients according to the patients' conditions. Dentist can also check the list of medicine that had been taken by the patients from the last treatment. All these information are important for the dentist to make sure that patients get the best treatment and have a healthy oral condition.

This system will make sure that the dentist can easily capture the information about the patients. So, there is no paper-based method to be used for the dental treatment. This will make sure that the data that had been capture are accurate and safe. Besides that, dentist will get an opportunity to do a research from the patients' condition as each of the patients information had been save accurately in this system.

This system will also generate report for each patient according to their dental problem. Dentist as well as the patients is able to view the

report according to yearly time. The report will show the users how the condition of the patients.

ii. Patients will get opportunity to increase their oral health care

As all the information regarding the patients oral health care had been gathered in this system, they can easily view the result and understand how the dentist done each treatment for them. Besides that, patients can gain information from this system as there is an area where patients can search for the oral disease according to the symptom and also others oral health care tips. Users can also search the best treatment that usually done for certain dental problem.

iii. Nurse/Staff

Nurse and staff of the dental clinic can easily record and search the patient information into the system. This system will also make sure that there is no data redundancy.