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JUDUL: PREGNANCY SCHEDULING AND INFORMATION SYSTEM

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PREGNANCY SCHEDULING AND INFORMATION SYSTEM

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This report is submitted in partial fulfillment of the requirements for the
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**FACULTY OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
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2004**

DECLARATION

I hereby declare that this project report entitled

PREGNANCY SCHEDULING AND INFORMATION SYSTEM

is written by me and is my own effort and that no part has been plagiarized
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DEDICATION

I owe this project and my true happiness I feel today to my beloved parents, my lovely father Haji.Ibrahim Harun, my mom Hajjah Fatimah Daud and not forget for my grandfather Haji Daud Salleh. Since the day I started going to this *Kolej Universiti Teknikal Kebangsaan Malaysia* (KUTKM) until today, they are very caring and supporting toward me. Also to my beloved sisters and brothers, thanks for your support and valuable advise.I love you all and thank you very much.

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ABSTRACT

This project paper is record for Pregnancy Scheduling and Information system. This document had record the process of development for Pregnancy Scheduling and Information system from beginning to ending. Pregnancy Scheduling and Information is developed to enhance the existing system to become more convenience and efficiencies. Currently, the same information may be recorded by difference department in the hospital. Thus, there will be more than one recorded are exists even in a hospital. This situation will make complexity for hospital management system. Besides, the existing manual will be replaced with the computerized system and at the same time in order to ensure decreasing of human recourse are able to overcome as soon as possible when this system was build up. This system is importance, as it is developed to replace the existing manual process and the most important purpose is to ease works of nurses and doctors. In addition, this system also wants to provide better service to the patient as much as can by given the patient capability to make online registration and capable to get as much as information about the pregnancy through the system provided. Monthly Check Up service also had provided in PSI system to be able to patients get monthly check up by doctor and the result of check up will be inserting by nurses. The other features in this system are the patient is able to request any question arising through email service and make any comment about this system's service. PSI is chosen OOAD methodology to developed PSI system. The users of this system are Nurses, Doctors and Patient. Entire three of these users have their own level usage. It is because to ensure the confidential information is not to be access by unauthorized user.. As the PSI features has the security function, the users are compulsory to insert the username and password first before enter this system As the conclusion, PSI system is able to provide benefits to all users of this system

ABSTRAK

Kertas projek ini adalah khas untuk merekodkan sistem Pregnancy Scheduling and Information System. Dokumen ini merekodkan tentang proses membangunkan sistem Pregnancy Scheduling and Information System dari awal hingga akhir fasa. Pregnancy and Information sistem ini dibangunkan untuk meningkatkan lagi sistem semasa supaya menjadi lebih mudah dan cekap. Pada masa sekarang, maklumat yang sama mungkin akan direkodkan oleh jabatan yang sama di sesebuah hospital. Jadi, terdapat lebih daripada satu data akan direkodkan pada masa yang sama. Situasi ini akan menyukarkan pihak pengurusan hospital mendapatkan rekod yang terbaru. Oleh itu, sistem semasa akan digantikan dengan sistem berkomputer dan pada masa yang sama untuk mengurangkan penggunaan tenaga pekerja. Sistem PSI akan menangani masalah semasa yang berlaku. Sebagaimana sistem ini dibangunkan, ia amat penting utk menggantikan sistem semasa dan tujuan paling utama adalah utk memudahkan kerja-kerja harian jururawat dan doctor. Perkhidmatan Monthly Check Up juga disediakan oleh sistem ini bagi membolehkan pesakit mendapat rawatan setiap bulan oleh doktor dan keputusan rawatan akan direkod oleh jururawat ke dalam PSI sistem. Diantara ciri-ciri lain didalam sistem ini adalah pesakit boleh menghantar sebarang pertanyaan melalui khidmat e-mail dan memberikan sebarang komen tentang perkhidmatan yang telah disediakan oleh system ini. OOAD adalah metodologi yang telah dipilih untuk membangunkan sistem PSI. Pengguna yang terlibat didalam sistem ini adalah jururawat, doctor dan pesakit. Kesemua jenis pengguna ini mempunyai peringkat capaian data yang berbeza-beza. Ini adalah untuk membolehkan sebarang maklumat sulit tidak boleh dicapai oleh pengguna yang tidak dibenarkan. Sebagai penutup, sistem PSI boleh memberikan kemudahan dan faedah kepada semua pengguna sistem ini.

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LIST OF ABBREVIATIONS

ABBREAVIATION	DESCRIPTION
KUTKM	- Kolej Universiti Teknikal Kebangsaan Malaysia
BITS	- Bachelor Information Technology Software
PSI	- Pregnancy Scheduling and Information
PSM	- Projek Sarjana Muda
SMS	- Short Message Service
OOAD	- Object Oriented Analysis and Design
UML	- Unified Modeling Language
USDP	- Unified Software Development Process
CSI	- Component Software Interface
CSCI	- Computer Software Configuration Item
UIS	- User Interface Service
BS	- Business Service
DS	- Data Service
ERD	- Entity Relationship Diagram
EDD	- Expected Date of Delivery
ASP	- Active Server page
AI	- Artificial Intelligent
EPRs	- Electronic Patient Records
PBRs	- Paper Base Records
DRGs	- Diagnosis Related Groups
MDA	- Model Driven Architecture
IIS	- Internet Information Service

LIST OF ABBREVIATIONS

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KUTKM	- Kolej Universiti Teknikal Kebangsaan Malaysia
BITS	- Bachelor Information Technology Software
PSI	- Pregnancy Scheduling and Information
PSM	- Projek Sarjana Muda
SMS	- Short Message Service
OOAD	- Object Oriented Analysis and Design
UML	- Unified Modeling Language
USDP	- Unified Software Development Process
CSI	- Component Software Interface
CSCI	- Computer Software Configuration Item
UIS	- User Interface Service
BS	- Business Service
DS	- Data Service
ERD	- Entity Relationship Diagram
EDD	- Expected Date of Delivery
ASP	- Active Server page
AI	- Artificial Intelligent
EPRs	- Electronic Patient Records
PBRs	- Paper Base Records
DRGs	- Diagnosis Related Groups
MDA	- Model Driven Architecture
IIS	- Internet Information Service

PC	-Personal Computer
IC	- Identity Card
Add	- Address
Edu	- Education
Num	- Number
Kg	- kilogram
Hb	- Hemoglobin
E	- Exception
A	- Alterna

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter explains about the Pregnancy Scheduling and Information system. PSI system will develop as web base system which be functioning to communicate and connect with all users who are doctors, nurses and patients. This chapter will be divided into seven sections. Project's background is briefly explained in Section 1.2. Section 1.3 described problem statement of e- Project and all the objectives are mentioned in Section 1.4. Section 1.5 will be defined all scope of e- Project and significance of this project are defined in Section 1.6. Expected result is discussed in Section 1.7 and finally, this chapter will be concluded in Section 1.8.

1.2 Project Background

Actually this business process is already provided at clinic and hospital but the problem is implementing in manual process using human power as main power. So all the manual process will be computerize.

Entire document that already used also will be computerized in order to ensure all the pregnancy process will be able to running successfully. By using PSI there are few features will be added such as email services, online registration, and online information.

The patient is able to make an online registration. For the conformation, the system will send the user name and password to the patient through the email and short message service (SMS). The system will also give a reminder message through email and SMS about patient check up schedule

The doctor will give the monthly check up to the patient base on the patient scheduling listed. The result of the check up will be given to nurse to ensure all patient record will be updated each time they came for treatment. In this case, the doctor also should have to view the previous result of check as a reference for next treatment.

Besides, this system is provided the patient who pregnant in 3 months until 9 month. But the system will also allow the patient less than 3 month to make the registration because the system will send the reminder to the patient through SMS and email when the patient reach the essential duration for treatment.

This system will also provide the information about Planning a Pregnancy, Prenatal Medical Care, Pregnancy Test and Procedure and how to calculate Expected Date of Delivery (EDD), so the patient will be t able to browse this web site and get a lot of information. After view all the information, patients are able to request a questionnaire to the doctor through email service.

Moreover, the patient will be able to know their pregnancy problem by inserting their pregnancy problem to be diagnosed by system. After get input from the patient, system will diagnose the problem and provide as output. For more information, patient is able to request through email or go to the clinic to see the doctor.

1.3 Problem Statement

I. Data entry redundancy

Based on current business process, the same information may be recorded by different department in the hospital. This may happen mostly on the patient registration. So, there will be more than one record of a patient will be recorded in the hospital and this situation will make difficulties for the management system to administer the patient records.

II. Time Consuming

By using previous business process, the patient must go to clinic or hospital even just to make a registration and get the information about pregnancy problems. All these procedure is wasting patient time.

III. Data is not consistence and not confidential

Based on current business process, patient's information is recorded in a card and will be kept in a filing system, which the assistant needs to find the patient card one by one. Therefore, the data is hard to keep track, since there are thousands of data is stored in one place. Besides, the security of data is also not very confidential, since it can be achieved by any staff that authorized to enter the room, where the data is stored and hence, it can also increase the possibility of data.

IV. Limited service are provided

All treatment and consultation process will be held during working hours, but not all patients can spend their working hours to go to the clinic. It will course the patient cancel the appointment.

1.4 Objective

Pregnancy Scheduling and Information (PSI) is developed with these following objectives, which are:

- To computerize the business process. As we know the previous system still use piece of paper to record the patient information or any process that occur. So this system will computerize all the manual paper base system.
- To ensure the patient information will be able to retrieve quickly and the correctness and validity of data appearance is deal.
- To provide a secure patient health record by using different level of authorization security system
- To ease the users of this system work. The doctor and nurses do not need to record the redundant data anymore but just retrieve from database.
- To ensure there is no limited time to work even after office hours. Doctors, nurses and patients are still able to browse PSI system and continue their work like in clinic. Beside the uses of telephone, patient also able to request the question to doctor through email as a first step before they go to see the doctor at clinic.

1.5 Scopes

PSI system has three types of user which are, the doctor, nurse and patient. So there is difference level to access this system. So there are limited level for each other. The whole system will develop by using ASP language and use the MS SQL server 2000 for database. PSI system consists of 3 modules which are:

I. Pregnancy Scheduling

Once the patient makes an online registration and fulfills the request form. The system will send conformation message that consist of username, temporary password and appointment date to patient through email and SMS. The purpose of first appointment is to give patient blood and urine test, so the doctor will evaluating the health status of patient such as types of hemoglobin, types of blood, types of ederma and etc.

The most important test is Urinalysis. It is because from the test, doctor will know the pregnant status. After that, nurse will insert all these information into the system and the system will automatically generate the patient of pregnancy scheduling. So, patient will be able to get monthly check up base on pregnancy scheduling listed.

Doctor will insert result of the check up in system and nurse will print the result and give to the patient for the next process. This system are provided the patient which pregnant in 3 months until 9 month. This system do not cover about pharmacy part, that means, after the patient get the result of check up printed. The process will stop here and do not proceed about medicines and fees part.

II. Pregnancy information

Provide the information about Planning a Pregnancy, Prenatal Medical Care, Pregnancy Test and Procedure and how to calculate Expected Date of Delivery(EDD), so patients will be able to use this web site and get a lot of information. Considering that 95 percent of expectant women don't deliver on the due date ordained by the pregnancy calendar, this change in thinking may be highly overdue. Besides, patients are able to expect the date of delivery in order to make more preparation even may be highly overdue. Further information can be obtained by having a consultation with the doctor.

III. Patient Monthly Check Up

When the patients come to the hospital for the first time, they will undergo a urine and blood test. Patient also must fulfill the patient health record that is divided into three topics which are history of patient health, patient medical problems and patient immunization. Normally the patient who pregnant in 3 until 9 months will comes to see the doctor and ready to undergo the treatment until delivery date. For the first time they come, they must register at counter registration and from that step they will be calling by nurses to get first monthly check up from doctor. The result of check up will be inserting in system by nurses. After registration, the patient will get the monthly check up scheduling or listing of appointment that stated date from first day they come to get check up until the baby is born.

1.6 Project Significance

Pregnancy of Scheduling and Diagnosis will be used by nurse, doctor and the patient. This system basically builds up to ease the doctors and nurses jobs. All users of this system will get their own benefit by make use of this system as well. In patient's side, definitely do not waste the patient time. It is because the patient able to make a registration and get lot of pregnancy problem information on line.

Base on previous system, if the patient who has little bit pregnancy problem such as morning sickness, the patient has to go to see the doctor at clinic and get some consultation from doctor. But by using this system, the patient is able get a lot of information about pregnancy. There are few of information about pregnancy and baby corner. So the patient is able to get and read the information that absolutely will help the patient situation. It is not just a reading, the patient also is able to request a questionnaire about the problem occurred to the doctor through email. Besides they capable to make a comment about the PSI's service in order ensure this system always give the best service to the customer and satisfied the users.

The other advantage can be benefited through this system is the computer can store for more information than a human. It will help the administrator in managing data storage, and at the same time, it can secure the data from retrieved by unauthorized user. Besides, the computer also does not 'forget' or make mistakes. So the data achieved is more accurate and confidential.

Nowadays, mobile phone is a trend and a need to all people in communication purpose. PSI also take a that opportunity to ensure users of this system able to get a information in many way such as through email and SMS. The patient also will get the reminder message through email and SMS one week early from appointment date.

1.7 Expected Output

PSI system will be develop as web base system which be functioning to communicate and connect with all users with are doctors, nurses and patients. This project is built base on three-tier concept; which include three component: system's component, database and server. The users of this system have their own limited area

This system will implement SMS and email to make communication more effective and do not waste the time. Base on business process, sometimes communication through telephone is not suitable and may be not clear or other reason. So to handle this problem, SMS and email had been choose to decrease information error occur.

PSI system also will be able generate the pregnancy scheduling after get the result of first patient check up. The result of check up will be entered by nurse. So, Pregnancy scheduling will be done automatically by this system. The second and continuous check up date can be referring to pregnancy scheduling listed.