

Design and Implementation of Web-Based Patient Management System Using C#

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Abstract: This work is on design and implementation of Web-Based Patient Management System (PMS). The system provides the benefits of efficient tasks, improved administration & control, patient care, and improved effectiveness. . The paper describes about an knowledge of a web-based platform that make many medical/patient processes online using Web, networking technology that can be very important in implementing the functionality of online patient management. The system was designed in C# as the front-end software, which is an Object Oriented Programming language and has connectivity with the back-end software in MySQL database.

Keywords: Patient, Employee, Web-Based, Inpatients, Outpatients, Drug.

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I. INTRODUCTION

1.1 Overview

The patient Management system comprises creating account for patients, storing their information into the system; everything is computerized compare to the previous system. The software has the facility to give a search facility for every patients and the staff automatically. m. User can search about the doctor whether they are available or not and the details of a patient. The patient management system can be login using a username, password and staff designation. It is available, by either an administrator or any staff that has an account in the system. Individual they can add data into the database. The data can be saved easily. The interface is precise and user-friendly. The data is well protected for individual use and fast data processing. Patient Management System (PMS) is designed for multispecialty patients, to cover a wide range of patient administration processes.

1.2 Motivation

The real inspiration for the patient management system development is to create easy process of all the administration process like patient's registration, drug management, doctor's prescription, etc. We continuously see that to find out the patient's and staff's history, the user has to go through various records. This marks in consumption of time. Therefore, by this system it will develop easy to accomplish all process.

1.3 Objectives

- i. Design a system for better patient care.
- ii. Reduce patient-operating costs and expenses on storing records in a paper.
- iii. Drug management (checking drug availability, expiry date).
- iv. Better co-ordination among the different departments.
- v. Patient management (scheduling, registration, long-term care and tracking daily inpatient/outpatient)
- vi. Patient care management and departmental modules.
- vii. Maintain the medical records of the patient

II. LITERATURE REVIEW

Hospitals can also be regarded as organizations based on high technology and information intensive processes. According to Lawrence and Dyer (1982), such organizations are not hierarchically structured bureaucracies, but are often based on democratic control mechanisms with institutionalized stakeholder influence in decision processes. [1], [2] A Hospital Information System (HIS) is defined as a comprehensive,

integrated information system that manages the administrative, financial, and clinical aspects of a hospital. Hospital Management System (computerized) is increasingly becoming an emerging tool in health care arena to efficiently enable delivery of high quality health services. These systems have large computerized data bases intended primarily for communication and storing health and administrative information. HMS has different components and includes broad scope and level of systems from departmental (a system limited to a specific clinical or financial domain) to knowledge based systems that provide diagnostic support and intervention for patient care activities.

III. METHODOLOGY

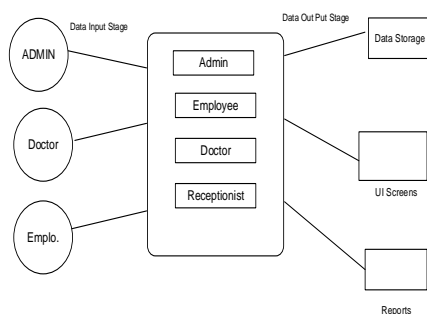
3.1 Problem Definition

- ✓ Lack of fast retrievals: - It is very tough to recover information and to find particular information like E.g. - To find out the patient's history, the user has to go through many registers. This marks in consuming a lot of time.
- ✓ Lack of quick updating: - Several changes to information like patient are challenging to make as paper work is involved.
- ✓ Patients are coming day-to-day to the clinic, it is a daily activity in the health center and it is manually manageable, and it is very difficult to store and process huge volumes of data and information manually in paper. In addition, it consumes more time and space, less security was provided for the valuable information of patients and staffs.

3.2 Proposed Approach

Nowadays Patient Management system in various sickbay is time consuming and prolonged process. Patients goes to sickbay and they have to go through various process for treatment. After this patients goes for registration and patients have to wait there in queue where the files is generated manually by receptionist, this process is more time consuming and lengthy. To overcome such drawbacks we design patients Management System. This PMS is built on the C#, database, and object-oriented programming language techniques. My SQL (Structure Query Language) is used in areas where keeping the records in the database is required, this system uses C# as the Front-end software, which is an object-oriented programming technique and has connectivity with My SQL, the back-end software.

Patient Management System DFD



3. SYSTEM IMPLEMENTATION

3.1 Software Requirement

Database: MySQL
Framework: ASP.Net
Coding: C#

3.2 Hardware Requirement

Dual core processor
RAM 1GB
HDD min 40GB

IV. RESULT AND DISCUSSION

In figure 4.1, there is a login page, which is common for each module. User of each module must go through this page with their own username and password.



Figure 4.1: Login Page

Figure 4.2 shows Patients Registration. In this page registration of patients is done by using their details like name, department, registration number, etc.



Figure 4.2: Patients Registration

In Figure 4.3, in this page admin create account for employees as shown in below figure 4.3.

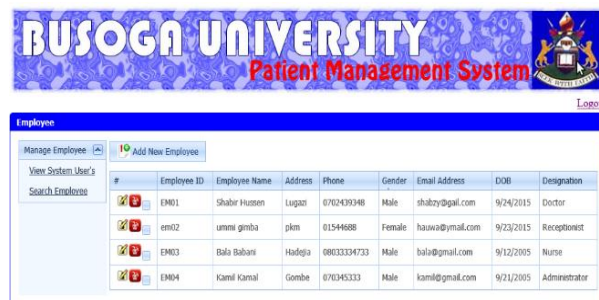


Figure 4.3: employee account

In Figure 4.4, in this page pharmacist stores the record of medicine as shown in below figure 4.4.



Figure 4.4: storing medicine record

In Figure 4.4, in this page pharmacist checks available record of medicine as shown in below figure 4.4.



The screenshot shows the 'BUSOGA UNIVERSITY Patient Management System' interface. At the top, there is a blue banner with the university name and logo. Below the banner, there is a 'Logout' button. The main content area is titled 'Checking Remaining Medicine' and contains a table with the following data:

Medicine ID	Medicine Name	Prices	Manufactured Date	Expiry Date	Company Name	Batch No	Quantity
Med	Pelding	5000	9/17/2020	9/13/2020	pel	b09	4
med02	Omeprazole	1000	9/13/2010	9/19/2020	morocco	mc01	6
Med03	Para	2000	9/12/2010	10/1/2015	terox	b2	3
Med05	Sephiline	3000	9/14/2015	9/15/2015	sep	b5	4

Figure 4.5: checking medicine record

V. Conclusion

The developed web-based patient management system solves the challenges of data redundancy, time wastage in records retrieval, employee management, and drug management at Busoga University's sick bay in eastern Uganda. Additionally, there is enhanced security as access to the system entails authentication with a valid system username and password. The Hospital Management System software meets user requirements relating to entering patient data (figure 2). It shows the number of patients registered in the hospital database (figure 3). The system also gives the number of in-patients in the hospital at that particular time and what they are being treated for (figure 3). A drug database was also established; where the pharmacy can input the particular type of drug available at that particular time so that doctors can know which drugs are readily available to be prescribed to patients (figure 4).

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