Medicine Management System

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***Abstract*— This project is based on the MEDICINE MANAGEMENT SYSTEM in python with help of MySQL Workbench. It manages all medicine details. It also keeps track records of all medicine information. In this system we have three different sections - first belongs to medicine information, second belongs to medicine add department section, and third is known as our entire database management section. This system has a very interactive framework, admin/user need to fill in all necessary details about different types of medicine, and that information will be stored in this system database, where admin/user can easily add medicine, remove and update. All these requirements will be done, also admin/user will be able to search specific medicine information by using the search tool presented in the frame. This work will be able to help in the pharmaceutical area where pharmacy/medicine shop managers can make use of this system to store medicine-based information.**

Keywords*— *Medicine, Management, System, Python, MySQL workbench, Database.

I. INTRODUCTION

Medicine Management System is a python database-based system that manages all medicine necessary details. This medicine management system project was developed using python programming language and using MySQL workbench to store the medicine database.

The main purpose of this system is to manage the medicine operation that includes medicine name, type of medicine, reference number, company name, lot number, issue date, expiry date, uses, side effects, precautions and warning, dosage, tablet price, and product quantity. All the record stores with the help of Python. Tkinter module in the form of a sheet where all necessary details will be visible. The proposed software helped to reduce the errors and paperwork.

II. LITERATURE REVIEW

This paper provides information on how to build and execute a Pharmacy Management System. Its main goal is to increase accuracy, as well as efficiency and safety, in the pharmacy shop. Nowadays, the most important characteristic form is management. Management gives the expertise required to do any activity in a certain manner. This is a pharmacy information management system, which is assigned to manage the majority of pharmaceutical-related tasks [1]. In order to give high-quality service performances, healthcare practitioners must manage healthcare delivery systems effectively. Inpatient pharmacy delivery systems are one of the components that contribute to the overall quality of a hospital's service. Because of its inherent complexity, simulation is the greatest tool for analyzing hospital pharmacy operations [2].

The implementation and design of a Pharmacy Management System with a stock alert system are demonstrated in this project. The main goal is to increase accuracy, as well as efficiency and safety, in a pharmacy. Nowadays, the most important characteristic of a kind is management. Management gives the expertise required to do any activity in a certain manner [3].

Because all departments such as surgery, cardiology, nephrology, medicine, pediatrics, and others are related to the 'hospital pharmacy management system', it is regarded as the heart of every hospital. Although Bangladesh's pharmaceutical business has grown significantly and its products are of good quality, the incorrect management system in hospital pharmacies adds to the patient's suffering. As a result, hospital pharmacy development is necessary to assure the right selection, preparation, storage, compounding, and dispensing of medicine and medical equipment, as well as patient safety and compliance counseling [4].

This system is used to handle clinical data by authorized users such as medical researchers and doctors. The system can query patient information, electrocardiogram (ECG) data, Computerized Tomography (CT) data, and diagnostic findings and it has a Cardio Dynamics gram (CDG) data comparison function as well as a statistical function for future medical research analysis. The study uses MATLAB and SQL Server to create a robust and simple operating system [5].

As medicine management is so critical in the treatment of sickness, there is no room for error. With such a big quantity of drugs and such a broad range of pricing, manual scheduling will be inefficient, resulting in a tremendous task for health staff. A computer information network system for medications administered in hospitals is critical to solving this problem and improving management efficiency. This study looks at the use of a computer information network system in a hospital medicines management system. The network data platform is now easy to use, simple, and divided into specific classifications and divisions for simple medicines management [6]. The Medical Project Management System is the novel mediator semantic that we present in this study. This mediator, which is based on an XML data interchange protocol, and ontological components, provides the user with a unified representation of information that was previously scattered over numerous heterogeneous and separate sites and is tied to a certain project. It is also accepted by the user to interact with a variety of medical projects, as well as study and compare similar projects in order to benefit from best practices and shared experiences in order to enhance treatment quality [7].

A fully integrated medicine management program encompassing all organizations in a local health economy would make a substantial contribution to healthcare excellence. The varied perceptions and interpretations of what medications management truly implies and includes are

examined in this research as a fundamental hindrance to an integrated strategy. The word "drugs management" appears to have become a catch-all term for any situation with medicines. Several factors have been found [8]. A hospital management system is constructed in this project using a Bluetooth connection. Wi-Fi or Wireless LAN (WLAN) is often used for network connectivity and data transfer in hospitals and medical clinics. The project's successful implementation will aid in the reduction of manpower and the effective administration of the hospital. Patients may schedule an appointment using an integrated Bluetooth device rather than waiting in line or at the Appointment Desk [9]. The focus of this study is on the design and implementation of a hospital management system (HMS). Streamlined processes, higher patient care, greater administration and control, increased profitability, and rigorous cost management are all advantages of the system. The system employs 'JAVA' as the front-end software Programming language is known as an 'Object-Oriented Programming' language and has back-end software connectivity [10].

III. METHODOLOGY

1. A. Main Modules of the System

1)Medicine Information Frame Module: - This module is used to fill in details about medicine details about reference number, company name, lot number, issue date, expiry date, uses, side effect, precautions and warning, dosage, tablet price, and product quantity (refer Fig.1.). In system reference number, type of medicine, medicine name these are combo boxes, in which we just have to select one option out of multiple.

Fig. 1. Medicine information frame module

2)New Medicine add department Frame Module: - This module includes a reference number, medicine name, and four buttons namely add, update, delete, and clear (refer Fig.2.). where we have to fill in a new reference number and medicine names, then just clicking on the add button will directly add those new reference numbers and medicine names to the medicine information frame module's combo box respectively. There is also one table included in this frame to see all reference numbers and medicine names available in the system, and we can update, delete them by selecting reference number and medicine name then click on update or delete, the system will act respectively.

Fig.2. New medicine add department frame module

3)Database Frame Module: - It includes all information about medicine which were added to the system, once we fill the medicine information in the medicine information frame module then we must click the 'add medicine' button present in this module then that all will be stored in the database and will be represented in the sheet which is presented in this module (refer Fig.3.). It also includes buttons as follow:
1) Update: we can update previous medicine data.
2) Delete: we can delete the specific medicine and its overall detail.
3) Reset: we can reset what we fill in the medicine information frame module.
4) Search by: In case if we want to search a specific medicine and their details here, we have a combo box to select their medicine's reference number, medicine name, and lot number.
5) Search: This system can search a specific medicine by their medicine reference number, medicine name, and lot number.
6: Show all: In the sheet, it will show all medicine and their detailed information.

Fig.3. Database frame module

B. Pre-Requisites

a) Python: Python is a high-level interpreted programming language that is used for a variety of tasks. Apart from web development, it is used for Variety types of software development and programming. This involves, among other things, data science, software development, developing system scripts, front-end and back-end development. Python GUI Programming has a wide variety of the GUI toolkits (frameworks) available in it.

b) Tkinter: Tkinter is Python's standard GUI library. In Python Programming with the help of TKinter creating graphical user interfaces is simple and quick. The Tk GUI toolkit has a cultured object-oriented interface called Tkinter.

c) MySQL Workbench: MySQL Workbench is known as a visual database design tool which combines SQL programming, database design, construction, administration, and maintenance for the MySQL database system into MySQL Workbench combined working platform.

C. Implementation

The medicine management system is an application of a combination of a python program and MySQL database. The main purpose of this system is to manage medicine data on a daily basis, handling things like medicine name, type of medicine, reference number, company name, lot number, issue date, expiry date, uses, side effect, precautions and warning, dosage, tablet price, and product quantity. We are taking the help of visual studio code to build this system. For programming purposes, We have used the Python programming language. For GUI programming we used the Tkinter Python module. To save the information-related medicine data We have used MySQL workbench. This application contains only one medicine management system frame.

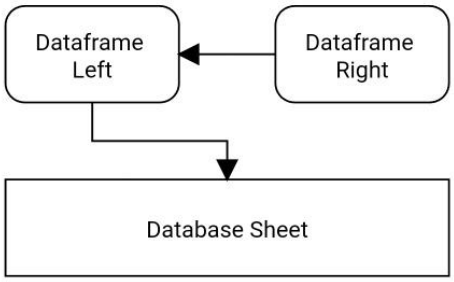

Fig.4. Frame block diagram of this system

In this system it consists of 3 main data frames that are: 1) data frame right 2) data frame left 3) database sheet frame. In the first step if the admin/user wants to add new medicine then in the data frame right (refer Fig.4.) We must create medicine reference no. and medicine name, click on add button then it will pass the data to the system's next data frame i.e., data frame left. In the data frame left we must fill in all details about medicine then this data will be stored in the form of a sheet in the system's third database sheet data frame. As shown in Fig.5. This is how its actual data is stored in MySQL workbench.

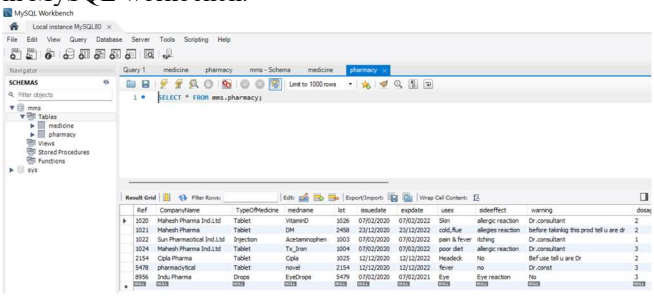

Fig.5. MySQL Workbench tables

In this way, the medicine management system in python with MySQL database will record all the medicine information details. In a short time, the collection will be obvious, simple, and sensible. The system is a secure, reliable, and fast management system.

IV. RESULT

This system contains only a single Medicine management system frame. In short, the manager will be able to fulfill his/her requirement related to medicine. This system shows all subframes, widgets, and buttons (refer to Fig.6.). the system is user friendly, easy to understand, reduces chances of human error, is less time consuming, and will give accurate results

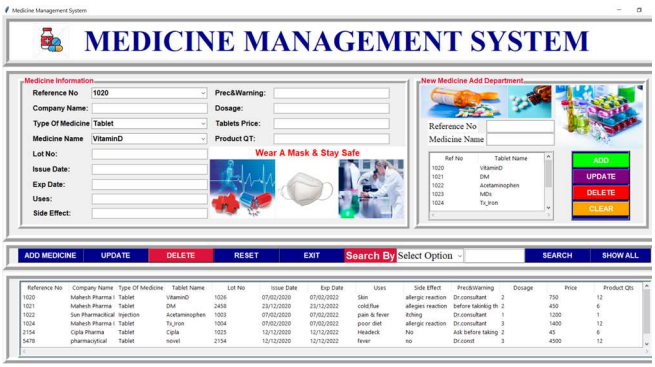

Fig.6. Medicine Management System

V. CONCLUSION

This system provides us with a user-friendly interface to manage the medicine details. It always provides accurate information. It reduces the manpower requirement. This is paperless work. This system is very useful for pharmacists. In this digital era, this medicine management system is essential in the pharmaceutical sector, medicine companies, and medical shops.

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