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Report on Mini Project

Medical Inventory Web Application

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ABSTRACT

Here we are building a Medical Inventory Web Application. A database oriented application which will store data into the sql database and allow us to insert, update, delete and modify medicine records. The main feature includes invoicing inventory and stock control, client and vendor management. This software helps us to track all the profits, loss, profitable clients and products of medical shop. Moreover, it's a medical shop accounting software. Flexible and adaptive software suited to medical shops or stores or pharmacies and it also calculates the bill and allows to download or print the invoice bill of the customer.

The purpose of Medical Inventory is also to automate the existing manual system by the help of computerized equipments and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. The required software and hardware are easy to work with. Basically the project describes how to manage for good performance and better services for the clients.

The web app as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it will help organization in better utilization of resources. The organization can maintain computerized records without redundant entries. That is, one need not be distracted by information that is not relevant, while being able to reach the information.

This system is a field concerned with purchasing and selling medicines, maintaining their inventory, generating sales invoices and effort when all procedures are performed manually.

Thus, in order to reduce time consumption and human effort, Medical Inventory web app can be applied in medicals where manual procedure exists. The purpose of this project is to reduce time consumption and human effort. This application provides user friendly interface as well.

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INTRODUCTION

The Medical Inventory Web Application, has been developed to override the problems prevailing in the practice manual system. This software is supported to eliminate and in some cases to reduce the hardships faced by this existing system. Moreover, this system is designed for the particular need of the company to carry out operations in a smooth and effective manner. The application is reduced as much as possible to avoid errors while entering the data.

As the DBA has all the responsibility of maintaining the system he can exercise his rights of modifying a user's account, privileges, and even Password without the prior permission from the user. This stands true for the entire group (user level) also; Since the user name and the password are stored on the remote server, they are transmitted only after encryption. This ensures their security owns a User name and a Password. This User Name and Password is asked every time a logon attempt is made. Once the User Name and Password are entered their validity is checked against the records stored in a table in the remote database. Once the validity is confirmed the user is allowed to enter into the system, else, the login attempt is cancelled and the user is asked to try again. As the DBA has all the responsibility of maintaining the system he can exercise his rights of modifying a user's account, privileges, and even Password without the prior permission from the user. This stands true for the entire group (user level) also. Since the user name and the password are stored on the remote server, they are transmitted only after encryption. This ensures their security.

This software stores details of medicine purchase stock and sell stock. We can maintain purchase stock detail by company wise sell stock or detail by customer wise. This software automated generate bill for every selling and generate reports for stock, sell, and customer detail.

Every organization whether big or small, has challenges to overcome and managing the information of stocks, medical shop, sales, medicines, user. Every organization has different medical needs. Therefore, we design exclusive system management for employee's sake that are adapted to your managerial requirements. This is designed to assist in strategic planning, and will help you ensure that your organization is equipped with the right level of information and details for your future goals. Also for those busy executive who are always on the go, our systems come with remote access features, which will allow you to manage your workspace anytime, at all times. These systems will ultimately allow you to better manage resources.

PROBLEM STATEMENT

After analyzing many existing Medical inventory management system, we have now the obvious vision of the project to be developed. Before we started to build the application, the team had many challenges. We defined our problem statement as:

- to make desktop based application of Medical inventory management system for small organization.
- to make the system easily managed and can be secured.
- to cover all the areas of Medical inventory management like purchase details, sales details and stock management.

Although we have put our best efforts to make the software flexible, easy to operate but some range of options are not covered or aren't provided to its users partly because of logistic and partly due to lack of sophistication. Lack of time also compelled me to ignore some part such as storing old result of the candidate and also parts such as:

- Firstly, the location of medicines in the store. Selecting the suitable medicine for the type of illness usually takes time and makes the patient or customer waiting. Therefore, it's a waste of time for the customer to keep waiting.
- Secondly, for the medical inventory management, the pharmacist must check it manually and no warning message for the medicine that decrease to finish. So problem statements provide the advantage to setup the process in selecting and alert program to warn about the medicine stock.
- Thirdly, no analysis is done for the frequency type of medicine usually buy by the customer or patient at that area. This is also important to determine the medicines that are at most demand by the customers so that the pharmacist can be prepared to order more for that type of medicines.
- Excel export has not been developed for medical shop/pharmacy, stocks due to some criticality.
- The transactions are executed in offline mode, hence online data for company, sales capture and modification is not possible.
- Offline reports of medical shop/pharmacy, user, company cannot be generated due to batch mode execution.
- Single admin panel
- Small production organization

OBJECTIVES

The main objective of the Project on Medical Inventory Management System is also to manage the details of medical shop/ pharmacy, stocks, company, sales, user. It manages all the information about medical shop/pharmacy, medicines, user. The project is totally built at administrative end and thus only the administrator is guaranteed the access. The purpose of the project is to build an application program to reduce the manual work for managing the medical shops/pharmacy, stocks, medicine, company. It tracks all the details about the company, sales, user.

The main aim of the project is also the management of the database of the pharmaceutical/medical shop. This project is insight into the design and implementation of a Pharmacy Management System. This is done by creating a database of the available medicines in the shop. The primary aim of pharmacy management system is to improve accuracy and enhance safety and efficiency in the pharmaceutical/medical store. The aim of this project is to develop software for the effective management of a pharmaceutical/ medical store. We have developed this software for ensuring effective policing by providing statistics of the drugs in stock. The database is then connected to the main program by using interconnection of the Visual Basic program and the database already created. Medical Inventory web app is useful to maintain correct database by providing an option to update the drugs in stock. It is used to manage most pharmacy related activities in the pharmacy/ medical store.

Medical Inventory management system is a management system that is designed to improve accuracy and to enhance safety and efficiency in the pharmaceutical/medical store. This program can be used in any pharmaceutical/medical shops having a database to maintain. It is a computer based system which helps the Pharmacist to improve inventory management, cost, medical safety etc. The software used can generate reports, as per the user's requirements. Using this medical inventory web app user is also able to generate report within a specified period of time. The system allows the user to enter a details of drug, during opening stock and sales transaction. The software can print invoices, bills, receipts etc. It can also maintain the record of supplies sent in by the supplier. The system services and goals are established by consultation with system user. It also involves manual entry upon arrival of new batches of drugs and upon drug movement out of the pharmacy for a certain period. Pharmacy/medical shop management system is being built through this web app. Medical inventory

management system is robust, integrated technology. Every month, the pharmacist may want to generate report for the movement of drugs in and out of the pharmacy, getting information about the drugs date purchased, number of drug type left. Medical Inventory web app, deals with the maintenance of drugs and consumables in the pharmacy/medical store unit. This web app system is user friendly.

LITERATURE REVIEW

Products are considered as the business resources for the organization. This includes managing the product with appropriate way to review any time as per the requirement. Therefore, it is important to have a computer based Inventory Management system which has the ability to generate reports, maintain the balance of the stock, details about the purchase and sales in the organization. Before developing this application, we came up with 2 Inventory Management System existing in the market, which helps to give the knowledge for the development of our project. This application software is only used by the large organization but so we came up with the application which can be used by the small company for the management of their stock in the production houses. After analyzing the other inventory management system, we decided to include some of common and key features that should be included in every inventory management system. So we decided to include those things that help the small organization in a way or other.

- 'How to Manage' Series for Healthcare Technology, Ziken International (Health Partners International), 2005
- Clinical Engineering Handbook, J. Dyro, Elseveir Academic Press, 2004
- Recommended practice for a medical equipment management program. American National Standard ANSI/AAMI EQ58
- Inventory Management Software project was done by Sagar International, Balkhu
- Swatik Accounting and Inventory software by High-tech Software, Kalimati
- Patient condition-based medicine inventory management in healthcare systems journal by Esha Saha

Peacock's research (2013) observed that effective utility of stock optimization fashions and practice is applicable to attaining pleasant and green operations. Further, Adeyemi and Salami (2010) found that the overall purpose of inventory management is to have what is needed, and to reduce the quantity of instances production and services operations are interrupted by using issues of stock outages. Chase et al. (2009) explained the idea of inventory management brings inside the total systems technique to coping with the whole drift of facts, substances and services from raw materials suppliers through factories and warehouses to the final consumer. The study similarly confirmed that a company's fulfillment depends on how they control their materials successfully. Chase et al. (2009) additionally indicated that it is vital to display stock at every stage as it ties up sources.

Vendor Managed Inventory (VMI) is a supply chain method whereby the vendor or

supplier is given the duty of managing the purchaser's inventory (Smaros et al., 2003). The vendor is given access to its purchaser's inventory and demand statistics for reasons of tracking the customer's stock level. Moreover, the vendor has the authority and the obligation to replenish the purchaser's inventory according to collectively agreed inventory control concepts and targets (Smaros et al., 2003).

METHODOLOGY

Here it uses two type of methodology approach to develop the web app:

The methodologies are **Software Development Life Cycle, SDLC** to the system development and

Database Life Cycle to develop the database.

SDLC is the history of an information system. It is the reference by the database design and the application developer. Feasibility study can help in the initial state in the SDLC. This methodology is divided to 5 phases, which are planning, analysis, detailed system design, implementation and maintenance.

Planning: Planning phase is the general overview of medical inventory and the objectives. There are 2 things to be focused, the initial assessment and feasible study. Initial assessment needs for manual system to be changed to new system of medical inventory as the systematic management of pharmacy/medical store. For the feasibility study, it shows the hardware and software needed in general. Hardware is the operating system used, Windows XP Professional platform. Software application used is Visual Studio Code, database development used is MYSQL application and the web server used is XAMPP server.

Analysis: Analysis phase is the definition of the problem that defines at planning phase.

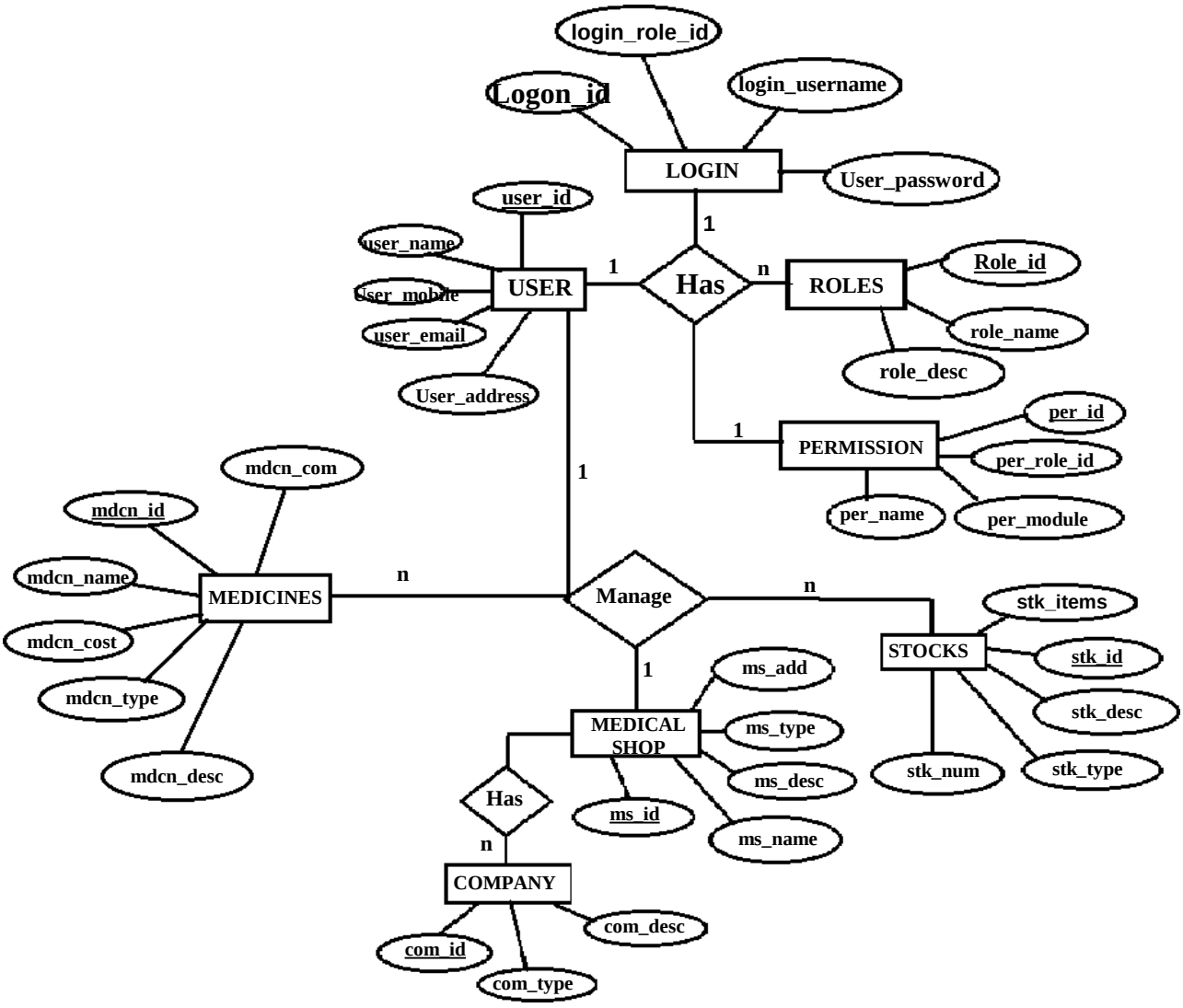
Pharmacist and system developer identify the process of the Medical Inventory system. It also needs for study the user requirement and the manual system. The result is logical data design. It is specifying the conceptual data model, input processes and expected output requirements. The logical designs are described using data flow diagram or ER diagram. The users that involve in the Medical inventory management system are pharmacist, pharmacist assistance and customer.

Detailed System Design: Detailed System Design phase is completed design of the system processes. It is the specification of the Medical inventory interface system, menus of the system and the reports. The approach that can be used is the web application development methodology.

Maintenance: Maintenance phase is involved when the web app is used several times, there are changes requested by pharmacist. The changes generate the system maintenance activities which can be

grouped into these types, corrective maintenance in response to system errors, adaptive maintenance due to changes in the business environment, perfective maintenance to enhance the system. For the medical inventory it may include these three maintenance activities which is pharmacist wants to add the module or edit the module or delete the module of the Medical inventory application.

Database Lifecycle, DBLC: Medical inventory web application use the database lifecycle, DBLC methodology approach to develop the database. DBLC contains 6 phases, which are, database initial study, database design, implementation and loading, testing and evaluation, operation and maintenance and evaluation.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Has
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IMPLEMENTATION

Inventory Management System was designed using Visual Studio as mentioned earlier following the three tier application architecture. It provided us with the code editor as a white blank space and the solution explorer where every code files were kept. Code Editor is where the logical were developed into code and kept safe in the solution explorer. In solution explorer we kept every code file by creating the folder and adding those files in a folder that are similar in nature. The main folder was the Inventory Management System. Following are the list of the folders, sub-folders and their corresponding files: User, Brand, Category, Product, new order, Manage, Invoice bill etc.

Features Implemented:

Login: Using this module, use(admin) enters user name and password and the system checks whether it is valid. It is valid, user can log in, otherwise invalid user name and password message is displayed.

Stock: This module manages the inventory. Stock is updated when purchase, sale or replace is made.

Product: This module consists of information of medicines available followed by their brand, category and stock quantity.

Invoice bill: The bills of the medicines that is purchased by the customers can be generated through this application either by printing or downloading the bill in pdf format.

Customer Database Management: The details of the customer like name, medicine purchased and many other details can be maintained through this application.

The Implementation phase is starting at process installing hardware and software requirements. Installing hardware is setting up the pc desktop hardware requirements specification. Process of operating system installation is based on Windows XP Professional platform installation. Visual Studio Code and MySQL are installed following the steps required. The languages used in this project are PHP and SQL at back end and HTML, CSS and JavaScript as the front end languages. This will be testing and debugging, until it is ready to be developed. The actual database is created and customizes the tables and view and user authentication.

The testing process is to be going to test the system application operation. After testing is concluded, the final documentation is reviewed and printed and end users are trained. The system is in full operation at the end of this phase but will be continuously evaluated and fine-tuned.

RESULTS AND DISCUSSIONS

- Generates the report on stocks, company, medical shop, inventory, sales, medicines.
- Company, Inventory, Sales has been integrated with the dynamic filter. So you can filter the records run time. So provides filter reports on Company, Sales, User.
- You can also easily export the report data into PDF containing Company, Inventory, Sales, medicines records of medical shop
- Excel sheet report can also be integrated for medicines, Company, sales, user by excel export option available.
- You can also export the reports into CSV format for Medical Shop, inventory, stocks, user.
- All the processes included in the system, achieves a very good performance and therefore has met the user's requirement.

CONCLUSION AND FUTURE SCOPE

Conclusion:

To conclude, Inventory Management System is a simple desktop based application basically suitable for small organization. It has every basic items which are used for the small organization. Our team is successful in making the application where we can update, insert and delete the item as per the requirement. This application also provides a simple report on daily basis to know the daily sales and purchase details. This application matches for small organization where there exist small limitations. Through it has some limitations, our team strongly believes that the implementation of this system will surely benefit the organization.

Shortly, the following can be considered:

- Almost accurate output
- Simple desktop IMS application
- Overall production inventory management

Our project is only a humble venture to satisfy the needs to manage the work of pharmacy/ medical store. The objective of software planning to provide a frame work that enables the manager to make reasonable estimates made within a limited time frame at the beginning of the software project and should be updated regularly as the project progresses.

At the end it is concluded that we have made effort on following points:

- A description on the background and its relation to work already done in the area, that is the abstract and the literature review regarding this project.
- Made statements of the aims and objective of the project.
- The description of Purpose, Scope and applicability.
- We define the problem on which we are working in the project.
- We described the requirement specifications of the system and the actions that can be done on these things.
- We understand the problem domain and produce a model of the system, which describes operations that can be performed on the system.

- Finally, the system is implemented and tested according to test cases. Inventories facilitate smooth production and sales operation, to guard against the risk of unpredictable changes in usage rate and delivery time and to take advantage of price fluctuations. The objective of the Inventory management should be maximization of the value of firm. Therefore, the firm should consider: Cost, Return, Risk factors.

Medical inventory is the system application that only do the process selection of the medicine to the relevant illness occurred or the relevant medicine needed. The problems that occur are successfully determined and the solution step is taken by the existing modules that are included in the system later. Scope of this system application is the boundary to guide the system development to reduce unnecessary process before it occurs. The scopes are divided into 4 categories: These are system functionality, users, operating location availability and hardware and software requirements. Project significance is describing for the advantage of medical inventory system application when it is to be implemented. The expected result of this system is successful, that all the modules can be implemented and all the objectives can be achieved.

Future Scope:

It can be summarized that the future scope of the project circles around maintaining information regarding:

- We can give more advanced software for medical shop/ pharmacy including more facilities like location tracker of the medicine, online payment system and many more.
- Use of Oracle as database and improvise system so that it is flexible in any type.
- We can host the platform on online servers to make it accessible worldwide.
- Implement the backup mechanism for taking backup of codebase and database on regular basis on different servers.
- Integrate multiple load balancers to distribute the loads of the system.
- There will be only one database for two or more stores.
- Messaging service to inform customers.

The above mentioned points are the enhancements which can be done to increase the applicability and usage of this project. Here we can maintain the records of medical shop and stocks.

REFERENCES

[1] Programming the World Wide Web, Seventh edition, Robert W. Sebesta

[2] www.w3schools.com

[3] www.fpdf.org/

[4] www.tutorialspoint.com

[5] www.ionos.com

[6] Code.visualstudio.com/docs/introvideos/basics

[7] www.mednetus.com

[8] www.captera.com

[9] www.henryschein.com