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Medical Management System

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Abstract: *The "Medical Management with Digital Drawer Project" is an innovative healthcare solution aimed at streamlining medical records and enhancing the management of patient information. This project leverages digital technology to create a secure and user-friendly digital drawer system for storing, organizing, and retrieving medical records. The system offers healthcare professionals and administrators a centralized platform for managing patient data. This digital drawer not only improves the efficiency of medical record management but also enhances data security and accessibility. By reducing paperwork and manual record-keeping, this project contributes to a more efficient and patient-centered healthcare environment. To provide detailed information about a "Medical Management with Digital Drawer Project" including expiry dates, stocks, and location of the digital drawer, you would typically need a specific project proposal or plan. However, I can provide a general outline of what such details might include:*

Digital Drawer Location: Specify the physical location where the digital drawer system is hosted.

Expiry Date Management: The system should include features to manage the expiry dates of medical supplies or medications, and it should provide automated alerts or notifications when items are about to expire. This helps in maintaining the inventory's integrity and ensures patient safety.

Inventory Management: Monitoring and maintaining stock levels of medical supplies and medications. Setting reordering thresholds and generating alerts for low stock levels. Tracking and managing the purchase and distribution of supplies.

Stock Management: The project should incorporate a comprehensive stock management module to track medical supplies, equipment, and medications. This includes real time monitoring of stock levels, reordering alerts, and the ability to adjust stock quantities manually.

Keywords: The Medical Management System, one distinct logins for the admin, comprehensive overview of patient health, the convenience of adding medicines

I. INTRODUCTION

Medical management with digital drawers is a cutting-edge solution designed to revolutionize the way healthcare facilities handle their medication inventory. In the fast-paced and critical environment of healthcare, it's essential to have a streamlined system for managing medications and medical supplies efficiently. This innovative system combines advanced technology and smart design to create a seamless process.

II. LITERATURE REVIEW

The Hostel Health Care Management System is a modern, tech-driven solution designed to efficiently manage the health and well-being of hostel students using current advancements in information technology. With five distinct user roles such as Admin, Principal, Student (Patient), Warden, and Doctor. The system leverages centralized data management and real-time access to ensure seamless communication and healthcare coordination.

The system allows admin to verifies the account of principal, doctor and warden and allow them to use the system. The principal can monitor the number of sick students across multiple departments like Computer, Electronics, Medical

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Electronics, Civil, and Dress Design, enabling data-driven decision-making and timely institutional interventions. Wardens can access student health records specific to their departments, facilitating prompt care and support. Doctors benefit from digital access to students complete medical histories, enabling more accurate diagnoses and personalized treatment plans. Students can use the system to book appointments instantly, significantly reducing wait times and ensuring faster medical attention.

The system embodies the principles of smart healthcare, enhancing efficiency, accessibility, and responsiveness. In today's technology-driven world, this solution exemplifies how digital transformation can revolutionize student health management in hostels, fostering a safer and more supportive living environment.

III. METHODOLOGY

The methodology of the Hostel Health Care Management System outlines the systematic approach used to design, implement, and manage the healthcare services within a hostel environment. The system is structured around five key user roles and follows a modular, role-based access control architecture to ensure smooth coordination and secure data handling.

PROCESS	DESCRIPTION
Admin	Verify account of Warden, Principal and Doctor
Warden	Verify account of student of their respective department
Principal	Monitor number of sick students across various departments
Student	Book appointment and access medical history
Doctor	Update medical records, view medical history
Tools	HTML, CSS, JavaScript, Bootstrap
Environment	Collage campus

IV. IMPLEMENTATION

Programming Language and Coding Tools

PHP

PHP (Hypertext Preprocessor) is a widely-used, open-source scripting language designed primarily for web development. It is a server-side language, meaning it runs on the web server and processes dynamic content before sending it to the user's browser.

HTML and CSS

HTML and CSS are the core programming languages for web development. We use HTML and CSS for the frontend purpose. HTML is used for the basic structure of webpage and CSS is used for the enhanced and modifying the content.

JavaScript

JavaScript is a computer programming language which is used to control the behaviour of different elements.

V. RESULT AND DISCUSSION

The Medical Management System was developed to streamline various aspects of clinical and pharmacy operations. The system includes five core modules: Company Module, Disease Module, Medicine Module, Purchase and Sale Management, and Billing Management. Each module was tested for functionality, usability, and data consistency.

Results

1. **Company Module**:

Successfully stores and manages pharmaceutical company details.

Enables easy addition of company profiles.

Facilitates linking medicines to their respective manufacturers.

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2. Disease Module:
Maintains a categorized list of common diseases.
Supports associating diseases with appropriate medicines for reference during prescription or sales.
Helps in data analytics by showing the frequency of common disease categories over time.

3. **Medicine Module**:
Enables addition of medicine records.
Tracks expiry dates, stock level.
Built-in search and filter features enhance searching of medicine.

4. Purchase and Sell Management:
Automates the recording of medicine purchases from companies and sales to customers.
Tracks stock-in and stock-out accurately.
Alerts for low stock levels and expired medicines improve inventory efficiency.

5. Billing Management:
Generates accurate and detailed bills based on medicine sales.
Stores transaction history for future reference and reporting.

1. PURPOSE: DETERMINE THE SCOPE AND OBJECTIVES OF MEDICALMANAGEMENT SYSTEM.
Scope: -
The Medical Management with a digital drawer is intended to improve the storage, distribution, and monitoring of medications and medical supplies within healthcare environments. The scope includes:
1. Secure Medication Storage: Using digital drawers with access control (e.g., biometric, RFID, or PIN) to ensure only authorized personnel can access specific items.
2. Real-Time Inventory Tracking: Automatic updates and monitoring of inventory levels to prevent shortages or overstocking.
3. Audit Trails and Logs: Recording of all transactions for accountability and compliance with healthcare regulations.
4. Be easy to understand by the operator.
5. Alerts and Notifications: For expired medicines, low stock, or unauthorized access attempts
Objectives:-
The primary objective of implementing a medical management system with a digital drawer is to enhance the safety, accuracy, and efficiency of medication and medical supply handling in healthcare setting. specefic objective include:
a. Ensure Secure Access: Limit medication access to authorized personnel through digital authentication methods (e.g., PIN, biometric, RFID).
b. **Improve Inventory Accuracy**: Enable real-time tracking and monitoring of medical inventory to reduce errors, theft, and wastage.
c. Enhance Compliance: Maintain detailed logs and audit trails for regulatory compliance and accountability in medication handling.
d. Support Clinical Efficiency: Reduce time spent on manual inventory checks and medication retrieval, allowing staff to focus more on patient care.
e. Enable Data-Driven Decisions: Provide usage reports and analytics to help manage stock levels, predict demand, and reduce expired or unused supplies

2. TECHNOLOGY SELECTION
Objective: Choose the best tools and frameworks for development.
Programming Languages: HTML, CSS, JavaScript, PHP Framework: Bootstrap

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3. DEVELOPMENT PHASE OF MEDICAL MANAGEMENT SYSTEM

Requirement Analysis & Planning:

- Define user roles (Admin).
- Choose technology stack (MySQL).
- Create project timeline and milestones.

System Design:

- Design the database schema (ER diagram).
- Create UI for different user roles.
- Plan system architecture (frontend, backend, database).

Database Implementation:

- Set up tables for users, medical records, appointments, etc.
- Ensure relationships and data integrity.

Frontend Development:

- Build responsive interfaces using HTML.
- Develop role-specific dashboards and forms.

Backend Development:

- Development of backend using PHP.

Maintenance:

- Monitor system performance and update based on feedback.

4. INTEGRATION

The integration of the Medical Management System (HCMS) connects the frontend (HTML) with the backend (PHP) for seamless data exchange. Role-based access control ensures secure, personalized access for only Admin type. Adding ,purchasing and sellingmedicine are synchronized in real-time, while notifications keep admin informed. Integration testing ensures smooth interaction between all modules for optimal system performance.

5. TESTING AND VALIADATION

- Unit Testing: Test individual components (e.g., booking, registration).
- Integration Testing: Ensure seamless interaction between frontend, backend, and database.
- User Acceptance Testing (UAT): Validate the system with real users to ensure it meets their needs.
- Validation: Ensure correct inputs and outputs, with error handling for invalid data.

6. DEPLOYMENT

- Backend Hosting: Deploy PHP backend on servers like Apache and configure MySQL for database management.
- Frontend Hosting: Upload HTML, CSS, and JavaScript files to a server or platforms
- Domain & SSL Setup: Register a custom domain and configure SSL for secure communication.
- Testing & Launch: Test the deployed system for functionality and security, then officially launch the system.
- Ongoing Monitoring: Monitor the system performance and ensure regular backups for database and security updates.

7. MAINTAINCE AND UPDATES

- Bug Fixes: Regularly address bugs and issues reported by users.
- Security Updates: Apply patches and security updates to the backend, frontend, and database to prevent vulnerabilities.
- Feature Enhancements: Add new features or improve existing ones based on user feedback.

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- Database Backups: Schedule regular backups to prevent data loss.
- Performance Monitoring: Use tools to track system performance and optimize as needed.

8. ETHICAL AND LEGAL CONSIDERATIONS

- Data Privacy: Ensure compliance with data protection for safeguarding students medical information.
- Data Accuracy: Maintain accurate, up-to-date records to prevent errors in treatment and ensure compliance with health regulations.
- Confidentiality: Ensure sensitive information is accessible only to authorized personnel and is kept confidential.
- Access Control: Implement role-based access to protect sensitive data and prevent unauthorized access.
- Reporting and Accountability: Ensure transparency in reporting and accountability for data breaches or misuse

VI. CONCLUSION

The Medical Management System project has successfully achieved its goal of providing a comprehensive and efficient platform for managing medical operations, including patient records, appointments, prescriptions, and billing. The system has streamlined workflows, reduced paperwork, and improved overall data management within the healthcare environment.

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REFERENCES

[1]. Sharma and R. Gupta, "Development of an Integrated Medical Management System for Hospitals," *International Journal of Computer Applications*, vol. 182, no. 42, pp. 15–21, 2023.

[2]. M. K. Jain and S. Rao, "E-Health Record Management System Using Blockchain Technology," *IEEE Access*, vol. 8, pp. 143305–143314, 2020.

[3]. World Health Organization, "Digital Health Systems: Tools and Strategies," WHO, Geneva, Switzerland, 2021. [Online]. Available: https://www.who.int/publications/i/item/9789240020924