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PROPOSAL PAPER

SYSADES – SYSTEM ANALYSIS AND DESIGN

2nd Semester • AY 2024-2025

Patient Record Management System

System Analysis and Design

Proposal Paper

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Chapter 1

INTRODUCTION

This chapter of the paper presents the problem and its settings. It includes the background of the study, statement of the problem, significance of the study and scope and delimitation of the study.

Background of the study

In healthcare, efficient record management is essential for providing quality patient care. Traditional paper-based systems often lead to inefficiencies, such as misplaced files, delays in accessing critical patient information, and difficulties in maintaining accurate records. A Patient Record System (PRS) is a digital solution designed to address these challenges by systematically storing, managing, and retrieving patient data. By digitizing records, healthcare providers can improve workflow efficiency, enhance data security, and reduce medical errors. The adoption of such systems is particularly crucial in modern healthcare settings where timely and accurate information is vital for diagnosis, treatment, and continuity of care. This study aims to develop a reliable and user-friendly Patient Record

System that streamlines record-keeping, facilitates better decision-making, and ensures compliance with data protection regulations.

The purpose of this study is to develop and implement a **Patient Record System** for school clinics to improve the efficiency, accuracy, and accessibility of students, teachers, and school personnel health records. The study aims to address the challenges associated with traditional paper-based recordkeeping, such as data loss, retrieval delays, and inefficiencies in managing patient information.

Scope and Delimitation

This study focuses on developing a simple and user-friendly Patient Record System for a school clinic to improve the organization and accessibility of health records for students, teachers, and staff. The system will allow clinic personnel to record basic patient information, track medical history, and manage consultations more efficiently. It will help reduce reliance on paper records, minimize errors, and make retrieving patient data faster. The study will involve designing and testing the system within a school setting, ensuring that it meets the basic needs of the clinic staff. However, the system will be limited to record-keeping and will not include advanced medical features or integration with external healthcare systems.

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Methodology

This study will employ a system development life cycle (SDLC) approach to design and implement the Patient Record System (PRS). The methodology consists of the following phases:

Requirements Gathering – Data will be collected through interviews and surveys with healthcare professionals to identify system needs, challenges in current record-keeping methods, and desired functionalities.

System Design – Based on the requirements, the system architecture, database structure, and user interface will be designed, ensuring usability, security, and efficiency.

Development – The system will be developed using appropriate programming languages and database management systems. Features such as patient data entry, retrieval, updating, and security measures will be integrated.

Testing and Evaluation – The system will undergo testing, including functionality, security, and user acceptance tests, to ensure it meets the needs of healthcare providers and complies with data protection regulations.

Implementation – After successful testing, the system will be deployed in a healthcare setting, with staff training provided to ensure smooth adoption.

Maintenance and Evaluation – Continuous monitoring, feedback collection, and updates will be conducted to improve system performance and address any emerging issues.

This structured approach ensures the development of an efficient, secure, and user-friendly Patient Record System that enhances healthcare service delivery.

PROJECT OBJECTIVES

Objective of the study

The objective of this study is to develop a system for a school clinic to enhance the efficiency, accuracy, and security of health records for students, teachers, and staff. Specifically, it aims to design a user-friendly digital system that allows authorized clinic personnel to record, store, retrieve, and update patient information efficiently. The system seeks to reduce errors and inefficiencies associated with paper-based records while ensuring data security through basic access controls.

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Stakeholders

The primary stakeholders of this study include students, teachers, and school staff, who will benefit from improved record management and faster access to their health information during clinic visits. School clinic personnel, such as nurses and administrative staff, are also key stakeholders, as the system will help them manage patient records more efficiently, reducing paperwork and retrieval time. School administrators are involved as decision-makers who may support the implementation of the system to improve overall health services within the institution. The study also indirectly benefits parents and guardians, as better record-keeping allows for more accurate health monitoring and reporting when necessary.

SYSTEM OVERVIEW

Proposed System

Patient Record Management System (PRMS) is a digital system used in school clinics to store, manage, and track student medical records. It helps clinic staff record medical visits, diagnoses, treatments, and prescriptions, ensuring easy access to health data.

One of its key features is automated email notifications to guardians, informing them when a student visits the clinic and the reason for their visit. The system also ensures secure data storage, role-based access control, and compliance with privacy regulations. Additionally, it provides reports and analytics to help monitor student health trends.

PRMS improves **efficiency, communication, and record-keeping**, ensuring better healthcare management in schools.

FEASIBILITY STUDY

Feasibility study

The feasibility study evaluates the practicality of developing and implementing the Patient Record System (PRS) by analyzing its technical, operational, economic, and schedule feasibility. This assessment ensures that the system is viable, effective, and beneficial for healthcare institutions.

Technical Feasibility

The proposed system will require hardware and software resources to function effectively. It will be developed using a database management system (DBMS), a secure server for data storage, and a user-friendly graphical interface for easy access by healthcare professionals. Existing technologies such as cloud computing, encryption methods, and access control mechanisms will be integrated to ensure data security and efficiency. The required technology is readily available, making the system technically feasible.

Operational Feasibility

The system is designed to streamline patient data management, enhance accessibility, and reduce errors. By transitioning from a manual to an automated system, healthcare providers can efficiently manage patient records, leading to faster decision-making, improved treatment accuracy, and better coordination among medical staff. Additionally, the system will be designed with a user-friendly interface, ensuring minimal training for healthcare personnel. These factors demonstrate that the system is operationally feasible.

Economic Feasibility

A cost-benefit analysis will be conducted to ensure that the financial investment in developing and maintaining the system is justified by its benefits. While initial costs may include hardware, software, and training expenses, the system will ultimately lead to cost

savings by reducing paperwork, minimizing administrative workload, and improving efficiency. The long-term financial benefits, including reduced record management costs and enhanced service delivery, make the system economically feasible.

Schedule Feasibility

This project would be feasible within the entire semester if scheduled properly. Here is my proposed schedule, but it remains open to changes, especially in case of any unforeseen challenges.

Phase	Tasks	Duration
1. Planning	Define system requirements, scope, and goals	2 weeks
2. Analysis	Conduct feasibility studies (technical, financial, operational), gather user needs	3 weeks
3. Design	Develop system architecture, create ERD, DFDs, and UI prototypes	4 weeks
4. Development	Code system modules (patient records, notifications, reports)	6-8 weeks
5. Testing	Perform unit, integration, and user acceptance testing	3 weeks
6. Deployment	Install the system, provide training, and go live	2 weeks
7. Maintenance	Ongoing support, bug fixes, and updates	Continuous

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REQUIREMENTS ANALYSIS

Functional Requirements

The **Patient Record Management System (PRMS)** is a digital solution designed to improve the management of student health records in a school clinic. It replaces paper-based records with a secure, efficient, and accessible platform.

The system allows clinic staff to **register students, store medical history, manage appointments, track prescriptions, and generate health reports.** It enhances **efficiency** by reducing paperwork and **improves security** with role-based access and data encryption.

By providing **quick access to patient records and real-time reporting via email**, PRMS helps the clinic deliver better healthcare services while ensuring data privacy and compliance.

User Requirements

1. Clinic Staff (Doctors, Nurses, Assistants)

- **Patient Management**: Register, search, and update student records.
- **Medical Records**: Add, edit, and view medical history, diagnoses, prescriptions, and lab results.

- **Reporting & Analytics**: Generate reports on illnesses, medication usage, and clinic visits.
- **Security**: Role-based access and secure login.

2. School Administrators

- **User Management**: Create/manage staff accounts with role-based permissions.
- **Reports & Insights**: View health trends and clinic visit records.
- **Compliance & Security**: Ensure data privacy and audit staff activities.

3. Students & Guardians

- **Medical Records Access**: Request view-only access to health history.
- **Prescriptions & Advice**: View medication details and health notifications.

This ensures a **secure, efficient, and user-friendly** system for managing student health records. Let me know if you need any refinements!

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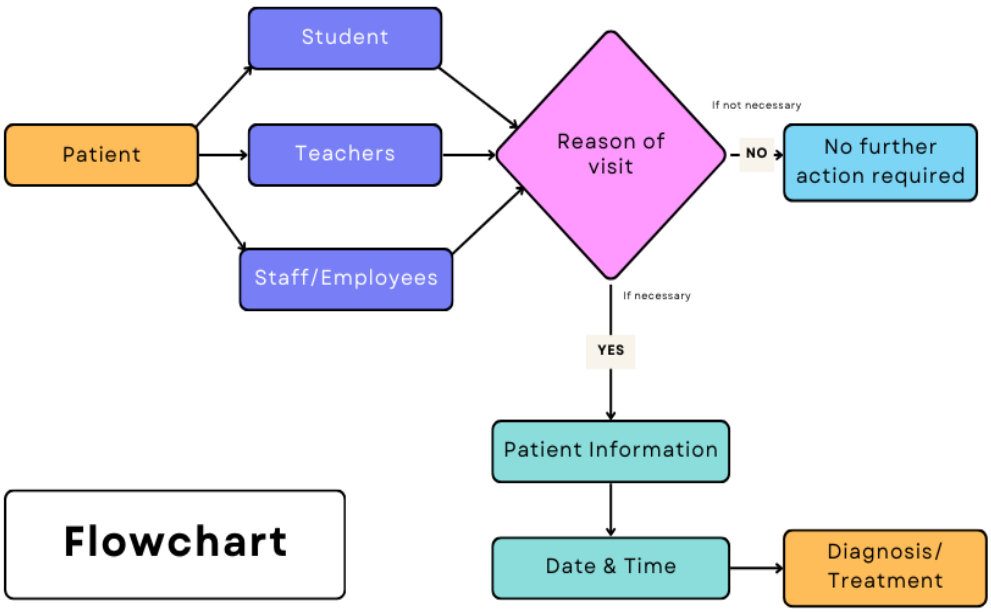
PROCESS AND DATA MODELING

The process by which the clinic operates usually follows this structure, ensuring an organized and systematic approach to patient monitoring and record-keeping. This workflow allows for efficient handling of patient visits, proper documentation of medical information, and timely communication with guardians or relevant personnel. By following this structured process, the clinic can provide accurate records, streamline operations, and improve overall healthcare management within the school setting.



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This diagram/chart represents the most used flow of events in patient monitoring and record-keeping. It is also the most effective for my proposed system, as it is more straightforward and easier to understand.