INTEGRATED HEALTH PORTAL FOR PERSONALIZED HEALTH CARE MANAGEMENT

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Abstract: This Integrated Health Portal For Personalized Health Care Management project is a computerized hospital front desk management that produces user-friendly, quick, and cost-effective software. It handles and secures patient information, diagnosis data, and so on. This was done by hand and its' principal job is to register and maintain patient and doctor information and to access and update the information when needed. Patient information and diagnosis are entered into the system, then the output is used to display these details on the screen. A username and password are required to access the Hospital Management System. It can be accessed by a receptionist or an administrator. They are the only ones who have access to the database. The information is easily accessible. For personal usage, the data is well-protected, and the data processing is quick. The Hospital Management System is a computer software system, which is used to managing the functioning and events of any hospital or multi-speciality hospital. The main goal of a hospital management system is to design a project that will improve patient care and reduce the expense of running a hospital. It aids in the registration of complete patient data, records and retains the patient's medical history, treatment needs, past visit details, planned appointments, reports, insurance information, and more. Web based technology offers many online services in almost every field. Almost everything can be done online which help to reduce the amount of tasks, cost, and efforts. The paper describes about an idea of such a web based platform that make many medical/hospital procedures online using Web, networking technology that can be very important in implementing the functionality of online medical management. This will help in management of patients, managing the schedules of the doctors, maintaining the records of patients which can be accessed throughout hospital. Storing, managing, communicating, analyzing and updating the patient details online. Thus, by implementing this web based application using customized application programming we can manage many tasks that are usually time consuming and inconvenient.

Keywords: Health Management Portal: Add Room, Patients Details, Reports, Payment Modes, Knowledge-Based System, Personalization

I. INTRODUCTION

A Integrated Health Portal For Personalized Health Care Management project is a computer system that facilitates the efficient management of healthcare information and the work completion of healthcare providers. This hospital management system project report oversees data from all areas of healthcare, including clinical, financial, and laboratory aspects. It comes with a pdf report and documentation revealing the whole hospital management system project. [1]. The hospital management system aids in the registration of complete patient data. It records and retains the patient's medical history, treatment needs, past visit details, planned appointments, reports, insurance information, and more. It reduces the requirement for these details to be obtained at each software visit. This discussion gives you the whole report on Hospital Management System Project along with its abstract and modules [23]. It enables you to be knowledgeable of the project's core functions and processes by knowing the purposes of the Hospital Management System.

The healthcare industry is one of the most important sectors of our economy. It is responsible for providing care to hundreds and billions of people around the world. The health of all people is paramount to their well-being, which means that the healthcare industry is an important part of society as a whole [4-5].

Technology has played an increasingly more important role in the delivery of healthcare. Hospital management system has emerged to be   an evolving healthcare technology trend in recent times. A HMS is a comprehensive solution for healthcare facilities to gather patient data, secure vital records, automate scheduling, and more. The future scope of the Hospital Management System includes continuous enhancements for improved interoperability with emerging healthcare technologies, integration of artificial intelligence for predictive analytics and personalized care, and expansion of telemedicine capabilities to enhance remote patient monitoring and virtual consultations [6].

II.   MOTIVATION

The real motivation for the hospital management system project is to make easy process of all the management process like patients registration, billing, doctor's appointment, doctor's prescription, etc. We always see that to find out the patient's history, the user has to go through various registers. This results in wastage of time. So by this system it will become easy to manage all process. So now by taking the motivation of this scenario which was regularly done in hospitals we are designing this system which can be benefited for the patients and hospital staff. So, we'd like to possess this system which help hospital to do work fast and effective. The development process of knowledge-based system has a clear knowledge-engineering methodology. This portal is an integrated knowledge based system for personalized diet plan and menu construction in health portal. The scope of the study is to provide the users with a personalized diet plan and construct a suitable menu based on their preferences and diet plan generated. The process of knowledge engineering is involved in multiple steps from the problem statement to develop a complete system. However, this study is not focused to complete the system development and implementation. Hence, the process of knowledge engineering methodology has been adapted to form this methodology for this study.

III.   OBJECTIVES

I.   The objective of the Integrated Health Portal for Personalized Health Care Management project is to design and implement an efficient and user-friendly system that automates the various tasks associated with managing a hospital.

II.   To computerise every detail related to hospital and patient information.

III.   Arranging patient appointments with physicians in a way that is convenient for both parties.

IV.   Appropriately scheduling emergency room visits and specialised medical appointments to ensure that hospital resources are completely and effectively utilised.

V.   The medical store's stock level should decrease if it provides patients with medications, and vice versa.

VI.   It ought to be capable of managing patient test findings from the hospital's pathology lab. VII.   Every   time   a transaction is completed, the inventory ought to be updated automatically.

VIII.   Patients' information should be current, and their records should be preserved in the system for future reference.

IX.   To implement this application, we will require computers in each room of hospital for e.g. All the wards of hospital should have a computer to update the details about patient, all the departments like MRI, CT scan, X-ray rooms should have computers to store the reports on the system database and all these computers should be in network and it should have an updated browsers and internet connection.

X.   Every patient should be registered, and every person who handles the patients in some or the other way should have a login access to the system so that person can update about the patient relatively.

XI.   All the doctors should have a system with internet connection and connected with the other hospital computers.

XII.   This web application can be developed by using object oriented programming languages for front end like .net, C#, HTML, CSS which will provide the latest technology in developing quite user friendly user interface so it is very easy for all the user to understand the system.

IV.   METHODOLOGY

In this section, the comprehensive methodology of the design and development including the implementation of the health portal has been discussed.

A. Requirement analysis -
1)   A thorough research and group discussions to identify key features and functionalities of the health portal was done.
2)   The necessity of the use of chatbot in health-
Related portals was pointed out and discussed in order to enhance user experience and interaction with the portal.

B. Design   -
A system designed outlining the interactions between the user and the back-end system.
The design includes use of user-friendly and responsive HTML and CSS based interfaces for both desktop and mobile platforms , ensuring the accessibility and intuitive navigation.

Fig. Home Page

Fig. Appointment Page

C. Implementation -
Use of HTML5 and CSS3 has been done for building the portal's frontend ,ensuring cross-platform compatibility and responsiveness.
Also Java Script for dynamic content loading and seamless user interactions. Integrated a chatbot by making use an AI-based generative platform Botpress which uses of machine learning that helps in the chatbot's functionalities contributing in understanding and responding to user inputs.
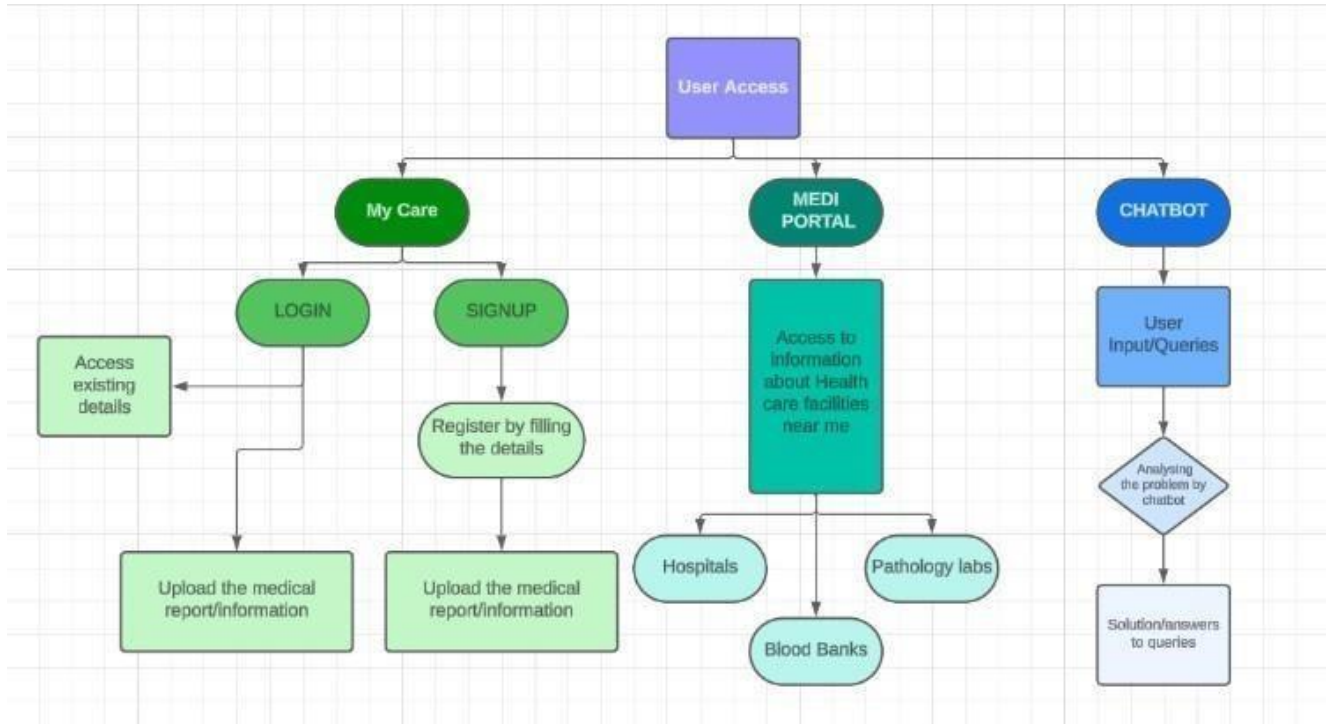
D. Chatbot Development –
By making use of a generative AI-based platform Botpress , trained the chatbot to understand and respond to health-related queries using machine learning techniques.
Incorporated a context-aware mechanism to maintain continuity in conversations and provide personalized responses.

FLOWCHART

V. RESULTS

This study looks into the usability and functionality of "Medi Portal". Particularly, the aim is to understand how the Health portal performs in managing health information regarding patients when patient-doctor interactions are not involved.

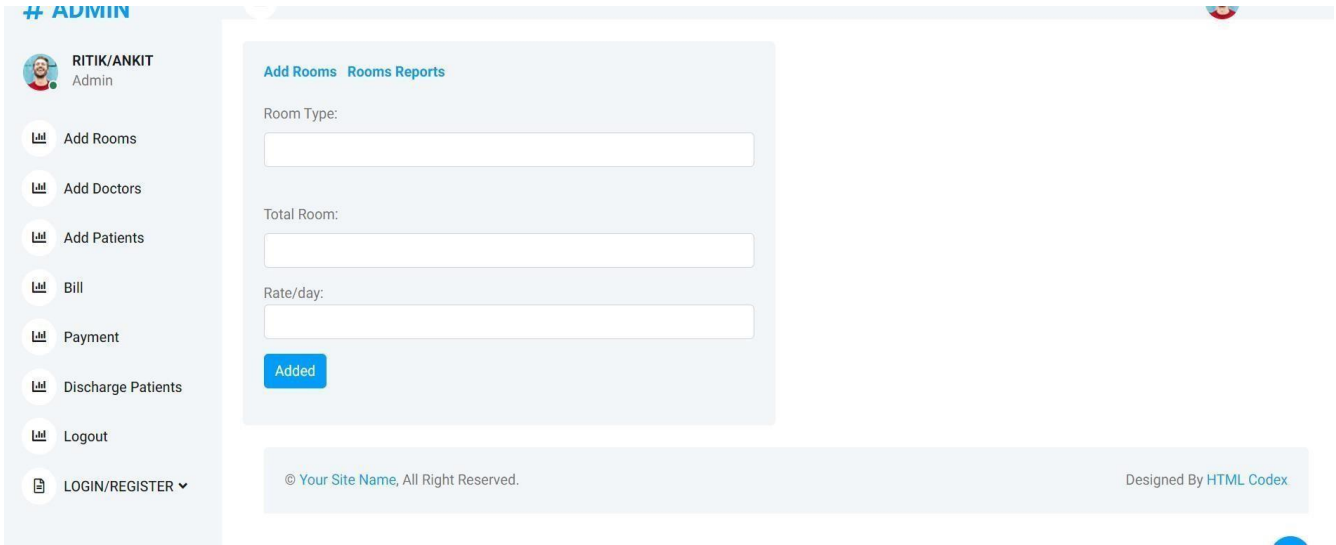**Interface design:**

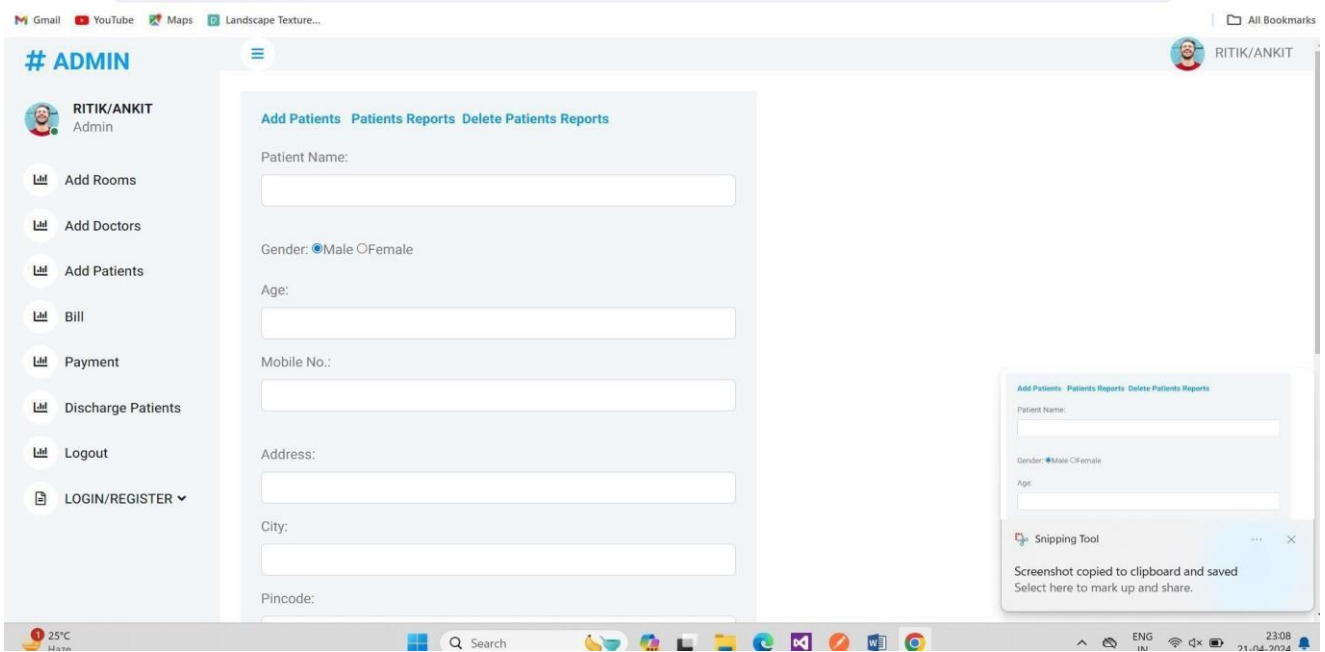Fig. Registration Page

Fig. Add Rooms Page

Fig. Patient Details Page

Fig. Add Bill Page

Fig. Payment Modes Page

Fig. Invoice Page

VI.   CONCLUSION

By implementing this web based application the website and customized application on the tablet. The management of the patients will be very much easier, efficient and less time consuming. It will be easy for the doctors and patient to access the records and reports as the history and reports are already present in the system ,so the patient will not have to carry all the reports and big x-rays and MRI films etc. The patient details are already present in the database while registration so there is no need to fill a form during emergency cases. The doctors can check details of the patients on their system, provide prescription on a click which will be sent to the pharmacist this will reduce a huge amount oftime as the pharmacist knows which medicines to be kept ready before hand, the communications among the doctor and patient is enhanced as the patient can get as much help online. It will help to reduce many manual efforts, time taken and cost.

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