

Project ID-430

Project Title-Hospital Management System

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1)Introduction

A Hospital Management System (HMS) is a comprehensive software solution designed to streamline and automate various administrative and operational tasks within a healthcare facility. Its primary purpose is to enhance the overall efficiency, organization, and quality of patient care delivery while simplifying the management processes for healthcare providers. By integrating different modules such as patient registration, appointment scheduling, billing and invoicing, electronic medical records, inventory management, and reporting, the HMS enables healthcare professionals to effectively manage and coordinate their daily operations, ensuring smooth workflows, accurate documentation, and improved patient outcomes. With its advanced features and functionalities, the Hospital Management System plays a vital role in optimizing resource utilization, enhancing patient satisfaction, and facilitating data-driven decision-making in modern healthcare settings.

2) Literature survey

“Survey paper on hospital management system by Saylee Dongre, Shivani Chaudhari, Saurabh Sonwane” - The advantages of a hospital management system include better system, control, patient care, cost management, and profitability. HMS is user-friendly and is created and tailored to provide hospitals the best possible advantages. The front-end software for the "Hospital Management System" project is Java, an Object Oriented Programming language with access to MySQL. All of the necessary modules and functionalities have been specifically created to only meet the criteria. The whole architecture was created using the most recent technology and is desktop-based. It includes all necessary modules, including those related to patient registration, medical information, doctor appointments, patient appointments, bills, record modifications, etc.

The human body has millions of functions and is an extremely clever and complicated organisation. Man himself has deciphered all of these intricate processes via study and tests. As science and technology advanced, medications played a crucial role in research. Medical science gradually evolved into a whole new field of study and investigation. Currently, the health sector consists of medical facilities including hospitals and clinics.

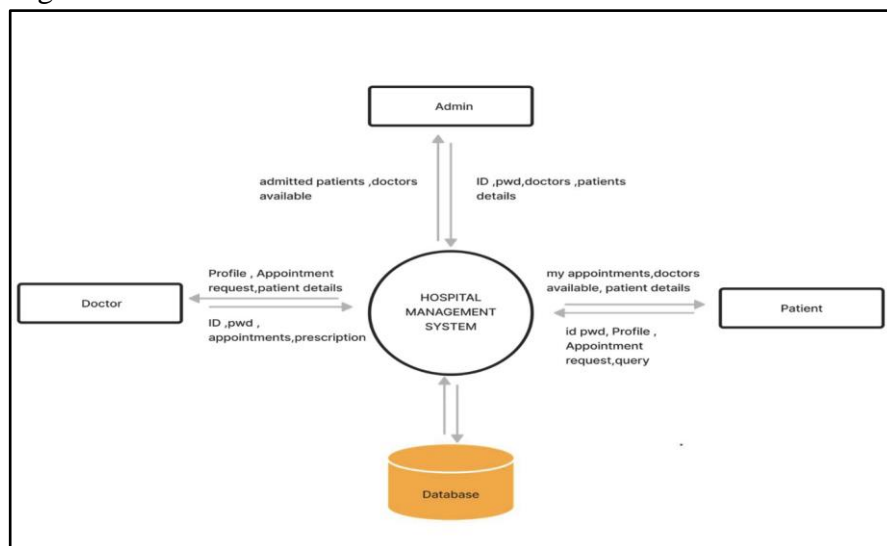
“Hospital management system using web technology (2020)” - According to this essay, web-based technology provides a wide range of online services in practically every industry. To better compete in the burgeoning digital market, every major sector is converting and creating a digital face for all of its core activities. Today's world has a rapid information flow, thus adopting duplicate methods won't help the person or the organisation using them. All modern businesses that are successfully run and managed must have internet access. The paper outlines a concept for a web-based platform that would replace the need for paper prescriptions in hospitals that practise electronic medical management, improving the effectiveness of patient management, doctor scheduling, and providing universal access to patient data throughout the hospital.

“Hospital Management System (International Journal of Research in Engineering Application & Management)” - In order to create software that is user-friendly,

straightforward, quick, and cost-effective, the front office management of hospitals will be computerised in this article. It deals with gathering patient data, including diagnostic specifics, etc. Traditionally, it was carried out by hand. The system's primary purpose is to enter and store information on patients and doctors, retrieve that information as needed, and alter it in a meaningful way. While system output is to display these facts on the screen, system input comprises patient and diagnosis-specific information. Entering the Hospital Management System requires a login and password. A receptionist or an administrator may access it. They alone are able to add data to the database. The information is simple to get. The data are securely safeguarded for personal use, which speeds up data processing.

3)Theoretical Analysis

a)Block Diagram



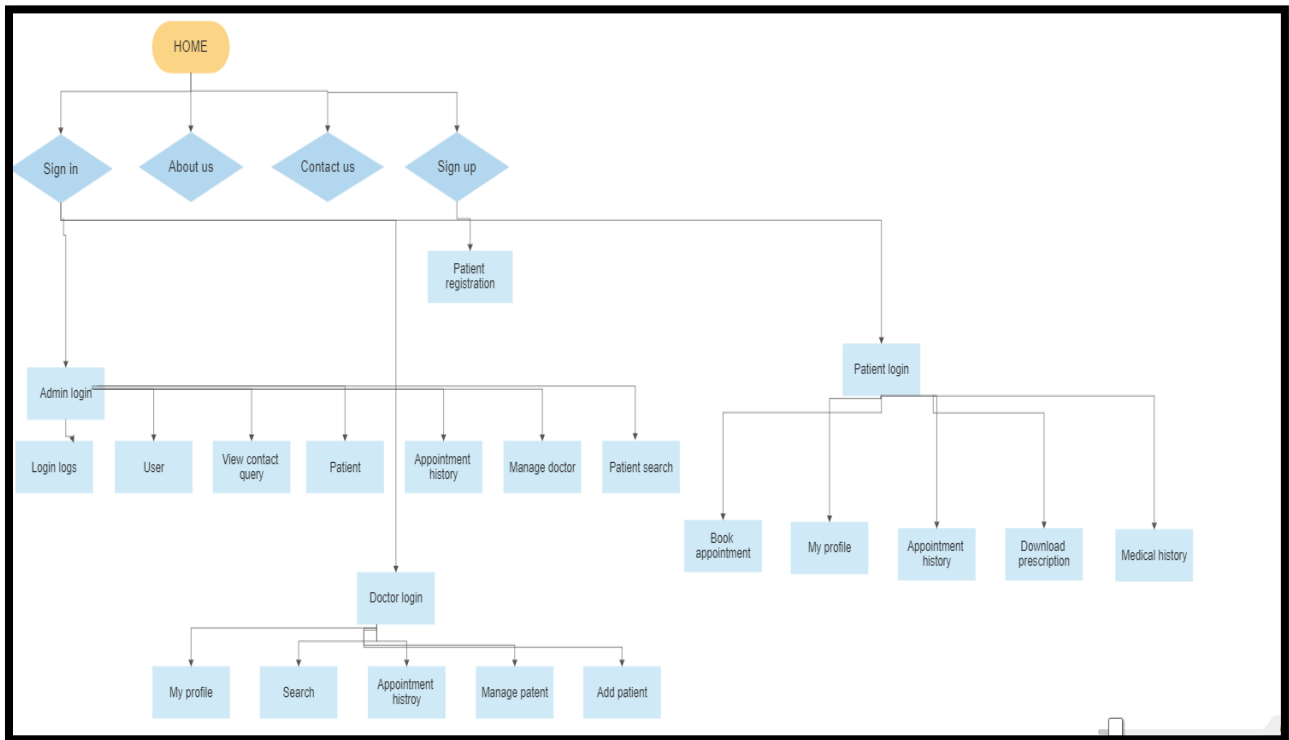
b)Tools/Libraries Used

- b.1)Visual Studio Code
- b.2)XAMPP
- b.3)MySQL

c)Language Stack

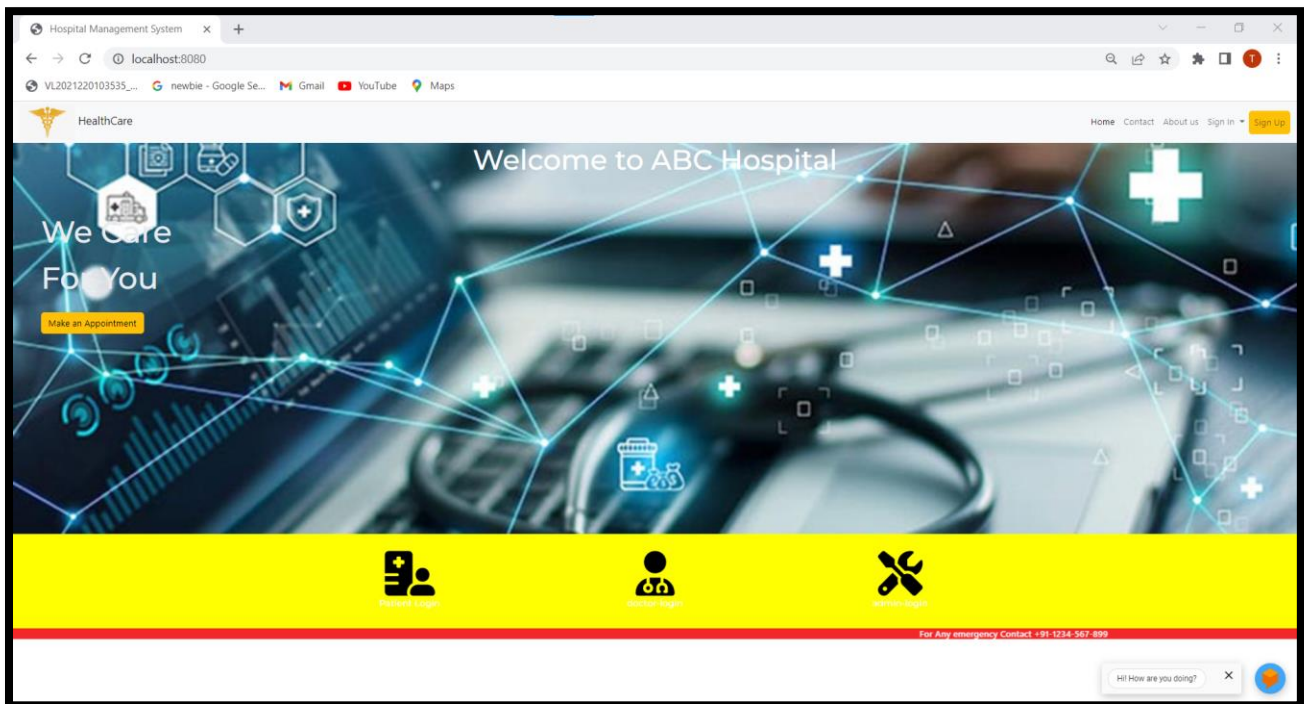
- c.i)Frontend
 - c.i.a)HTML
 - c.i.b)CSS
 - c.i.c)JavaScript
- c.ii)Backend
 - c.ii.a)PHP
 - c.ii.b)MySQL

4)Flowchart



5)Result

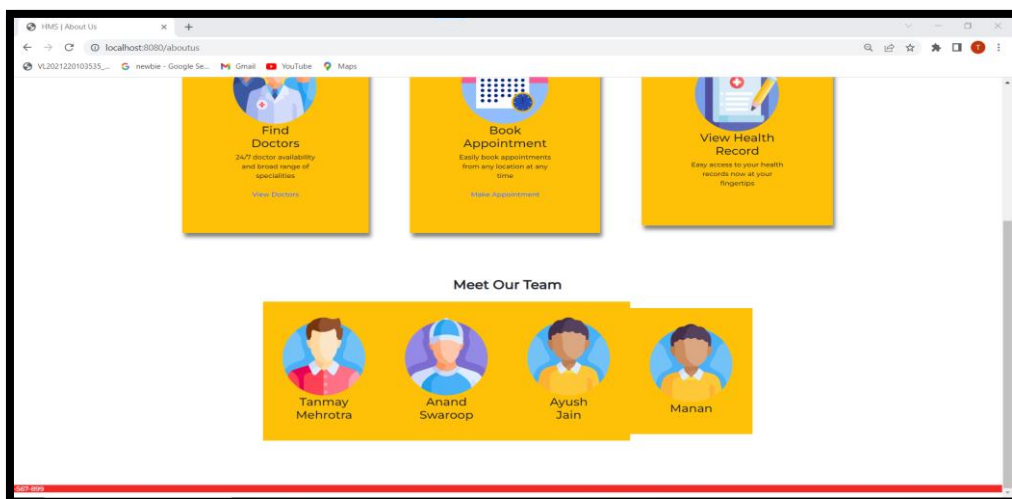
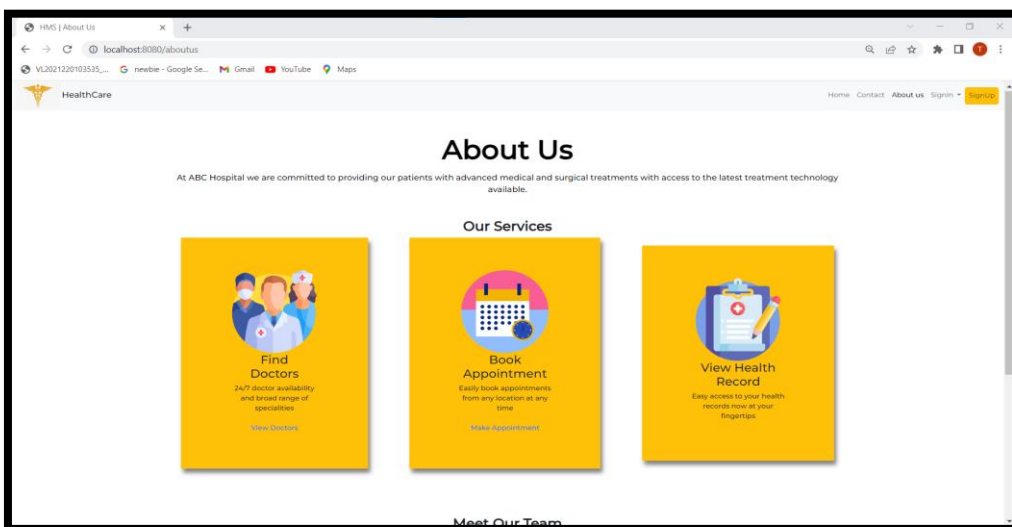
a)Home Page



b)Contact Us Page

The screenshot shows the 'Contact Us' page of the HealthCare website. The page has a white background with a light blue header. The header contains the 'HealthCare' logo on the left and navigation links 'Home', 'Contact', 'About us', 'Signin', and 'Signup' on the right. A yellow box on the left displays the 'Hospital Address' as 'ABC Hospital, Wadgaon, Maharashtra, India, Email: info@abchospital.com'. The main content area features a 'Contact Us' form with fields for 'NAME', 'E-MAIL', 'MOBILE NO', and 'Description'. A yellow 'SUBMIT' button is at the bottom of the form. A red footer bar at the bottom contains the text 'For Any emergency Contact +91-22-54-567-890'.

c)About Us



d)User Sign up Page

User Registration

HealthCare

Home Contact About us Signin Signup

User registration

Name

Address

City

Gender
☐ Female ☐ Male

Email

Password

Password Again

Signup

Have an account? [Sign in](#)

e)User Dashboard

HealthCare

USER | DASHBOARD

My Profile
Show User Profile
[My Profile](#)

My Appointment
View user's appointments
[View Appointment History](#)

Book My appointment
Users can book an appointment
[Book appointment](#)

Dashboard
Book Appointment
Appointment History
Medical History

For Any emergency Contact +91-1234-567-89

VL2021220103535...
newbie - Google Se...
Gmail
YouTube
Maps

HealthCare

Dashboard
Book Appointment
Appointment History
Medical History

User | Book Appointment

Book Appointment

Doctor Specialization

Pediatrics

Doctors

Dr. Christopher Davis

Consultancy Fees

400

Date

28-06-2023

Time

12:00

ng | 10:00 PM

Submit

HealthCare

Dashboard
Book Appointment
Appointment History
Medical History

User | Appointment History

Sr.No	Doctor Name	Appointment ID	Specialization	Consultancy Fee	Appointment Date / Time	Appointment Creation Date	Current Status	Action
1.	Dr. John Smith	HAPP001	Neurology	600	2023-06-28 / 10:00	2023-06-28 17:17:59	Cancel by You	Cancelled
2.	Dr. Christopher Davis	HAPP007	Pediatrics	400	2023-06-28 / 12:00	2023-06-28 17:23:45	Active	Cancel

f)User Profile Page

VL2021220103535...
newbie - Google Se...
Gmail
YouTube
Maps

HealthCare

Dashboard
Book Appointment
Appointment History
Medical History

User | Edit Profile

User/Edit Profile

Edit Profile

ABC's Profile

Profile Reg. Date: 2023-06-28 16:16:52

User Name

ABC

Address

98,Baghambari Housing Scheme

City

Prayagraj

Gender

male

User Email

tanmeh.20021@gmail.com

Update your email id

Update

7

g) Doctor Profile Page

The screenshot shows the 'Doctor | Edit Doctor Details' page. The left sidebar contains a 'Dashboard' menu with options: Appointment History, Add Patient, Manage Patient, and Search. The main content area is titled 'Doctor | Edit Doctor Details' and contains a form for editing a doctor's profile. The form is for 'Dr Andrew Patrick's Profile' and includes fields for 'Doctor Specialization' (Orthopedics), 'Doctor Name' (Dr Andrew Patrick), 'Doctor Clinic Address' (123, Sunrise Apartments, Park Street, Bangalore, Karnataka, India), 'Doctor Consultancy Fees' (500), 'Doctor Contact no' (9876543561), and 'Doctor Email' (andrew.p@gmail.com). An 'Update' button is at the bottom of the form. A red footer bar contains the text 'For Any emergency Contact +91-1234-567-899'.

HealthCare

Doctor | Edit Doctor Details

DoctorEdit Doctor Details

Edit Doctor
Dr Andrew Patrick's Profile
Profile Reg. Date: 2023-06-28 16:52:04
Profile Last Update Date: 2023-06-28 16:52:04

Doctor Specialization
Orthopedics

Doctor Name
Dr Andrew Patrick

Doctor Clinic Address
123, Sunrise Apartments, Park Street, Bangalore, Karnataka, India

Doctor Consultancy Fees
500

Doctor Contact no
9876543561

Doctor Email
andrew.p@gmail.com

Update

For Any emergency Contact +91-1234-567-899

f) Add Patient Page

The screenshot shows the 'Doctor | Manage Patients' page. The left sidebar contains a 'Dashboard' menu with options: Appointment History, Add Patient, Manage Patient, and Search. The main content area is titled 'Doctor | Manage Patients' and contains a form for adding a new patient. The form is for 'Patient Details' and includes fields for 'Patient Name' (mno), 'Patient Email' (mno.p@gmail.com), 'Patient Mobile Number' (7890345691), 'Patient Address' (98, Baghbari Housing Scheme Allapur), 'Patient Gender' (male), 'Patient Age' (21), and 'Patient Medical History(if any)' (N/A). Below the form is a table for 'Medical History' with columns: #, Blood Pressure, Weight, Blood Sugar, Body Temperature, Medical Prescription, and Visit Date. There are buttons for 'Add Medical history' and 'Upload prescription'. A red footer bar contains the text 'For Any emergency Contact +91-1234-567-899'.

HealthCare

Doctor | Manage Patients

DoctorManage Patients

Manage Patients

Patient Details

Patient Name	mno	Patient Email	mno.p@gmail.com
Patient Mobile Number	7890345691	Patient Address	98, Baghbari Housing Scheme Allapur
Patient Gender	male	Patient Age	21
Patient Medical History(if any)	N/A	Patient Reg Date	2023-06-28 17:51:07

Medical History

#	Blood Pressure	Weight	Blood Sugar	Body Temperature	Medical Prescription	Visit Date

Add Medical history Upload prescription

For Any emergency Contact +91-1234-567-899

g)Admin Dashboard Page

The screenshot shows the Admin Dashboard Page. The header includes the HealthCare logo and a user profile icon. The left sidebar contains a menu with options: Dashboard, Doctor, User, Patient, Appointment History, Contactus Queries, Doctor Session Logs, User Session Logs, and Patient Search. The main content area is titled "Admin | Dashboard" and features five summary cards: "Manage Users" (Total Users: 2), "Manage Doctors" (Total Doctors: 6), "Appointments" (Total Appointments: 2), "Manage Patients" (Total Patients: 1), and "New Queries" (Total New Queries: 0). A red footer bar contains the text "For Any emergency Contact +91-1234 567 899".

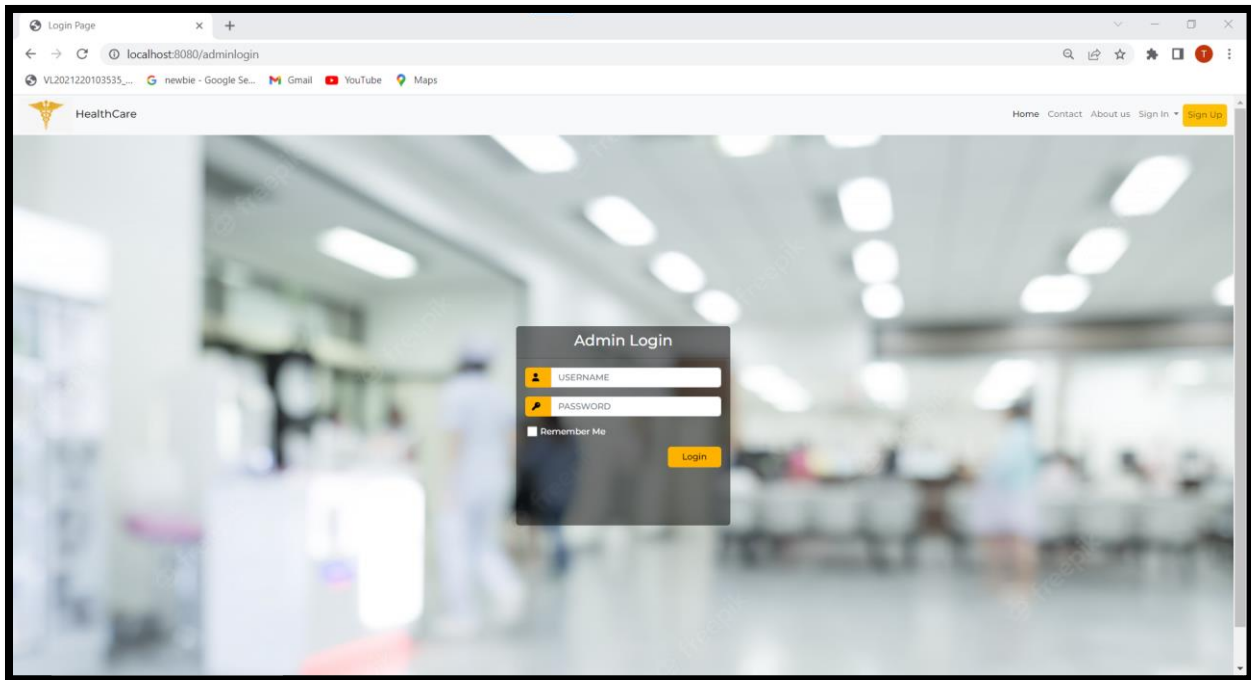
i)Doctor Session Logs

The screenshot shows the Admin | Doctor Session Logs page. The header includes the HealthCare logo and a user profile icon. The left sidebar contains a menu with options: Dashboard, Doctor, User, Patient, Appointment History, Contactus Queries, Doctor Session Logs, User Session Logs, and Patient Search. The main content area is titled "Admin | Doctor Session Logs" and displays a table of session logs. The table has five columns: S.No, Username, Login time, Logout Time, and Status. The data rows are as follows:

S.No	Username	Login time	Logout Time	Status
1.	tanmeh2002@gmail.com	2023-06-28 04:43:38		Failed
2.	daniel.r@gmail.com	2023-06-28 17:35:33		Failed
3.	tanmeh2002@gmail.com	2023-06-28 17:35:42		Failed
4.	andrew.p@gmail.com	2023-06-28 17:46:37		Failed
5.	andrew.p@gmail.com	2023-06-28 17:50:17	28-06-2023 06:00:31 PM	Success

A red footer bar contains the text "For Any emergency Contact".

j)Admin Login



6) Advantages and Disadvantages:

“Advantages” - In the case of the healthcare system, communication has been significantly improved by the system's integration of the software. As a consequence, using an authorised login, anybody may access all data from anywhere in the globe. This kind of communication has become much less expensive. Many of the restrictions have been reduced because of smart technology use. Geographical restrictions are seen to be one of the main problems in the healthcare system. The inclusion of the hospital management system has allowed for better administration of this. Instant messaging, emails, and other methods may be used to provide the essential reports.

Another significant benefit of the hospital management system is thought to be increased productivity and cost-effectiveness. When compared to the earlier manual system, managing things automatically has shown to be more effective nowadays.

“Disadvantages” - Security is often cited as one of the hospital management system's biggest drawbacks. If you use inadequate security when online, it is seen to be a cause for worry since this might lead to serious security-related issues. The data breach is one of the biggest issues facing the health care sector. Additionally, it is well acknowledged to be a complex issue. Another of these is unemployment. The likelihood of employment often decreases as a result of system automation. Additionally, the need for human data drafting gradually loses relevance.

7) Applications -

7.1) “Pharmacy and stock management” - Any healthcare facility's pharmacy will typically stock medications and other medical supplies. Since patients purchase these items, it is essential to closely monitor your supply to prevent unforeseen losses. In addition to protecting your investment, keeping track of your inventory will make it simple for you to manage the patients' prescription histories. Any services offered at a medical institution are probably included in the stock. Because of this, certain HMS include strong administrative features that may be used to manage radiology and other things. You may increase your margins and have a better understanding of the patients you are working with with the help of a good stock management system.

7.2) “Cost-Effectiveness” - You don't want to manage your healthcare institution using expensive software. Keep in mind that there are several degrees of healthcare application software and infrastructure. For example, you need to locate a programmer for starting facilities if you are new to the sector. This is due to the fact that their fees are fair given the calibre of your facilities. On the other side, more established hospitals utilise more expensive services that they can afford. Keep in mind that the data and software are more complicated at larger healthcare facilities. But keep in mind that you only want to guarantee that your programme will function well enough to justify its price. The cost of your software may be shockingly inexpensive for what it can achieve because of the intense rivalry in the HMS development area, but only if you undertake extensive study.

9)Future Scope:

This hospital management system using spring boot can be improved with much better user interface technologies like ReactJs,AngularJs.Along with Doctor Appointment booking the application can be extended to Pharmacy medicine booking.

AI and ML technologies can enhance application by automating repetitive tasks, optimizing resource allocation, and providing predictive analytics for better decision-making. These technologies can help in areas such as patient diagnosis, treatment planning, drug discovery, and personalized medicine.

HMS can further develop and integrate telemedicine features to facilitate remote healthcare delivery, including video consultations, digital prescriptions, and online appointment scheduling.

Mobile Applications and Remote Access: Mobile applications can play a significant role in HMS by providing healthcare professionals with easy access to patient data, scheduling tools, and communication channels. Patients can also benefit from mobile apps for appointment management, medication reminders, and health tracking.

These are just a few examples of the future scope of Hospital Management Systems. The rapid advancements in technology, coupled with the growing need for efficient healthcare delivery, offer tremendous opportunities for innovation and improvement in the management of healthcare facilities.

8) Conclusion:booking medicine

The Hospital Management System (HMS) initiative aims to computerise hospital operations. It much outperforms the manual method. The system's computerization has sped up the procedure. The front office management is very sluggish and time-consuming in the existing system. The hospital management system was extensively examined and evaluated using fictitious data, and as a result, it is discovered to be quite dependable. The software can handle all of the needs of a typical hospital and can easily and effectively save patient information that is brought into the facility. By enabling capabilities like building patient profiles and permitting appointments, this initiative accomplishes its primary goal. Since the prescription is already entered in the database, the patient does not need a paper prescription when they see the doctor.