



## **Hospital Management System using AWS cloud services**

**Pratibha Chavan<sup>1</sup>, Prajwal Deshpande<sup>2</sup>, Divya Gandhi<sup>3</sup>**

*<sup>1,2,3</sup>Trinity College of Engineering & Research, Pune*

*<sup>1</sup>Pratibhachavan.tcoer@kjei.edu.in*

*<sup>2</sup>Prajwaldeshpande.entctcoer@kjei.edu.in*

### **Abstract:**

Hospital Management System is an organized computerized system designed and programmed to deal with day-to-day operations and management of the hospital activities. The purpose of the project “**Hospital Management System**” is to computerize the front office management of hospital to develop software which is user friendly simple, fast and cost-effective. The main function of the system is approving the appointment placed by the patients and store their details, doctor details, and retrieve these details as and when required, also to manipulate these details meaningfully. Hospital Management System follows a authentication based system in which only the registered user can access the system. The system is built so to protect the user data and information.

### **1. Introduction:**

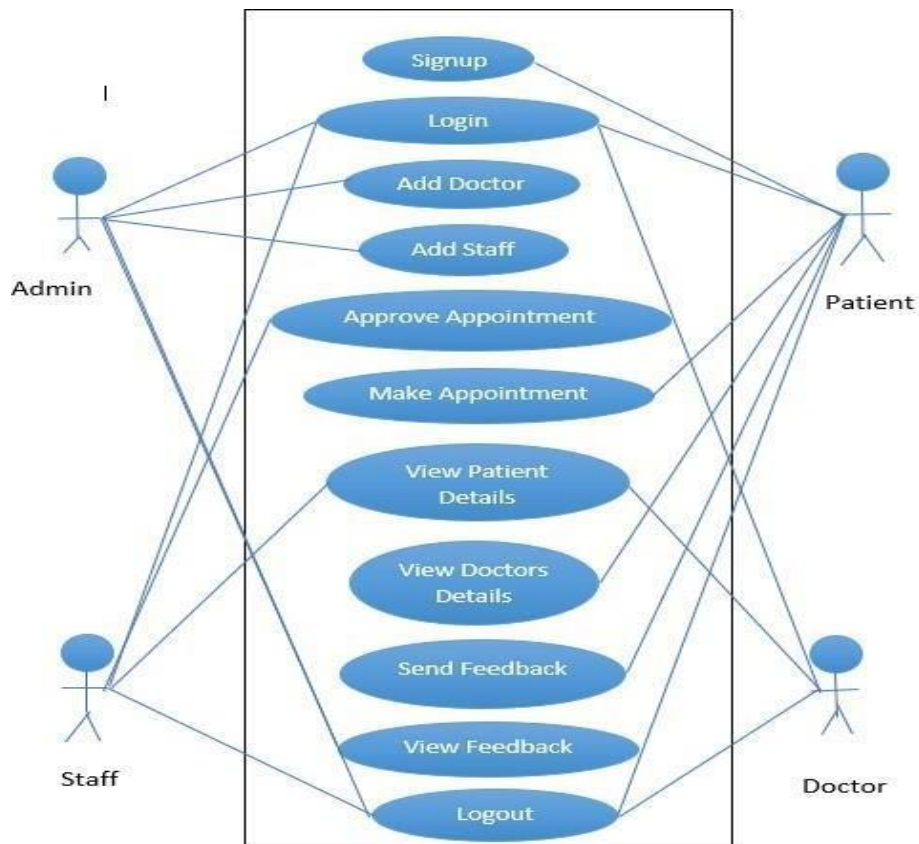
The project Hospital Management system includes appointment booking, registration of patients, doctor, and storing their details into the system. The software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. The project can be entered using a username and password. Where User can search various services available, Book appointment, view doctor details and Doctor can view their appointments and patient detail using their id. It is accessible either by an admin or staff. Only they can add data into the database. The data can be retrieved easily. The interface is very user-friendly. Hospital Management System is Powerful, Flexible and easy to use and is designed and developed to deliver real conceivable benefits to hospitals, clinics tec. This system has four modules-Admin , Staff , Doctor , Patient.

### **2. Literature Review:**

An extremely important area which is the backbone for any research as it provides the entire information pertaining to the problem and objectives. Reviews consisting to antecedents of the App pertaining to the trust of customer and the digital mode of retention of flow in digital era service quality, customer trust, satisfaction, and commitment in Digital mediating to customer retention.

### **3. Model Hospital management system:**

An architectural diagram is a diagram of a system that is used to abstract the overall outline of the software system and the relationships, constraints, and boundaries between components. It is an important tool as it provides an overall view of the physical deployment of the software system and its evolution roadmap.



**Fig1 Pic Internal architecture**

#### 4. Utilization of MPLABX IDE:

A use case diagram in the Unified Modelling Language (UML) is a type of behavioural diagram defined by and created from a use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases.

#### 5. Methodology:

##### HIPAA-Compliant Architecture:

HIPAA (Health Insurance Portability and Accountability Act) compliance is crucial for healthcare systems. Start by deploying a HIPAA reference architecture on AWS. This ensures that your system adheres to privacy and security standards.

Use AWS CloudFormation templates to create a customizable environment that aligns with your organization's HIPAA compliance program.

##### Clinical Data Management:

Amazon AppStream 2.0 can be leveraged to deliver applications and data to clinical staff remotely. It reduces overhead costs and enhances accessibility.

Construct an AWS architecture for image analysis applications used in clinical trials while keeping costs



manageable. Combine existing AWS services with image analysis tools.

### Data Veracity and Security:

Patient data integrity is paramount. Consider using Amazon Quantum Ledger Database (Amazon QLDB) to create cryptographically secure and verifiable medical records.

QLDB's append-only journal ensures data consistency and verifiability, addressing the need for data integrity in healthcare systems.

### Efficient Data Management:

Cloud-based healthcare databases allow hospitals and clinical facilities to efficiently address data management, interoperability, and data standards.

AWS provides a range of data analytics tools to analyze and gain insights from healthcare data.

### Modernizing Clinical Systems:

With AWS and partner solutions, healthcare organizations can modernize their clinical systems. This frees clinicians from administrative burdens, allowing them to focus on patient care.

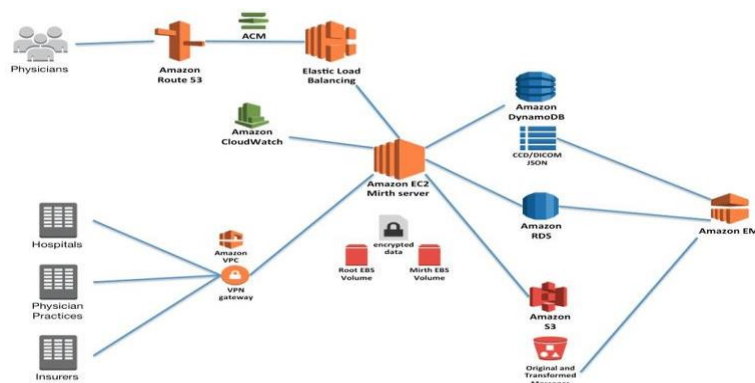


Fig 2. Tree diagram of hospital management system

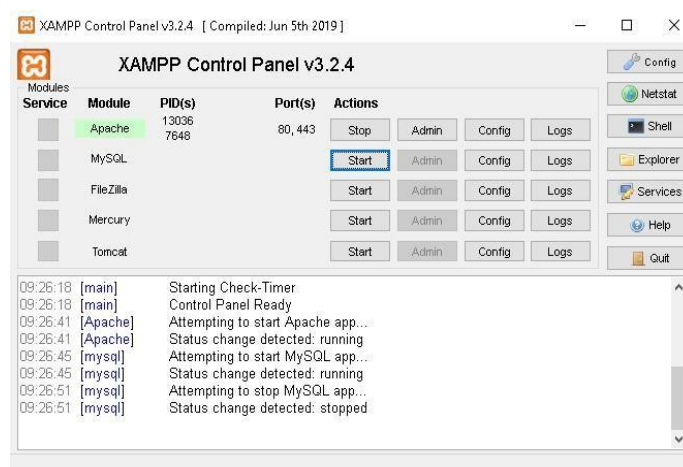


Fig.3 Xamp server



6. Experimental Results and Analysis:

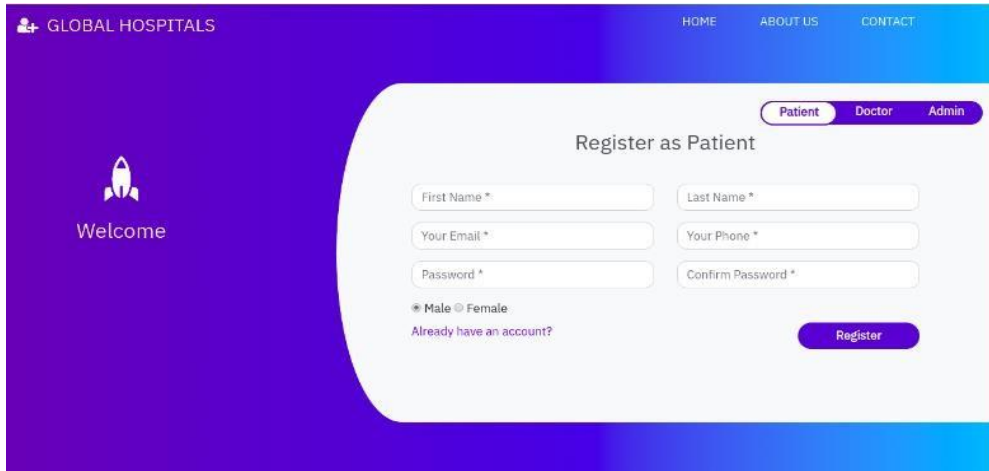


Fig.4 registration page of system page

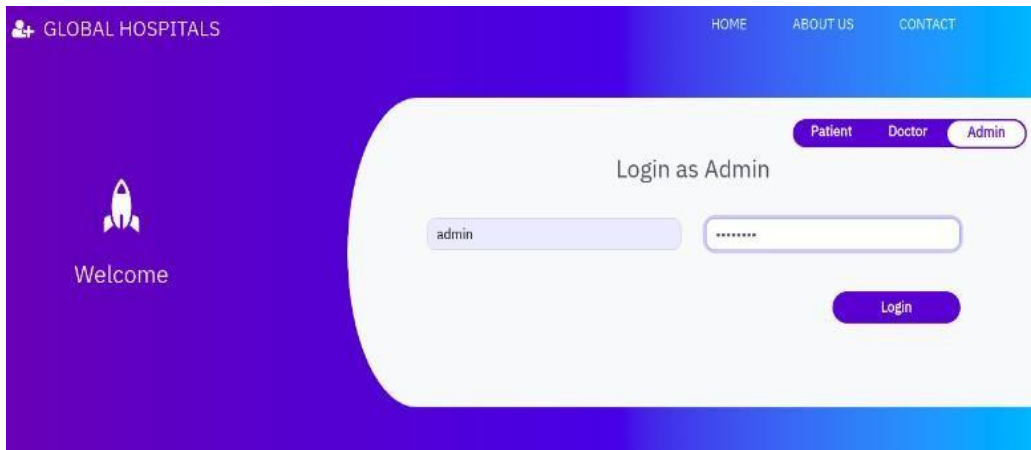


Fig. 4.1 admin login page

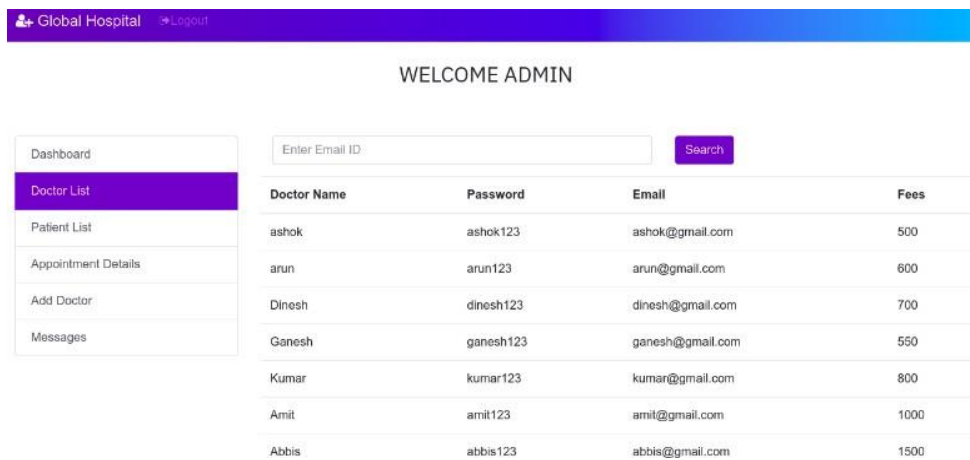


Fig.4.2 doctors available data shown to admin



Global Hospital Logout

Welcome Kishan Lal

Doctor Name	Consultancy Fees	Appointment Date	Appointment Time	Current Status	Action
Ganesh	550	2020-02-14	10:00:00	Cancelled by Doctor	Cancelled
Dinesh	700	2020-02-28	10:00:00	Cancelled by You	Cancelled
Amit	1000	2020-02-19	03:00:00	Cancelled by You	Cancelled
Dinesh	700	2020-02-28	12:00:00	Active	Cancel
Ganesh	550	2020-02-26	15:00:00	Active	Cancel

**Fig.4.3. patient appointment list for doctor**

### 7. Future Scope:

Some of the Future Scope are – Real Time Notification (that may system is AI based ) Means when patient login they identify the patient history and given following available doctor list , maximum charges and availability zone of doctors.

UPI for Payment Method(internal in system) now days UPI is available but some time these having issues related to some server problems that may solve using these system in future

Users can signup / login using their social media account.

In future the web application will have all these features which are not available now.

### Conclusion:

I have successfully designed and developed webpage, which is demonstrated in the way so that all the patients can make their appointment after that staff will align it and make for n appointment patient according to doctor schedule. The system was implemented using webbased technologies which include AWS cloud services , CSS, JS, Bootstrap, HTML, MySQL and PHP.

The project can be entered using a username and password. Where User can search various services available, Book appointment, view doctor details and Doctor can view their appointments and patient detail using their id. It is accessible either by an admin or staff. Only they can add data into the database. The data can be retrieved easily. The interface is very user-friendly. Hospital Management System is Powerful, Flexible and easy to use and is designed and developed to deliver real conceivable benefits to hospitals, clinics etc.

### References:

1. Fitch K, Bernstein SJ, Aguilar MD, Burnand B, LaCalle JR, Lazaro P, et al. The RAND/UCLA Appropriateness Method User's Manual.
2. Iezzoni LI, Davis RB, Palmer RH, Cahalane M, Hamel MB, Mukamal K. et al. Does the Complications Screening Program flag cases with process of care problems? Using explicit criteria to judge processes. Int J Qual Health Care.
3. Davies S, Geppert J, McClellan M, McDonald KM, Romano PS, Shojania KG. Re- finement of the HCUP Quality Indicators. Technical.