



COMPUTER SCIENCE

Cloud-Based Healthcare Management System

GROUP PROJECT



TABLE OF CONTENTS

1. Project Overview
2. Requirement Analysis
 - i. Software Requirement Specifications
 - ii. Use Cases
3. Function Points & Effort Estimation
4. Data Flow Diagram
5. Technology Platform
6. Application Snapshot
7. Future Enhancement
8. Conclusion

PROJECT OVERVIEW :



A **Cloud-Based Healthcare Management System** is designed to streamline medical data storage, patient management, and doctor-patient interactions using cloud computing. It provides secure, real-time access to medical records, appointment scheduling, and telemedicine services.

REQUIREMENT ANALYSIS :

- A **Cloud-Based Healthcare Management System** designed for hospitals and clinics to manage patient records, appointments, and medical history securely which require software and hardware such as
- Softwares Requirements :
 - **Operating System:** Windows/Linux/MacOS
 - **Platform:** Cloud-based (AWS, Azure, Google Cloud)
 - **Database:** SQL Server / Firebase / MongoDB
 - **Language:** Java, Python, or Node.js
- Hardwares Requirements :
 - Minimum **Intel Core i5 processor** or equivalent
 - **8GB RAM, 1TB cloud storage**
 - **Stable internet connection**
- Security Considerations :
 - **End-to-end encryption** for data security
 - **Two-factor authentication** for login
 - **HIPAA & GDPR compliance** for data privacy

Software Requirement Specification :

Functional Requirements	Non-functional Requirements
User Management	Performance Requirements
Appointment Scheduling	Security Requirements
Electronic Health Records (EHR)	Availability & Reliability
Telemedicine & Consultations	Scalability & Maintainability
Prescription Management	
Billing & Payments	
Notifications & Alerts	
Reports & Analytics	

Use Cases :

- Book an Appointment
- View Medical Records
- Update Patient Diagnosis
- Process Payment for Consultation
- Conduct Telemedicine Consultation

Function Point

Function point can used to

- Estimate the cost or effort required to design, code and test the software.

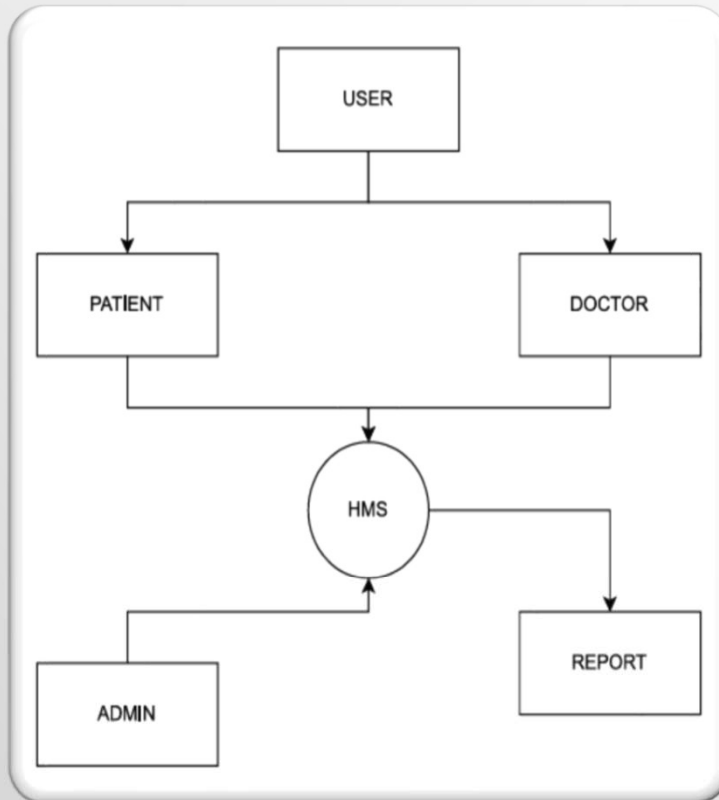
- Predict the numbers of the errors that will be encountered during the testing.

- Forecast the number of component and/or the number of projected source code lines in the implemented system.

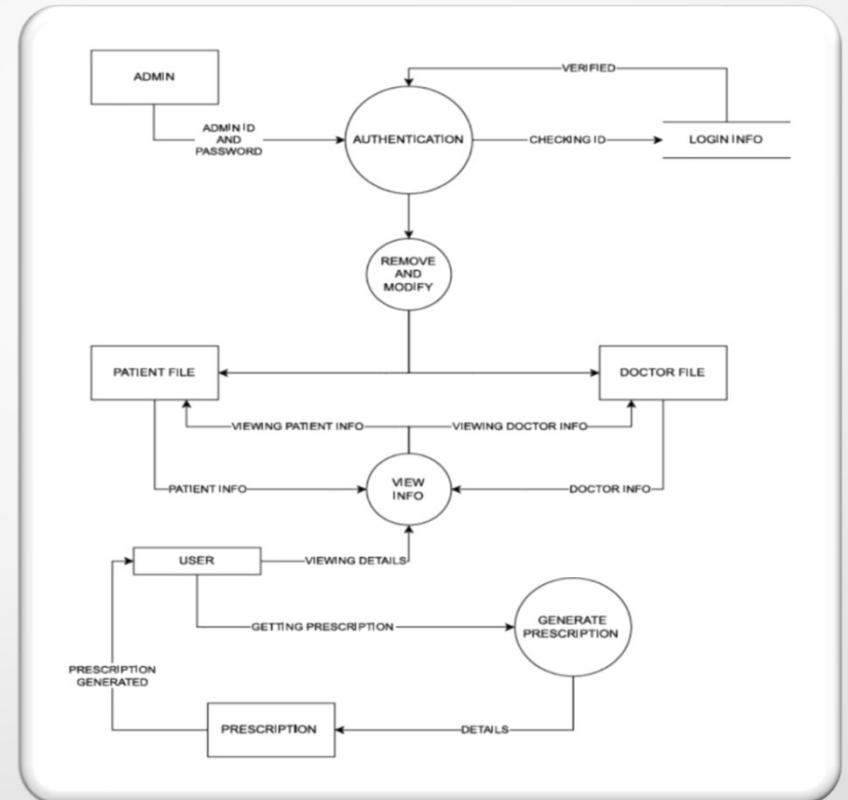
Effort Estimation

Work effort is the labour required to complete an activity. Work effort is typically the amount of focused an uninterrupted labour time required to compute an activity.

Data Flow Diagram



Level 0

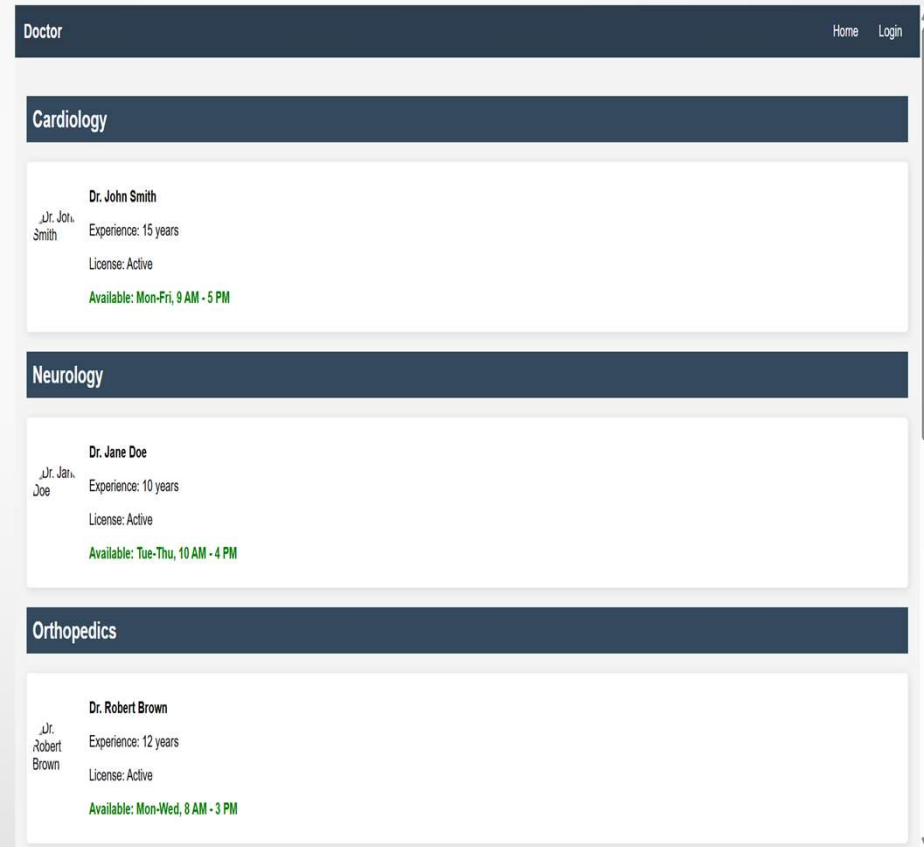
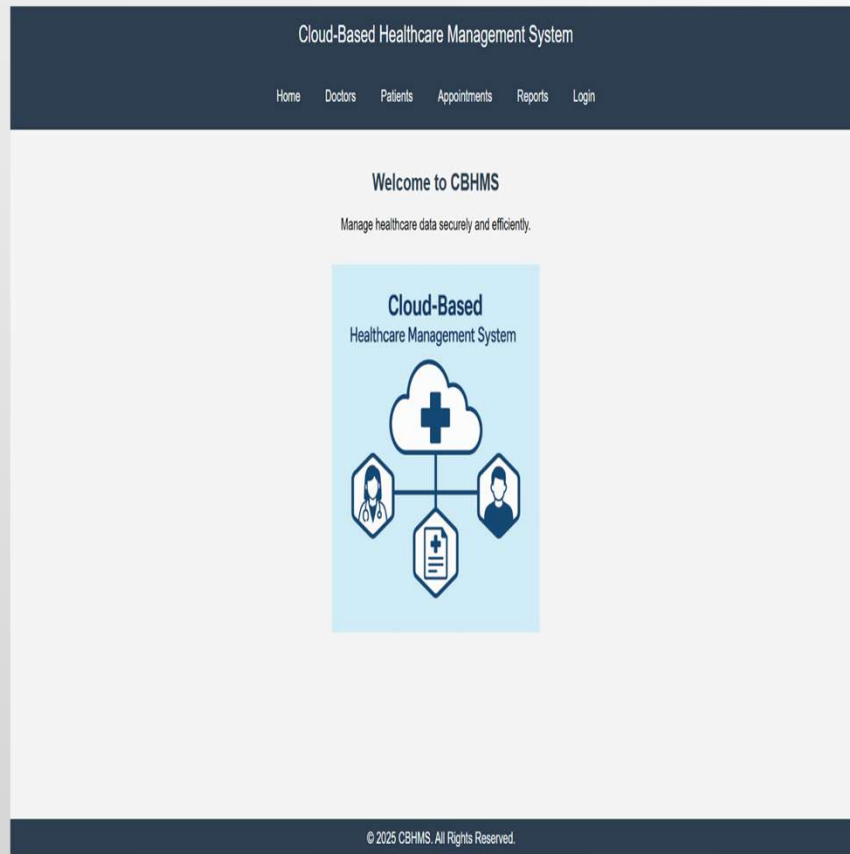


Level 1

Technology platforms :

- Web Platform:** Cross-platform (accessible via browsers)
- Application Development Framework:** HTML, CSS, JavaScript
- Backend Language:** PHP / Node.js / Python (based on implementation)
- Database:** MySQL / MongoDB
- User Interface Language:** HTML & CSS
- API Integration:** RESTful APIs for interoperability
- Hosting Platform:** Cloud (e.g., AWS, Azure, Firebase)
- Security Protocols:** HTTPS, Token-based Authentication
- Communication Medium:** Email, SMS, or push notifications for alerts

Application Snapshot :



Patient Dashboard

HomeLogin

Patient Profile

Name: John Doe

Age: 35

Medical History: Hypertension, Diabetes

Blood Group: O+

Upcoming Appointments

Doctor: Dr. Smith (Cardiologist)

Date: April 5, 2025

Time: 10:00 AM

Prescriptions

Medicine: Amlodipine (5mg)

Dosage: Once daily

Prescribed by: Dr. Smith

Medical Reports

Appointments

HomeLogin

Upcoming Appointments

Doctor: Dr. John Smith (Cardiologist)

Date: April 5, 2025

Time: 10:00 AM

Cancel Appointment

Schedule a New Appointment

Select Doctor:

Dr. John Smith (Cardiologist)

Select Date:

dd-mm-yyyy

Select Time:

--:--:--

Book Appointment

Medical Reports

HomeLogin

Blood Test Report

Patient: John Doe

Date: March 20, 2025

Doctor: Dr. Smith

Status: Normal

Download Report

X-Ray Report

Patient: John Doe

Date: March 10, 2025

Doctor: Dr. Jane Doe

Status: Mild Fracture

Download Report

Home

Login to Healthcare Management System

User ID (Email)

Enter your email

Password

Enter your password

Login

Forgot Password?

New User? Sign Up

Admin Login

Future Enhancement

- **AI-powered symptom checker**
- **Blockchain for medical record security**
- **Wearable device integration (heart rate, BP tracking)**



Conclusion :

The Cloud-Based Healthcare Management System (CBHMS) is designed to enhance healthcare services by digitizing patient records, streamlining doctor-patient interactions, and improving hospital management. By leveraging cloud technology, this system ensures secure, scalable, and remote access to healthcare data, benefiting both medical professionals and patients.



THANK YOU