



Faculty of Technology and Engineering Chandubhai S. Patel Institute of Technology Department of Computer Science & Engineering

Project Problem Statement for Project-IV

Project Group ID: CSPIT/CSE/C2/				
Student ID:	D23CS102	D23CS104	D23CS108	
Name:	Siddhit Kale	Denis Ruparel	Tanay Mahale	
Project Title:	HealthSync: Patient Appointment and Management System with Real-Time Analytics			
Domain of Project Definition:	Domain: Healthcare and Health Information Management Systems. Project-Definition: The project focuses on leveraging technology to streamline patient registration, appointment scheduling, and administration within the healthcare domain. It incorporates features like SMS notifications, secure file storage, performance tracking, and responsive design to enhance efficiency and user experience for both patients and administrators.			
Technology/Methodologies to be used in project:	 Frontend and Backend Next.js: A React-based framework for building both the frontend and backend, offering server-side rendering, static site generation, and API routes for efficient development. Database MongoDB: A NoSQL database solution for flexible and scalable data storage, ideal for handling JSON-like documents with dynamic schemas. DevOps Tools GitHub: Platform for version control and collaborative development, ensuring efficient code management and version tracking. Jenkins: A CI/CD automation tool to streamline build, testing, and deployment processes, ensuring continuous integration and delivery. Docker: A containerization platform to package applications and their dependencies, ensuring consistency across different environments. AWS (Amazon Web Services): A cloud computing platform offering scalable infrastructure for hosting the application, databases, and other 			

	 Docker Hub: A cloud-based registry for sharing and managing Docker images, facilitating smooth collaboration and deployment. JIRA: A project management and issue tracking tool for organizing tasks, managing workflows, and tracking project progress.
	 Power BI: A business analytics tool for visualizing data, generating interactive dashboards, and providing insights through reports, aiding in data-driven decision-making.
Project Objectives	 Patient Registration. Efficient Appointment Management. Enhanced Communication with SMS Notifications Real-Time Data Visualization. Continuous Deployment and Monitoring. Patient Data Management. Complete Responsiveness. Data-Driven Insights with Power BI. Compliance and Security. Data-Driven Insights for Better Decision Making. Ensure Secure and Trustworthy Web-app. Scalability and Adaptability.
Brief Description about project:	 Patient Registration and Profile Management: Users can securely sign up and manage personal profiles, including medical and personal information, creating a central repository for patient data. Appointment Scheduling System: Patients can book, reschedule, or cancel appointments at their convenience, while administrators manage, confirm, and oversee all bookings. Real-Time Analytics: Leverages Power BI to provide real-time visualization and analysis of patient data for better decision-making. Integrated DevOps Practices: Ensures continuous deployment, monitoring, and seamless updates to maintain system reliability and scalability. SMS Notification Integration:Patients receive real-time SMS alerts for appointment confirmations, changes, or cancellations, ensuring effective communication. Secure File Storage:Integration with Appwrite Storage allows users to upload, access, and manage medical documents, ensuring data security and accessibility. Technology Stack for Scalability and Responsiveness:Built with Next.js for dynamic and SEO-friendly web applications, MongoDB for robust database management, and DevOps for CI/CD and reliable infrastructure. Scalable and Adaptable Design: Builds a flexible system capable of

Project Deliverables

The project will deliver a responsive web application for patient registration, appointment scheduling, and medical record management using Next.js and MongoDB. It includes secure file storage, SMS notifications, performance monitoring with Sentry, and analytics via Power BI. With DevOps for CI/CD, the solution ensures scalability, maintainability, and seamless user experience across devices.

SWOT analysis chart for the Project



Strengths

D23CS108

-Proficient in Power BI, enabling the creation of interactive dashboards and reports. -Provide Data Visualization Skills and Real-Time Insights.

D23CS104

-Strong skills in automation,Familiarity with cloud platforms (e.g., AWS, Azure, Google Cloud) that can enhance scalability and reliability of healthcare applications.

D23CS102

-Proficient in both front-end and back-end development, allowing for seamless integration of user interfaces with server-side logic.



Weaknesses

D23CS108

-Dependence on Data Quality,Learning Curve in Al/ML.

D23CS104

-Complexity of Healthcare Systems, Limited budgets and resources in healthcare organizations may restrict the implementation of advanced DevOps tools and practices.

D23CS102

Rapidly changing technology landscape requires continuous learning and adaptation which can be time-consuming and May face challenges in mastering new frameworks.

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Opportunities

D23CS108

-Growing Demand for Data-Driven Decision Making,Potential to expand services to include advanced analytics, machine learning, and Al integration.

D23CS104

-Growing Demand for Digital Transformation, Opportunities to work with emerging technologies such as AI, machine learning, and big -data analytics to drive innovation in project.

D23CS102

-Potential to contribute to projects that leverage advanced analytics and machine learning for better outcomes



Threats

D23CS108

-Need to continuously innovate and provide unique value propositions to stand out in the market.

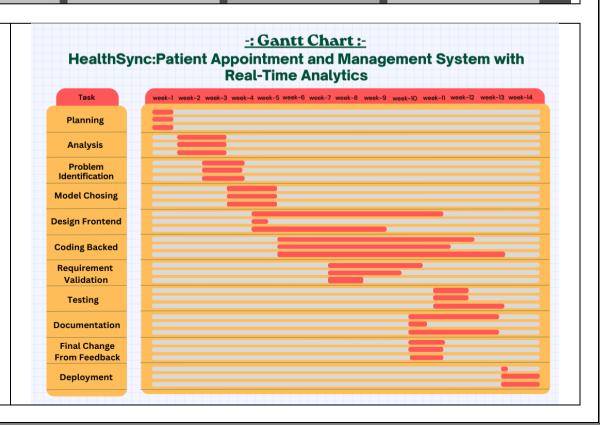
D23CS104

-Compliance with evolving regulations can be challenging and may require continuous updates to security practices.

D23CS102

-Increasing cyber threats targeting applications can pose significant risks, necessitating robust security measures.

Gantt chart with Project Timeline and Team Roles



Siddhit Kale	Denis Ruparel	Tanay Mahale	
D23CS102	D23CS104	D23CS108	

Assessment Rubric to evaluate Difficulty level of Project:

Criteria	D23CS102	D23CS104	D23CS108
Scope and Complexity			
Technical Challenges			
Resource Requirements			
Quality level of Gantt Chart			
Quality level of SWOT analysis chart			
Innovation and Creativity			
Total (Out of 30)			

Assessment Rubric to evaluate quality of Project Problem Statement:

Criteria	Marks
Clarity of Problem Statement	
Relevance to Project Objectives	
Clarity of Language and Presentation	
Overall Impression	
Total (Out of 20)	

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Mentor's Sign:

HOD's Sign with Comments: