Project Proposal

Project Title: DigiHealth: Digital Clinic & Appointment Booking System
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1. Executive Summary

DigiHealth is a web and mobile-based system designed to modernize campus and small community health clinics by digitizing appointment booking, patient record management, and medicine inventory tracking. The solution aims to eliminate manual logbooks and long queues while ensuring secure and efficient healthcare service delivery. By leveraging a mobile app for patients and a web-based dashboard for clinic staff, DigiHealth streamlines appointment scheduling, reduces waiting times, and enhances the quality of medical record-keeping.

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2. Background / Problem Statement

Campus and small community clinics often rely on manual appointment logs and physical records, which result in inefficiencies such as:

Current Challenges:

- Long waiting times due to walk-in only systems.
- Lost or misplaced paper-based medical records.

- Inefficient tracking of medicines and supplies.
- Lack of analytics for monitoring patient visits and health trends.

Opportunity:

With the rise of cloud and mobile technologies, clinics can adopt digital solutions to manage appointments, secure patient records, and track medicine inventory in real time. This improves service delivery, minimizes errors, and enhances patient satisfaction.

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3. Project Objectives

Primary Objective: Develop and launch a digital clinic management system with appointment booking, record management, and medicine inventory features.

Specific Objectives:

- Implement an appointment scheduling module with QR-based check-in by Q2 2026.
- Digitize patient records with role-based secure access for doctors, nurses, and patients.
- Develop a medicine inventory management system with low-stock alerts.
- Deploy mobile app (Android) and web-based dashboard within 7 months of project initiation.

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4. Scope of Work

In-Scope:

- Mobile application for students/patients (Android).
- Web-based dashboard for clinic staff and administrators.
- Patient record management with search and retrieval.
- Appointment booking and queue management.
- Medicine inventory tracking with reporting and alerts.

Out-of-Scope:

- Integration with external hospital systems.
- Advanced telemedicine features (video consultations).
- Billing and insurance processing.

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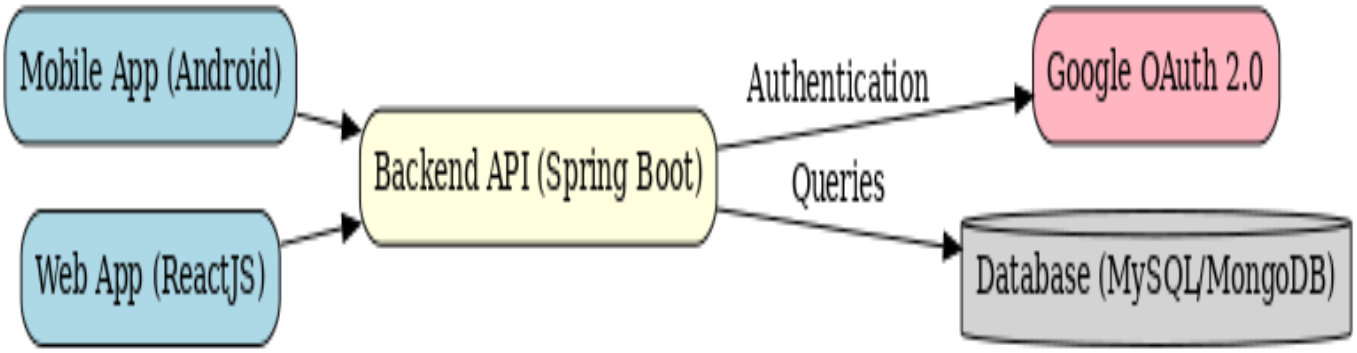
5. Methodology / Approach

- **Initiation** – Requirement gathering, stakeholder meetings, and competitor analysis.
- **Planning** – Define system architecture, tech stack (Spring Boot + React + MySQL/MongoDB), and project timeline.

- **Execution** –
    - Backend development (Spring Boot REST APIs).
    - Mobile app (Kotlin for Android).
    - Web dashboard (React + Tailwind + Chart.js).
    - Integration of authentication (Google OAuth 2.0).
- **Testing** – Unit testing, integration testing, and UAT with selected clinic staff and students.
- **Deployment** – Hosting on cloud platform (AWS Free Tier / Railway / Heroku).
- **Post-Launch** – Training for staff, continuous maintenance, and updates.

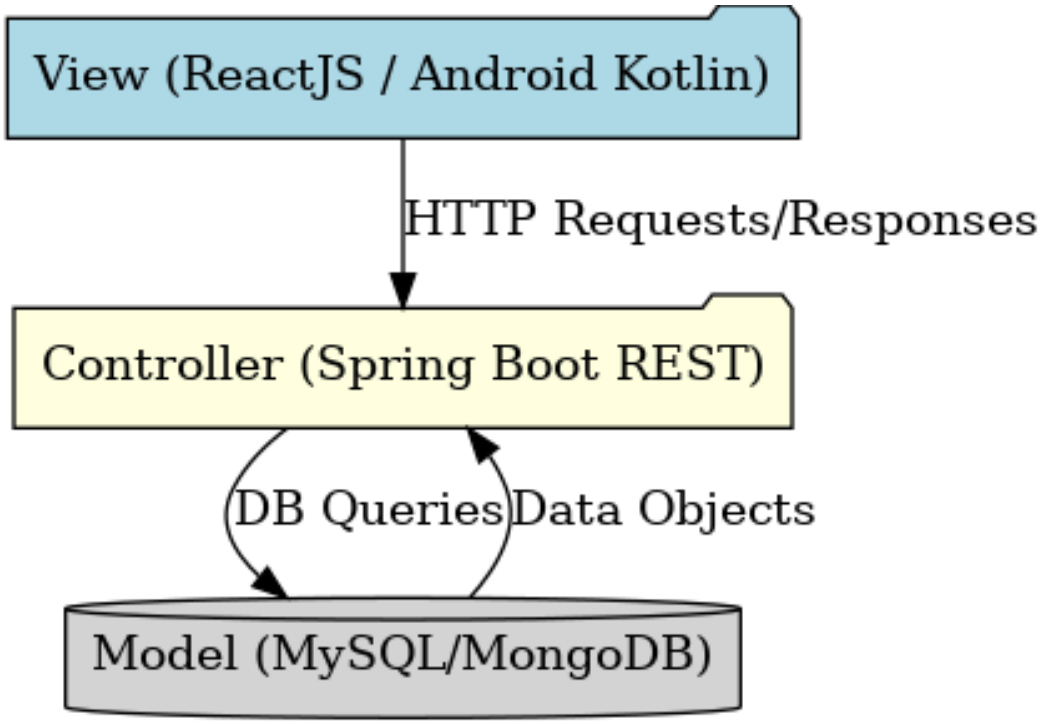
Architecture Diagram



6. Deliverables

- Fully functional DigiHealth mobile application (Android).
- Web-based dashboard for clinic staff.
- Backend server with secure API endpoints.
- Database with patient, appointment, and inventory records.
- User manuals, onboarding, and training materials.

Component Diagram (MVC)



7. Timeline

Phase	Duration	Target Completion
1. Requirements	3 weeks	Oct 2025
2. Design & Prototyping	4 weeks	Nov 2025
3. Development	12 weeks	Feb 2026
4. Testing & QA	3 weeks	Mar 2026
5. Deployment	1 week	Apr 2026

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8. Budget Estimate

Item/Category	Cost (PHP)	Notes
1. Development	₱150,000	Based on student effort (no outsourcing). Mostly allowance, devices, and software tools.
2. Cloud Hosting & Database	₱12,000	Approx. ₱1,000/month using free-tier + minimal paid services.
3. Testing & QA	₱10,000	Basic testing tools, small device rental if needed.
4. Marketing & Training	₱8,000	Posters, awareness campaigns, and training materials.
5. Contingency (10%)	₱18,000	Buffer for unexpected costs.
Total	**₱198,000**	

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9. Risk Assessment & Mitigation

Risk	Likelihood	Impact	Mitigation Strategy
1. Data privacy/security breaches	Medium	High	Encrypt records, role-based access
2. Low user adoption by patients	Medium	Medium	Conduct orientation & onboarding
3. System downtime during peak use	Low	High	Implement cloud-based auto-scaling
4. Budget overrun	Low	High	Apply strict project monitoring

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10. Stakeholders

- **Product Owner:** [Name]
- **Project Manager:** [Name]
- **Development Team:** Backend engineers, frontend developers, database admins, QA testers, UI/UX designers.
- **End Users:** Students/patients, clinic staff (nurses, doctors, pharmacists), administrators.

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11. Expected Benefits / ROI

- Reduced waiting times and improved appointment scheduling efficiency.
- Better management of patient records and medical history.
- Automated inventory tracking, minimizing medicine shortages.
- Improved patient satisfaction and clinic service efficiency.

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12. Approval

Name & Role	Signature	Date
Frederick Revilleza, CSIT327 Instructor		