# Feasibility Analysis Report

## Introduction

LifeAura AI – SANKALP is an intelligent health management platform designed to assist users with medication reminders, quick symptom guidance, and AI-powered analysis for minor health issues. With a focus on accessibility and reliability, it serves as a digital health companion for individuals and caregivers alike. Targeted at elderly, chronic condition patients, caregivers, and health-conscious individuals, the system aims to deliver reliable, accessible digital health support. The system integrates features like medication scheduling, AI chatbot support and OCR-based prescription digitization within a secure and scalable web architecture.

## Objective & Scope

The primary objective is to provide an accessible, scalable, and secure health management tool leveraging MERN stack technologies, AI modules, and secure integrations (WhatsApp/SMS). The scope includes:

- Medication reminders via automated notifications
- AI chatbot-based instant guidance
- OCR-driven prescription management
- Caregiver-focused monitoring tools.

## Feasibility Analysis

### A. Technical Feasibility

- **Technology Stack**: Built using the MERN stack (MongoDB, Express.js, React.js, Node.js) for modularity, scalability, and strong community support.
- **Deployment:** Can run on standard Windows/Linux servers with moderate RAM and CPU, minimal hardware barriers for education and healthcare.
- **Open Source:** Utilizes major open-source solutions reducing licensing and long-term operational costs.

### B. Operational Feasibility

Designed for real-world accessibility and ease of use, targeting elderly users, patients with chronic conditions, and caregivers. Its intuitive interface, large fonts, and automation of reminders and symptom checks reduce manual effort. As an academic project, it is manageable by a small development team handling frontend, backend, and AI modules efficiently.

### C. Economic Feasibility

The project is economically viable as it relies on open-source technologies like MongoDB, Node.js, React.js, and Python libraries. Hosting and deployment can use free cloud tiers, minimizing operational costs. Optional services such as domain registration or communication APIs may incur small additional expenses, but overall financial requirements remain minimal, making the project suitable for a student team.

## D. Financial Feasibility

- **Minimal Budget:** The project uses primarily free or open-source technologies, including the MERN stack, free-tier cloud hosting, and AI/ML libraries, avoiding expensive licenses or paid services.
- **Resource Accessibility:** Required hardware (computers, internet) and software tools (IDEs, libraries) are already available to students, incurring no additional financial burden.
- **Cost Control:** Optional API usage (e.g., SMS/WhatsApp notifications) is limited to free or low-cost tiers, and simulated datasets are used to reduce cloud processing expenses.
- **Outcome Value:** While not profit-driven, the project provides academic benefits, including skill development, practical experience, and a functional prototype suitable for demonstration or further research.

## E. Cultural Feasibility

- **Language & Accessibility:** Provide symptom guidance and reminders in clear, easy-to-understand terminology, with potential support for multiple languages to ensure inclusivity.
- **Trust & Privacy:** Strong data protection and transparent privacy policies enhance user trust, encouraging adoption in culturally sensitive contexts.
- **Health Beliefs:** AI-driven symptom guidance and chatbots are presented as supportive tools rather than replacements for professional medical advice, respecting cultural attitudes toward traditional healthcare practices.

## F. Social Feasibility

- **Team Collaboration:** Success depends on effective communication and coordination among the small development team, simplifying decision-making and task allocation.
- **Stakeholder Simplicity:** With minimal external stakeholders, social feasibility focuses on meeting academic expectations, ensuring user satisfaction, and enabling smooth demonstrations.
- **Learning & Development:** The collaborative approach fosters teamwork skills and shared problem-solving, enhancing educational value and overall social feasibility.

## G. Safety Feasibility

- **User Safety:** AI-driven symptom guidance and medication reminders support users without replacing professional medical advice, minimizing the risk of incorrect self-diagnosis or medication errors.
- **Data Safety:** Sensitive health information is protected via strong encryption, secure authentication, and adherence to privacy standards.
- **System Stability:** The application is designed to avoid crashes or unpredictable behavior, ensuring reliable use for all users, including elderly or vulnerable populations.
- **Minimal Physical Risk:** As a purely software-based solution, there are no hardware-related safety concerns.

- **Ethical Use:** AI components are monitored to prevent harmful bias or misinformation, with protocols in place to handle situations where automated guidance could be misinterpreted.

### H. Political Feasibility

- **Regulatory Compliance:** The project aligns with healthcare regulations, data protection laws (e.g., GDPR, India's privacy frameworks), and telemedicine guidelines, ensuring legality and acceptance.
- **Support for Health Initiatives:** Objectives may complement national or local digital health missions, potentially fostering political goodwill or future collaboration opportunities.
- **Institutional Awareness:** Minimal political barriers exist for academic projects, but understanding policies on patient data security and AI in healthcare enhances project relevance.
- **Ethical Standards:** Adherence to ethical guidelines in AI and healthcare helps prevent legal or political repercussions.

## Project Roadmap

1. Initial design and scope finalization.
2. Implement MERN stack core with secure authentication and user profile.
3. Integrate AI modules (chatbot, OCR, skin condition analysis).
4. Enable WhatsApp/SMS alerts for medication.
5. Deploy production platform and conduct pilot testing.
6. Collect feedback, refine UI/UX, expand feature set.

## Conclusion

The feasibility analysis shows that the LifeAura AI project is viable within the academic scope. The project's technology stack, small development team, and resource constraints align well for successful implementation. Financially, using open-source tools and minimal costs fits the budget of a small-scale academic effort. Operationally and socially, the project meets user needs and team capabilities. Safety, cultural, and political considerations have been adequately addressed to minimize risks and enhance acceptance. Overall, the project demonstrates strong potential for successful completion and valuable learning outcomes.