MATHEAL – Maternal Health Mobile App

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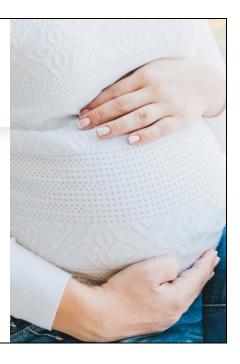**Rajiv Gandhi Institute Of Technology,Kottayam**

INTRODUCTION

- Maternal healthcare is critical during pregnancy and postpartum. Many women, especially in underserved areas, lack access to consistent healthcare and timely guidance. Matheal introduces anmobile application providing health tracking, education, reminders, and community support.

EXISTING SYSTEM

- Traditional maternal health support relies on hospital visits, pamphlets, or unstructured online content.
- Most women do not have personalized tracking tools.
- Existing apps provide either generic pregnancy information or basic trackers, but lack AI-based risk detection and integrated community features.

LITERATURE REVIEW

- Several mobile health (mHealth) apps provide pregnancy tracking.
- Existing apps lack AI integration for risk detection.
- Few platforms provide secure community spaces moderated for safety.
- Current solutions do not integrate reminders, education, AI health alerts, and peer support in one platform.

GAP IDENTIFIED

- No existing system combines AI-based risk detection, education, reminders, and a moderated community forum.
- Pregnant women lack personalized, proactive tools for early complication detection.
- Existing apps focus on one feature, leading to fragmented maternal care support.

PROPOSED SYSTEM

- Matheal is a Flutter-based mobile app for maternal health.
- - AI-powered health risk detection (using TensorFlow Lite).
- - Health data tracking (weight, BP, symptoms).
- - Educational content (articles, videos).
- - Appointment & medication reminders.
- - Safe, moderated community forum.
- - (Future) AI-powered emergency alerts & family notifications.

SOFTWARE & HARDWARE REQUIREMENTS

- S/W Requirements:
- Frontend: Flutter
- Backend: Firebase
- Database: Firestore
- APIs: OPENAI-API
- Architecture: Clean Architecture
- H/W Requirements:
- Android smartphone (4GB RAM, Quad-core processor)
- Stable internet connection.

PROBLEM STATEMENT

- Many pregnant women face challenges in accessing consistent healthcare.
- They lack tools for timely health tracking, reminders, and education.
- There is a need for a mobile app that combines AI-Chatbot insights with reminders, education, and community support.

OBJECTIVES

- 1. Develop a mobile app to support pregnant women and new mothers.
- 2. Enable AI-based health risk detection.
- 3. Provide educational resources.
- 4. Facilitate appointment & medication reminders.
- 5. Create a safe community forum.
- 6. (Future) Introduce AI emergency alerts.

DEVELOPMENT METHODOLOGY – APPROACH

- The project follows Agile methodology.
- Work is divided into 8 iterations (weeks).
- Continuous testing and feedback ensure feature refinement.
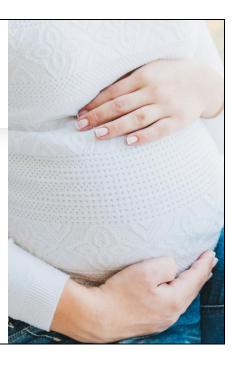- Incremental integration of modules.

DEVELOPMENT METHODOLOGY – PHASES

- Phase 1: Requirement Analysis
- Phase 2: UI/UX Design
- Phase 3: Authentication & Profile Management
- Phase 4: Health Data Tracking + AI Risk Detection
- Phase 5: Education & Reminders
- Phase 6: Community Forum
- Phase 7: Integration Testing & Bug Fixing
- Phase 8: Documentation & Final Presentation

TENTATIVE WORK PLAN

- Week 1: Define scope & user personas
- Week 2: UI design in Flutter
- Week 3: Authentication & profile setup
- Week 4: Health tracking + AI detection
- Week 5: Education + reminders
- Week 6: Community forum
- Week 7: Testing & optimization
- Week 8: Documentation & final presentation

CONCLUSION AND FUTURE SCOPE

- Conclusion:
- Matheal empowers women with AI-driven health tracking, reminders, education, and community support.
- It promotes healthier pregnancies and safer deliveries.
- Future Scope:
- - AI-based emergency alerts
- - Family integration
- - Teleconsultation with doctors
- - Multi-language support