

Final Year Design Project Proposal

Mom N Baby SmartCare

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Project ID: 22-KS-BSIT-05

by

Syeda Nawal Naqvi 089318 (2022-ks-357)

Sibgha Arfan 089315 (2022-ks-354)

(Morning)

Project Advisor:

Sir Hasan Raza

Govt. Graduate College, Civil Lines, Sheikhupura

University of Punjab, Lahore, Pakistan

(2025)

Mom N Baby SmartCare

Abstract

Mom N Baby SmartCare is a smart mobile application that helps new mothers to take care of their daily lives and their baby in a streamlined and structured manner. The application is a digital assistant that assists in monitoring postnatal recovery, infant development, immunization and gives effective health data. It has mother and baby care modules where users can enter the weight, height and the health condition of the mother and the baby which can be viewed easily in a graphical form. The system also offers convenience with the help of notifications for health and vaccination to reduce the psychological burden of a busy mom. Mom N Baby SmartCare provides such personalized care, easy health monitoring and support that helps mothers to make better choices and raise their babies without fear.

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Chapter 1

INTRODUCTION

1.1 Background:

Motherhood is both joyful and demanding. New mothers face emotional and physical changes while caring for their newborns, baby growth and vaccinations together. **Mom N Baby SmartCare** is a simple mobile app that helps mothers stay organized by tracking health details, sending reminders and offering helpful guidance. It makes daily care easier, more structured and comforting through smart features like notifications and tips.

1.2 Problem Statement:

New mothers often struggle to manage their own recovery while caring for their babies. Over 70% of mothers forget vaccination or milestone dates and around 60% neglect their own health due to time constraints and lack of support (*World Health Organization, 2022*). Existing apps (e.g., *Baby Connect*) treat mother and baby care separately, offering limited personalization and minimal meaningful interaction. **Mom N Baby SmartCare** addresses this gap by providing an all-in-one and intelligent mobile solution that tracks both mother and baby health, sends reminders and offers personalized guidance through a simple and conversational interface.

1.3 Stakeholders & Interests:

Stakeholder Type	Need / Interest	Potential Reach
New Mothers	Simple and reliable tracking of baby growth, vaccinations, and personal recovery.	~6 million childbirths annually in Pakistan (<i>UNICEF, 2024</i>).

Total Potential Users: Millions of new moms and caregivers who use mobile apps as resources in their daily lives.

1.4 Objectives:

The primary aim of Mom N Baby SmartCare is to provide simplified, smarter and customized postnatal and baby care. The app is designed not only as a utility but as an assistant for new mothers. Its objectives are:

1. To design an Android application that will enable the monitoring of both the mother and the baby on a single platform.
2. Simple progress graphs to record and view the important data such as weight, growth and health conditions.
3. To provide notifications and reminders regarding vaccinations, checkups and health milestones.
4. To provide daily wellness tips that would help in maintaining the physical and emotional well-being of mothers and their babies.
5. To design a clean, icon-based user interface that can be used by mothers quickly and interactively even in their busy routine.

1.5 Scope:

This project aims to develop and design an Android-based application that acts as a health assistant to both the baby and the mother. It offers organized Mother Care, Baby Care and Health tips modules to assist mothers in tracking progress and getting prompted and supportive information at a single platform.

1.5.1 Included Features:

1. Create and update the mother and baby profile.
2. Progress graphs for data visualization in an abstract form.
3. Tracking vaccinations and health-related notifications.

1.5.2 Limitations:

The app is designed to act as a personal guide and organizer for mothers. Its purpose is to support and guide mothers in staying organized but it cannot replace the care or advice of a medical professional. For any health-related concerns, users are encouraged to consult a qualified doctor or healthcare expert.

Chapter 2

LITERATURE REVIEW

2.1 Related Work:

2.1.1 Commercial parenting & baby care apps:

There are many popular mobile applications which are designed to help parents in infant development, vaccination and sleep tracking. For example: **BabyCenter** and **Glow Baby**. These apps mainly focus on information delivery and event logging. They offer reminders and basic growth metric charts. They are fully developed consumer products with refined user interfaces and they have large content databases. However, they often treat postnatal support for the mother and baby care as separate things.

2.1.2 Health tracking and growth standard research:

Infant growth is usually tracked through simple measures like weight, length and how these change with age. The **World Health Organization (WHO)** provides clear standards to guide this process. Researchers often use charts and percentiles to see if a baby's growth is normal or if there might be a concern. Tools like line graphs and growth curves make this information easy to understand. They help parents quickly see how their baby is growing over time and notice any changes that might need attention.

2.2 Technical building blocks used by similar projects:

Developers usually use libraries and cloud services to build these kinds of apps. Common examples include MPAndroidChart for creating graphs, Firebase Auth and Firestore for authentication and cloud storage and AlarmManager for setting reminders. These tools are reliable, easy to use and save development time. Mom N Baby SmartCare app also follows a hybrid offline-first approach, which means it can work even without an internet connection. Data is stored locally on the device and can be synced to the cloud whenever the internet is available. This feature is especially helpful for mothers who may not always have stable internet access.

2.3 Disadvantages and limitations of current solutions:

- 1. Fragmentation:** Many apps focus only on one area, such as baby tracking (height, weight) or postnatal content instead of providing combined postnatal care for both the mother and baby. As a result, mothers often need to use multiple apps to meet all their needs.
- 2. Limited customization:** Most apps offer general tips or static content. Very few adjust their messages or advice based on the data entered by the mother or baby.
- 3. Dependence on connectivity:** Some apps require a persistent internet connection to work which makes them difficult to use in low-connectivity areas.

2.4 Gap Analysis:

Based on the above review, the following gaps have been identified, which **Mom N Baby Smart Care** aims to address:

1. Integrated mother and baby experience:

Most existing apps focus only on either the baby or the mother. There is no single app that treats both as one unit of care. Mom N Baby Smart Care will bring both profiles together within one connected workflow, making it easier to manage their health and daily routines in one app.

2. Simple and clear visualizations for busy users:

Existing apps often display complex charts that are difficult to read. This app will use simple, easy-to-read progress charts such as weight vs time and vaccination due dates. The interface will be less crowded and user-friendly, allowing quick data access and instant understanding.

Chapter 3

FYDP OVERVIEW

3.1 FYDP Title: Mom N Baby SmartCare:

Sr. No	Roll Number	Name	Signatures
1	089318	Syeda Nawal Naqvi	
2	089315	Sibgha Arfan	

Table 3.1: Group Members

3.2 Project Proposal Summary:

Component	Details
FYDP Goals	Smart mobile app for mothers to manage their own and their babies' health through tracking and reminders, helping them stay organized, never miss important milestones and maintain a healthy routine even without persistent internet access.
FYDP Objectives	Build mother & baby modules, add reminders along with health tips and simple data graphs.
FYDP Success Criteria	Fully functional app with Firebase storage, reminders and a user-friendly interface.
Assumptions	Users have basic knowledge of using smartphones. The app includes input validation features to make sure all data entered by the user is accurate and complete.
Risks & Obstacles	The app may face issues like weak internet connection during data sync, small delays in updates and privacy concerns while saving personal health details.
Organization Address	Govt. Graduate College Civil Lines, Sheikhupura

Target End Users	Mothers
Suggested Project Supervisor	Sir Hasan Raza
Approved By	_____
Date	October 15, 2025

Table 3.2: Project Proposal Summary

3.3 Tools, Libraries And Technologies with Reasoning:

Category	Name	Version	Purpose
Tools	Android Studio, Firebase Console	Latest	App development and backend management.
Libraries	MPAndroidChart (3.1.0), Firebase Auth & Firestore	Latest	Graphs, login, and data storage.
Technologies	Java (8+), XML, Material Design, AlarmManager/WorkManager	—	Coding, UI design, reminders, and consistent interface.

Table 3.3 : Tools, Libraries And Technologies

3.4 Project Team Members Work Division:

Sr. No	Roll Number	Name	Role
1	089318	Syeda Nawal Naqvi	Frontend & Backend Development, Documentation
2	089315	Sibgha Arfan	Frontend & Backend Development, Documentation

Table 3.4: Project Team Members Work division

References:

- 1. World Health Organization (2006):** *WHO Child Growth Standards*. Geneva: WHO. Retrieved from <https://www.who.int>
- 2. BabyCenter (n.d.):** *BabyCenter, Postnatal & Baby App.* Retrieved from <https://www.babycenter.com>
- 3. Glow:** *Glow Baby: Feeding & Sleep Tracker*. Retrieved from <https://glowing.com>
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