

PUSL2021 - Computing Group Project

Project Proposal

Group 57

Child Growth Monitoring System for  
Ministry of Health

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## Introduction

The early years of a child's life are considered to be the “golden period”, the best time for them to build the habits of their future. A baby's health issues that arise in its early years typically don't go away. So, it is important to track an infant's growth in order to identify and correct any deviations from the appropriate growth standard. Growth refers to specific body changes and increases in the child's size including height, weight, head circumference, and body mass index. The primary goal of growth monitoring is the early detection of growth disorders.

Various factors can result in growth disorders. The most crucial element is nutrition, which gives the body the energy it needs for various tasks and keeps the body safe from diseases. Previous research indicates that most mothers lack the information needed to provide their babies with the right nourishment. In today's fast-paced and increasingly demanding society, parents often find themselves juggling multiple responsibilities, including work, household chores, and various commitments. This hectic lifestyle can make it challenging for parents to prioritize and manage their child's health and nutritional needs effectively.

To address this important problem, the “Child Growth Monitoring Web Application” attempts to offer a thorough solution. The goal of this project is to create a user friendly, safe, and accessible web application that will help parents and medical experts track, classify, and evaluate children's growth and nutrition status. This project seeks to bridge the gap between traditional child health assessments and modern technology. Our Child Growth Monitoring Web Application is not just a web-based tool; it is a commitment to the well-being of children. We hope to transform the way we nurture and protect our children by combining the knowledge and expertise of healthcare professionals, the dedication of parents, caregivers, and the power of data driven insights.

In a busy society where time is often a limited resource, the Child Growth Monitoring Web Application becomes an invaluable tool for parents. It offers a solution that not only simplifies the process of tracking their child's growth but also supports their ability to make informed decisions and ensure the best possible care for their children, even amid their demanding schedules.

Through this proposal, we present a comprehensive blueprint of our project, outlining its objectives, scope, features, and anticipated benefits. We invite you to embark on this journey with us, as together, we endeavor to empower healthcare professionals, enlighten parents, and enrich the lives of children through informed and proactive health and nutrition management.

## Project Objectives

1. **Create a user-friendly Interface:** Develop a user-friendly web interface for healthcare professionals and parents to input and access children's growth data.
2. **Track growth parameters:** Implement features to record and monitor essential growth parameters such as height, weight, head circumference and BMI overtime.
3. **Generate growth charts:** Generate growth charts that visualize a child's growth progression enabling healthcare professionals to make informed decisions about the child's development.
4. **Notify stakeholders:** Incorporate automated notifications to alert parents and healthcare providers when a child's growth falls outside their normal ranges ensuring timely intervention.
5. **Secure data management:** Ensure the security and privacy of Children's Health data in compliance with relevant regulations
6. **Mobile accessibility:** Optimize the application for mobile devices, making it accessible to a wider audience.
7. **User training and support:** Provide user training and support to healthcare professionals and parents to effectively utilize the application.

## Key Features of the Web Application

- **User registration and authentication:** Implement user registration and login functionality for healthcare professionals and parents.
- **Child profile management:** Allow users to create and manage profile for individual children, including the name age gender and other relevant information
- **Data entry:** Enable users to input and update growth data including length/height weight and head circumference and other relevant measurements
- **Growth chart generation:** Generate growth charts that visually represent a child's growth progression over time. Include percentile lines to compare the child's growth with standard reference data.
- **Nutritional assessment:** Implement algorithms to automatically categorize children into groups like normal weight, overweight, moderate acute malnutrition, severe acute malnutrition based on their growth data

- **Notifications:** Set up automated notifications to alert healthcare professionals and parents when a child's growth falls outside normal ranges.
- **User support and help desk:** Offer user support channels and a help desk for addressing user questions and issues

## Target Users

1. Healthcare professionals
  - Pediatricians and doctors: People who specialized in child health and development
  - Nurses and midwives : Medical professionals involved in regular health check ups and vaccination for children
2. Parents and caregivers
3. Government health department
4. Researchers and Analysts

## Time Frame

- **Project Planning**
  - Define project scope, objectives, and goals.
  - Identify target users and stakeholders.
  - Establish a project team and allocate responsibilities.
  - Develop a budget and resource plan.
- **Requirements Gathering**
  - Collaborate with healthcare professionals and experts to define requirements.
  - Identify legal and regulatory requirements.
  - Create a detailed project plan, including a scope document.
- **Design and Prototyping**
  - Create wireframes and prototypes of the user interface (UI/UX).
  - Develop a data model for child profiles and growth data.
  - Get feedback from potential users and stakeholders.
- **Development**
  - Build the web application with core features.
  - Ensure data security measures are implemented.

- Conduct ongoing testing throughout development.
- **Testing**
  - Perform unit testing, integration testing, and user acceptance testing.
  - Address and resolve bugs or issues.
  - Conduct load testing to ensure the application can handle expected traffic.
- **User Training and Documentation**
  - Create user guides and training materials.
  - Plan and conduct training sessions for healthcare professionals and parents.
- **Deployment**
  - Deploy the application to a web server or cloud platform.
  - Ensure it's accessible on various devices.
  - Conduct a final round of testing after deployment.
- **Monitoring and Maintenance (Ongoing)**
  - Implement monitoring systems for performance and user feedback.
  - Establish a maintenance plan for regular updates and improvements.
  - Continuously provide user support and address issues.
- **Project Closure**
  - Evaluate the project's success and collect feedback.
  - Create a final project report.
  - Hand over the project to relevant stakeholders.

