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Design and Development of a Web-Based Integrated Health Post Application for Infants, Toddlers, and Pregnant Women at the Belida Darat Community Health Center

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Abstract

Belida Darat Health Center is under the auspices of the Muara Enim Regency Health Office, this Health Center is located in Belida Darat District, precisely in Tanjung Bunut Village. Currently, Belida Darat Health Center does not have an application for managing data on infants, toddlers and pregnant women, so the purpose of this study is to build a posyandu application to facilitate the management of data on infants, toddlers and pregnant women at Belida Darat Health Center. The research method uses a qualitative descriptive method with data collection techniques in the form of observation, interviews and literature studies, data sources consist of primary data and secondary data. while for the system development method using the RAD (Rapid Application Development) method, the system design tool used is UML (unified modeling Language). The design of this application uses the PHP (Processor Hypertext) programming language, MySQL Database and Coding using Visual Studio Code.

Keywords: *Application, Web, RAD, UML, PHP & MySQL*

1. Introduction

Community Health Posts (Puskesmas) are health care facilities managed by the Indonesian government at the sub-district level. Puskesmas provide basic health services, including preventive, promotive, curative, and rehabilitative services. Services available at Puskesmas typically include general health checks, immunizations, maternal and child services, infectious disease treatment, and other public health programs. Puskesmas play a vital role in supporting Indonesia's health system, particularly in rural and urban areas. The Belida Darat Community Health Center has 10 integrated health posts (Posyandu), located in the villages of Lubuk Semantung, Lubuk Getam, Talang Balai, Babat, Tanjung Bunut, Talang Beliung, Ibul, Gaung Asam, Sialangan, and Tanjung Tiga. This integrated health service post (Posyandu) is conducted once a month. This Posyandu activity is carried out by one village midwife and assisted by six Posyandu cadres. Recording and processing of data on infants, toddlers, and pregnant women is still done manually using books and pens, causing delays in the preparation and submission of Posyandu activity reports. During the reporting process, many errors occur in the data entry of infants, toddlers, and pregnant women. Based on the above background, in writing this thesis, the author wants to create a Posyandu application for infants, toddlers, and pregnant women at the Belida Darat Community Health Center, which aims to simplify the work of the Community Health Center in summarizing the 10 Posyandu activities. The system being designed is a web-based system.

2. Theoretical Basis

2.1. Understanding Applications

According to [1], an application is a collection of program commands designed to perform specific tasks. Therefore, an application is often considered a subclass of computer software that utilizes computer capabilities directly to perform a task desired by the user. According to [2] Abdur Rauf and Agung Tri Prastowo in the Journal of Technology and Information Systems (2021), an application is a program developed to meet user needs in performing specific tasks.

2.2. Understanding Websites

According to [3], a website can be defined as a collection of pages containing digital data, including text, images, animations, sound, and video, or a combination of these, provided via an internet connection so that it can be accessed and viewed by anyone worldwide. According to [4], a website is a tool used to provide information and promote a product, making it known and understood by the wider public.

2.3. Understanding PHP (hypertext preprocessor)

According to [5], PHP is an abbreviation for (hypertext preprocessor) used as a server-side scripting language in web development, embedded in HTML documents. According to [6], PHP is classified as open source software regulated by the general purpose license (GPL). The PHP programming language is well-suited to web development because it can be embedded within HTML scripts and vice versa. PHP is specifically designed for dynamic web development.

2.4. Pengertian MySQL

According to [7] MySQL is a derivative of Structured Query Language (SQL), a database operating concept primarily for data selection and entry, enabling easy and automated data operations. According to [8], MySQL is a multithreaded, multi-user SQL database management system (DBMS). According to Adinda Febriyani and Martanto in the Journal of Informatics Engineering Students (2023), MySQL is a popular open-source relational database management system (RDBMS) used for managing and storing data. MySQL is one of the most widely used database management systems in the world and is widely used in web application development.

2.5. Understanding Xampp

According to [9], XAMPP is a server software that typically runs on Windows, Apple, and Linux operating systems. XAMPP is an Apache web server software that includes a MySQL server embedded within it, supported by the PHP programming language for creating dynamic websites. According to [10], XAMPP is a tool that provides software packages in a single package. By installing XAMPP, there is no longer any need to manually install and configure the Apache web server, PHP, and MySQL.

2.6. Understanding Databases

According to [11], a database is a collection of related data stored together with controlled redundancy to optimally serve one or more applications. A database is also defined as a collection of logically related information, stored together, designed to meet the information needs of an organization. According to [12], a database is a useful tool for efficiently producing and managing large amounts of data while maintaining long-term security.

3. Research Methods

A research method is a series of scientific activities designed to answer a problem. The research method used in this study is descriptive qualitative. Qualitative research is both descriptive and analytical. Descriptive in qualitative research means describing and explaining the events, phenomena, and social situations being studied [13].

3.1. Data source

The following are the data sources used by the researcher in this thesis:

1. Primary Data
   Primary data is data collected and processed by the researcher directly from the research object. In this study, the researcher obtained it directly from the Community Health Center (Puskesmas), namely Mr. Mulyadi, SKM.
2. Secondary Data
   Secondary data is data that has been collected, processed, and published. Therefore, it can be obtained through reading and studying media sources such as literature, books, and documents available at the research object.

3.2. Data collection technique

1. Observation
   This activity was conducted by collecting data through direct observation of the research object, the Belida Darat Community Health Center.
2. Interviews
   The interview technique is a data collection method that involves asking questions and answering questions with parties related to the problem being studied. The researcher conducted an interview with Mr. Mulyadi, SKM, the head of the community health center, who is familiar with all the problems at the Belida Darat Community Health Center.
3. Literature Review
   In this literature review, the researcher collected data and information from various sources, such as books, journals, theses, and documents related to the system to be developed.

4. Use Case Diagram of the Proposed System

The proposed use case analysis explains the analysis of data management procedures for infants, toddlers and pregnant women at the Belida Darat Health Center. The proposed analysis at the Belida Darat Health Center is as follows:

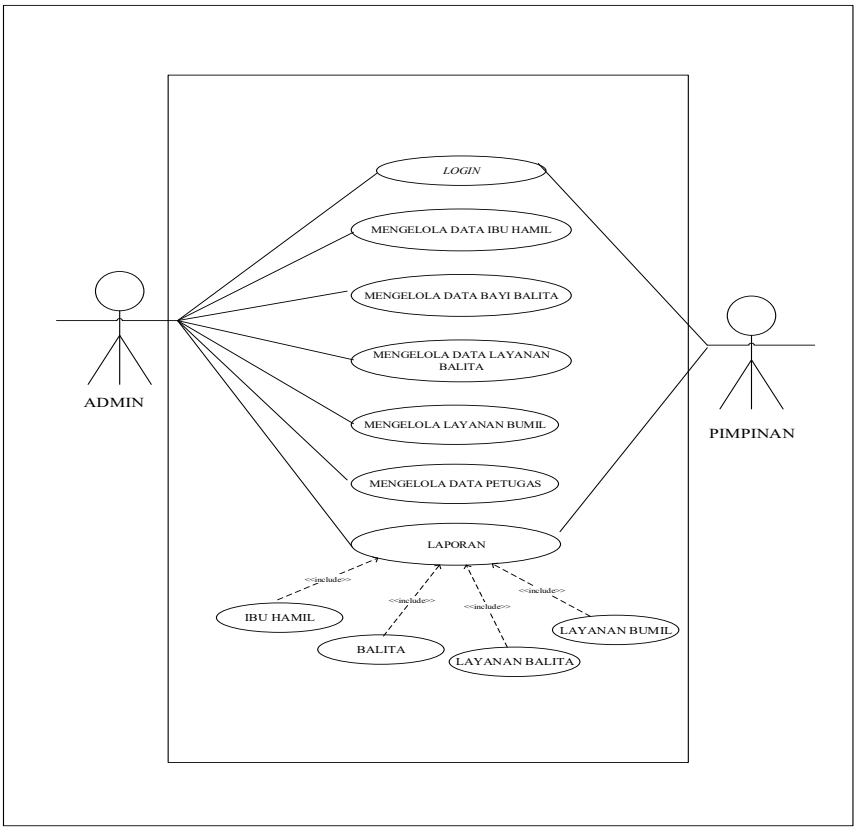

Fig. 1 : Proposed Use Case Diagram

5. System and Testing Implementation

5.1. Interface Implementation

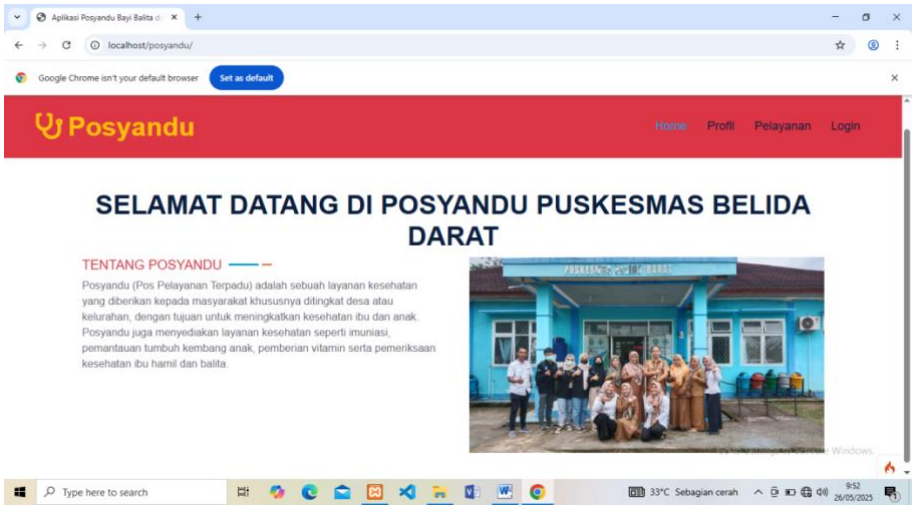

Fig. 2 : Front End Page View

The image above is the front end page, on this page there are home, profile, service and login buttons.

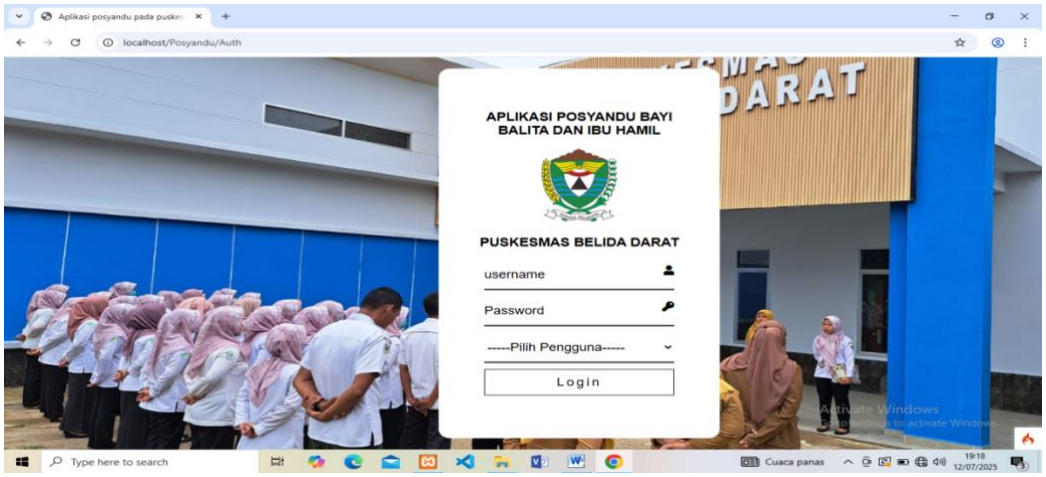

Fig. 3 : Login Page View

The image above shows the login page display which will later function for admins and village midwives who want to enter and use the system. Admins and village midwives must first log in by filling in their username and password.

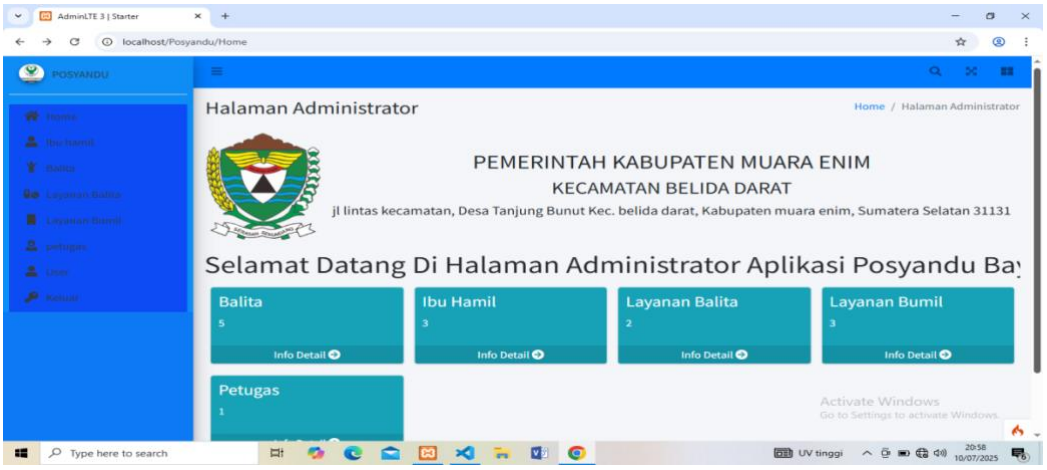

Fig. 4 : Home Page View

In the image above is the home page, all menus are on the home page so the admin can click on them via the home page.

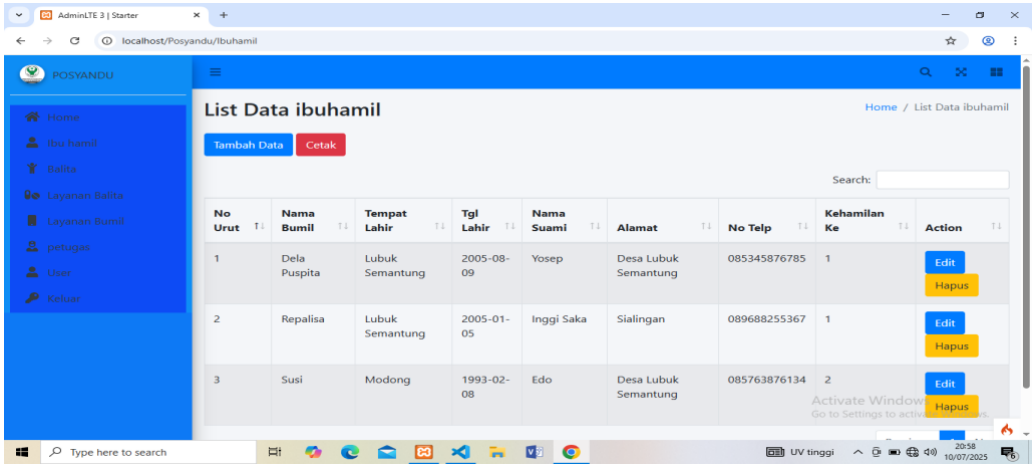

Fig. 5 : Pregnant Women Page View

The image above shows the pregnant women's page, allowing the admin to add, edit, and delete data. Once data has been added, edits and deletions can be made. If no edits or deletions are made, the data can be printed directly to a file.

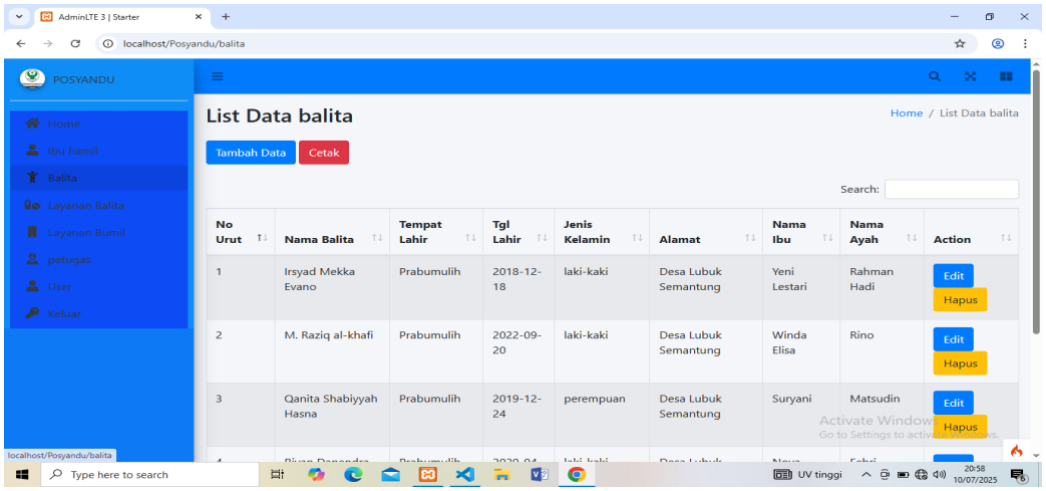

Fig. 6 : Toddler Page View

The image above shows the toddler page, allowing the admin to add, edit, and delete data. Once data has been added, editing and deletion can be performed. If no edits or deletions are made, the data can be printed directly to a file.

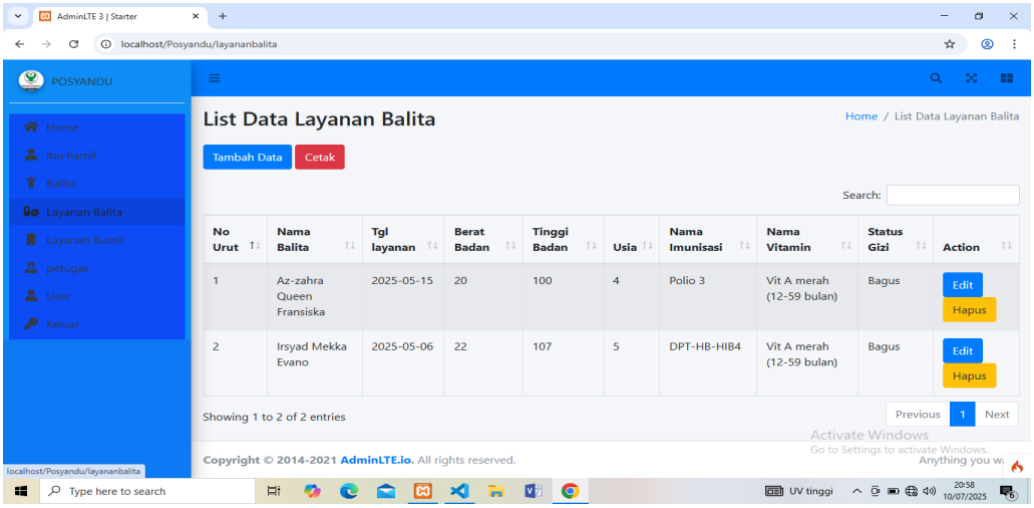

Fig. 7 : Toddler Service Page View

The image above shows the toddler service page, allowing admins to add, edit, and delete data. Once data has been added, it can be edited and deleted. If no edits or deletions are made, it can be printed directly to a file.

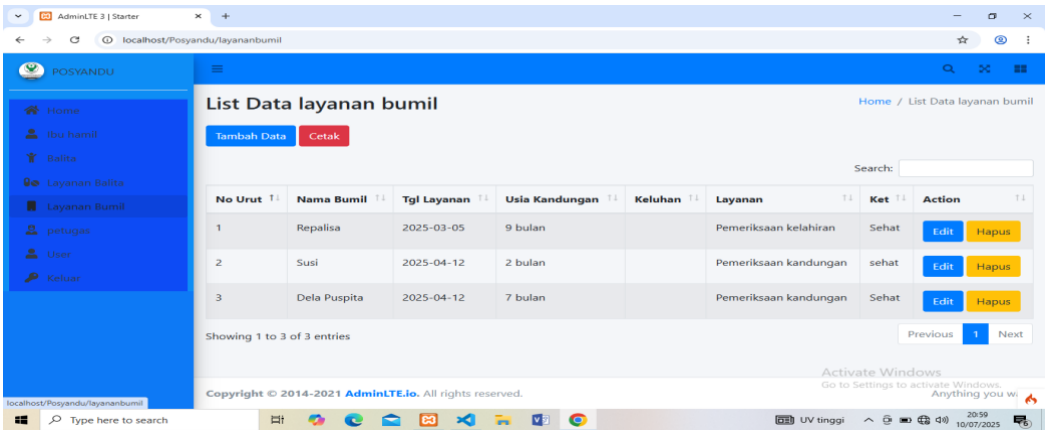

Fig. 8 : Pregnant Women's Services Page View

The image above shows the pregnant woman service page, allowing admins to add, edit, and delete data. Once data has been added, it can be edited and deleted. If no edits or deletions are required, it can be printed directly to a file.

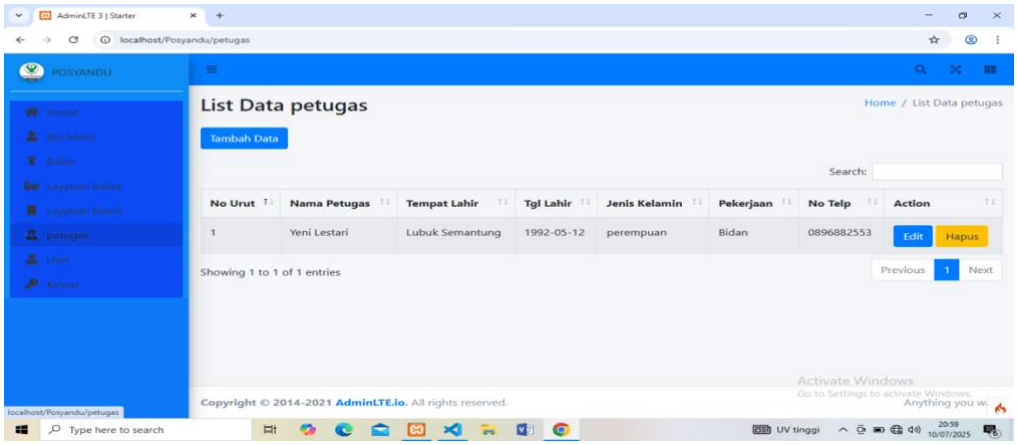

Fig. 9 : Officer Page View

The image above shows the officer page, allowing admins to add, edit, and delete data. Once data has been added, editing and deleting data can be performed.

5.2. Conclusion of Test Results

Based on the results of a test conducted by previous researchers, it can be concluded that the application of the integrated health post for infants, toddlers and pregnant women at the Belida Darat Health Center that has been developed and created can run and function well.

6. Conclusion

Based on the description and explanation above, the results of the research system development at Belida Darat Community Health Center using the Rapid Application Development (RAD) method are as follows:

1. This application was designed using the PHP (Hypertext Processor) programming language, a MySQL database, and Visual Studio Code for coding.
2. By applying the Rapid Application Development (RAD) method and the UML (United Modeling Language) tool, the data processing system development at Belida Darat Community Health Center was carried out effectively and efficiently.
3. Based on the research conducted to create the integrated health service post (Posyandu) application at Belida Darat Community Health Center, the system has met the needs of Belida Darat Community Health Center. This system has been approved by the relevant parties and the supervising lecturer. Therefore, this system will be used to manage data on infants, toddlers, and pregnant women at Belida Darat Community Health Center.

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