Monitoring Toddler Growth And Development Using A Web-Based Integrated Posyandu Information System

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Abstract: Monitoring the growth and development of children under five is an important aspect of basic health services, especially at the Posyandu level. An integrated web-based Posyandu Information System (SIP) is an effective solution in facilitating toddler growth monitoring activities and maternal health services. This study aims to build a web-based integrated SIP that can support the monitoring of toddler growth and development and maternal health services effectively and efficiently. This study is based on several previous studies that highlighted the importance of SIP development to support Posyandu activities but also showed challenges in its implementation, such as suboptimal data management processes and overlapping health data collection and processing. Therefore, the development of a web-based integrated SIP is expected to make a significant contribution to improving the quality of basic maternal and child health services at the Posyandu level.

INTRODUCTION

The Posyandu Information System (SIP) is an information system used to collect, manage, and present data and information related to activities, conditions, and developments that occur in each Posyandu. The SIP assists in monitoring and evaluating basic maternal and child health services, and facilitates the operationalisation of Posyandu service activities. Some examples of information that can be accessed through the SIP include data on residents, families, posyandu, MCH posyandu, adolescent posyandu, posbindu, and other social issues. (https://sip.ntbprov.go.id), (https://patangpuluhankel.jogjakota.go.id/detail/index/9579), (https://unair.ac.id/evaluasi-sistem-informasi-posyandu-menggunakan-model-jaringan-metrik-kesehatan/)

The SIP also allows users to perform various activities, such as data entry to complete posyandu data, recapitulation of monthly posyandu activities, records of pregnant women, births, infant and maternal deaths, infant and toddler registration, as

well as records of iron tablets, Vitamin A, and ORS administration. (https://patangpuluhankel.jogjakota.go.id/detail/index/9579), (https://www.neliti.com/publications/174188/sistem-informasi-posyandu-kesehatan-ibu-dan-anak).

Through SIP, it is expected that Posyandu can develop the right types of activities in accordance with the needs of the target, as well as facilitate the collection and processing of health data. However, some challenges in the implementation of SIP are still faced, such as the data management process that has not been optimised and the number of formats that must be filled in, thus increasing the workload of Posyandu cadres. (https://unair.ac.id/evaluasi-sistem-informasi-posyandu-menggunakan-model-jaringan-metrik-kesehatan/), https://www.neliti.com/publications/174188/sistem-informasi-posyandu-kesehatan-ibu-dan-anak).

SIP can also assist in monitoring programme coverage, programme achievements, weighing results, community participation, as well as user and posyandu staff data. The SIP application can also assist cadres in recording Posyandu activities, especially maternal and child health, such as weight and height weighing data, vitamin A, immunisation, and health complaints. (https://www.neliti.com/publications/174188/sistem-informasi-posyandu-kesehatan-ibu-dan-anak).

SIP can be accessed through an official website or a special application, where users need to log in using a registered email and password (https://sip.ntbprov.go.id/loginPengembangan system in this study using an approach model RAD (Rapid Aplication Development).

Some studies have also highlighted challenges in the implementation of SIP, such as the suboptimal data management process, the large number of formats to be filled in, and overlaps in health data collection and processing. Nevertheless, SIP is still expected to assist Posyandu in developing activities that are appropriate and in accordance with the needs of the target, and facilitate the collection and processing of health data. Research by Yuliani (2020) discussed the design of SIP to support maternal health and monitor infant growth and development based on the web. Another study highlighted that the SIP has seven formats, including records of pregnant women, births, infant deaths, and maternal deaths, as well as registers of infants, toddlers, and pregnant women in the

Posyandu working area. Evaluation of the SIP using the Health Metrics Network Model showed that the SIP is still faced with several challenges, such as unoptimised data management processes and overlaps in health data collection and processing. Another study by Universitas Muhammadiyah Metro (2021) discusses the creation of a web-based SIP involving Posyandu participants as users and admins from Posyandu cadres.

Research objectives Building a web-based integrated posyandu information system that is able to support the monitoring of toddler growth and development and maternal health services effectively and efficiently.

METHODOLOGY

Collecting Data

Observation

Direct observation is done by visiting the object to be studied, starting from the Posyandu service information management system that takes place at Posyandu Melati, to aspects related to the Posyandu service system.

Library Methode

In doing this research the author conducted library research, to obtain information related to this material through books, related materials, lecture materials and other readings that have relevance to the system.

Waterfall Methode

The waterfall SDLC model is often called the sequential linear or classic life cycle model. (Susanti & Haevi, 2018). According to Ian Sommerville, the main stages of the waterfall model directly reflect basic development activities. There are 5 stages in the waterfall model, namely requirement analysis and definition, system and software design, implementation and unit testing, integration and system testing, and operation and maintenance. (Sommerville, 2011).

This waterfall methodology is applied in this research including (Zaliluddin & Rohmat, 2018):

1. Requitment: Starting from the preparation of the background of the problem to be researched, formulating the problem along with the limitations of the problem and researching the object of research.

2. Design: Followed by designing a programme using DFD according to the results of observations and company needs.
3. Impementation: This phase the programme starts to be tried to find its advantages and disadvantages.
4. Verification: After finding the shortcomings of this programme, it is verified to make improvements.
5. Maintenance: After verification, the programme is improved according to the latest company needs.

Research of Framework

To assist in the preparation of this research, it is necessary to arrange a framework that has clear stages. This framework is the steps that will be taken in solving the problem to be discussed

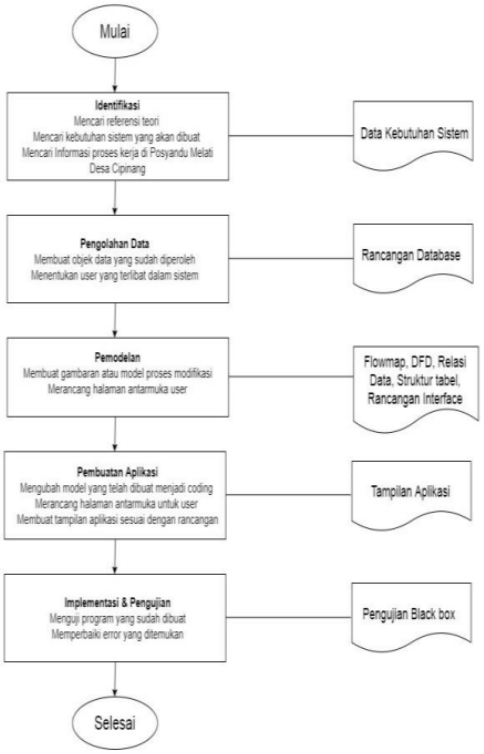

Figure 1. Research Design

RESULT AND DISCUSSION

Use Case Diagram

The design of the posyandu information system development is made with an object-oriented system method, namely UML.

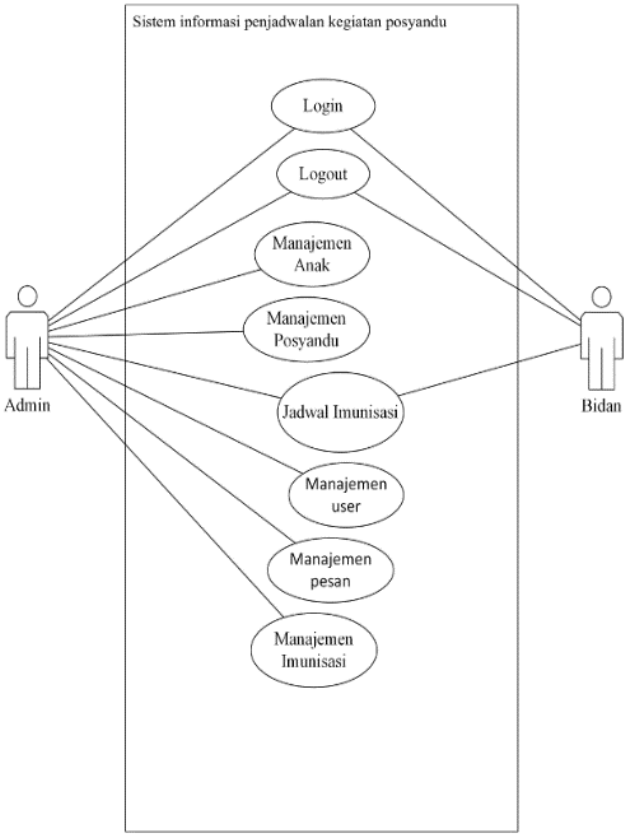

Figure 2. Usecase Diagram

This use case consists of one sub-system, namely the designed system. In this sub-system the admin actor must log in first to enter the system in order to manage child management, posyandu, schedules, users, immunisation and can log out after logging in.

Design

1. Login

To enter the system, the login interface design includes a username, password, and login button form.

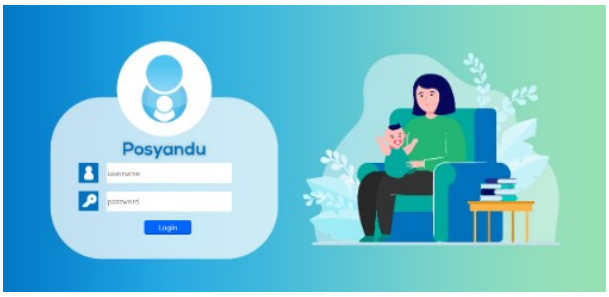

Figure 3. Login

2. Dashboard

The Dashboard page view is the view that opens after a successful login. In this display, several menus related to ePosyandu are presented.

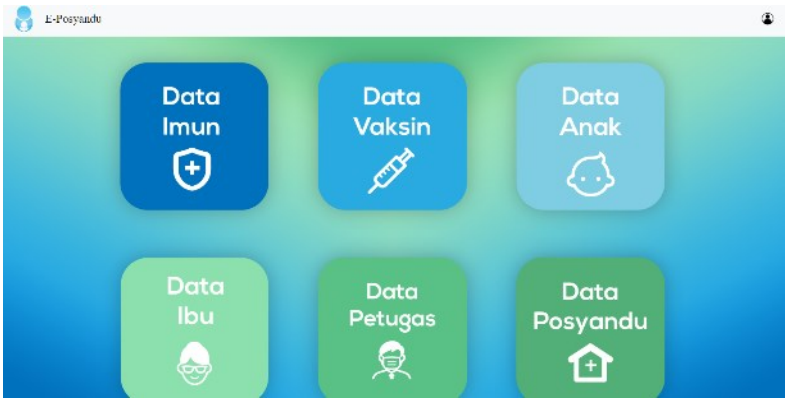

Figure 4. Dashboard

CONCLUSION

From the results of the study it can be concluded that the Web-based Posyandu Information System can make it easier for the Village community to compile and find out digital data and information about the condition of the activities to be carried out by the posyandu, compile detailed and real data-based planning of Village posyandu activities, direct the work of Posyandu Cadres systematically, measurable, directed, sustainable, and focus on information utilisation priorities, In accordance with the civic and territorial needs of the Village to accelerate the achievement of the design which will later make the development of a web-based posyandu information system, the achievement of posyandu goals will be achieved and implemented and can integrate the data that has been recorded so that it can form an accurate information report and automatically the village posyandu cadres and the village community will be helped by information disclosure so that the web-based services developed will be effective and efficient.

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