

Management Information System Web-Base on Blood Donation Service

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Submitted : Nov 11, 2022 | **Accepted** : Nov 20, 2022 | **Published** : Jan 1, 2023

Abstract: Blood donation is an activity of sharing blood from a person to others in need. This activity was carried out because of the large number of patients in the hospital who needed blood for their illness. The amount of blood needed is not proportional to the amount of blood stock in the hospital, so it is deficient and requires a lot of blood from donors. The scarcity of blood stocks does not occur only in hospitals but also in PMI (Indonesian Red Cross) so that patients or families have difficulty finding blood to meet the needs of patients. The method used in these crisis conditions is to contact a few random people, or create information on personal social media about who can donate blood. This method is less efficient and effective because the data of potential donors is often also not qualified and data collection is also still done manually by the blood transfusion unit. Information technology is one of the solutions in providing information and data collection as well as management in the blood transfusion unit PMI Deli Serdang. In this case the R&D method (Research And Development) can help develop a management information system to collect data in blood donation services at PMI Deli Serdang.

Keywords: Management Information System; Blood Donation; R&D; FIFO; PMI

INTRODUCTION

The Indonesian Red Cross (PMI) is one of the national humanitarian organizations. As explained in article 1, Law No. 1 of 2018 concerning headings. PMI's priority is the community's own needs for pmi assistance. Government regulation number 18/1980 has given an assignment to PMI to organize blood transfusion health efforts.

Blood is one of the components of the system in the body that is very vital in its existence. Some of the functions of blood in the human body are as a supplier of oxygen to the cells and tissues of the body, transporting nutrients as well as hormones, and as a regulator of body temperature, etc. In addition, the main components in the blood are platelets and blood plasma which play a crucial role in the initial defense against diseases that enter the body. Blood Donation is important in the healthcare system. Blood can only last for 42 days.(Herman & Wijaya, 2021)

The rapid development of information technology today provides so many benefits for all humans, one example is the development of information technology in the health sector which is the implementation of a website-based health sector information system. A website is a domain that contains information from the creator of the *website* itself which is used to provide information or knowledge for users (samsudin, 2022). Because with a website people can use it to get any information they want. such information systems are created through the utilization of software, MySql Database Management System and PHP programming language.

So far, information related to the availability of blood, looking for dornors, as well as blood donation activities still lacks supporting facilities to get this information. When blood stocks run out in hospitals or PMI, families have to find other alternatives to meet the patient's blood

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needs. Therefore, the author develops by creating blood donation services that can make it easier for the public to get the information they need.

Previous research was conducted by Tri Raharjo Yudiantoro, with the title "ANORA: Android-Based Blood Donation Application and Web With Broadcast System For Blood Needs At PMI Semarang". This research is in the form of an application that can be used by users, namely prospective donors, donors and patients. This application has features news, blood stocks, schedules and also broadcast notifications of blood needs can run well using android version 4.2 and above (Yudiantoro et al., 2019). Another research that has been carried out and carried out by Betty Apriliasari, Nur Sri Utami, Lidia, Asrul Abdullah in 2019 entitled "Aksi UNIASIAH (Blood Transfusion Unit) Based On Android With Waterfall. The research was applied using the *waterfall method*. The purpose of the study is to make it easier for *users* to obtain information related to blood stocks and activities held (Apriliasari et al., 2019). This research has also been conducted previously by Iena Magdalena entitled "Design a PMI Information System By Integrating Donor Data and Blood Stocks Between PMI Branches in Region III Cirebon". In this study, researchers used the FIFO algorithm which is based on the assumption that if the goods are in stock, the goods will be issued first, so that the next item is the one issued later (Magdalena & Mulyasari, 2018).

Based on this, there is a need for innovation in system improvement at PMI Deli Serdang, especially in the blood transfusion unit, so that a system is needed that can support information service activities to be more effective and efficient. Information services are considered sufficient to be a solution in finding donors, schedules of donor activities, and knowing blood stocks. One system that is quite widely developed is a *website-based* blood donation service. It is hoped that the web-based blood donation service management information system at PMI Deli Serdang can make it easier and faster to find donor data and make it easier for the public to get information related to blood donations. In addition, through the existence of a *website-based* blood donation service management information system, it can provide accurate reports and can be printed and stored and can also establish partners in hospitals as blood distribution that has been collected.

LITERATURE REVIEW

The system is a series of stage processes that are made based on an orderly or systematic arrangement in carrying out a series of activities in the organization. (Santoso, H., Putra, H. S., & Pratama, 2020)

According to yadi, information is a keyword that is always melding in this era. To get a computer information is one of the devices to produce it as well as other technologies that are considered appropriate to use. (Princess & Effendi, 2018)

In addition, based on the Gita, the information system means a group or organization in which there is managed data and supports data that is managerially related to the strategic activities of the organization to provide a decision of fact that becomes information. (Octavianti, 2019). There is also an opinion from alda regarding information systems, which is a combination composed of people, hardware, software, communication networks and data resources that are able to change, collect and also disseminate information within a group / organization. (Alda, 2020)

According to Fristyanty, the management information system is an arrangement of a comprehensive and coordinated and rationally coordinated information sub-system that is expected to be able to transform data to increase information productivity (Fibriany, n.d.). management information system is a fixed, real and demonstrable truth that exists in an organization, because with this management information system can help manage work in a company. (Laia et al., 2022)

According to yuhfizar, a *Website* is all of the pages on the web that are contained in a domain that contains information (*Jurnal__Informasi__Web*, n.d.).

According to Fazriansyah, the first in first out method explains that the goods that have been purchased first are considered to be used or sold earlier, and the cost of goods produced by the goods purchased first will be charged first as the cost of goods sold. In its physical recording, this method assumes that the first item was sold first as well. The difference is in perpetual recording with the FIFO method. The calculation of the cost of goods is carried out at the time of the sale. (Hidayat et al., 2018)

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Government regulation number 18/1980 has given an assignment to PMI to organize blood transfusion health efforts (uktd). This first in first out method explains that the goods that have been purchased first are considered to be used or sold earlier, and the cost of goods produced by the goods purchased first will be charged first as the cost of goods sold. In its physical recording, this method assumes that the first item was sold first as well. The difference is in perpetual recording with the FIFO method. The calculation of the cost of goods is carried out at the time of the sale.

Blood donation is a humanitarian activity in terms of donating blood from someone to another person who needs blood caused by several things that if too late to meet the blood needs can be fatal. (Handayanto, 2019)

METHOD

Research method means a way of solving a clear or specific problem. In this case, researchers use the R&D (Research And Development) approach as an effort to implement the application to be created, as well as using the RAD (*Rapid Application Development*) method to build applications (Putri & Effendi, 2018). R&D is a method used in addition to building applications to test the effectiveness of the product or application. To determine the stages that wajib is used to create products, the flow of research carried out is (Buani & Putri Cahya, 2020):

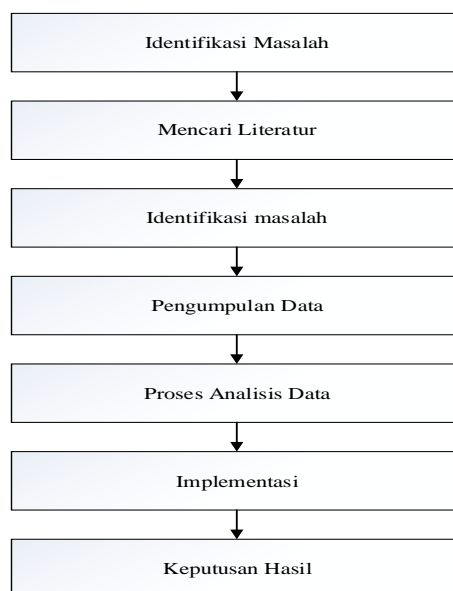


Figure 1. Research Design

The data collection used in the following research uses a descriptive method, which is to determine the process that must be used in fulfilling the completeness of research and writing, namely:

- Observation
The observation was carried out directly by researchers to the Blood Transfusion Unit of PMI Deli Serdang, in order to directly observe the system carried out in the blood transfusion unit of PMI Deli Serdang.
- Interview
Interviewing is carried out in order to get data and available criteria. Related to this, the author interviewed with the head of the blood transfusion unit of PMI Deli Serdang.
- Literature Study
Literature studies are held by observing various researches that have been carried out such as theses, journals, and also literature related to problems in this research.

The method in constructing this web-based application is the *Rapid Application Development* (RAD) method. The *Rapid Application Development* method is a software model

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process that develops slowly and systematically where the modeling process emphasizes a simple and efficient development mechanism or cycle, modeled by the following activities:

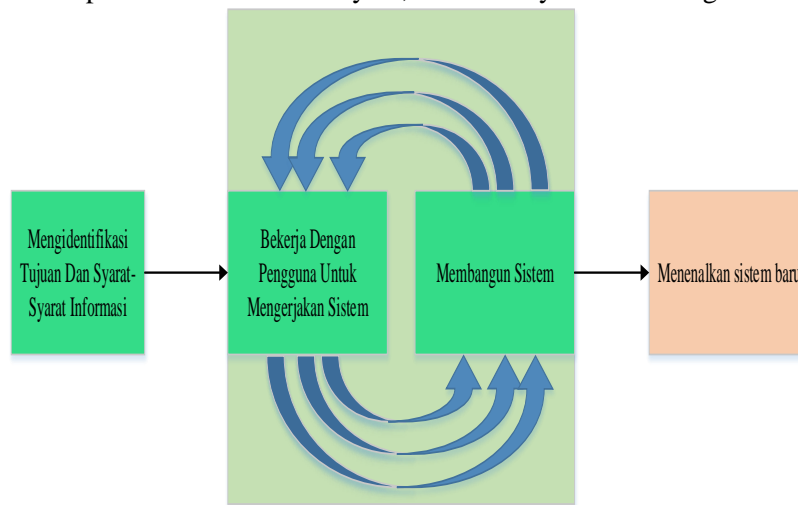


Figure 2. RAD Stages

RESULT

Needs Analysis

Flowmap is a mixture of map and flow chart that shows the flow of objects from one place to another, this *flowmap* provides an explanation by showing how a system runs which aims to provide a systematic picture of the *flow* or path of the system being designed (Silmia et al., n.d.). *The proposed flowmap* system can be give the following description:

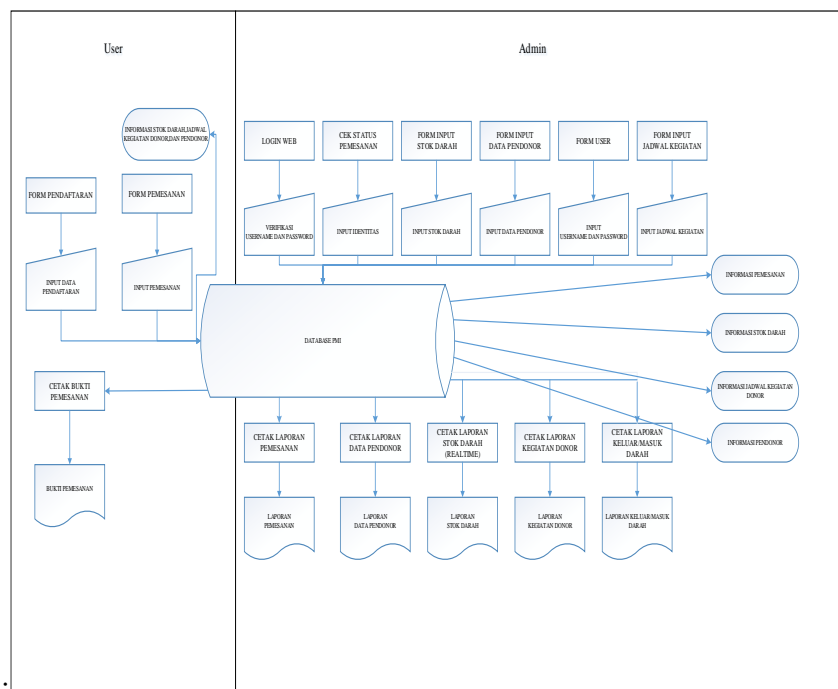


Figure 3. FlowMap Proposal

System Design

The author uses a blood donation service management information system model based on the page on the PMI Deli Serdang using two diagrams, namely the *use case diagram* design. According to Tri A Kurniawan Use case is an information system model that is useful for knowing what functions are in

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the system and who has the right to carry out these functions.(Kurniawan, 2018) . As shown in Figure 4, there are three interconnected factors, namely admins, donors and bookers.

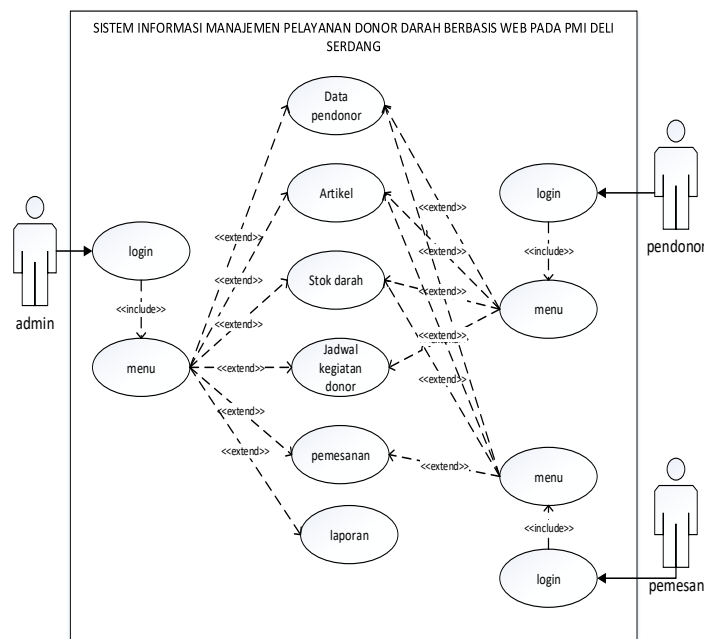


Figure 4. Use Case Diagram

Second, the design of the Entity Relationship Diagram (ERD) of the blood donation service management information system based on the website at PMI Deli Serdang. This diagram serves to illustrate the structure of the website-based blood donation service management information system on the PMI Deli Serdang as shown in figure 5.

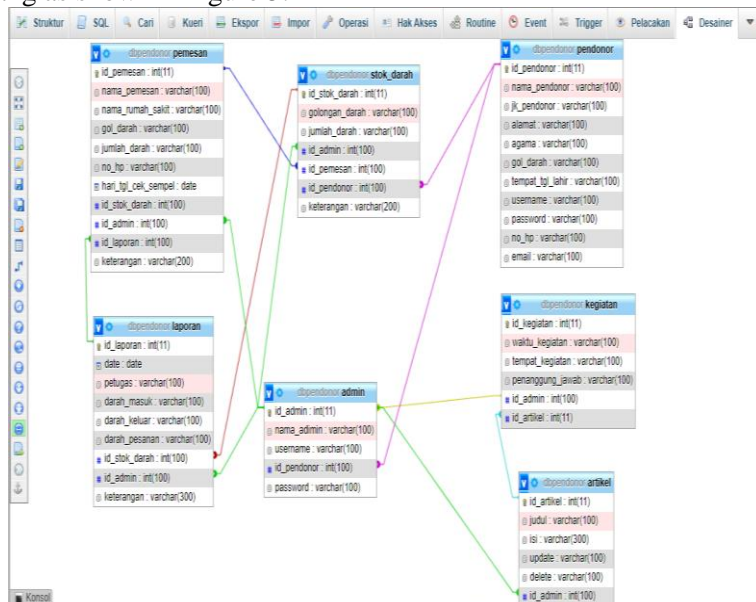



Figure 5. Entity Diagram Relationship

Implementation

The code program is translated in the form of a *user interface*, in the application of the program, it can be observed the form of the website road display both output and input. There is also the implementation of a web-based blood donation service information system on PMI Deli Serdang including:

*name of corresponding author





Swiss Transplant Coordination
 Swiss Transplant Foundation

Login

Bitte geben Sie Ihre E-Mail-Adresse und Ihr Passwort ein. [Passwort vergessen?](#)

E-Mail-Adresse

Passwort

☐ Ich bin ein Arzt

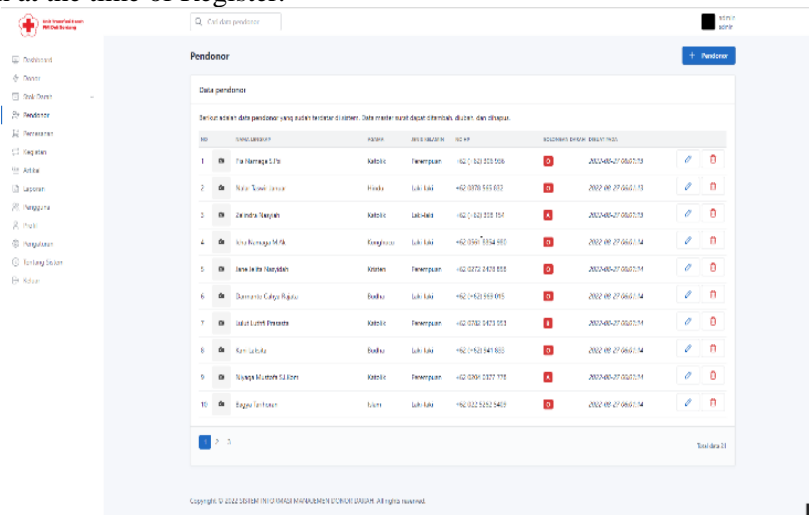
☐ Ich bin ein Patient

Einloggen

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The implementation of the *login* display in the web-based blood donation service information system functions for users who are already registered as donors and already have an account, donors who have been registered can log in or log in can access or view information related to blood donation services more closely and with the presence of registered donors, admins or other users can be contacted if there are people who need urgent blood through a contact person who has been filled in at the time of Register.



ID	Nama Donor	Alamat	Jenis Kelamin	NO HP	Kelompok Darah	NO HP
1	Tia Haraga Lita	Kab. Bkt	Perempuan	+62 812 333 558	B	2023-08-27 08:07:13
2	Nisa Tami Lita	Bkt	Laki Laki	+62 812 333 553	B	2023-08-27 08:07:13
3	Zakaria Tami	Kab. Bkt	Laki Laki	+62 812 333 553	B	2023-08-27 08:07:13
4	Nisa Tami Lita	Kab. Bkt	Laki Laki	+62 812 333 553	B	2023-08-27 08:07:13
5	Nisa Tami Lita	Kab. Bkt	Laki Laki	+62 812 333 553	B	2023-08-27 08:07:13
6	Nisa Tami Lita	Kab. Bkt	Laki Laki	+62 812 333 553	B	2023-08-27 08:07:13
7	Nisa Tami Lita	Kab. Bkt	Laki Laki	+62 812 333 553	B	2023-08-27 08:07:13
8	Nisa Tami Lita	Kab. Bkt	Laki Laki	+62 812 333 553	B	2023-08-27 08:07:13
9	Nisa Tami Lita	Kab. Bkt	Laki Laki	+62 812 333 553	B	2023-08-27 08:07:13
10	Nisa Tami Lita	Kab. Bkt	Laki Laki	+62 812 333 553	B	2023-08-27 08:07:13

Figure 9. Donor Data View

The application of the Donor Data display in this web-based blood donation service information system serves for users and admins, users can view donor information so that when the public or patients who need urgent blood can be contacted through the contact person in the donor data and can see the blood match needed through the donor's blood type. Admins can change, add, and delete donor data on the donor view page.

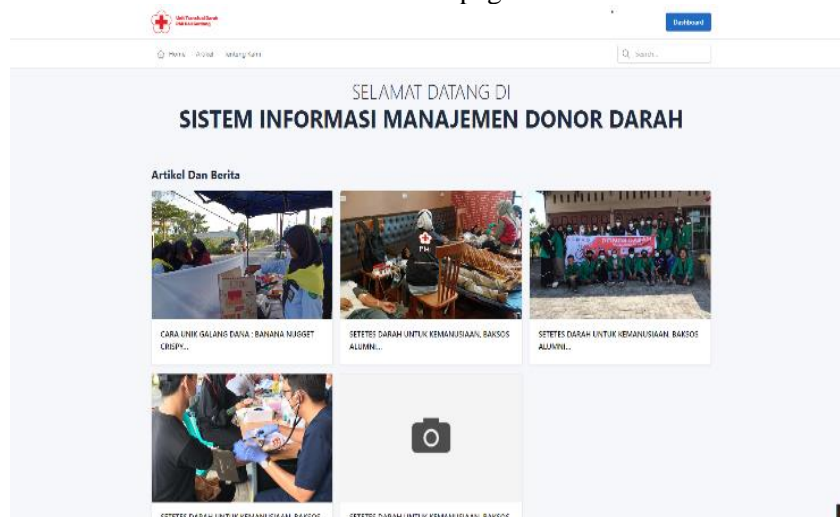


Figure 10. Article View

The application of article display in the web-based blood donation service information system serves to create, add, change the articles to be displayed, this page can be accessed by the admin by filling in any article related to blood donation information.



DISCUSSIONS

CONCLUSION

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