

## **Development of Website-Based Blood Group Database in Pangauban Village, Katapang District, Bandung Regency Sector 7**

*Nishfi Rahmah Maulani, Rendi Rahman Alfarisi, Utari Nur Ambiya, Milah Nurkamilah, Usman Sas Syari, Anggia Suci Pratiwi, Budi Hendrawan, Yopa Taufik Saleh*

*Universitas Muhammadiyah Tasikmalaya, Tasikmalaya, Indonesia*

Corresponding Author : milah.nurkamilah@umtas.ac.id

### **ABSTRACT**

Database is a collection of files / tables / archives that are interconnected which are stored in electronic storage media. Database creation is the process of creating a design that will support the company's operations and goals. The use of databases in the medical field makes it possible to store data or perform and display data back quickly and easily. In the implementation of this activity, the method used in this community service is counseling and blood group examination using the slide method. A person's blood type is not just a personal identity, some people don't care about their blood type. Some don't even know what their own blood group is. Because we do a blood group check so that we know the blood group of each.

**Keywords:** Database, Website-Based Blood, Bandung Regency Sector 7

### **INTRODUCTION**

One of the technologies that is currently developing rapidly is information/computer technology. Rapid progress can be seen both in terms of hardware, software, and the development of the quality of human resources (brainware). This is possible because computer technology is able to collaborate with many other fields of science.

The use of information technology today is very important, this can be seen from the application of information technology, especially in the application of electronic databases or databases that are not limited to trade or business, but also in various other fields such as education (e-Learning), social media (social networking), the banking sector (e-Banking) and also in the health sector. Various advantages are provided by information technology, especially in the application of databases, namely making the process of data collection and dissemination of information faster and easier. The extraordinary advantages of Information Technology should be utilized by various parties to manage various institutional activities properly, planned and documented to the fullest. With the various advantages offered by this technology, information technology, especially databases, is widely applied in various fields of human life, including in the field of community services

To search for community data, especially blood type, community service officers will search for community data in the archives storing community data so that it takes quite a long time. Because of this, blood group data collection in Pangauban Village, Katapang District, Bandung Regency is still lacking, because it is

necessary to have a database that can help provide better community services. And based on observations of many people in Pangauban Village, Katapang District, Bandung Regency, especially Sector 7, they do not know their own blood type, therefore a blood type examination for sector 7 areas is needed.

Blood type is a special characteristic of the blood of an individual because of the different types of carbohydrates and proteins on the surface of the red blood cell membrane. In this world, there are actually about 46 types of antigens besides ABO and Rh antigens (Andriyani et al, 2015)

The term "database" has its origins in computer science. Although later the meaning was broader, including things outside the field of electronics, this article is about computer databases. Records similar to databases actually existed before the industrial revolution, namely in the form of ledgers, receipts and collections of business-related data.

The basic concept of a database is a collection of records, or chunks of knowledge. A database has a structured description of the types of facts stored in it: this description is called a schema. Schema describes the objects represented by a database, and the relationships between these objects. There are many ways to organize the schema, or model the structure of a database. These are known as database models or data models.

This is the background for the author to carry out the research that the author presents in this KKN report entitled "CREATING A WEBSITE-BASED BLOOD GROUP DATABASE IN PANGAUBAN VILLAGE, KATAPANG DISTRICT, BANDUNG DISTRICT SECTOR 7".

## **RESEARCH METHOD**

The method used in this community service is counseling and blood group examination using the slide method. The slide method is a simple, fast and easy method for examining blood groups (Chandra, 2008). The data collection was carried out to find out the blood type of the Pangauban Village residents so that the data obtained could be input to the Pangauban Village blood type website. From this data, the next steps were prepared, namely counseling and examination of blood types A, B, AB and O. This activity was carried out on 13-14 November 2019 with the assistance of 14 students from various Study Programs at the Muhammadiyah University of Tasikmalaya. The following are the stages in the community service activity of examining the blood type of Pangauban Village residents:

### **1. Preparation Stage**

In this stage a survey and data collection is carried out regarding the total number of residents, and the number of residents who already know their blood type. At this stage coordination was also carried out with village officials.

### **2. Data analysis stage**

The data obtained is collected and then input into the blood group data collection system with the aim of facilitating the search when local residents need blood donors.

### **3. Counseling about Blood Type.** In this stage counseling is carried out about blood groups and blood donors.

4. Examination of blood group

- a. Preparation of tools and materials Examination of blood groups A, B, AB and O was carried out using the slide method. At this stage, the tools and materials that will be used in blood group examination are prepared. The tools used include blood group cards, blood lancets, and capillary tubes while the materials used are antisera reagents for blood group examination.
- b. The blood group examination was carried out by inviting residents of Pangauban Village to the Citarum Umtas KKNT post to have their blood type checked and
- c. door to door (visiting residents' homes) for residents who do not come to the posko.

5. Data analysis

In this stage, the blood group data obtained was collected and then analyzed and obtained data on the frequency of blood groups A, B, AB and O of the residents of Pangauban Village in the form of the Pangauban Village Blood Group Data Collection System Application. The data obtained is then submitted to the Village

### **RESULT AND DISCUSSION**

Pangauban Village has an area of 155.ha of land, 153.ha of land and 2.ha of rice fields (Pangauban Village Government, 2018). The northern boundary of Pangauban Village is Sulaeman Village, south of Gandasari Village, east of Sangkanhurip Village / Banyusari Village, and west of Katapang Village / Cilampeni Village. Based on the results of the survey conducted, it was found that most residents did not know their blood type, so counseling was carried out about blood type and the importance of blood donors.

1. Counseling about blood groups and blood donors



Figure 1. Counseling about blood groups and blood donors

The blood group system that is commonly used is the ABO system (blood groups A, B, AB, and O) whose classification is determined by the presence or absence of antigens on red blood cells. In addition, the blood group system must also be determined based on Rhesus (Rh positive or negative). A person's blood type is determined based on the presence or absence of antigens on red blood cells and blood plasma. Antigen functions like a sign recognition of human body cells. This is so that the body can distinguish its own cells from cells that come from outside the body. If cells with opposing antigens enter the body, the immune system will start fighting against the cells that are considered foreign by producing antibodies.

Through the ABO system, blood groups are divided into 4 types, namely A, B, AB and O:

- a. If you have blood type A, then you have A antigens on your red blood cells and produce antibodies to fight the red blood cells with the antigens
- b. If you have blood type B, then you have B antigens on your red blood cells and produce A antibodies against the red blood cells with A antigens.
- c. If you have blood type AB, then you have both A and B antigens on your red blood cells. It also means you don't have A and B antibodies in your blood plasma.
- d. If you have blood type O, then you have neither A nor B antigens on your red blood cells. People with blood type O produce antibodies A and B in their blood plasma.

Counseling was carried out with presentations and discussions with residents of Pangauban Village. Through counseling, it is hoped that residents can understand the importance of knowing blood type. It is also expected to increase the motivation of residents to donate blood.

## 2. Examination of blood group



Figure 2. Examination of blood group

During the implementation of the blood group examination program, some residents were very enthusiastic about participating in the program. This can be seen from the number of residents who participate in blood type examination activities. And based on the data in the database, as many as 102 people participated in blood type examination activities. Most of those whose blood type was examined were mothers, teenagers and children. Because the blood group check is done during the day, many residents do not have time to check their blood type because they have a work schedule. And also there are some people who don't dare to do a blood group check, and some residents have already done a blood group check at the health center so they don't need to do a blood type check again.

Several obstacles encountered during the blood group check, there were some residents who did not want to have their blood group checked, some were afraid to have their blood group checked, especially children and toddlers, and there were also residents who did not have time to come during the program. These obstacles can be overcome by providing understanding and education to residents about the importance of knowing blood type and convincing residents that blood group testing does not cause pain so there is no need to be afraid to have their blood type checked. For residents who did not have time to come during the implementation of the program, they were handled door to door to residents' homes to check their blood

type. The data obtained from the ABO blood type data collection for the residents of Pangauban Village can be used as a reference if needed at any time. The data obtained was then submitted to Pangauban Village

## **CONCLUSION AND SUGGESTION**

The database is a collection of files/tables/archives that are interconnected and stored in electronic storage media.

The use of information technology today is very important, this can be seen from the application of information technology, especially in the application of electronic databases or databases that are not limited to trade or business, but also in various other fields such as education (e-Learning), social media (social networking), the banking sector (e-Banking) and also in the health sector.

The blood group system that is commonly used is the ABO system (blood groups A, B, AB, and O) whose classification is determined by the presence or absence of antigens on red blood cells.

During the implementation of the blood group examination program, some residents were very enthusiastic about participating in the program. This can be seen from the number of residents who participate in blood type examination activities. And based on the data in the database, as many as 102 people participated in blood type examination activities. Most of those whose blood type was examined were mothers, teenagers and children. Due to blood type checking during the day, many residents do not have time to check their blood type because they have a work schedule.

## **REFERENCES**

Rohmadi. Perancangan Basis Data Sistem Informasi Pelayanan Medis Di Rumah Bersalin Permata Hati Abadi Sragen. Jurnal Kesehatan, ISSN 1979-9551, VOL.II, NO.2, MARET 2008, Hal 99-113

Andriyani, R., Triana, A. & Juliarti, W., 2015. Buku Ajar Biologi Reproduksi dan Perkembangan. Edisi 1. Yogyakarta: Deepublish.

Chandra, S. 2008. Pengenalan Golongan Darah Jenis ABO dengan Mempergunakan Pemodelan Hidden Markov, Skripsi Fakultas Teknik Universitas Indonesia

<http://www.pangauban-katapang.desa.id/first>

<https://www.alodokter.com/memahami-karakteristik-golongan-darah-a-b-ab-dan-o>