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APPLICATION UTILISATION OF API AND B-SHARE APPLICATION FOR PROVIDING BLOOD AVAILABILITY INFORMATION

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ABSTRACT

Lack of information about the availability of blood is a problem that is not uncommon in daily life; many medical cases require a blood transfusion procedure. Practically, the hospital will entrust the patient's family to find blood bags with the type of blood needed. Families with little knowledge about where to find blood will encounter confusing situations. Whereas they have to see it fast. If a blood transfusion is done too late, then even death may occur. Because of this, it is expected that the existence of a public service that can provide information quickly and accurately will allow the community to utilize blood. The development of the internet could be used to increase public service and fulfill the need for information, especially for the government, which hasn't provided information about blood availability, location-based on geolocation that all people should easily access. Because information about the availability of blood is essential to be known to the community, we would develop a geographical information system to search for the location of PMIs and hospitals that have the blood supply. The chosen method for this program is requirement analysis, conceptual modeling, implementation, and testing. This method is one of the development methods of software engineering that produced an application that could solve the problem by providing software that integrates bloodstock information across PMI and hospital branches all over Indonesia. This information system integrates bloodstock information across PMI branches and hospitals all over Indonesia, providing access to real-time blood stock updates to people and providing information about PMI branches and hospital locations across Indonesia in the shape of a map complete with the contact number.

Keywords: bloodstock, geolocation API specification, mobile application, B-Share.

INTRODUCTION

Cities Palembang City, which has a population of 1,558,494 people, is one of the fastest-growing cities in building smart cities in Indonesia. Various policies to improve services for the community in all development sectors continue to be implemented to improve the quality and quantity of services. Along with the concept of a smart city, the government of Palembang City continues to improve the quality and quantity of all sectors to make the city of Palembang an intelligent city according to the innovative city concept, which is a smart economy, a bright environment, intelligent people, a brilliant life, smart mobility, and a competent government.

Blood is a vital fluid for the human body. Blood is the oxygen-carrying carrier for the lungs throughout the body, supplying nutrients and containing various beneficial immune system compounds. In everyday life, in many cases, patients are threatened by their lives because it is challenging to get the blood

supply for medical treatment at the hospital. When the hospital does not have the required bloodstock, it will submit the blood supply issue to the patient's family. Patients' families with little knowledge of where to look for blood stocks will experience confusion. Though they have to find blood supply in a short time, if the blood transfusion is done late, then death may happen because it is expected that the existence of a public service that can give blood information quickly and precisely can be exploited by society.

The rapid development of mobile technology in recent years has made human needs available through devices always available in pockets or bags wherever they are. Internet technology, especially mobile internet, is growing, and mobile internet usage has increased worldwide. Indonesia is ranked 7th with a percentage of 18%. [1] Suppose the mobile internet facility can be used to access information about information on the availability of blood. In that case, this will have more value in terms of usefulness for the community. facilitiesMobile internet facilities can be utilized to get information to help fulfill society's requirements, such as blood availability at the blood bank in Palembang City. As it is known, the city government of Palembang has not had a blood information center in an integrated geolocation-based blood bank that can display information and characteristics of a location in real-time and be accessible to all communities in Palembang and visitors.

Recognizing the great need for information by all communities, the authors are interested in developing applications that utilize Geolocation API Specification to Accelerate the Provision of Blood Supply Information for patients requiring blood transfusions that can help integrate blood supply information at all PMI and Hospital branches and give more values in terms of usefulness for government and society.

LITERATURE REVIEW

The authors conducted a literature review to complement the author's knowledge of the background and the technology used in making the application. The literature review is run primarily using the Geolocation API Specification to be applied to mobile applications. Literature studies are sourced from articles on the internet, supportive lecture materials, books on the technology used, and discussions with relevant experts and lecturers.

Blood Management

By government regulation No.7 / 2011 in UU no. 36/2009 on the management and service of blood. Declare that the government is responsible for implementing management and blood services that are safe, easy to access, and meet the community's needs. Governments and local governments (local governments) are responsible for regulating, guiding, supervising, and funding blood services to benefit public health services. By the explanation of UU no. 36/2009 on Health. Article 90 and GR No. & / 2011 on service and blood management article 46, government funding guarantee is realized in the form of subsidy from APBN, APBD, and other assistance.

Location Base Services

LBS or location Base Services is a mechanism of a service that provides location information. Location based services use device locations to provide information about a location [2]. The main question that can be answered with Location Based Service is "Where is My Location? ". Or the more specific

question is "Where is My Device Location?". To answer this question, a well-known device can tell the position is the Global Positioning System (GPS). Global Positioning System or often called GPS, utilizing satellite technology directly managed by the US Defense Agency to be able to provide position information. Until now there are 24 satellites in use to determine the position. Position information can also be obtained from devices we have used every day, ie cell phones. GPS has a higher level of accuracy when compared to mobile phones. Accuracy obtained can range from 5 to 30 meters. While the mobile phone level of accuracy is only 500 meters to 20 meters. So it can be concluded that the use of mobile phones is the right choice when it does not require a high degree of accuracy.

Geolocation API Specification

Geolocation can be interpreted as a way to know a location in the world. There are several methods that can be used to find a location, which can be through the wireless connection or BTS, with IP address. And with dedicated GPS and embedded GPS on mobile phones. Geolocation utilizes coordinate data of latitude and longitude owned by computer or cellular phone [3]. The location information navigator is represented by latitude and longitude coordinates. A Geolocation interface allows you to retrieve position information with a "one-shot" position request (by the getCurrentPosition () method) or repeated positioning updates (by the watchPosition method).

Chatbot

A chatbot is a simulator that can carry a conversation as a computer program but can dialogue with users with natural language. Chatbot is just a program that does not have a body and mouth like a robot, so chatbot can not talk like a human.
Dialogue between humans that can be done by chatbot is a dialogue done by typing things that want to be discussed by humans, who will then respond by chatbot. In 1966, the first chatbot program was written by MIT professor Joseph Weizenbaum. At that time, the chatbot program was still very, very simple. Chatbot has been categorized into Artificial intelligence to date. However, developments in the artificial Intelligence field are rapidly growing, and sophisticated chatbot still maintains its position in the world of Artificial intelligence [5].

RESEARCH METHODS

The software development method used is the Development Life Cycle software method, which is the waterfall. Waterfall method approach systematically and sequence starting from level requirement of software to phase analysis, design, coding, and testing. Each stage must be completed entirely to proceed to the next scene. Several steps can be described as follows.:

A. Requirements Analysis

Begin by looking for the needs of the system to be implemented in the form of software. This stage is implemented to know the conditions in software development. These requirements may include software capable of interacting well with users easily and quickly connected to the server where the database is stored. Mobile applications will function as input or output for the user. Users can enter the Blood Group in need, and then the system will display the location of PMI and RS that have blood stock according to user input. Applications can also allow users to communicate directly with the chatbot feature on the app, and users can ask questions that can then be answered by bots that have been

prepared. For the process of collecting data, the authors make observations and distribute questionnaires that can be utilized as an assessment of the user's response about the menus and information needed in the development of this application. Questionnaires are directly distributed by distributing to the community and distributing questionnaires online.

Meanwhile, data and information on PMI and RS locations were obtained from a direct search of latitude and longitude. This information is then processed into a database that can be accessed from the mobile application that the author develops. This database will then be stored on the server (hosting). Until now, completeness and accuracy have been the author's focal point in creating databases that have been collected so that the community can feel the usefulness of this system. The data for Chatbot consists of basic knowledge in AIML, simplifying complex grammatical forms into simpler forms, sentence splitting into sub-sentences, word equations, spelling improvements, and grammar. Chatbot was created and formed through supervised learning and previous Chatbot remarks..

B. Conceptual Modeling

Conceptual Modeling is the step done after knowing the application needs from the data processing obtained from the previous stage. The software needs to be developed can be understood from the conclusions obtained from the data processing collected, which can then be done modeling design and hypertext design. The process of making software or software on this system is divided into two parts: making the basic algorithm of the location search program of Blood Supplier, which uses Geolocation API Specification, and designing a User Application interface to produce a user-friendly application.

C. Implementation

Implementation is a stage of making an application that refers to the results of analysis and design that have been done from the design interface and the effects of design logic that have been done. At this stage, the author uses Visual Studio As an application that helps the coding process for the view of the application and the composition of content and services to get the location of blood providers. Accompanying MySql usage for database/data storage.

D. Testing

Once the system is implemented, a system test is performed to ensure that the performance of each outcome, both algorithm and database, works properly. The results of this test are used to evaluate the system and complete the plan for the better. Testing can be done in two stages: Testing Black Box Test and Alpha Test. Testing.

RESULTS AND DISCUSSION

In providing solutions to problems described in the introduction, the author initiated B-share, a Mobile Application that allows users to search for Blood within the broader environment without dealing directly with hospital personnel or PMI officers. This application is beneficial in the time that always use the internet because, with the B-Sharee information, the availability of Blood will be obtained quickly, Appropriately, and Relevant to the location of this Application User. In

addition, B-Share also provides a Chatbot service that will answer user questions about blood information in real time.

Authors and Affiliations

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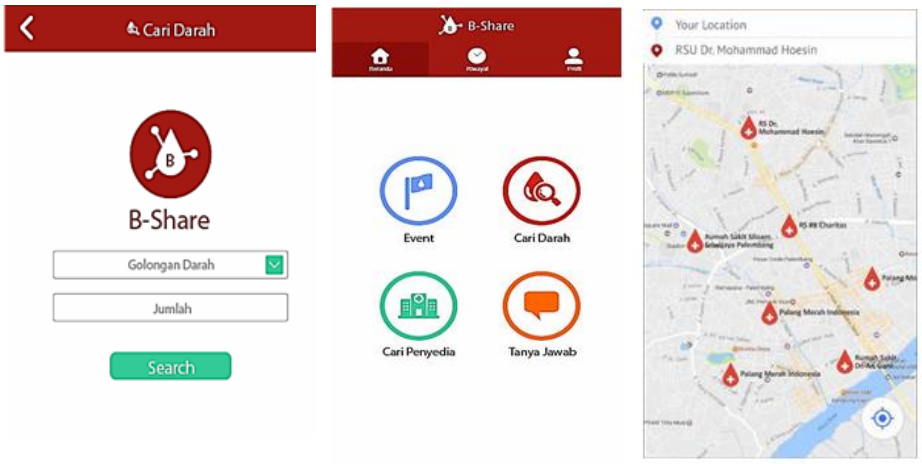

Figure 1. Interface mobile application B-share

This app can be accessed with any smartphone connected to the internet. This application database is located on a server that has been tested previously. This application is design by considering the user experience to produce user interface that is easy to understand the user and easy to accept so that it can be utilized properly.

To determine the accurate position of the device in real time. Then, the method used affects the accuracy of the part to be generated. Locations can be expressed by text descriptions or in the form of spatial data. Latitude longitude-altitude can denote spatial position data. At the same time, Latitude is described as 0-90 degrees south or north value of the line equator. Longitude with a value of 0-180 degrees east or west of the prime meridian. As we know, the Prime meridian is a virtual line that passes through one of the cities in Greenwich. Altitude represents the surface level of the sea surface. While the text is usually used to express the way, the city, and other things.

Below are some examples of positioning methods that can be used:

1) Method of utilizing telephone cellular network. A cellular phone's radius accuracy level can reach 2 to 20 kilometers. Cell ID can be an option to identify the Base Transceiver Station (BTS) associated with the device.
2) Method of Satellite Utilization. With an accuracy of 4 to 40 meters, the use of GPS is a usable technique, and the user must use a GPS Receiver to use this method.
3) Method of utilizing short-range position beacons. With the use of Bluetooth technology, this method can be implemented for a limited area.

In the above Application View, there is the getCurrentPosition () method, which works to get the user location in the lokasiSaya() function. GPS will take the latitude and longitude of the user, which is then sent to the initial process through function parameters, which will then be displayed on a map indicating

the user's presence while accessing the Application. On the provider, the search menu will appear a map showing the real-time location of users obtained from GPS devices and search form provider of blood in the city of Palembang after filling out the form. The App will instantly display the nearest provider from the current user's location. The information displayed after finishing searching is the name of the nearest provider, address, and route to areas within kilometers (km).

The App will request the user's location access permission when using this App. If the user consents, the Application will get the coordinates of the user's GPS smartphone. The following code can be used to get the location of Geolocation.:

```
<scripttype=”text/javascript”>
Started = false ;
 Function lokasisaya(node){ If (started) return;
        Started = true ; Navigator.geolocation.getCurrentPosition (
        successCallback,errorCallback,
         {enableHighAccuracy : true}
);
}
function successCallback(position) { c_lat =
    position.coords.latitude; c_lng = position.coords.longitude;
    initMap(position.coords.latitude, position.cords.longitude):

    initMap(position.coords.latitude, position.coords.longitude);

$("#lat").val(position.coords.latitude);
$("#long").val(position.coords.longitud;
    }
function errorCallback(error) { alert(error);
        $("#status").html("Tidak menemukan lokasi");
        }
        </script>
```

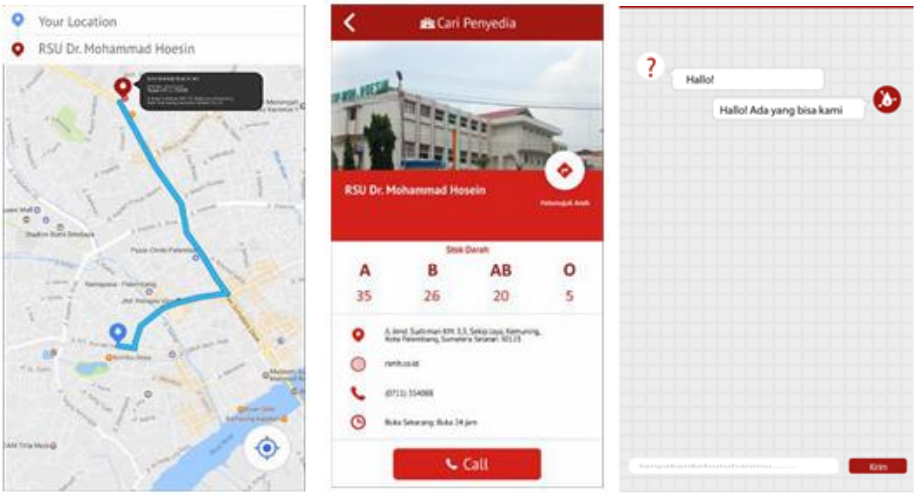

Figure 2. Interface application B-share

The road map will provide information and display a road route marked with a marker and a line visible on the map using the Google Maps API. It works because a pointer will show the destination direction is equipped with the estimated distance and travel time on each route that the user will skip. The distance displayed is the distance between the user and the destination.

The following description helps us imagine the use of B-share apps. First of all, the user of this Application must activate the GPS and internet in the mobile device. Then, the Application will display the main page of the mobile Application, and in it, there is a menu to show Blood donor events, Frequently asked blood information, and a Location map. Users can do a Blood Information Search by Entering the Blood Type needed and the number of blood bags required. The Application will display a map of the Hospital location and PMI with the bloodstock you need, and the Application will provide a route to your chosen location and see the closest stop distance so you can quickly get to the destination location.

Q & A service that uses chatbot with Brain File. Brain file implementation is a place to store all the vocabulary, behavior, response, and knowledge (knowledge) of the chatbot developed. For language and answers to the content of Brain File based on questions related to Blood Donor.

CONCLUSION

The b-share app is designed as a mobile application that can be accessed with any internet-connected smartphone from any user's point of existence. The Availability Information information provided by B-Share is expected to help Automate the work that must be done in the process of finding the information on the availability of blood in a location. This application is expected to help reduce the risk of patients needing more blood, as we know that patients queued to obtain blood donors have not successfully gotten blood donors. Conditions like this can cause loss because the time used to queue should be used to do more practical.

With the B-Share application, PMI and government hospitals will be integrated to obtain information and data that can be utilized as the basis for decision-making. This application will also improve the Government service for the community where, with this application, society can obtain information on the availability of areas in an agency in real life. Data received is the data that exists in that agency so that it can be ascertained. With this application, governments and health workers will collaborate to provide the best services to the community.

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