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Geographical Information System Based Android Application for Blood Donor Search

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Abstract: *Mobile applications are increasing in recent years. Searching blood donors using mobile application will make the search process easier and faster. Our mobile application for blood donor search uses GIS information to identify the donors located in and around the specified distance.*

Keywords: *Mobile application, GIS, Haver sine formula*

I. INTRODUCTION

In recent years, most of the searching is done using mobile application. Applications used for searching blood donors are available in Google play store. Some applications in that are not specifying location information of donors while searching. This application will produce the result as donors from all geographical location in the world. It is difficult for searcher to check the location details of the donors in the result. In other most of applications, location is specified as a keyword. Then application retrieves the donors from the specified location only. This method is also adequate to retrieve the donors who are nearer to the location.

For example, if location is specified as Coimbatore, the application retrieves the donor from Coimbatore. But the donors from the Mettupalayam Tirupur and Pollachi are not displayed even though they are nearer to the blood searcher. Our application uses GIS data to retrieve the donors from specified location and nearest location.

After the retrieval of donors in the nearby location using GIS from database, The application will produce the result of all eligible donors. But in general a person can donate blood in a cycle of three months, so a filtering is made and eligible donors are retrieved.

II. Searching Donors using GIS

Our application retrieves the latitude and longitude of specified location and finds the set of location which are near to the specified location [1]. For this, to calculate the distance between two locations the following Haver sine formula is used:

The locations are filtered using some saturation distance provided by the user [2]. Then based on the saturation distance donors of the search blood group who are all eligible and are from the nearby location are filtered and retrieved.

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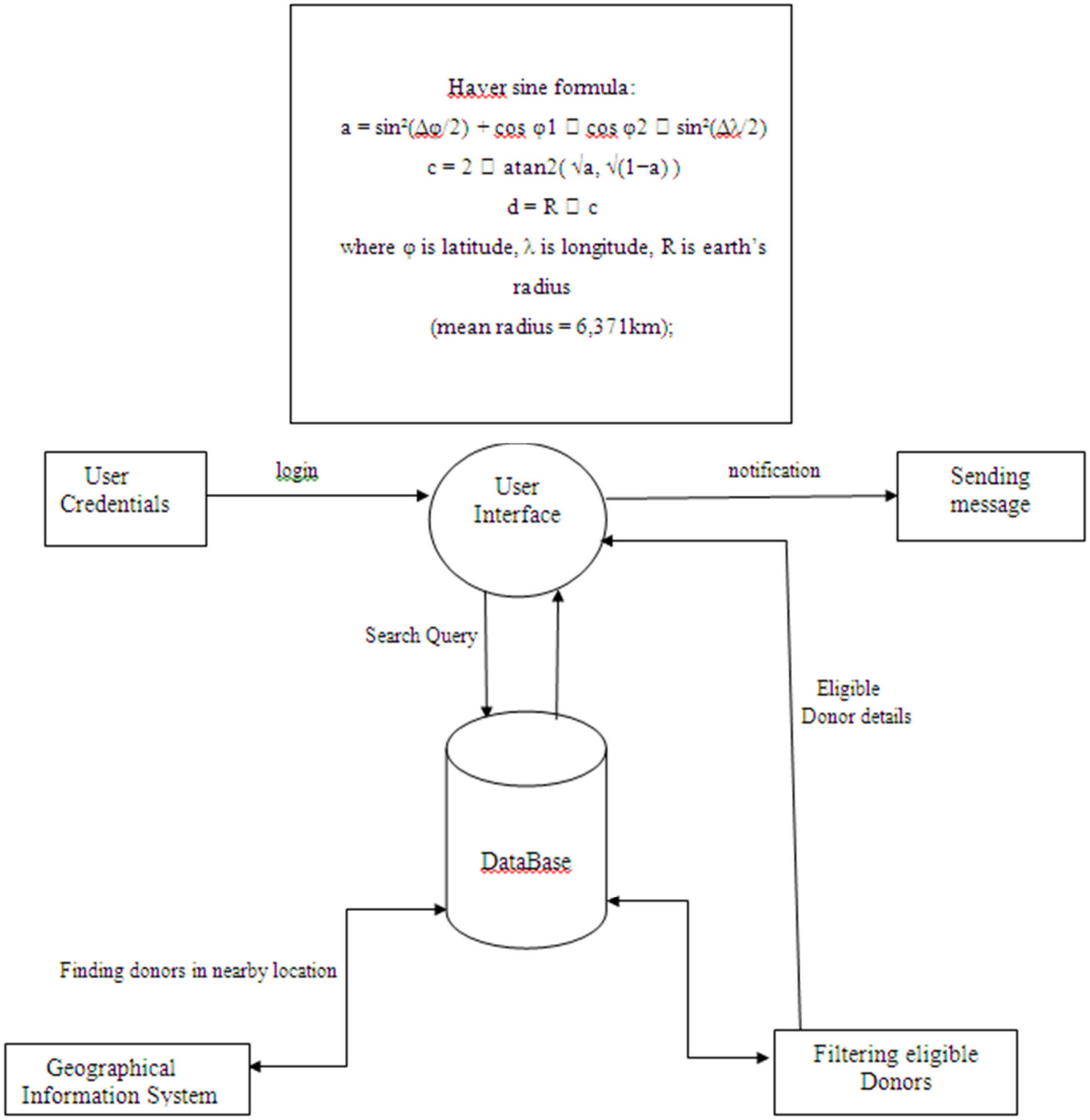

III. Implementation

This mobile application is developed using Eclipse software[4]. Using MY SQL database the details of donor are stored. In this application based on the search for blood, the Geographical Information is gathered and after filtering, the details of the eligible donors are retrieved from the database. After retrieval of eligible donors a notification message is sent to donor's mobile with the information of the searcher.

We gathered a record of 100 person's details and stored in the database and tested the working module of the application.

IV. Conclusion

The aim of this project is to develop a mobile application that will connect all donors. The application will help to control a blood transferring service and create a database to hold a data of blood in each area as data on donors in each city. Moreover, people will be able to see which patients need blood supplies through the application. They can also register as donors and receive request from their local clients who needs blood to donate blood in cases of emergency.

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