

Online Blood Bank Management System using Android

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Abstract: *The main aim of this project is to save lives of people by providing blood. Our project Online Blood Bank system using Android is developed so that users can view the information of nearby hospitals, blood banks. This project is developed by three perspective i.e. hospital, blood bank and patient/donor. We have provided security for authenticated user as new user have to register according to their type of perspective and existing user have to login. This project requires internet connection. This application we are developing helps to select the nearby hospital online instantly by tracing its location using GPS. We are also proving a alert system for severe accidents as using that function an ambulance will be sent to your destination without any wastage of time. This application reduces the time to a greater extent that is searching for the required blood through blood banks and hospitals. Thus this application provides the required information in less time and also helps in quicker decision making.*

1. INTRODUCTION

1.1 Scope

The Scope of the project is that in a very short span it provides user with many facilities. It provides an elegant management of blood, list of hospitals, blood banks and donors online. The main purpose of this project is to interconnect all the blood banks, hospitals, donors into a single network, validation, store various data and information of blood and health of each individual. This system is used to store data over a centralized server which consist of database where the individuals' information cannot be accessed by a third party.

1.2. REST Services

REST has become the default for most mobile apps and Web. For Web Applications REST has become one of the most important technology. As all technologies move towards an API orientation its importance is likely to grow quickly. Nowadays every major development language includes frameworks for building RESTful Web services. A clear understanding of REST and RESTful services is important for

Architects and Web developers. REST is an architectural style for networked hypermedia applications. It is used to build Web services that are, maintainable, lightweight and scalable. RESTful service means services based on REST. REST does not depend on any protocol, but almost every RESTful service uses HTTP as its underlying protocol

1.2.1 Features of a RESTful Services

1. Stateless
2. Uniform interface
3. Representations
4. Caching
5. Messages
6. Links between resources

2. DESIGN AND IMPLEMENTATION CONSTRAINT

Creating a user interface which is both easily navigable and effective will be a difficult challenge for us. The basic and primary constraint will be that we are developing an application for mobile platform. The major constraint will be resolution and limited screen size as the application is for mobile handsets. The other constraint regarding mobile handset will be processing power and limited memory. Our project is meant to be responsive management of functions which deals with tremendous information regarding the hospitals, blood banks, donors, patients, stock management and will be developed with efficiency.

2.1 Assumptions and Dependencies

2.1.1 Assumption:-

- 1) GPS will trace the current location of user exactly.
- 2) Proper management of Blood over mobile servers.
- 3) Database will work properly and store the records of the User.
- 4) Network should be essential for the Android application to work properly.

2.1.2 Dependencies

- 1) Tracing depends upon Google Maps API's
- 2) Login page consist of Username and Password which is stored in Database i.e. SQLite.
- 3) This project depends upon REST web services.
- 4) Suitable for any kind of person.

3. FIGURES

3.1 System Architecture

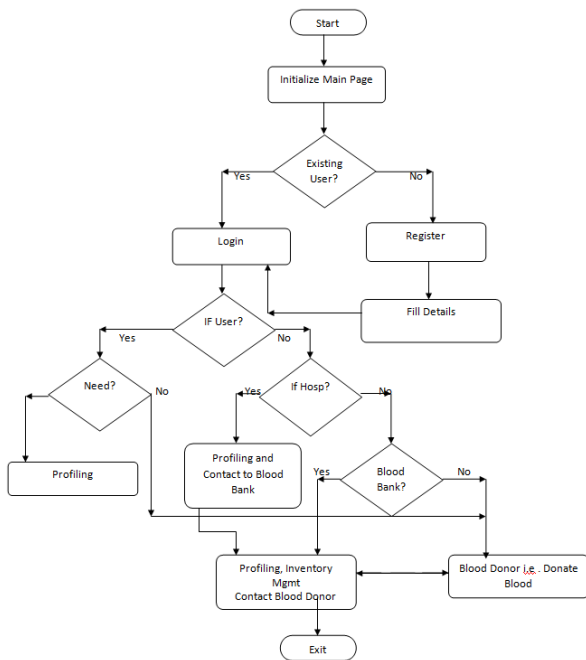


Fig 1: System Architecture

First the Main page is initialized then either Login or Register

1. If you are a new user then first sign up, and if you are a member then enter your details regarding your personal information, contact information, health information. Press submit and your location will be traced and information will be available.
2. Register means registration in terms of Username and Password then check the availability of blood in hospital, blood banks, and blood donors, if present then get the information and list of them and use the information as per the requirement and then exit.
3. If blood needed then first check that account is present or not for that go to point 4 the users location is traced and according to the location nearby hospitals, blood donors , blood banks is listed. Then

choose the information as per the requirement and then exit.

4. Login: If the account is present then proceed to point 3 and exit but if not then register and go to point 2.

3.2 Use Case Diagram

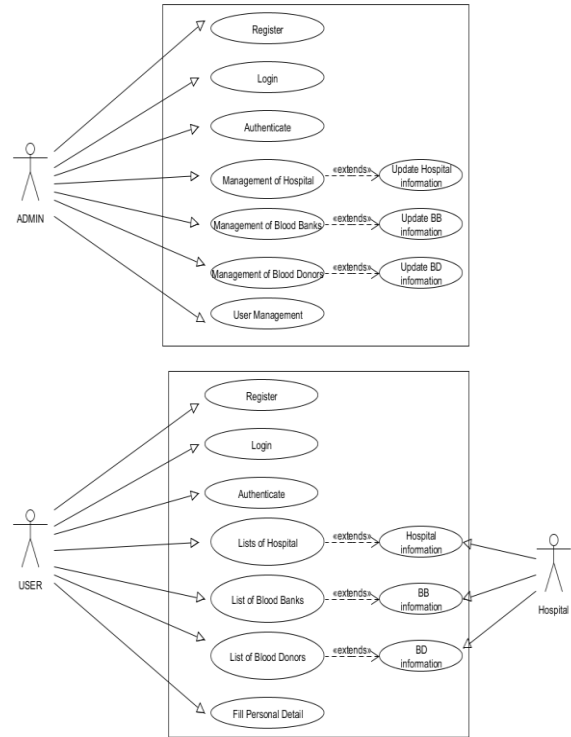


Fig 2: Use Case Diagram.

3.3 State Transition Diagram

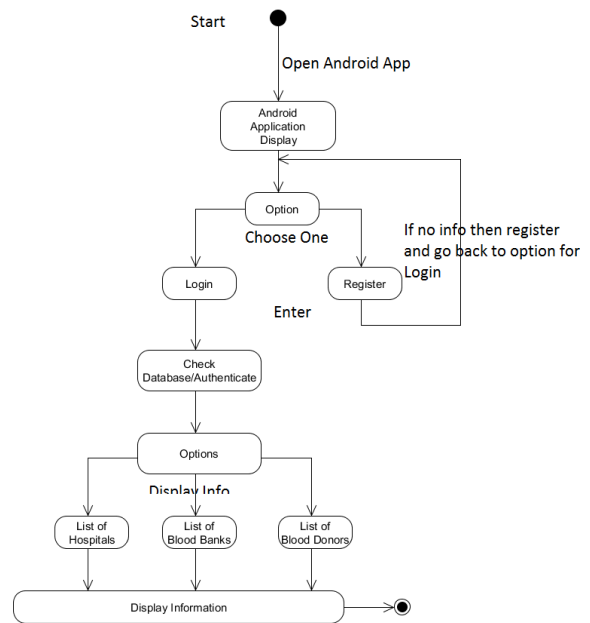


Fig 3: State Transition Diagram

4. SYSTEM FEATURES

4.1 Mobile Application over Web Based Application

The current web based system's in India for Blood Bank are not available according to the user's requirement as they are deployed on web which are handy to use as they can be accessed in the case of emergency or an trauma Situation. The Mobility provided By Android based system which is accessible on mobile through Application are available on the go.

4.2 Location Accuracy

Web based system provides the list of Blood banks with unique Identifier in nearest city, which is not that feasible as compared to direct access of mobile application as that of surfing the internet on personal system. Using GPS location identification of the applicant towards the blood bank application will provide location and path for nearest blood bank system.

4.3 Highly Trained Dataset

Dataset Training i.e., data storage, manipulation, service etc., provides a great supporting model for the Application. The filtered dataset in which is uniformly structured helps end user to access this information and make fruit from it.

The key features and information are date of birth of the donor as well as patient, blood group of the patient/ donor, date of last blood donated, mobile number, address with city and state, email id. It provides the criteria according hospital, blood bank wise advance search for the list and retrieval of data.

4.4 Inventory Management

There are many Web Based Application which stores and provides information of both user's like donor of blood and blood bag applicant. The blood bank Organization are relatively very large in the context of their physical and geographical aspects. So the inventory management of the Blood bank Systems is very necessary the information to be handled is very vast.

Generation of report for the inventories used in the application should be properly done. Inventory includes the patient, donor, hospitals, blood banks, stock and the seeker inventory. Secondly the blood bags inventory should be discarded automatically once it has expired and the expiry policy is 21 days from the

day of inventory included, so proper record should be kept for the expired blood as it will save manual work of the manager who is inserting the record into database.

4.4 System Security

The Blood Bank management systems facilitate the application with advanced security feature like validation and verification for web base application. This security service is provided by the android application were the user is Already registered to the system and its profile related information is stored And maintained for the further validation and verification of the user.

4.5 Alert System

In case of emergency were the availability of blood is not known and the time is the major concern for user as they cannot manually search for required blood from each hospital and blood banks. So the Application provides an alert button which as soon as is clicked the information according to the best search attribute id displayed to the user profile with the nearest hospital and blood bank with its route to the destination

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5. CONCLUSION

As the paper suggest us to implement Android mobiles for faster communication between the agents, using Restful web services.

Appendix

REST: -Representational State Transfer used for networked hypermedia applications. It is used to build Web Services that are scalable, maintainable and light weight. RESTful service means services based on REST.

API: - It is a set of routines, protocols, and tools for building software applications. The API specifies how software components should interact and APIs are used when programming graphical user interface (GUI) components.

IIS Web Server: - IIS stands for Internet Information Services. It is a web server developed by Microsoft .IIS supports HTTP, HTTPS, FTP, FTPS, SMTP. It has been an integral part of the Windows NT family though it may be absent from some editions and it is not active by default.

MySQL: - It is an open source RDBMS. It is used for client server model RDBMS (Relational Data Base Management System).

ARM CORTEX A8:- The mobile has inbuilt ARM CORTEX which is 32bit processor core and has a superscalar design. The Cortex A8 was the first Cortex design used in mostly consumer devices.

Android version:

4.0 Ice cream.

4.1 Jelly Bean.

2. Kit Kat.

3. Lolli Pop.

4.4 Marshmallow.

ACKNOWLEDGMENTS

Report is on the topic "**Online Blood Bank Management System using Android**". All the relevant and important details are included in this report. At beginning we have given quite summary regarding the project we are building and as we proceed details about how project is going to be implemented is mentioned using technologies

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