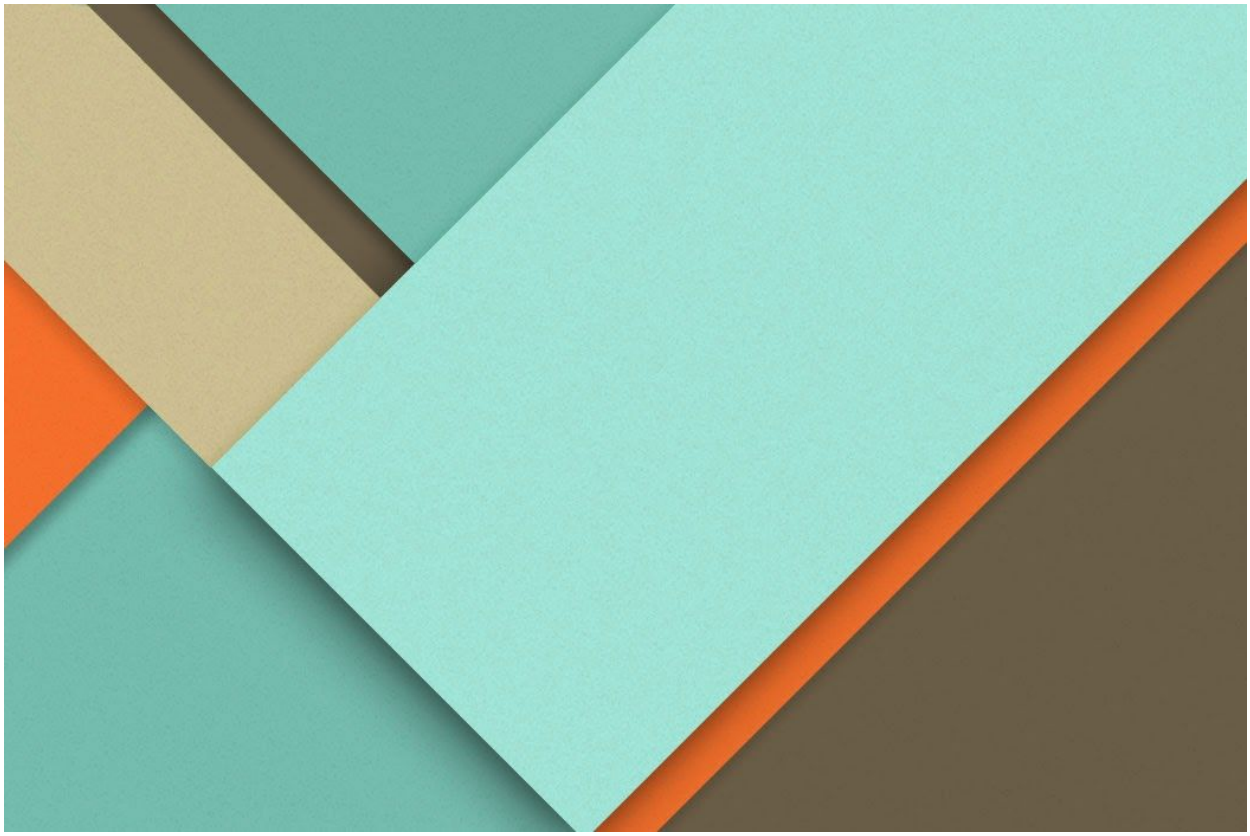

Software Requirement Specification

Drop of Hope

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What is the need?

The main objective of this specification is to support the automated tracking of blood products from the initial ordering of a blood transfusion for a patient, through to the taking of a blood sample for cross matching, to administration of a blood transfusion and subsequent updates to care records. To allow the probable recipients to search and match the volunteer donors or searching for blood donation camps and also hospitals, and make a request for the blood.

The limitation of the manual system includes that it is time consuming, and can lead to error prone results. Lacks of data security and percentage of accuracy is very less.

Blood sales and blood purchase are entered and maintained in this project. It will help us to find the blood group with its most efficient time to take care of the blood and it is easier to hand over the blood to the hospitals to help people to get blood on time. To help more people trying best to do so.

Addressing the need

This Software is designed & suitable for several Blood Banks either operating as an individual, organization or part of a Hospital. This is the unique application in which an acceptor to donor map could be established. It covers all Blood banking processes from Donor recruitment, donor management, mobile sessions, component preparation, screening covering all tests, blood stock inventory maintenance, patient registration, cross matching, patient issues, nearest availability of the donor etc.

Prospective Users

- **Public:** Anybody who is in need of blood can use the application.
- **Doctors:** Helpful during emergency surgeries, due to unavailability of blood in the clinic.
- **Organisation:** The organisation such as NGO(s) which organizes blood donation camp(s) can use the application.
- **Hospitals:** This application can be used by hospitals when they need the specific group of blood, and in some cases rarity of blood groups can be a case of emergency.
- **Developers:** Due to open-source applications, developers can add good functionality and creative measures to make the app more interesting and user friendly.

Challenges to be Overcome

- Routine updation of the inventory of the blood banks.
- Scarcity of rare blood needs.
- Emergency issue of blood need.
- Management of returned and unused blood units.
- Algorithms for finding nearest donors and making a map of all the donors around a specific user.

Working plan of the project

- **Week 1**: Requirement Analysis & Specification and Feasibility Study
- **Week 2**: GUI Programming
- **Week 3**: System Analysis and Design
- **Week 4**: Networking
- **Week 5**: Implementation and Testing
- **Week 6**: Debugging
- **Week 7**: Final Documentation

Functional Requirement

- **Admin Login:**
  1. System shows the GUI of the application.
  2. Admin enters his username and password to get logged in.
  3. System then validates the information.
  4. Successfully logged in.
- **Login Interface for users (consumers):**
  1. System shows the GUI.
  2. Users either register as a new user or logs in directly by providing his/her login id and password.
  3. For new users, registration will be required and all the personal information related to the user must be entered.
  4. After the information verification by the system, the system outputs successfully logged in.

- **Registration details**:
    1. Name
    2. Phone number
    3. Profile photo
    4. Email-id
    5. Address
    6. Donor / Recipient
- **Organisation Login details:**
    1. Name of the NGO or the organization
    2. Number of workers
    3. Location of the camp
- **Blood Stock Management**:
    1. This screen first shows the option of the group for blood to be seen.
    2. When selecting a specific group, the screen shows the details of all the people having the same blood group in a sorted list form with respect to the location from the recipient or the hospital.
- **Report**:
    1. The system will have the option for reporting any wrong incident.
    2. The user reporting will have to write their login id for verification of the user.
    3. The report screen shows a textbox for describing the incidence.

4. A submit button on which when clicked, the reporting will be confirmed and a message will then show up saying “Reported”.

- **Google maps API:** For incorporating the need of a map in the application.It will be used to check the proximity of the donors, hospitals or the donation camps from the recipients of blood.

Non Functional Requirement

- **Performance Requirements**

  The software should be lightweight and should not consume excessive processing power. It should have a high response speed with a minimal lag present, i.e. efficiency should be supported with resource utilization.

- **Security Requirements**

  Software should contain the latest dependencies of the requirements so that the major vulnerabilities should be patched and no exploitation should take place. In other words, it shouldn’t be prone to hacking attempts.

- **Portability Requirements**

  The software should be usable in different environments and the pre-requirements for different environments are minimal and almost the same (different android versions).

- **Usability Requirements**

  The software should have a user-friendly interface and the tools should be easy to comprehend and use. Most of the complex work should be done in the back-end away from the screen, which would lead to easy handling and thus customer satisfaction.

Software Environment and Hardware Environments

- **Hardware Requirement**
  - A mobile with a minimum android version of 7.0.

- **Software Requirement**
  - Requires Android Studio for developing GUI.
  - This software does not only depend upon Java but requires internet connection for receiving and sending data to an online database with the help of Firebase Realtime Database.
  - The Google API for Google Maps is also needed in this system.

- **Communication Requirement**
  - Internet connection is necessary for storing data in an online database so that other users can also share data and also routine updation of data.

- **Memory Constraint**
  - This Software is quite memory efficient as it stores all the data in an online database. All the temporary files which are created by the software while running are erased upon exit.

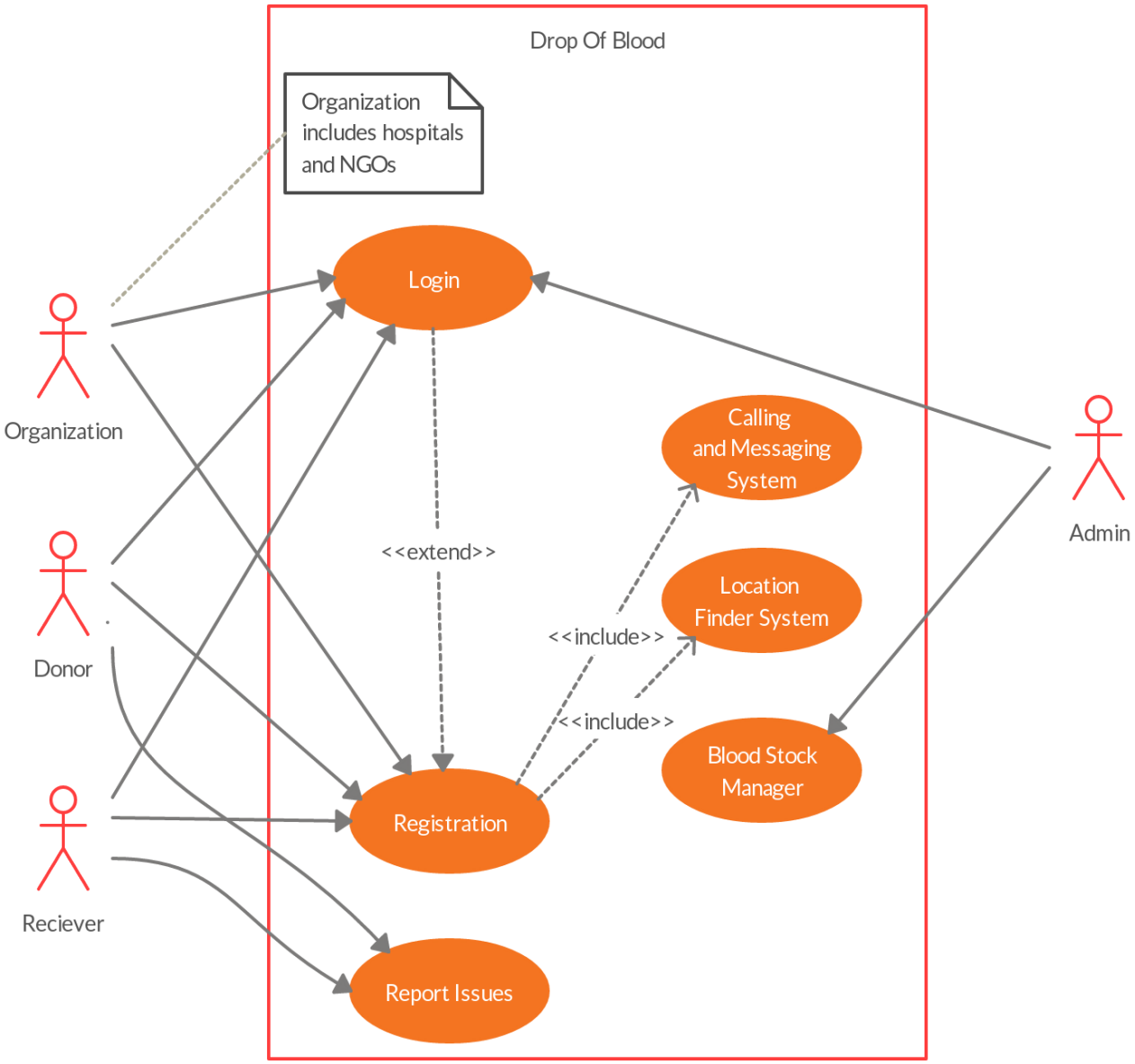
Marketing

The app can be marketed as an essential time saver for both users - donors and recipients. Put up attractive posters to spread knowledge about the app. Make use of Fests and other events to let students and people of college be aware of the application. Set up advertisements on social media platforms and have posts boosted, liked and shared to let others know about the innovative application. As the application is linked to hospital(s) it could be used to publicize hospitals, doctors, etc. And thereby earning a good amount of money by advertising.

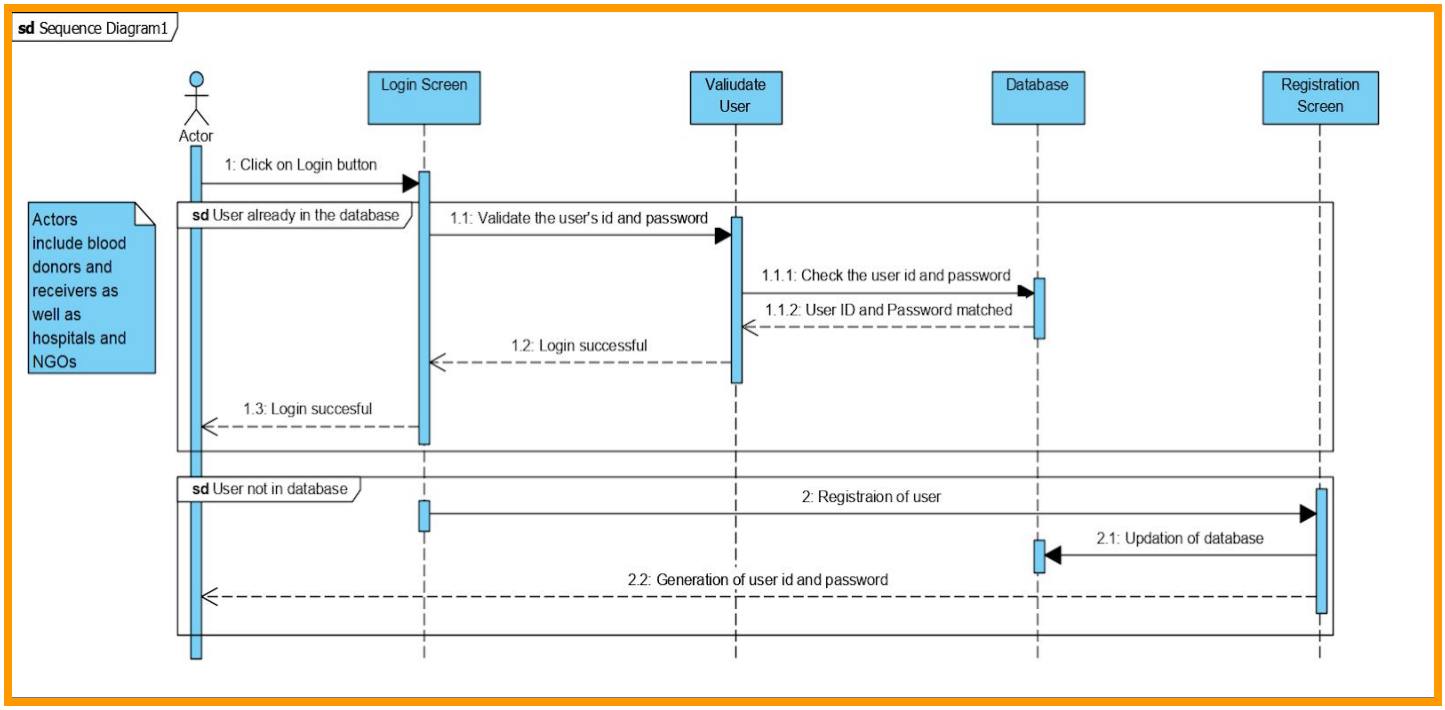
Cost Assessment

The app will be provided free of cost to the user, as we wish to help the “people in need” out of good will.

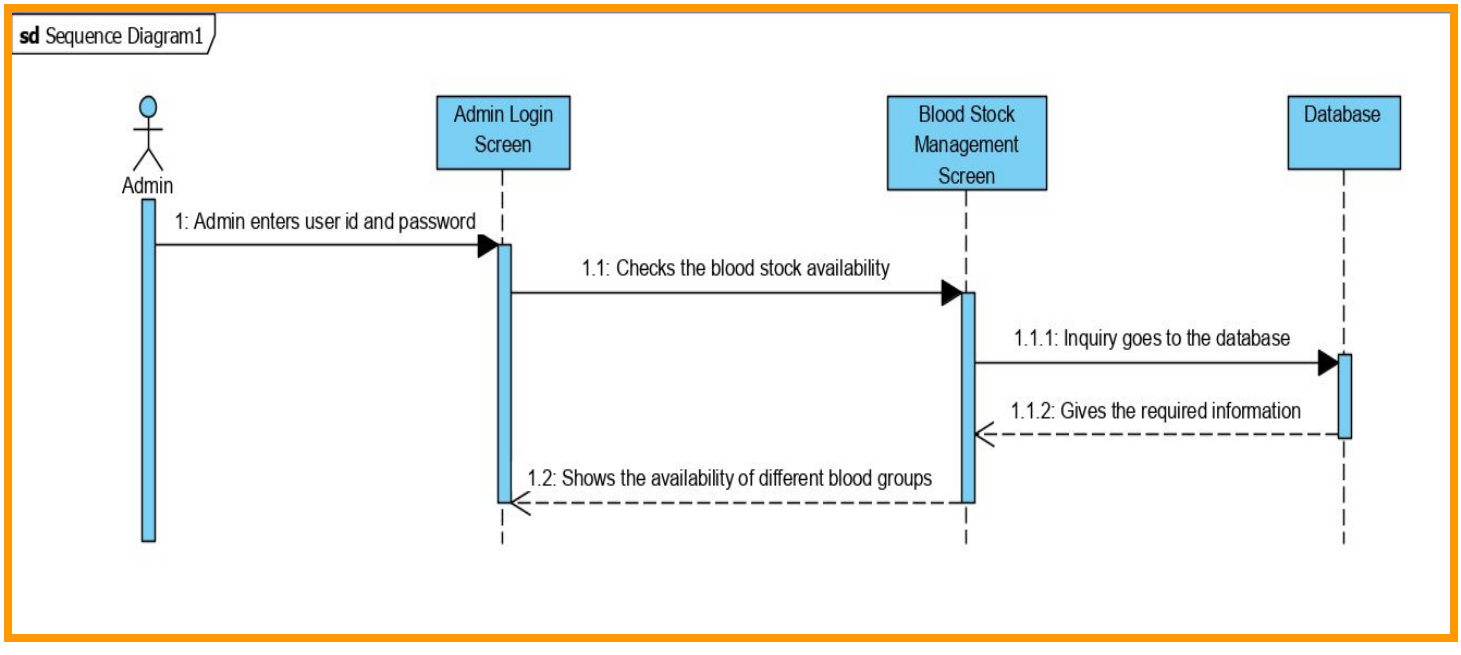
Software Design Description (SDD)



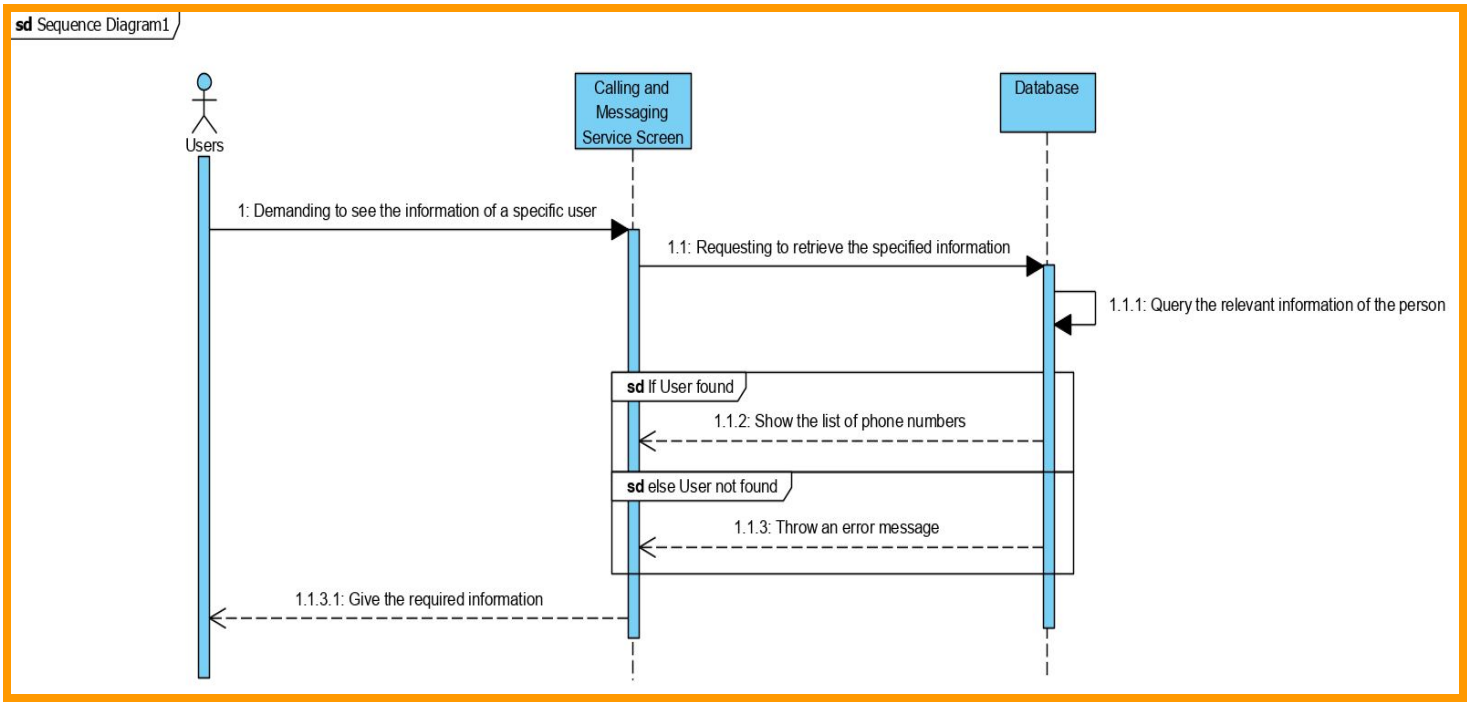
Sequence Diagram for login screen:



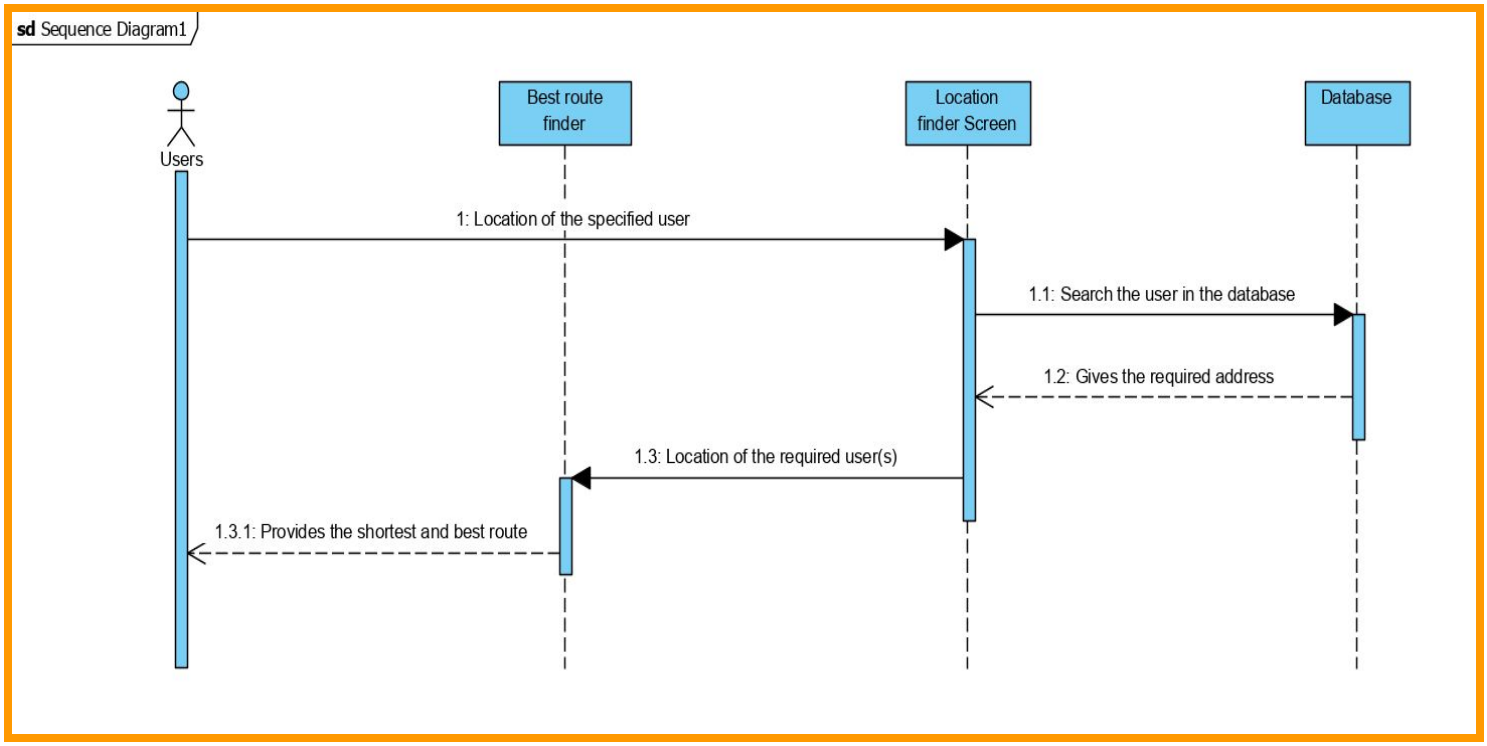
Sequence diagram for admin and blood stock management:



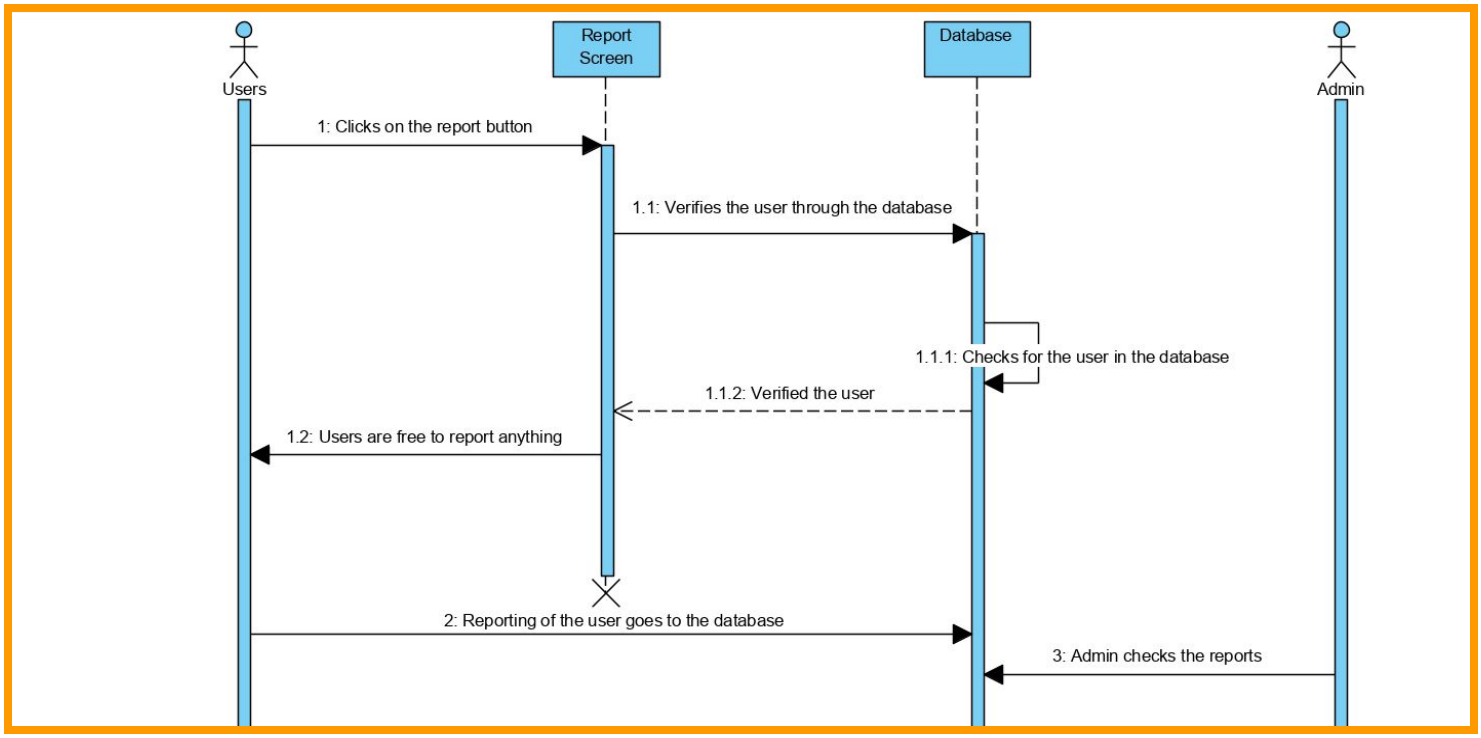
Sequence diagram for users and user's contact & messaging information:



Sequence diagram for location finder:



Sequence diagram for reporting:


Users
Report Screen
Database
Admin
1: Clicks on the report button
1.1: Verifies the user through the database
1.1.1: Checks for the user in the database
1.1.2: Verified the user
1.2: Users are free to report anything
2: Reporting of the user goes to the database
3: Admin checks the reports

Class Diagram: