ONLINE BLOOD BANK
SRS REPORT

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1. Introduction

1.1 Problem Statement

The process first starts with an offline Blood Donation Camp. On the day following a blood donation, the Blood Bank Testing Unit tests all blood for blood type and potential viral agents. They send the results of these tests to the Blood Inventory (another unit of the Centre). For each tested blood unit, if the tests indicate that the blood may be contaminated with a viral agent, the blood unit is destroyed. This is indicated on the test form. Blood units have a limited shelf life. The Blood Bank receives a list every day of those units which have exceeded their shelf life. These are discarded and the list of blood units is updated.

The Blood Bank also distributes blood to various hospitals requesting blood. Requests usually come in for specific blood types. The Blood Bank prepares refrigerated containers of these units and distributes them to the hospital when they place the order. The Blood Bank receives a listing for each hospital and the specific units of blood to supply to the hospital from the Blood Inventory. When the order is filled, the Blood Bank Manager signs the order and returns a copy to the Blood Inventory. A copy of it travels with the blood to the requesting hospital. The final copy is kept in the Blood Bank records but discarded after one year.

1.2 Purpose

The Blood Bank Management system is a great project. This project is designed for successful completion of a project on blood bank management system.

The basic building aim is to provide blood donation service to the city recently. Blood Bank Management system is a web-based application that is designed to store, process, retrieve and analyse information concerned with the administrative and inventory management within a Blood Bank.

This project aims at maintaining all the information pertaining to blood donors, different blood groups available in every Blood Bank and help them manage in a better way.

Project aim is to provide transparency in this field, make the process of obtaining blood from a Blood Bank hassle-free and corruption-free and make the system of Blood Bank Management effective.

1.3 Scope

The specification builds on the experience of IT technology in blood transfusion that is currently available and informs both Connecting for Health (CfH) and commercial companies producing both hardware and software.

The main objective of this specification is to support the automated tracking of blood products from the initial collection of the blood unit to the final ordering and purchase of the units by hospitals.

1.4 Definitions, Acronyms and Abbreviations

 1. empId empId stands for Employee Id, i.e the number given to the employee during his job commencement with the Blood Bank.
 2. dob
Dob stands for date of birth.

 3. hosId
It is the hospital Id given to the hospital by the Blood Bank.

 4. hosType
This specifies whether the hospital is a government hospital or private.

 5. hosName
 Name of the hospital.

- 6. hosAddress Address of the hospital.
- 7. bId
- The Blood Id given to the unit by the Blood Bank.
- 8.reqId
- The order request ID given by the Blood Bank when a hospital places an order.

1.5 References

- 1. References provided by Prof. Bibhudatta Sahoo.
- 2. IEEE Software Engineering Standard Committee, “IEEE Std 830-1998, IEEE Recommended Practice for Software Requirement Specifications”.
- 3. https://creately.com/Class Diagram and Use Case Diagram made on .

2. Overall Description

This section will give an overview of the entire system. System will be explained in its context to show how the system will work and introduce the basic functionality of it. It will describe all the stakeholders who will access to the system and what functionality is available for each type. The constraints and assumptions for the system will be explained.

2.1 Product Perspective

This system includes both offline and online components. The collection of blood will be manual through Blood Donation Camp. The donor can either register on the Blood Bank website on his own or can visit the Blood Donation Camp and the responsible authority at the camp can do the registration for the donor. An online database is maintained with all the information about the donors.

Once the blood is collected it stored in a safe place. An online Blood Inventory Database is maintained as well for the Blood Units collected. From here a small sample of the blood units are sent to the Testing Unit. Here the blood samples are tested to determine whether they are fit to be used or not. A report is made by the lab technician and is sent back to the Blood Bank. Based on the reports received the Blood Bank Inventory is updated-some blood samples might need to be discarded as they are not fit for use.

Hospitals place orders from this Blood Bank. A record of the order and payment is maintained by both parties. Once the order is placed the Blood Bank Manager send the receipt. Once the hospital makes the payment the order is delivered by the Blood Bank staff.

A complete database of all the staff working in the Blood Donation Camp as well as the Blood Bank is maintained.

2.2 Product Function

According to this product, a Donors can create an account back at home or register themselves at the spot of blood camp before donating blood. The Hospital Manger has to register the Hospital which act as an acceptor here. The details of the blood inventory i.e., the availability of a particular type of blood is regularly updated and maintained by the Inventory Manager. It is a confidential data so the access is only with the administrators. The registered hospital can place an online order. The order is processed by the Inventory Manager who can check the database of the blood units. If the required blood type and the amount is available, it notifies the corresponding hospitals. When the Hospital Manager confirms the Order, the details are being sent to it.

2.3 User Characteristics

There are mainly seven users interacting with each other in this system: Donor, Receptionist, Hospital Manager, Blood Camp Doctor, Inventory Manager, Delivery Boy.

The Donors register through the website or at the spot of blood donation. The Receptionist assists them and maintain the details of the Donors. The Receptionist updates the donor database.

The Blood Camp Doctor who collects the blood units from the donors with proper procedure. After the collection and packaging of the blood, the Doctor sends the samples to the Lab Technician for Blood testing and the rest of the blood units to the blood inventory. The Lab Technician carries out test on each blood sample. He sends the blood report to the Inventory Manager.

The Inventory Manager carefully studies the report. According to which he/she discards the unfit blood and store the healthy blood in the respective places. Then he/she updates the required changes in the blood inventory database. He/she keeps a track of the date of the blood was newly stored in the inventory and its expiry date.

The Hospital Manager places an order for the blood units as per the Hospital's requirement. The Inventory Manger go throughs the order. After confirmation, he requests the hospital manager to do the payment. When the order is confirmed and the payment is done, the Delivery Boy delivers the blood units very carefully at the Hospital. The Hospital Manager checks and maintains the details.

2.4 Constraints

The Donor and the acceptor are constrained to create an account first to avail the services.

The internet connection is also a constraint for this web application.

The web application is also constrained by the database capacity so it works well with a smaller number of donors and hospitals.

The access to manage the databases are different for different people. The receptionist is given the access to maintain the database of the registered donors and hospitals. The inventory manages is allowed access to update the inventory details and payment of the order placed by the hospitals.

2.5 Assumptions and Dependencies

It is assumed that the users have enough resources to run the web application i.e a mobile phone or a computer that supports the required functions.

It is assumed that the online payments carried out are looked by the respective bank administrators.

The web application depends on the application such as Oracle and MySql for creating and managing the database.

The front end is designed with the help of HTML, PHP and Bootsrap.

3. Requirements

3.1 Functional Requirements

1. Access Website:

User should be able to access web-application through either an application browser or similar service on the mobile phone or computer. There should not be any limitation to access web-application.

2. User Registration:

Given that user has accessed web-application, then the user should be able to register through the web-application. The donor user must provide first name, gender, blood group, location, contact , username and password.

3. New Releases:

When a new/update version of the web-application is released, the appearance will be automatically appears when the user access the web-application.

4. User log-in:

Given that the user has registered, then the user should be able to login to the web-application. The login information will be stored on the database for future use.

5. Search result in a list view:

Search result can be viewed in a list. Each element in the list represents a specific donor. Each element should include first name, gender, blood group, location, contact according to the user position. There should be maximum of ten result display.

6. Request Blood:

User(Hospital) should be able to request for blood at emergency situation, user need to define blood group, location, required date, contact. The order requested will be sent to blood bank and then to the Inventory to check the availability. If available, the requested blood will be sent to the requested donor(Hospital).

7. View Request:

The Blood Bank should be able to view received request and then respond to them and can search requests by selecting two options select blood group and provision.

8. Search Blood Bank Stock:

Receiving the order from Hospital , the blood stock in the Blood Bank Inventory will be searched to match the requested order. Thus matched blood units will be sent to the Hospital.

9. View Order Details:

The Hospital, Blood Bank should be able to view the OrderId, time of the order placed, name of the hospital, location and the address of the hospital. In addition to this an additional feature of tracking the delivery person which includes his location and the checkpoints passed.

10. View Delivery Status:

The Hospital, Blood Bank should be able to view the status of the delivery time. If the delivery seems to be delayed then the hospital manager must to able to call the delivery person to get the update on the delivery.

3.2 Non-functional Requirements

1. Availability :

The system including the offline and online components should be available 24/7.

2. Reliability:

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage (typically tape) and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

3. Security:

Security systems need database storage just like many other applications. However, the special requirements of the security market mean that vendors must choose their database partner carefully.

4. Correctness:

The Blood Unit sent by the Blood Bank should be matched with the requested Blood Unit by the Hospital, which should reach the correct destination(Requested Hospital).

5. Maintainability:

The Blood Inventory Manager should maintain correct records of the Blood Inventory Stock.

6. Usability:

The cost of the Blood Units are standardized.

7. Extensibility:

Requirements for website extensibility in case there is a need to add new functional requirements.

3.3 Logical Database Design

1. Donor Database

The receptionist at the Blood Donation Camp will maintain the donor database which will contain all the information of the donors.

2. Staff Database

This database will contain all the information of the staff involved in every unit of the database. The doctors, nurses, lab technicians, people maintaining the online website etc. are staff whose information is to be maintained.

3. Blood Inventory Database This database has all the inventory of the blood units collected. In certain cases when a blood unit is to be deleted or added the updation is done in this database.

4. Order Database

The Blood Bank Manager has access to this database where he can view all the orders which are placed. This database contains all previous and current orders which are placed by the hospitals.

3.4 Design Constraints

 1. Hard Drive Space

PLAN: Not more than 15MB MUST: Not more than 20MB WISH: Not more than 10MB

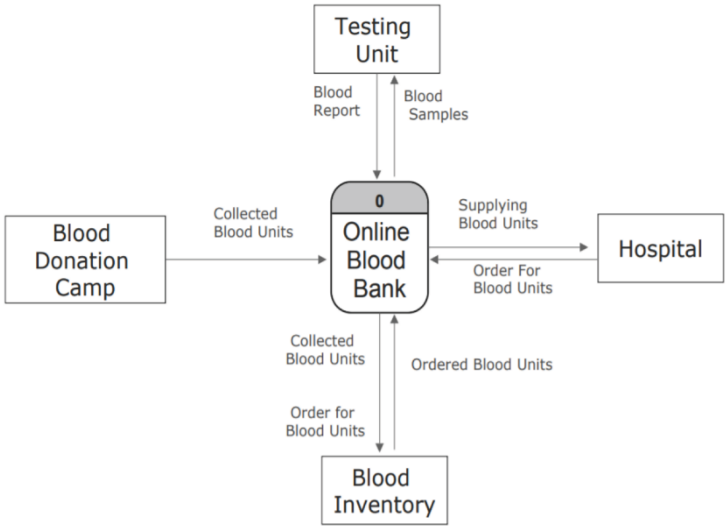
 2. Application Memory Usage The amount of Operating System memory occupied by the application when it is accessed.

PLAN: Not more then 16MB MUST: Not more than 20MB WISH: Not more than 10MB

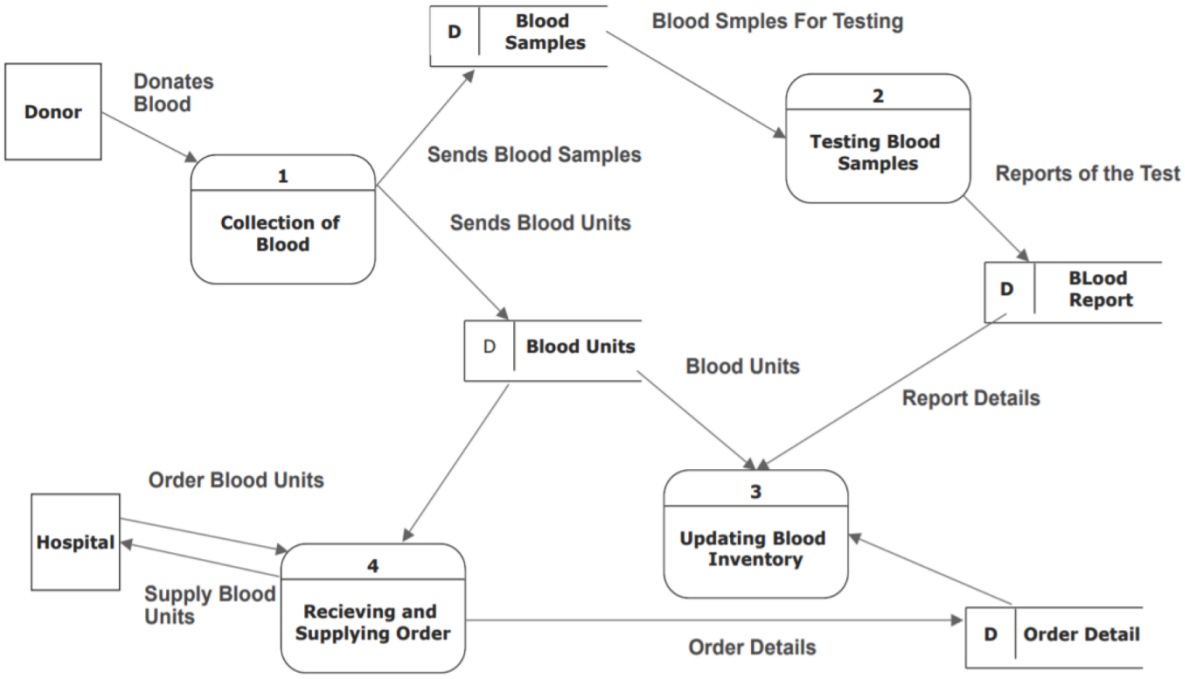
3.5 Object Oriented Models

3.5.1. Data Flow Diagram

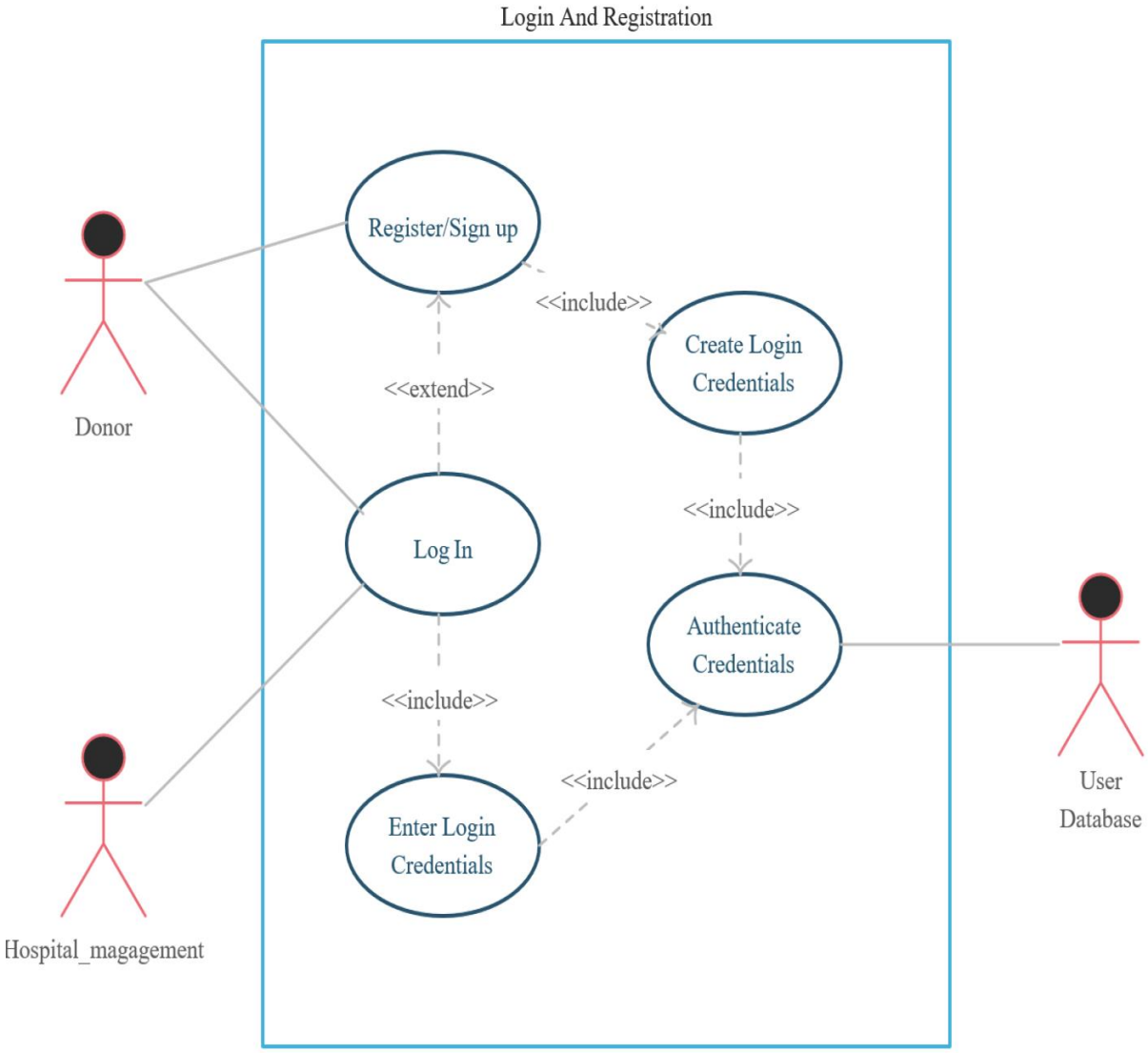
Level 0:



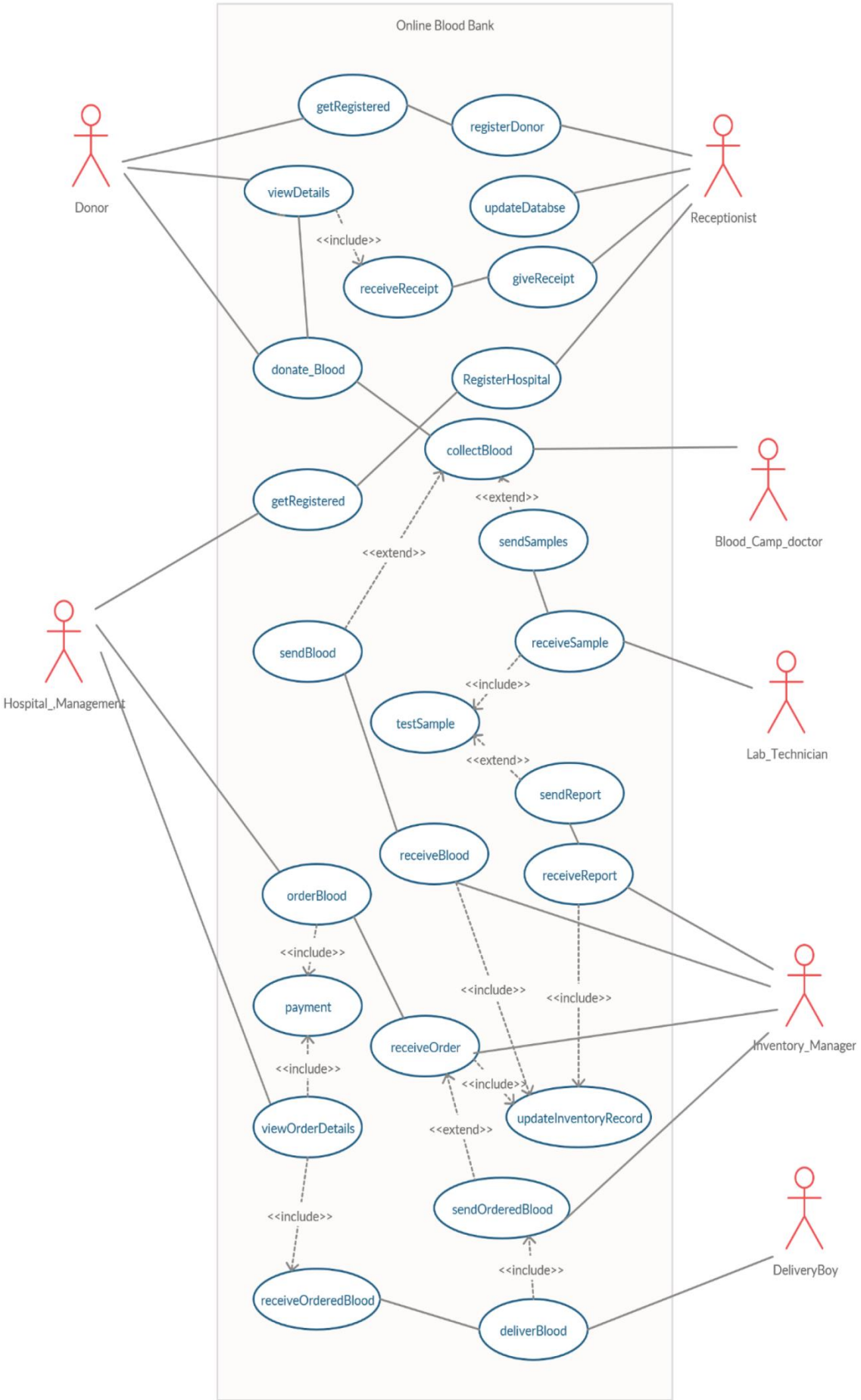
Level 1:



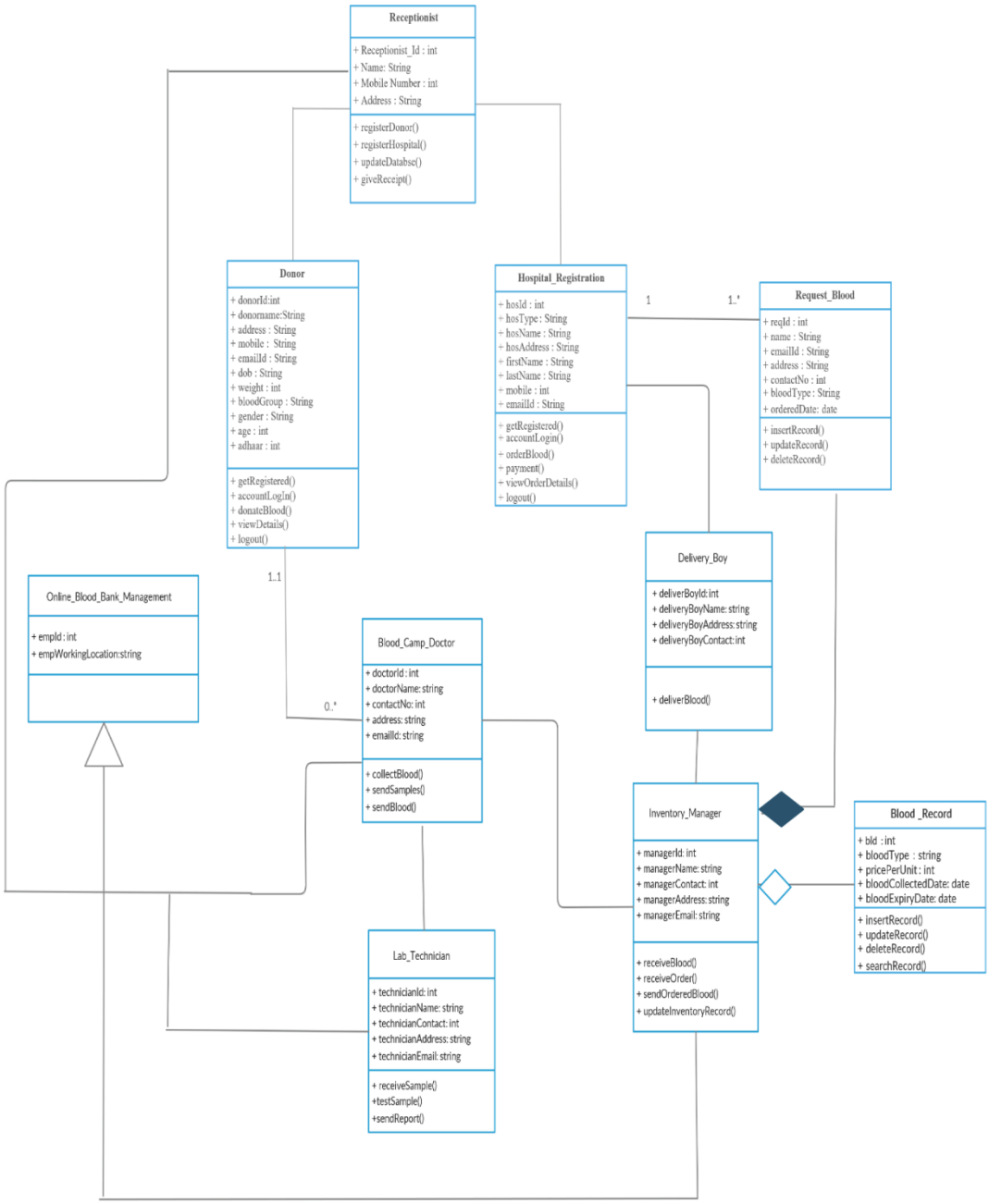
3.5.2. Use Case Diagram-1



Use Case Diagram-2



3.5.3. Class Diagram



4. Conclusion

Our project is only a humble venture to satisfy the needs of a realistic Blood Bank. The objective of software planning is to provide a framework that enables the working of Blood Bank.

We are grateful that we got the opportunity to understand how software are designed in the real world. We got to design a small software through which we learnt a lot.

This project shed light on how this subject is useful in practical terms. The purpose of this theory subject was justified.