

Chapter 4

System Description

4.1 Modules of Blood Bank Management System

Online Blood Bank management system is to provide services for the people who are in need of blood by getting help from the donors who are interested in donating blood for the people. There are seven main modules in this system.

1. Admin
2. Donors
3. Donor Registration
4. Modifying Donor Information
5. Receivers
6. Donor Search
7. Life Saving Contacts

4.1.1 Admin

Admin can manage donors, bank & receivers. He can add or remove any user and bank from the system. After filling the details by the bank, details will be verified by the admin and then and then only the user id and password will be provided to the respected bank.

- Change Password
- Modify donor/bank details
- delete donor/bank details
- Logout

Whenever a user wants to change his / her password he can select the change password option. The system displays the form, which asks him for his old password and new password. The system then compares the old password with the existing password in the database and if they match then the password is set to the new password in the database.

4.1.2 Donors

From this module user can create their account, when user create his account the user create a user id and password, which identifies him uniquely. From this module user can search donor for blood and can also refer his friend to become a donor. Donor can also get information like when he donated blood or when he will be able to donate blood.

4.1.3 Donor Registration

In this module, people who are interested in donating blood get registered in my site and give his overall details related to him, i.e. he fills in a registration form by giving the total details such as name, address, city, gender, dob, blood group, telephone numbers, e-mail address, etc. He was also given two fields' username and password to fill such that he was a registered donor and he can enter the login form with his username and password and can modify his details if needed.

4.1.4 Modifying Donor Information:

The registered donor only is able to modify his details; no other person can modify his details as there was a login form which restricts others from entering the username and password providing high security for the details given by the donor. If at all the donor wants to modify his details, he was forced to give his username and password to enter in. After giving the username and password it checks for the donor whether he is an existing donor or not and if the username and password matches, he can then able to modify his total details. If the username and password do not exist then he gets a message as 'Wrong ID and Password Entered, Try Again'.

Following links are available on donor module.

- Home
- Update Profile
- View Donation
- People in need
- Change Password
- Logout
- Search

4.1.5 Receivers

This module helps user to find blood group. When user click on find a blood group or search option system ask him to enter blood group, state, city, taluka in which who want search. After entering the blood group, system search for the availability of the blood group and give him the list of the donors who has the same blood group.

4.1.6 Donor Search:

The people who are in need of blood can search in our site for getting the details of donors having the same blood group and within the same city. They can directly click on the link search a donor and can select a city name as well as the blood group which he needs. He then gets the details of the donors who exist within the city and the same blood group that he has selected. If no match was are found for the city and group selected by him he gets a message 'SORRY DONORS ARE NOT AVAILABE WITH THE FOLLOWING BLOOD GROUP AND AREA'.

4.1.7 Life Saving Contacts:

If at all the people in search of a donor doesn't get any match for their area and group then they will be provided a service i.e. he will be given a Contact Person details for their nearby cities who have the details of many other donors with him. The people in search can call him and can get the details of the donors and can be provided services in this manner. But this life saving contact persons can be available only for a limited number of cities but not for all. These contact persons are the authorized persons of my blood bank.

4.2 Pseudo code for Blood Bank Management System

4.2.1 Client (Search module)

```

</script>
<Script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.0/jquery.min.js"></script>
<!--This link is important for dependent drop drop-->
<form method="post" enctype="multipart/form-data" id="registrationForm"
action="find.php">
<table class=" table table-bordered table-responsive" style="color:#000">
<tr><td>Blood Group</td><td><select name="blood_group" class="form-control"
id="fetchval">
<option>-----Select Bloodgroup-----</option>
<?php
$q="select * from bloodgroup";
$r=mysqli_query($con,$q);
while($row=mysqli_fetch_array($r))
{
?>
<option value="<?php echo $row['bloodgroupname'] ?>"><?php echo
$row['bloodgroupname'] ?></option>
<?php
}
?></select>
</td></tr>
<tr>
<td>State</td>
<td>
<select class=" c form-control validate[required] " name="state" id="state">
<option value="" selected="selected">--Select state--</option>
<?php
require 'config.php';
$sql="select DISTINCT state from statecity";
$result=mysqli_query($con,$sql) or die(mysqli_error());
while($row=mysqli_fetch_array($result))
{ ?>
<option value="<?php echo $row['state'];?>"><?php echo $row['state'];?></option>
<?php }
?>

```

```

</select>
</td>
</tr>
<tr>
<td>District</td>
<td>
<select class="form-control validate[required]" id="district" name="district">
<option value="" selected="selected">--Select District--</option>

</select>
</td>
</tr>
<tr>
<td>Taluka</td>
<td>
<select class="form-control validate[required]" name="city" size="1"
id="city">
<option value="" selected="selected" >--Taluka--</option>

</select>
</td>
</tr>

<tr><td colspan="2" align="center"><input type="submit" name="save" value="Search"
class="btn btn-success"> &nbsp;&nbsp;&nbsp;<input type="reset" name="reset"
value="Clear" class="btn btn-danger"></td></tr>
</table>
</form>
</div>
</div>

<?php /*?> <?php

if(isset($_POST['save']))
{

$query="select * from donor_registration where
blood_group='".$_POST['blood_group']."'and state='".$_POST['state']."'and
district='".$_POST['district']."'and city='".$_POST['city']."'";
$res=mysqli_query($con,$query) or die(mysqli_error($con));
if(mysqli_num_rows($res)>0)
{
?>
<table class="table table-bordered">
<tr>

```

```

<th>Name</th>
<th>Gender</th>
<th>Age</th>
<th>Mobile No.</th>
<th>Blood Group</th>
<th>Email</th>
<th>Image</th>
</tr>
<?php
while($row=mysqli_fetch_array($res))
{
?>
<tr>
<td><?php echo $row['donor_name'] ?></td>
<td><?php echo $row['gender'] ?></td>
<td><?php echo $row['age'] ?></td>
<td><?php echo $row['mobile_no'] ?></td>
<td><?php echo $row['blood_group'] ?></td>
<td><?php echo $row['email'] ?></td>
<td></td>
</tr>
<?php
}
}
else
{
echo "<script>";
echo "alert('Result Not Found');";
echo "</script>";
}

}
?>
</table><?php */?>

</div>
<div class="col-md-3 w3ls-about-top-left-grid"></div>
<div class="clearfix"> </div>
</div>
</div>

```

Chapter 5

Modeling and Designing

5.1 System Flow Diagram

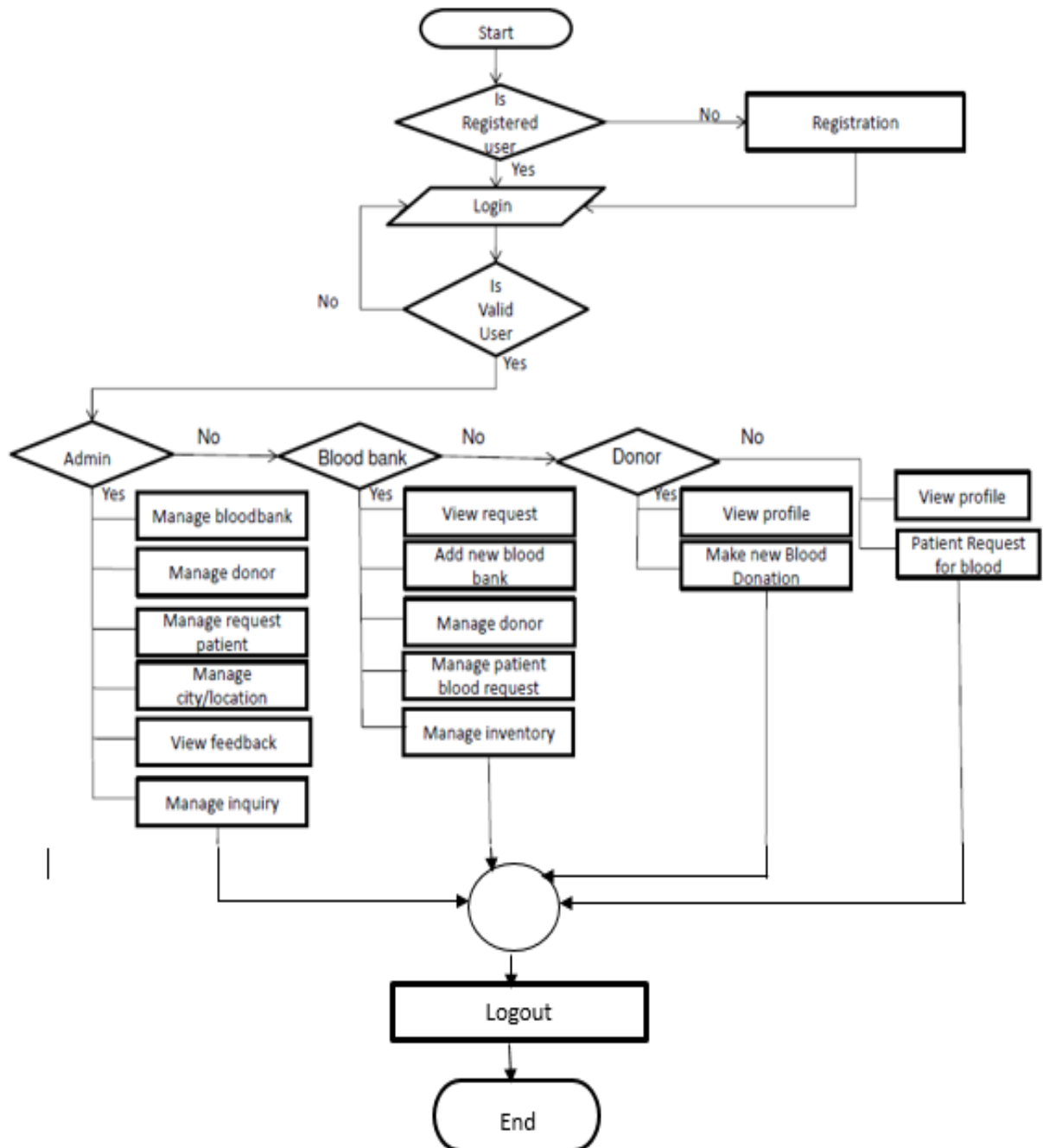


Fig.5.1.1: System Flow

5.2 ER Diagram

An entity relationship model, also called an ER diagram, is a graphical representation of entities and their relationships to each other, typically used in computing in regard to the organization of data within database or information system.

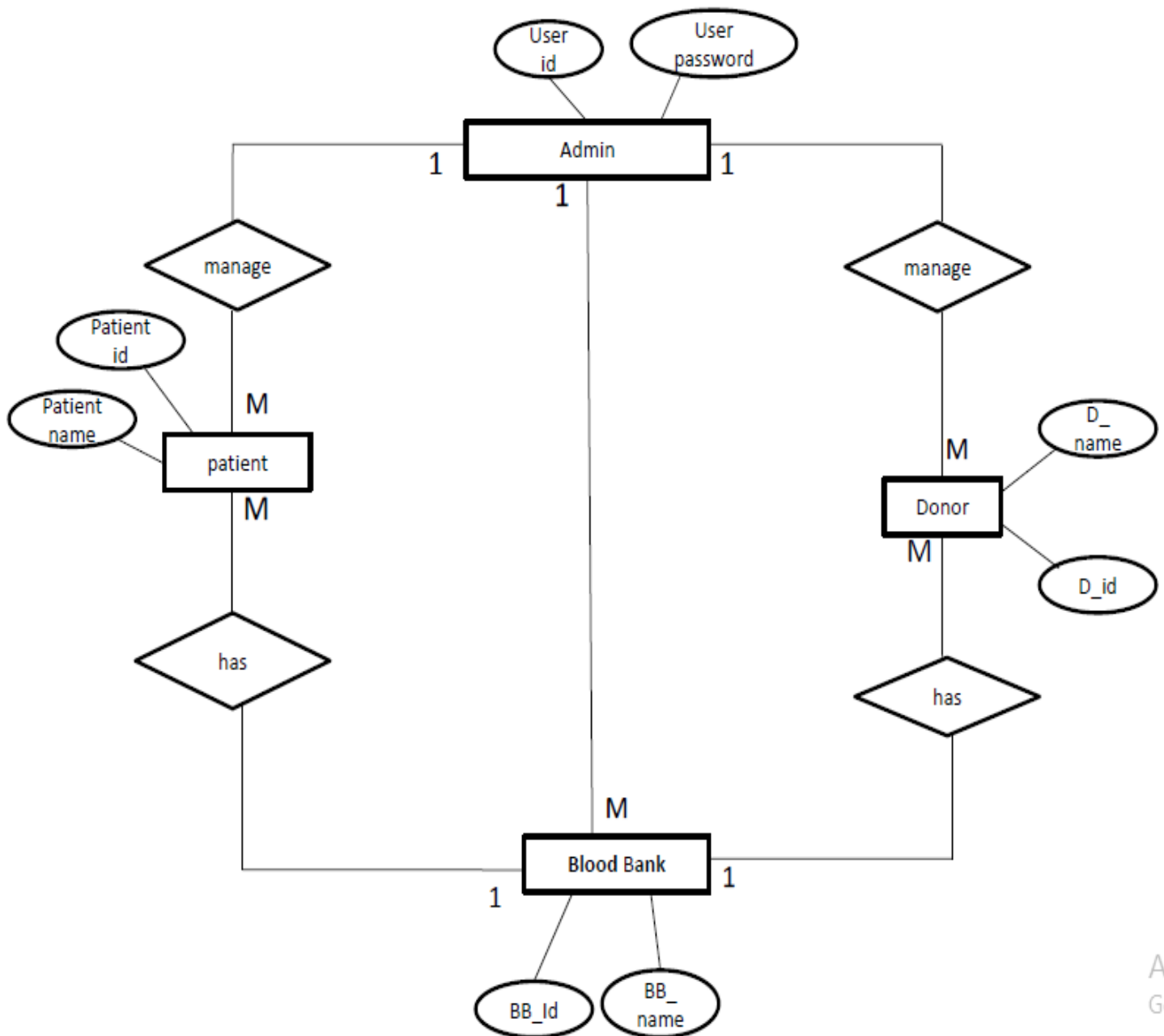


Fig.5.2.1: ER Diagram

5.3 Data Flow Diagram

A data flow diagram (DFD) is a graphical representation of “flow” of data through an information system, modeling its process aspects. A DFD is often used as a preliminary step to create an overview of system, which can later be elaborated. DFD can also be used for the visualization of data processing.

5.3.1 DFD level-I

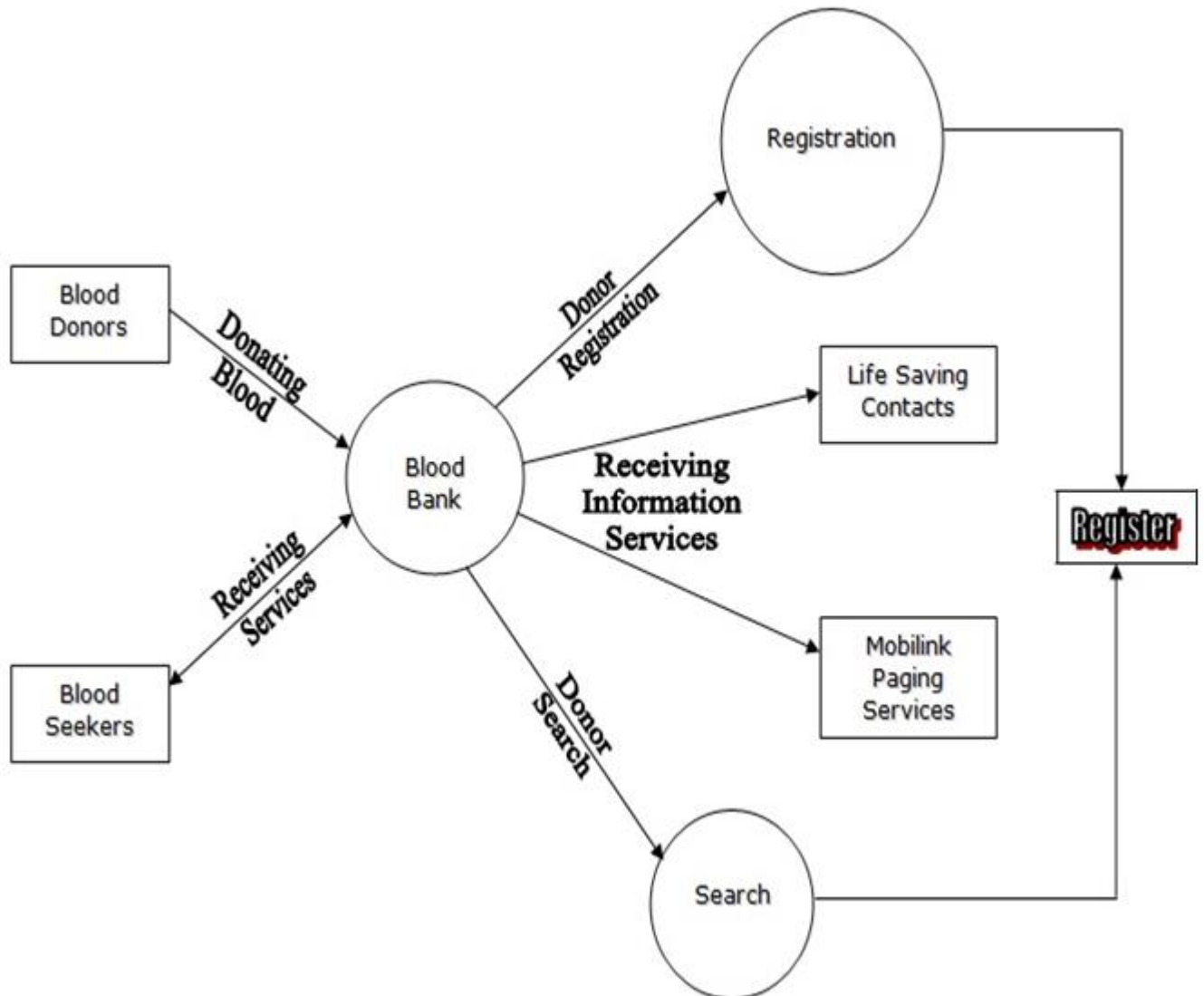


Fig.5.3.1.1: DFD Level-I

5.3.2 DFD level-II

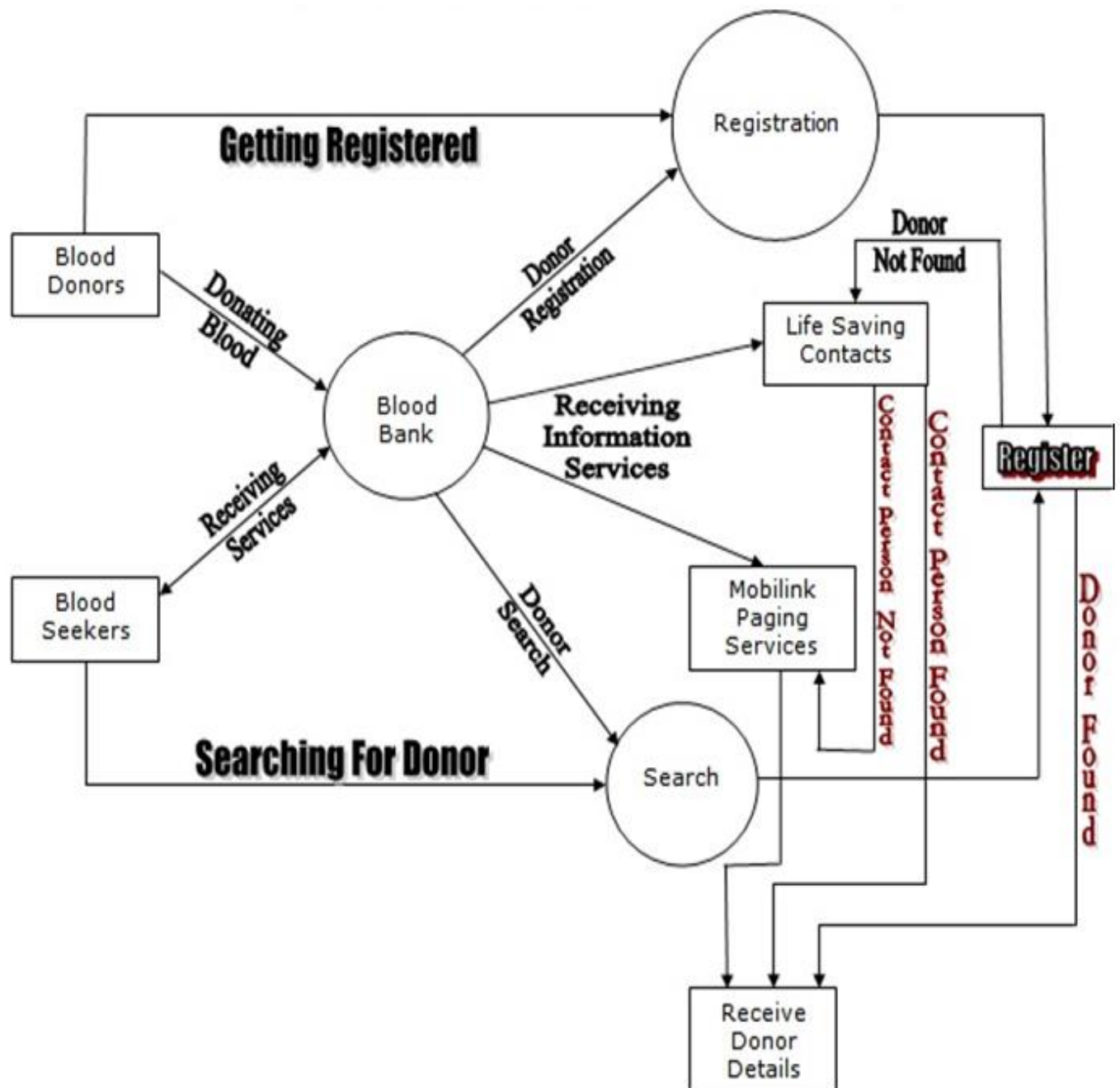


Fig.5.3.2.1: DFD Level-II

5.4 UML Diagrams

UML stands for Unified Modeling Language. The approach used by UML is called as object oriented approach for the development of models.

UML is used in converting reality with the help of simplest models. The major contributors to UML are of James Rumbaugh Ivar Jacobson and Grady Booch and the Rational Software Corporation.

Because of great contribution of the people and organization above, UML is accepted as a standard modeling language by OMG.

The UML modeling consist of following diagrams to model a software system and those diagrams are:

1. Object Diagram
2. Class Diagram
3. Use-Case Diagram
4. Sequence Diagram
5. Activity Diagram
6. Collaboration Diagram
7. Deployment Diagram

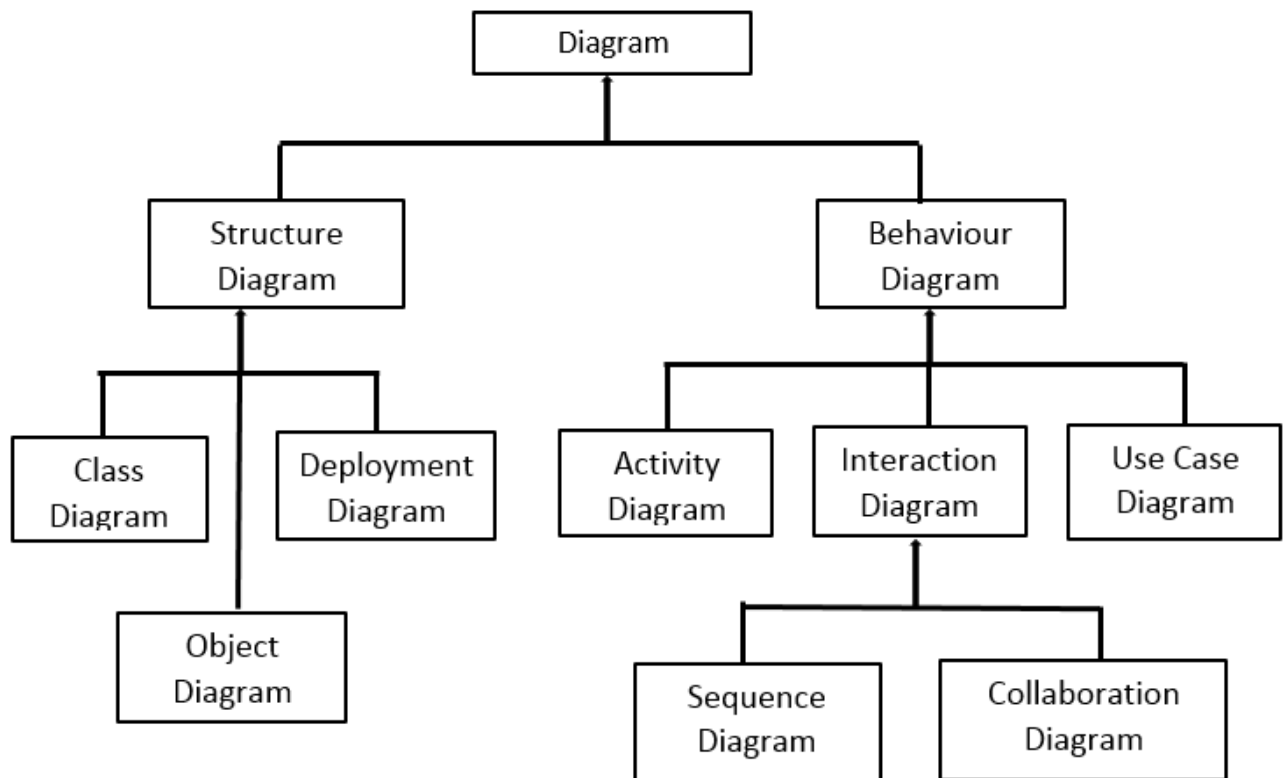


Fig.5.4.1: Classification of UML

5.4.1 Class Diagram

In software engineering, a class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among objects. The class diagram is a static diagram. It represents the static view of an application. The class diagrams are widely used in the modelling of object oriented systems because they are the only UML diagrams which can be mapped directly with object oriented languages.

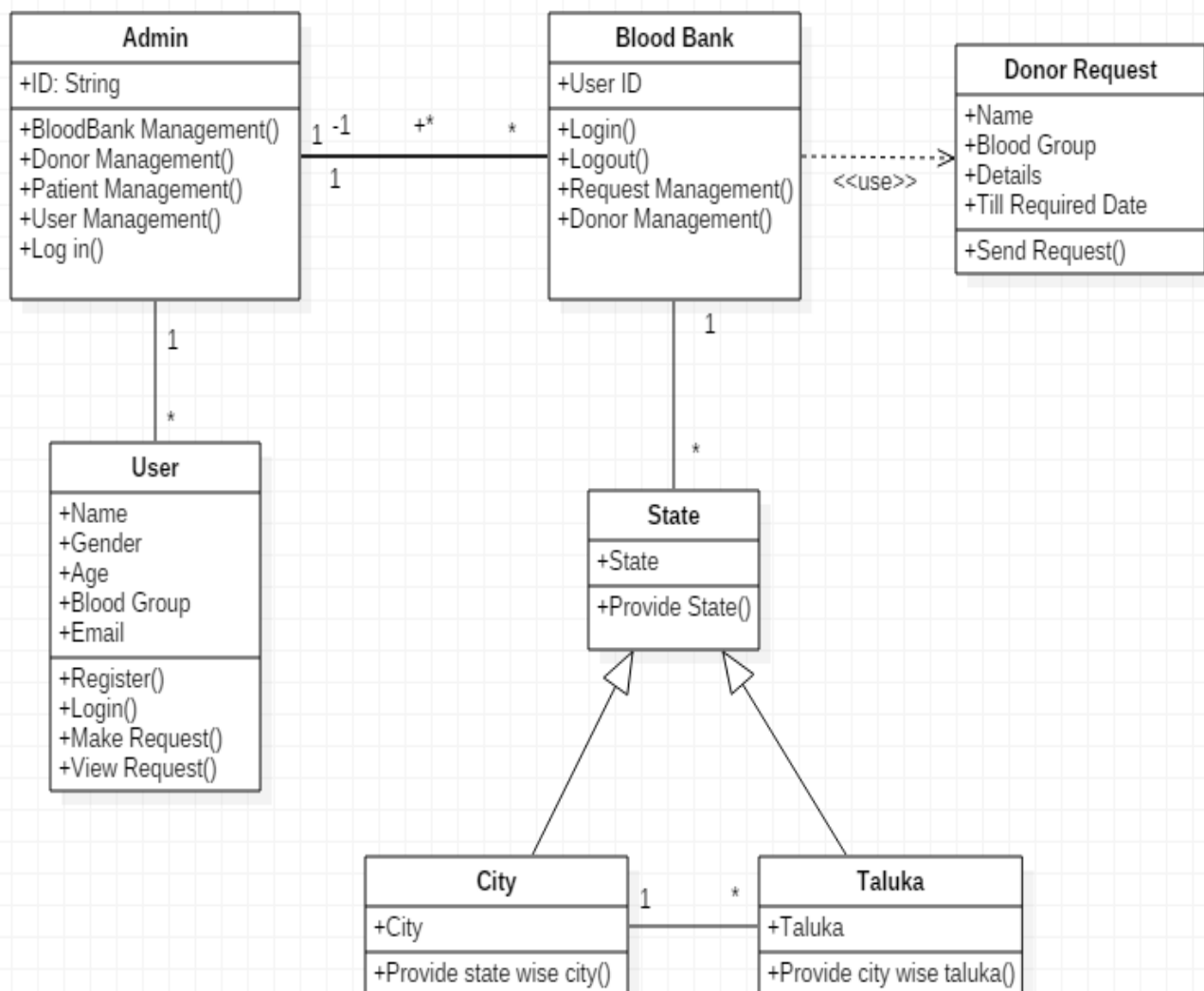


Fig.5.4.1.1: Class Diagram

5.4.2 Use-case Diagram

Use case diagrams are usually referred to as behavior diagrams used to describe a set of actions (use cases) that some system or systems (subject) should or can perform in collaboration with one or more external users of the system (actors). A use case diagram at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved.

5.4.2.1 Admin

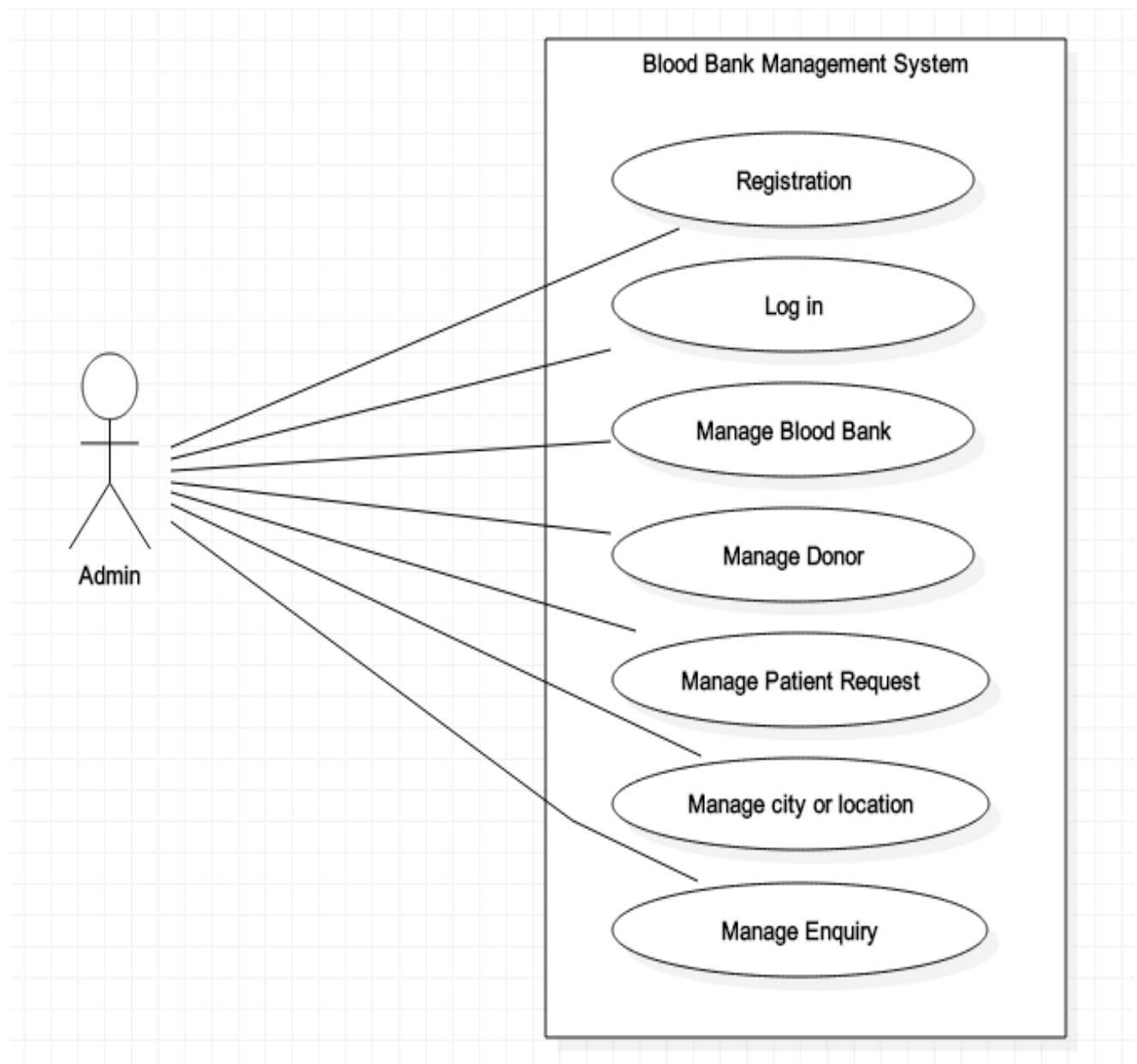


Fig.5.4.2.1.1: Use-Case Diagram for Admin

5.4.2.2 Blood Bank

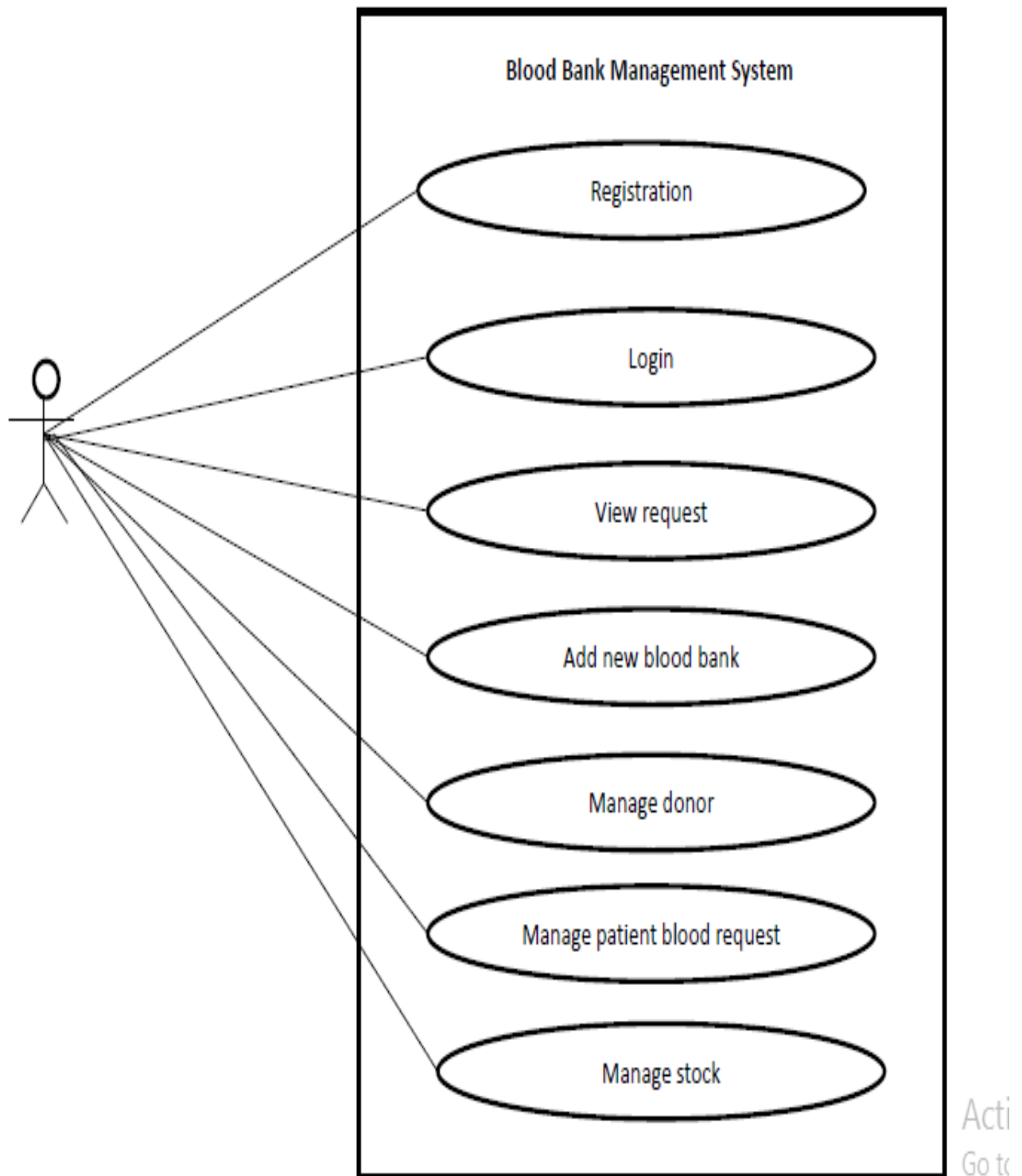


Fig.5.4.2.2.1: Use-Case Diagram for Blood Bank

5.4.2.3 Donor

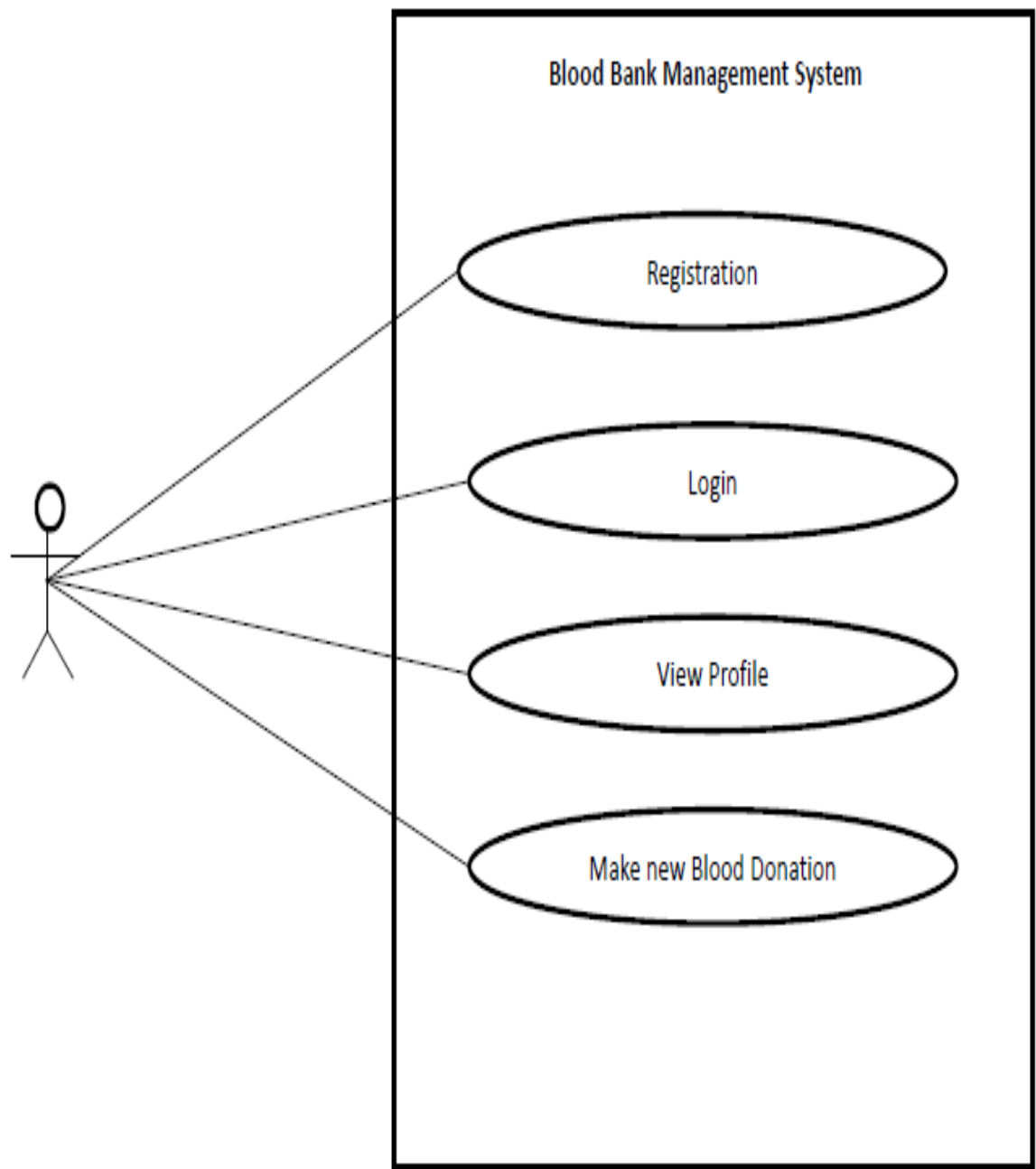
Ac
Go

Fig.5.4.2.3.1: Use-Case Diagram for Donor

5.4.2.4 Patient

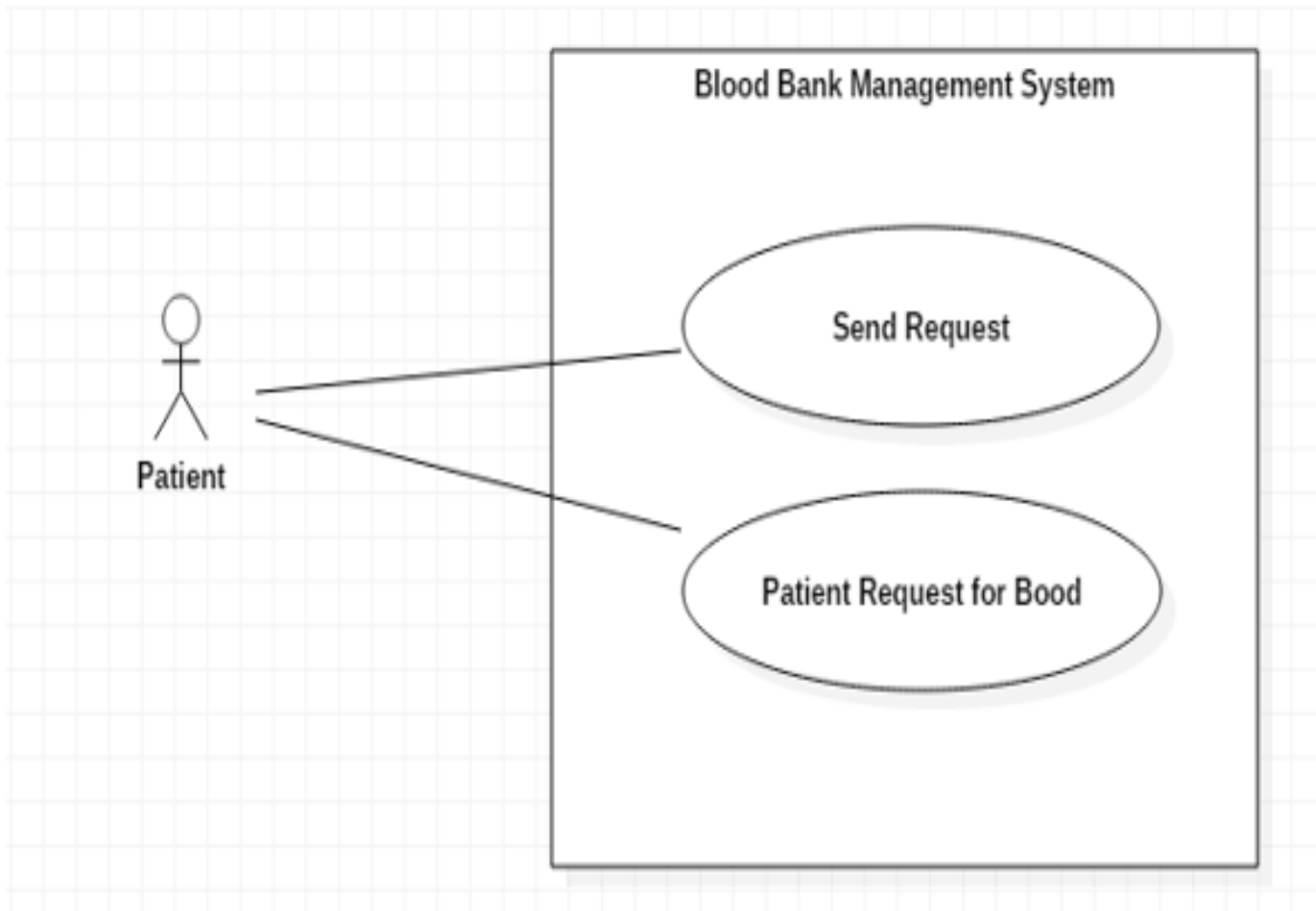


Fig.5.4.2.4.1: Use-Case Diagram for Patient

5.4.3 Sequence Diagram

A sequence diagram is an interaction diagram that shows how objects operate with one another and in what order. It is a construct of a message sequence chart. A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario.

5.4.3.1 Admin

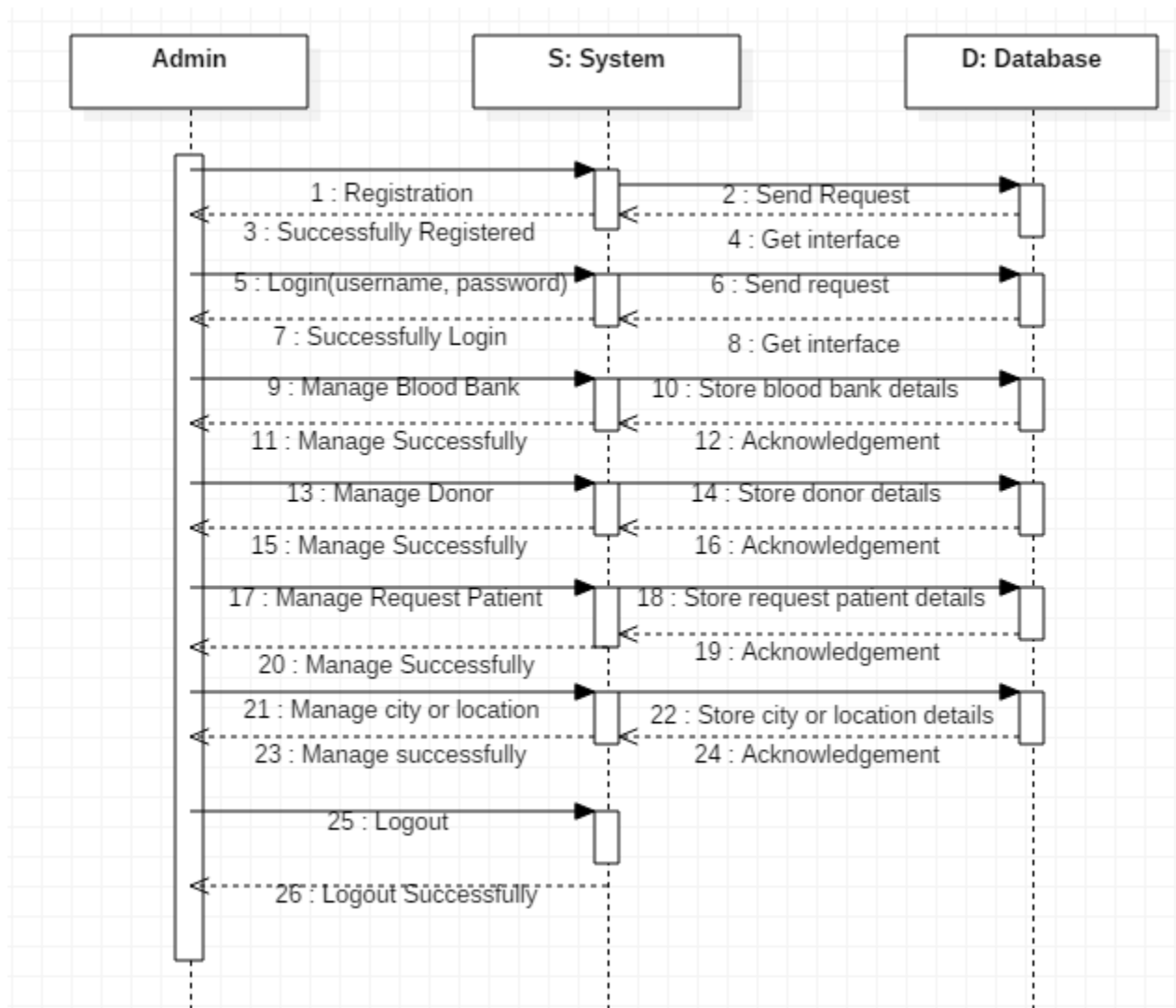


Fig.5.4.3.1.1: Sequence Diagram for Admin

5.4.3.2 Blood Bank

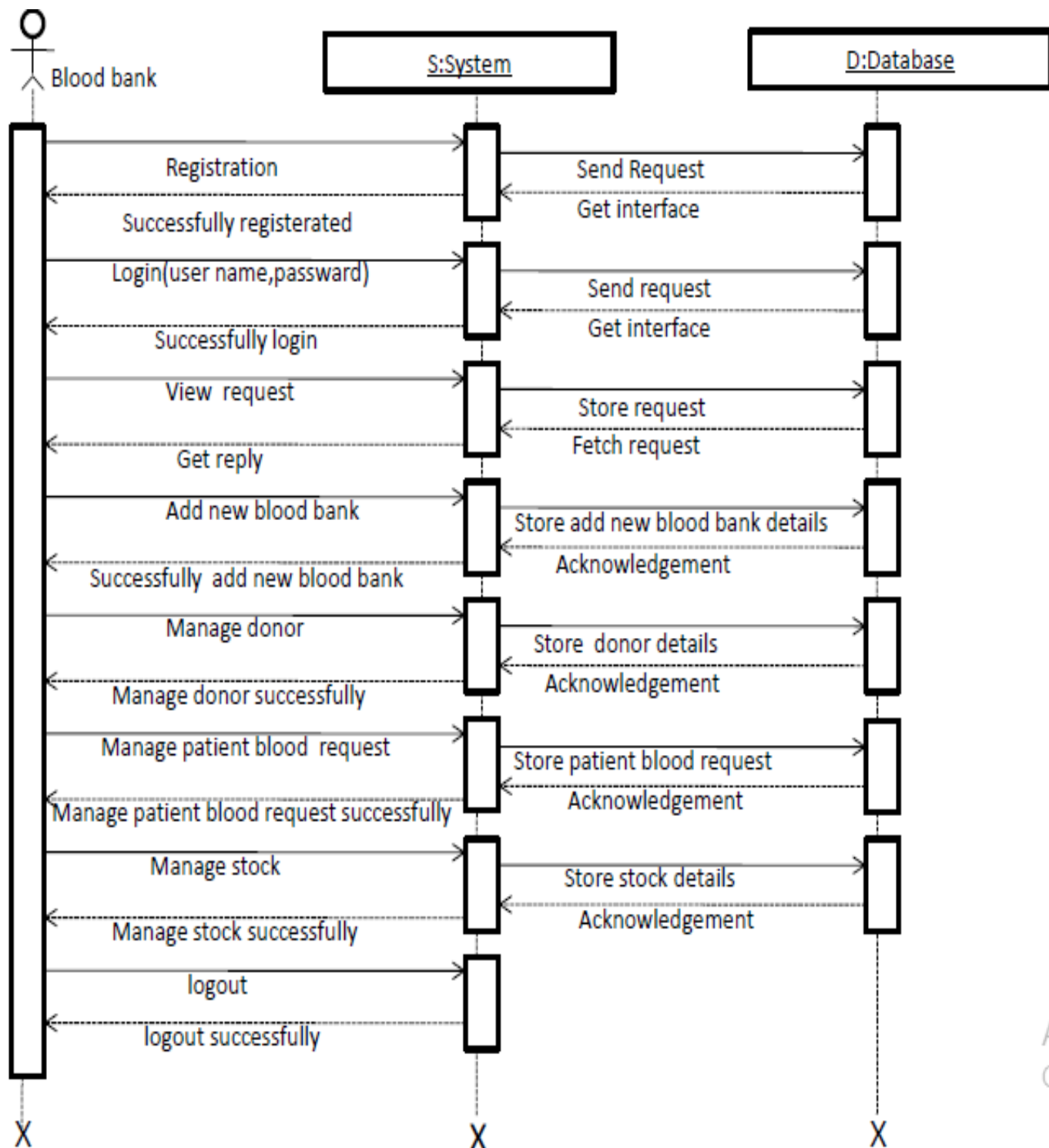


Fig.5.4.3.2.1: Sequence Diagram for Blood Bank

5.4.3.3 Donor

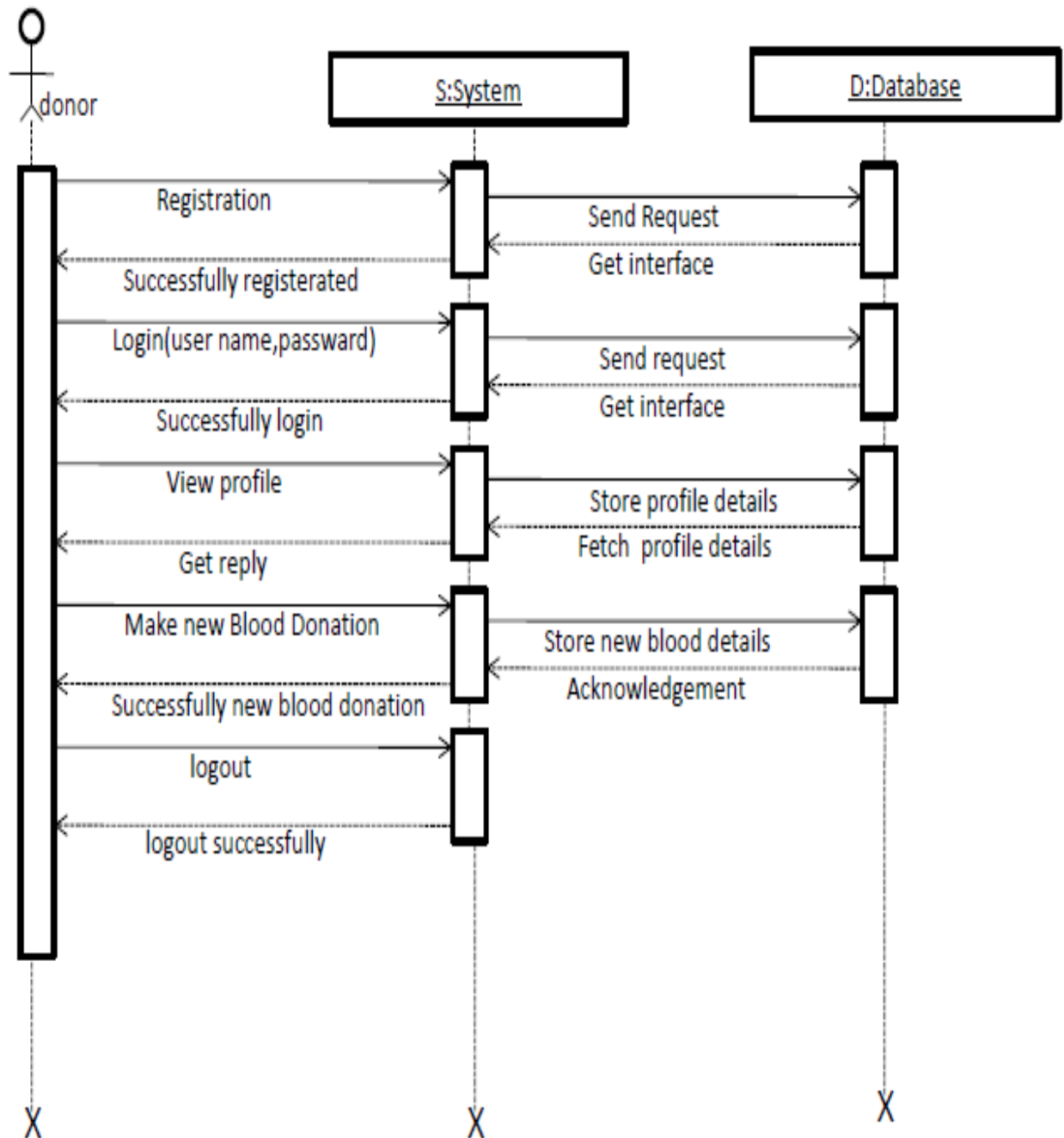


Fig.5.4.3.3.1: Sequence Diagram for Donor

5.4.3.4 Patient

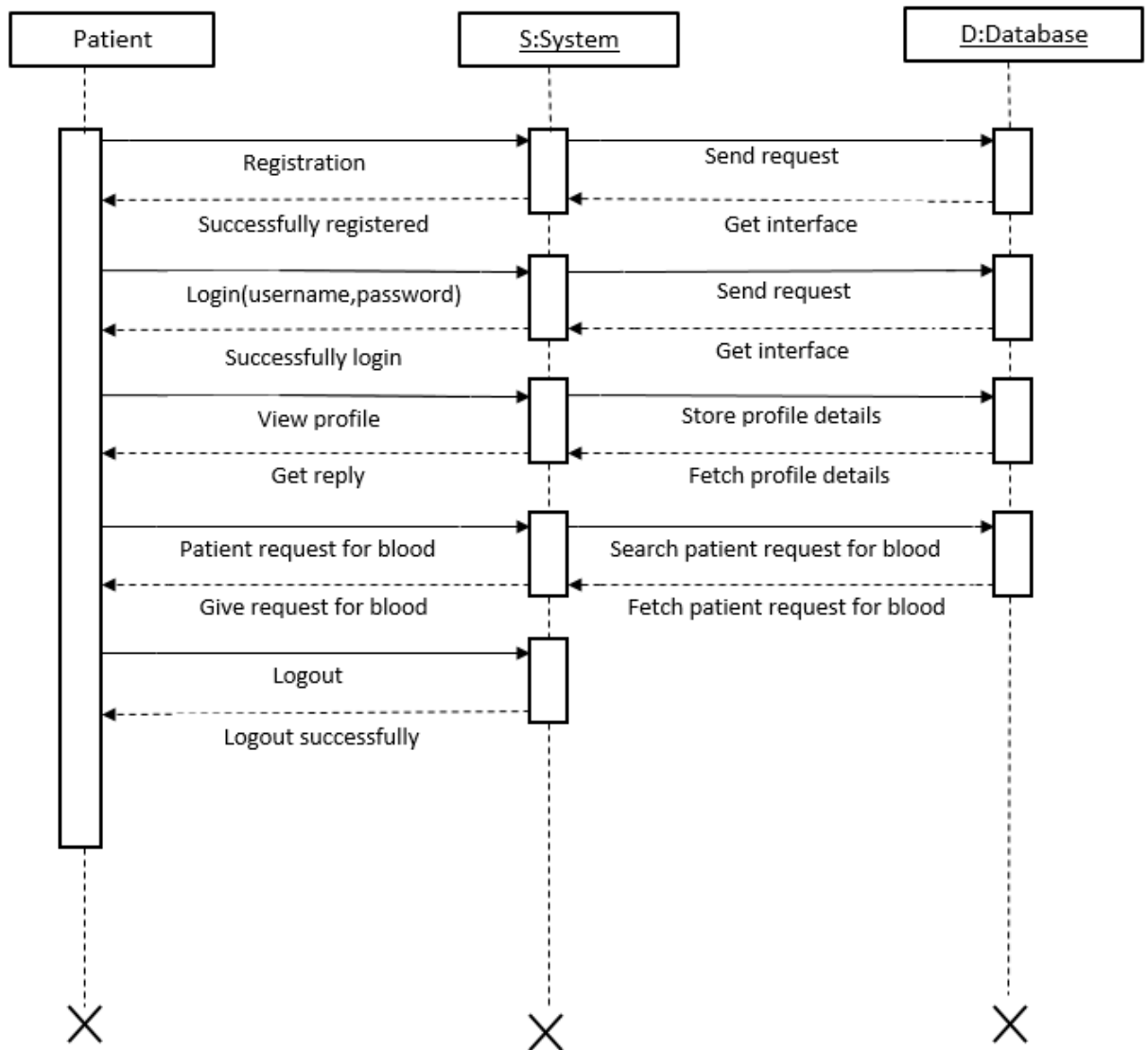


Fig.5.4.3.4.1: Sequence Diagram for Patient

5.4.4 Activity Diagram

Activity diagram is another important diagram in UML to describe dynamic aspects of the system. Activity diagram is basically a flow chart to represent the flow from one activity to another activity. The activity can be described as an operation of the system. So the control flow is drawn from one operation to another. This flow can be sequential, branched or concurrent. Activity diagrams deals with all type of flow control by using different elements like fork, join etc.

5.4.4.1 Admin

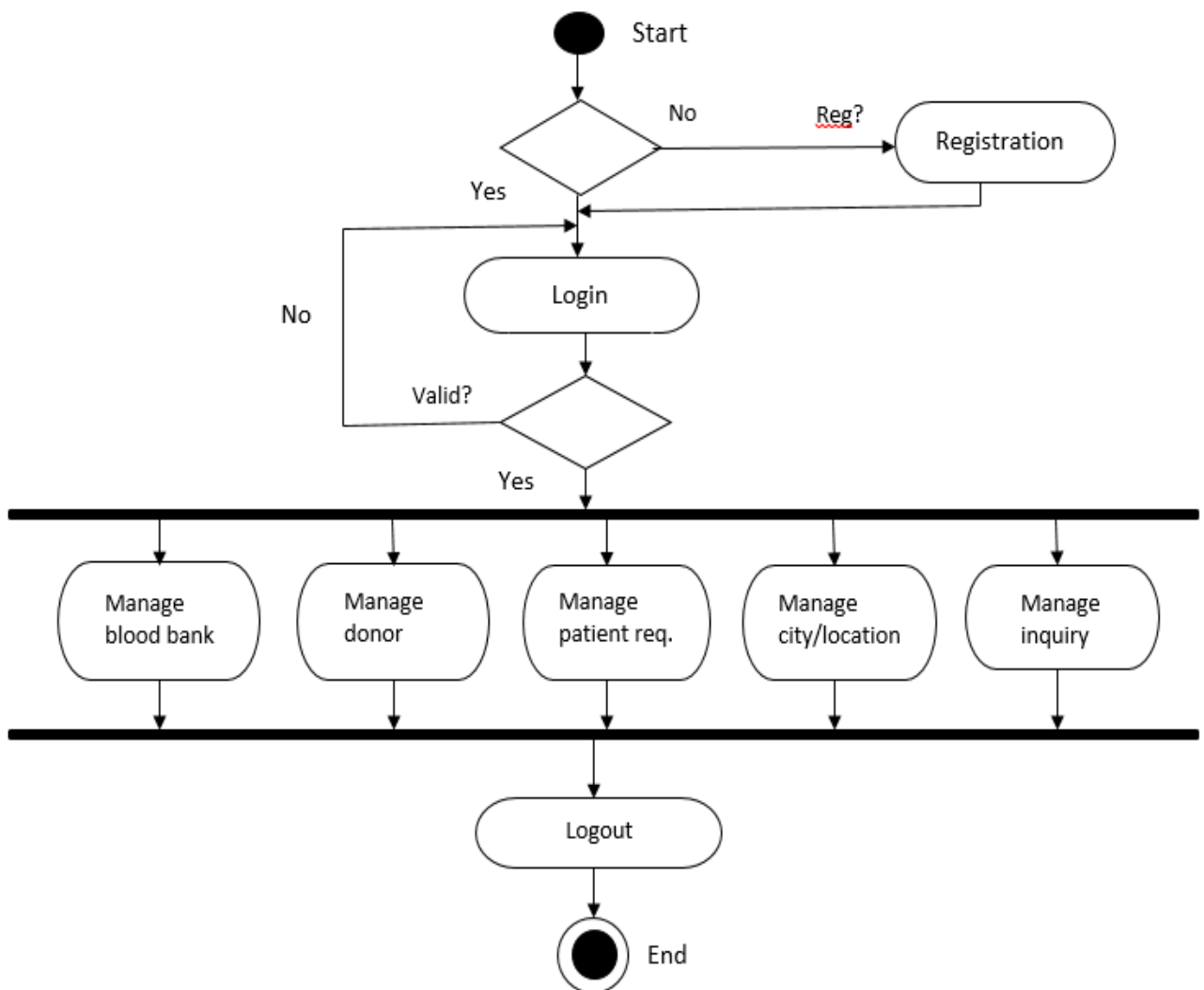


Fig.5.4.4.1.1: Activity Diagram for Admin

5.4.4.2 Blood Bank

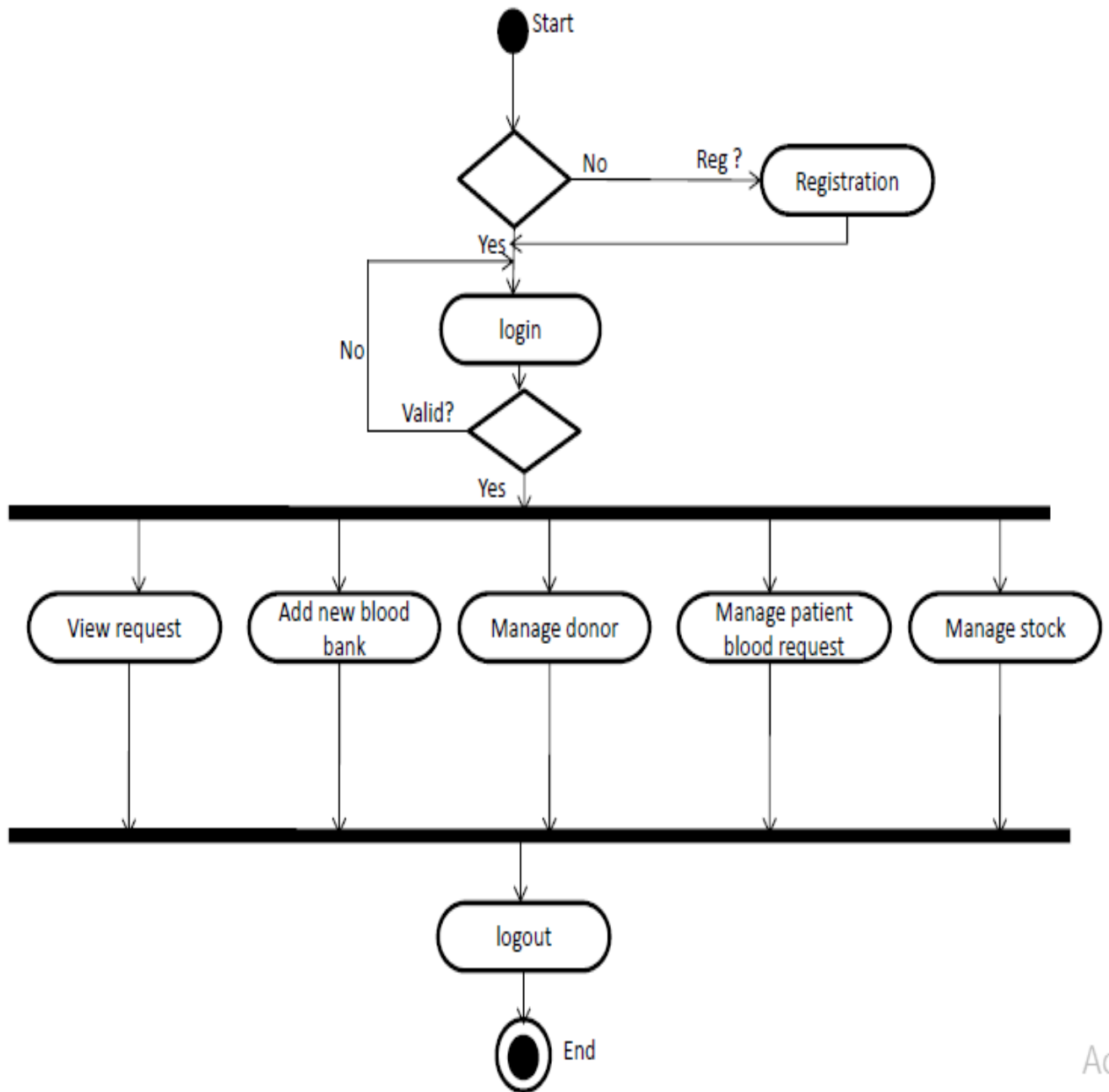


Fig.5.4.4.2.1: Activity Diagram for Blood Bank

5.4.4.3 Donor

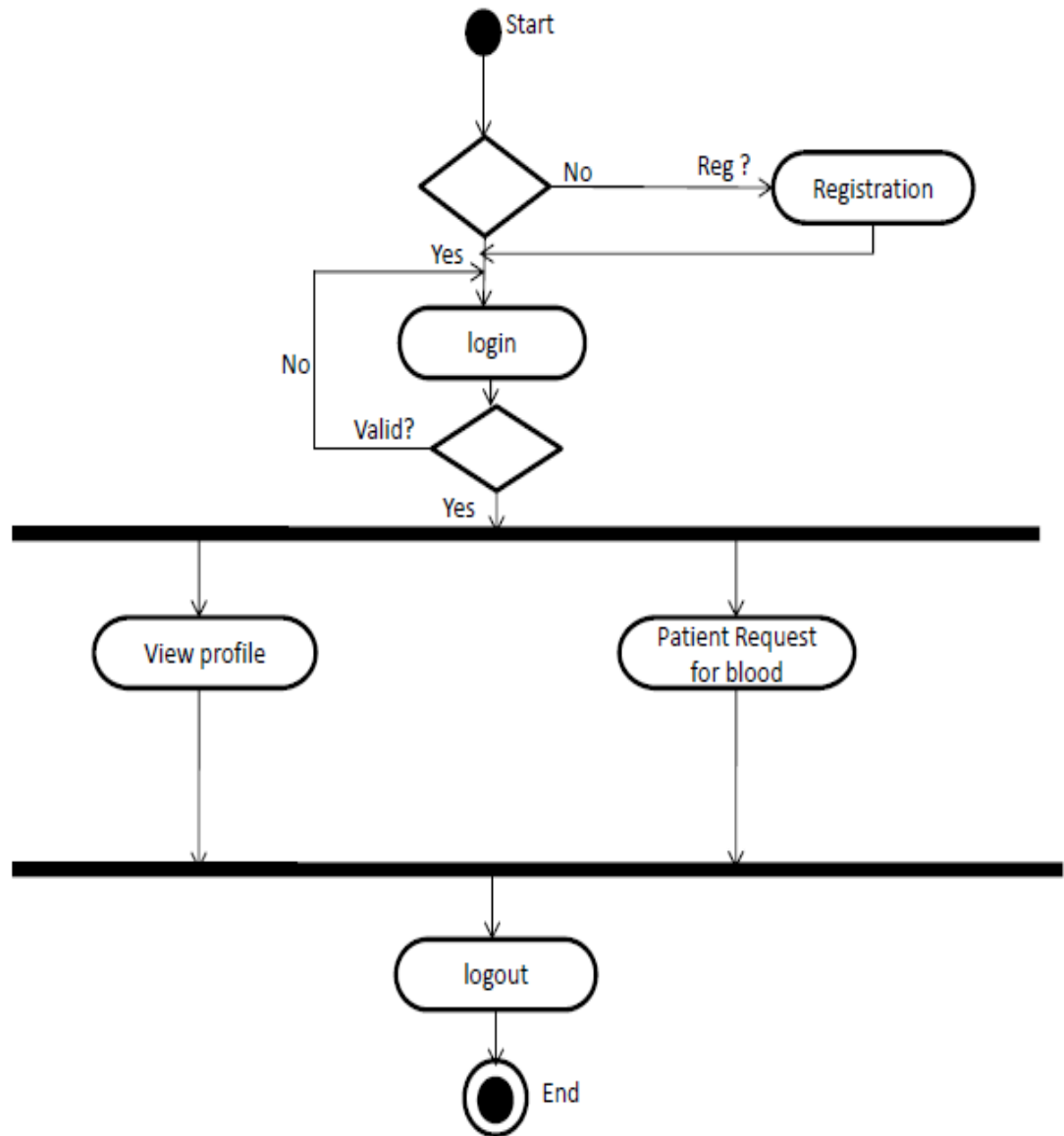


Fig.5.4.4.3.1: Activity Diagram for Donor

Act
Go t

5.4.4.4 Patient

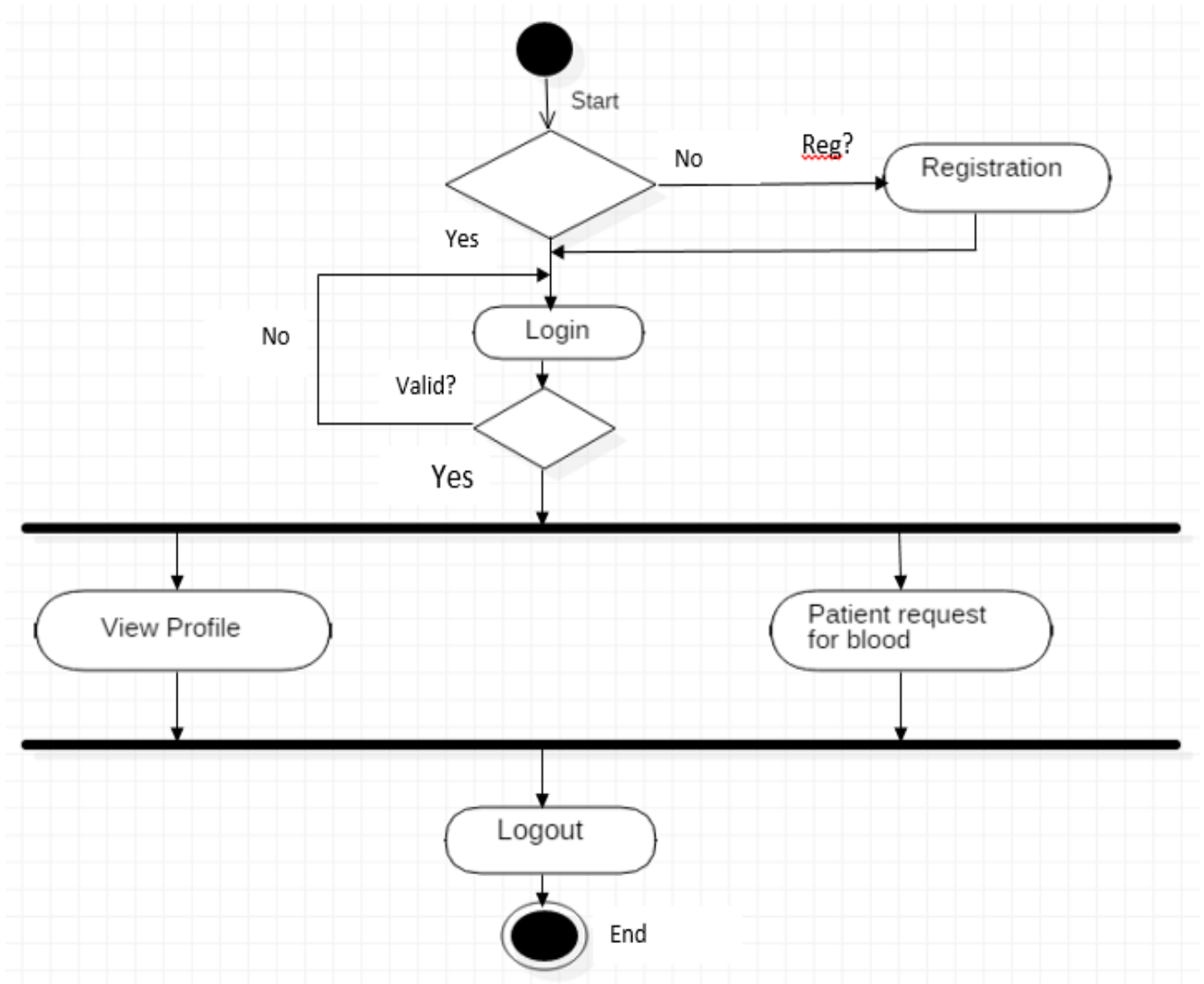


Fig.5.4.4.4.1: Activity Diagram for Patient

5.4.5 Collaboration Diagram

A collaboration diagram, also called a communication diagram or interaction diagram, is an illustration of the relationships and interactions among software objects in the Unified Modeling Language (UML). The second interaction diagram is collaboration diagram. It shows the object organization as shown below. Here in collaboration diagram the method call sequence is indicated by some numbering technique. The number indicates how the methods are called one after another. We have taken the same order management system to describe the collaboration diagram.

5.4.5.1 Admin

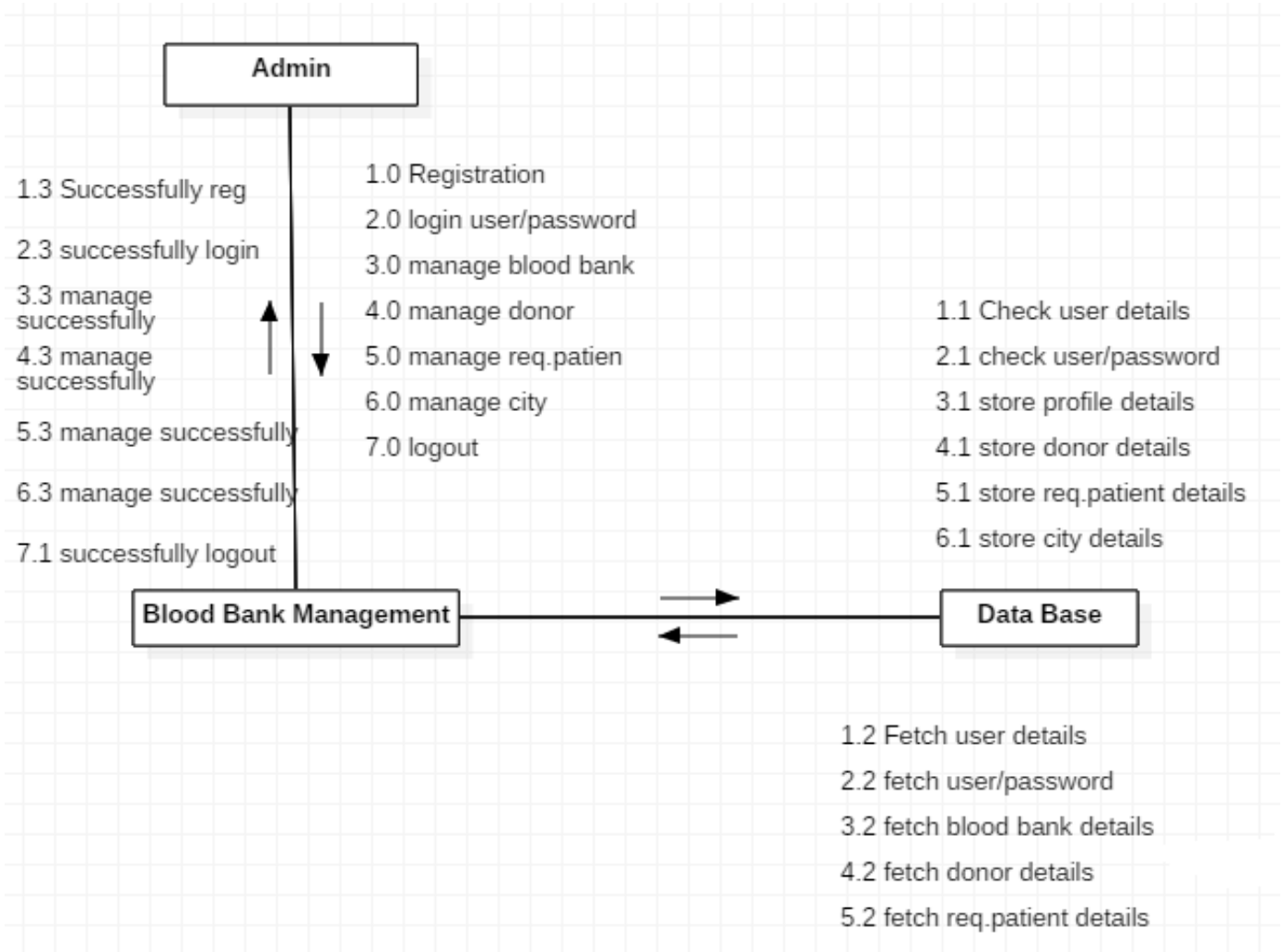


Fig.5.4.5.1.1: Collaboration Diagram for Admin

5.4.5.2 Blood Bank

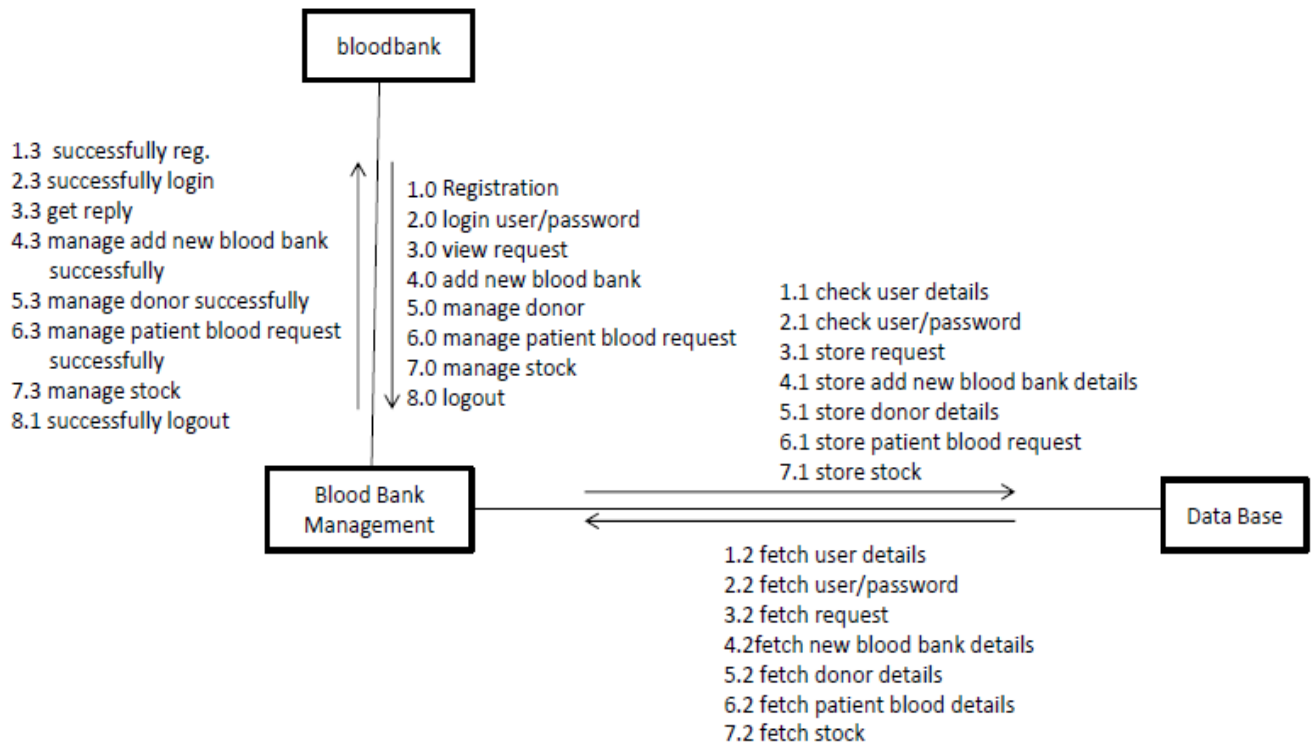


Fig.5.4.5.2.1: Collaboration Diagram for Blood Bank

5.4.5.3 Donor

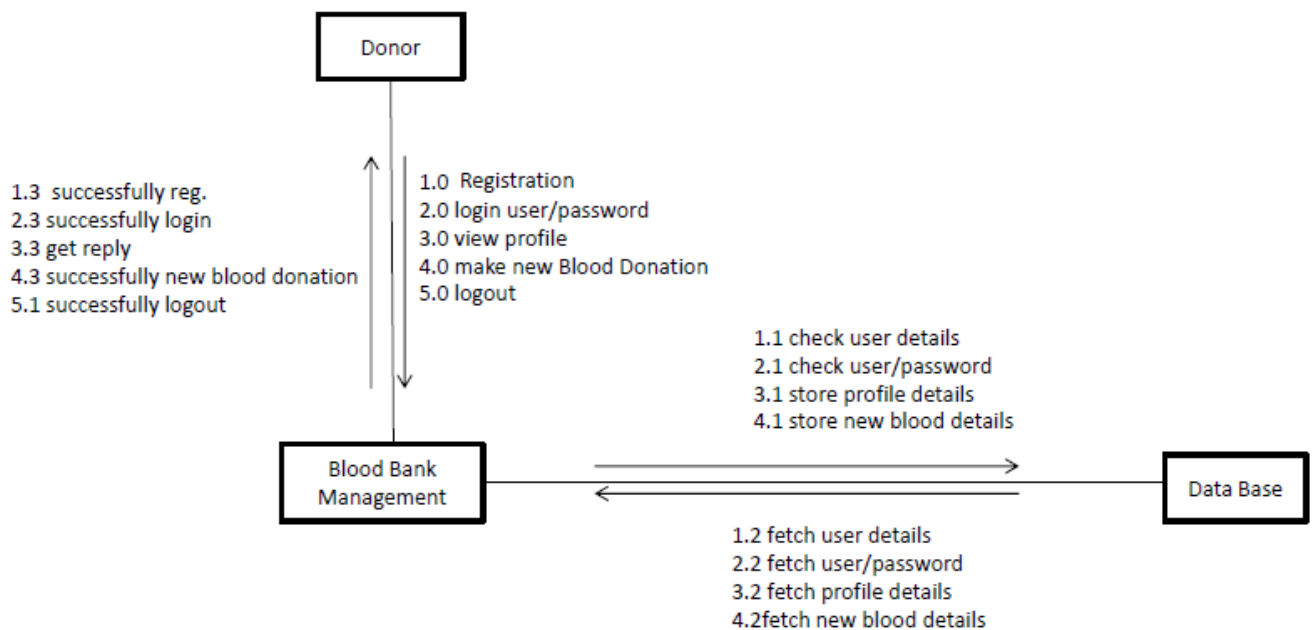


Fig.5.4.5.3.1: Collaboration Diagram for Donor

5.4.5.4 Patient

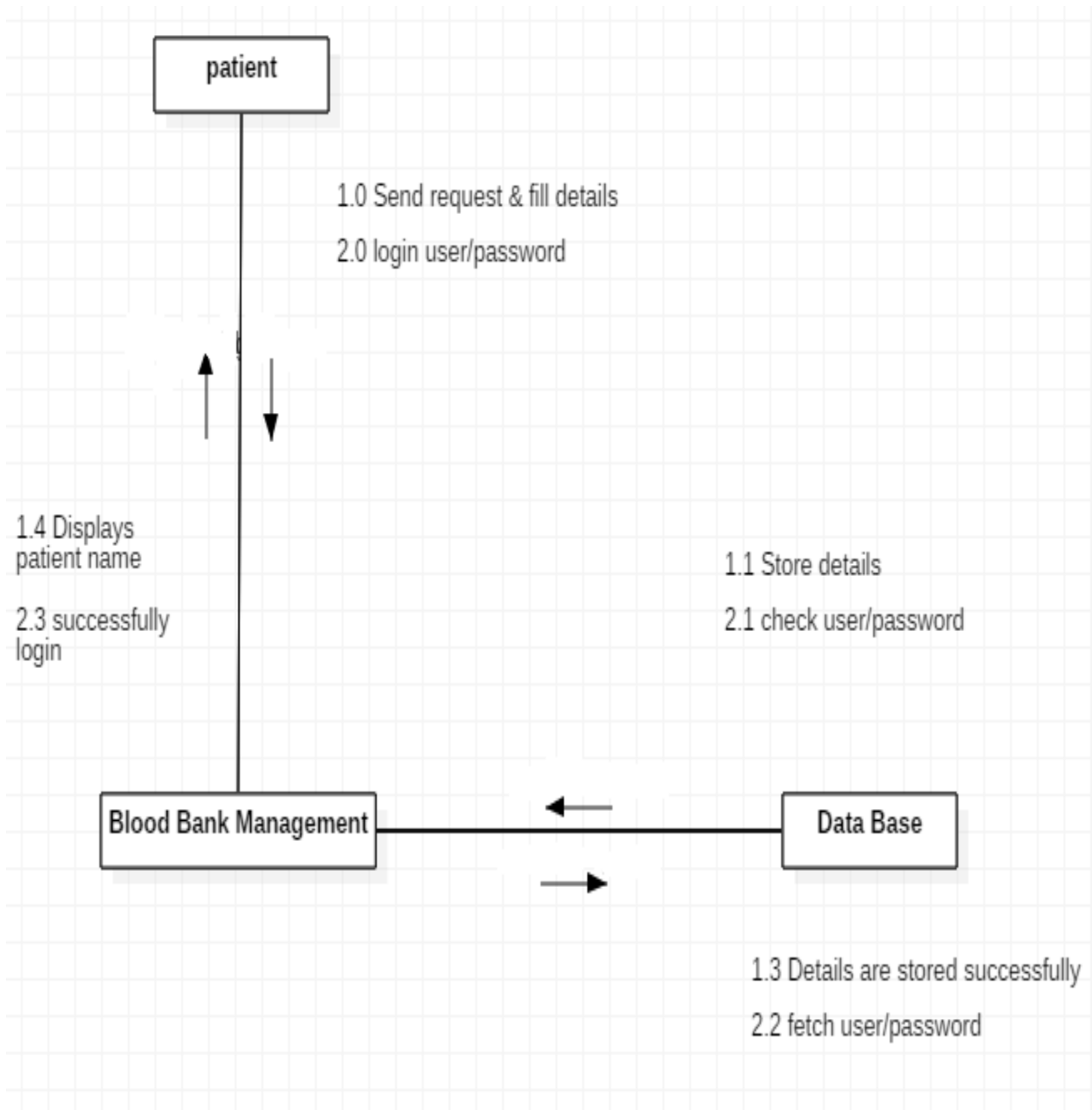


Fig.5.4.5.4.1: Collaboration Diagram for Patient

Chapter 6

Testing

6.1 Donor Login

Table 6.1.1 Donor Login Test Cases

Sr.no.	Test Case	Expected Result	Actual Result	Status
1	Whether clicking on submit button without user name and password it allows login or not.	System does not allow user to login.	System displays message & resume to the same page.	Pass
2	Whether click on submit button with invalid user name and or password it displays the message or not.	It should display message 'Please fill up the username or password'	It displays message	Pass
3	Whether by clicking on submit button with correct username and password.	System allow user to login	System allow user to access application based on rights given to him.	Pass

6.2 Donor Registration

Table 6.2.1 Donor Registration Test Cases

Sr.no.	Test Case	Expected Result	Actual Result	Status
1	Whether clicking on Donor Registration button with blank field it allows register or not.	System does not allow user to register	System displays message & resume to the same page.	Pass
2	Whether click on Clear button it removes all the fields or not.	It should clear all the fields	It resets	Pass
3	Whether by clicking on Donor Registration button with all correct fields it register donor or not	System should register to database	System allow to register	Pass

6.3 Blood Bank

Table 6.3.1 Blood Bank Test Cases

Sr.no.	Test Case	Expected Result	Actual Result	Status
1	Whether clicking on Login button it login to correct bank account	It should login to correct account	It Logins to correct account	Pass
2	After login, whether clicking on different menus, the specific pages gets open or not	It should open the specific page.	It opens the specific page.	Pass
3	In Update Profile menu, after filling the details whether clicking on Update Profile button it gets update or not.	It should update the information.	It updates the information.	Pass
4	Whether in settings menu, after clicking on change password button the password changes or not.	It should change the password.	It changes the password.	Pass
5	After Logout, whether clicking on back button it opens the previous page or not.	It should not open the previous page.	It doesn't open the previous page.	Pass

6.4 Search (Donor Request)

Table 6.4.1 Search (Donor Request) Test Cases

Sr.no.	Test Case	Expected Result	Actual Result	Status
1	Whether clicking on search menu it displays the search donor form or not	It should display the search donor form	It displays the search donor form	Pass
2	Whether clicking on dropdown button of blood group & state it shows the sub menus or not	It should show the sub menus of blood group	It shows the sub menus of blood group	Pass
3	Whether clicking on dropdown button of district it shows the sub menus of that specific selected state or not	It should show the sub menus of that specific selected state	It show the sub menus of that specific selected state	Pass
4	After clicking on clear button it resets the details or not.	It should resets the details	It resets the details	Pass


6.5 Admin

Table 6.5.1 Admin Test Cases

Sr.no	Test Case	Expected Result	Actual Result	Pass
1	After verify the bank details from the Blood Group List it either approves or delete the bank	It should either approve or delete the bank after verify	It approves or delete the bank after verify	Pass
2	After adding new camp in Add Camp option, the camp displays at the client page or not	It should displays at the client page	It displays at the client page	Pass

6.6 Snapshots

6.6.1 Snapshot of Search (Donor Request)



The image shows a mobile application interface for a blood bank. The top status bar displays the time as 12:05, battery level at 45%, and signal strength. Below this, a blue header bar contains the word "Bloodbank" in white. Underneath the header, contact information is shown: a phone icon followed by "+040 185 999" and an email icon followed by "mail@example.com". The main title "ONLINE BLOOD BANK" is centered in a large, teal font. Below the title is a decorative banner with a green bokeh background and a red blood drop. A black navigation bar at the bottom right contains a white menu icon (three horizontal lines).

SEARCH DONOR

Search	
Blood Group	<input type="text" value="-----Select Bloodgroup-----"/>
State	<input type="text" value="--Select state--"/>
District	<input type="text" value="--Select District--"/>
Taluka	<input type="text" value="--Taluka--"/>
<div><input type="button" value="Search"/> <input type="button" value="Clear"/></div>	

The bottom of the image shows the standard Android navigation bar with three icons: a back arrow, a home circle, and a recent apps square.

Fig.6.6.1.1: Snapshot of Search

6.6.2 Snapshot for Donor Registration

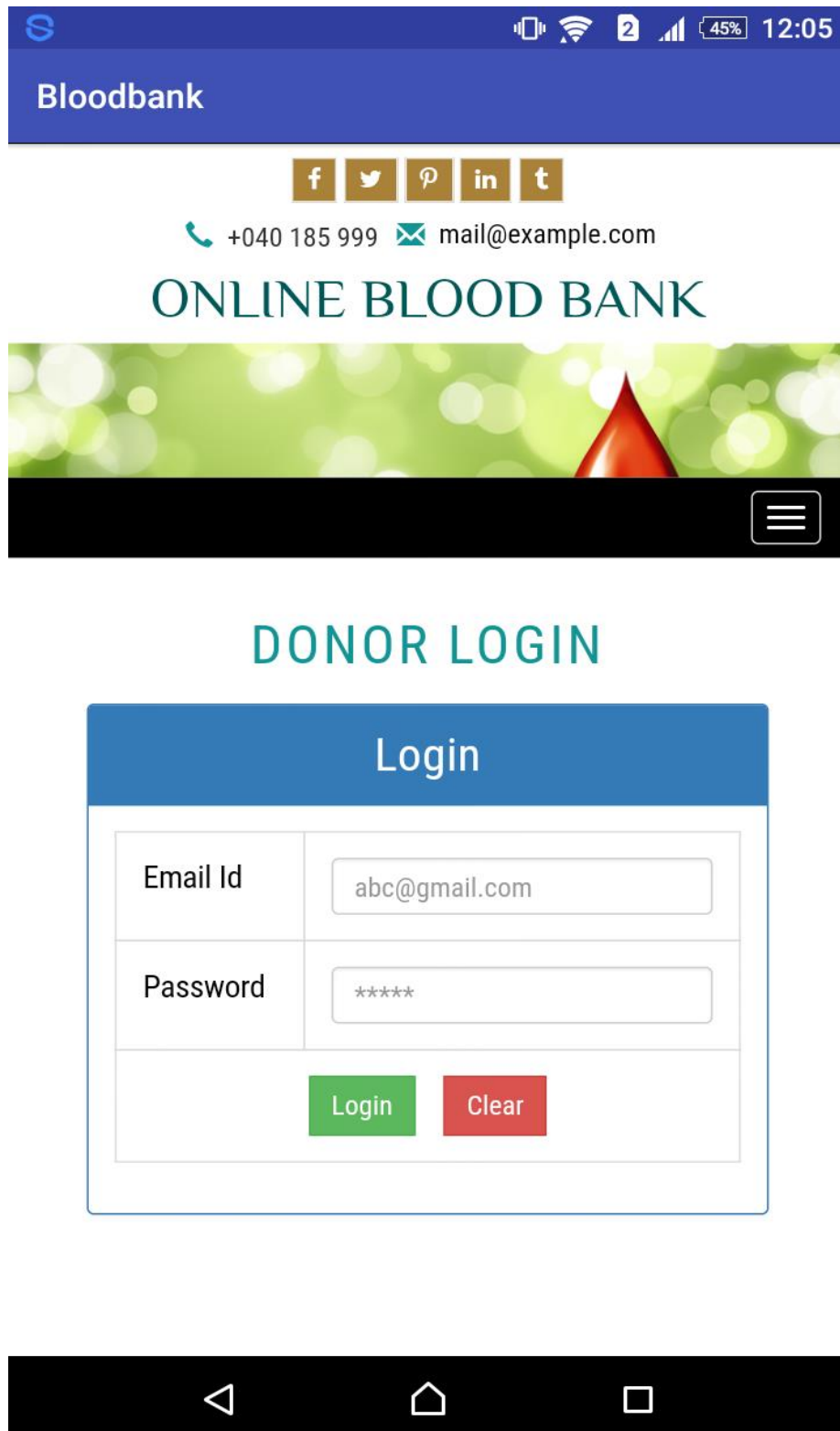
Bloodbank

Donor Registration

Donor Name	<input type="text"/>
Gender	<input checked="" type="radio"/> Male <input type="radio"/> Female
Age	<input type="text"/>
Mobile No	<input type="text"/>
Blood Group	-----Select Bloodgroup----- ▼
Address	<div><div></div></div>
State	--Select state-- ▼
District	<input type="text"/>

Fig.6.6.2.1: Snapshot of Donor Registration

6.6.3 Snapshot for Donor Login



The image shows a mobile application interface for a blood bank. At the top, there is a status bar with a blue header containing a logo and the word "Bloodbank". Below this is a navigation bar with social media icons (Facebook, Twitter, Pinterest, LinkedIn, and Tumblr) and contact information: a phone icon with "+040 185 999" and an email icon with "mail@example.com". The main heading "ONLINE BLOOD BANK" is displayed in a large, teal font. Below the heading is a banner image featuring a green bokeh background and a red blood drop. A black bar at the bottom of the banner contains a white menu icon. The central part of the screen displays the "DONOR LOGIN" title in a large, teal font. Below this is a login form with a blue header labeled "Login". The form has two input fields: "Email Id" with the value "abc@gmail.com" and "Password" with the value "*****". At the bottom of the form are two buttons: a green "Login" button and a red "Clear" button. The entire interface is set against a white background, and the bottom of the screen shows a black Android navigation bar with white icons for back, home, and recent apps.

Bloodbank

+040 185 999 mail@example.com

ONLINE BLOOD BANK

DONOR LOGIN

Login

Email Id abc@gmail.com

Password *****

Login Clear

Fig.6.6.3.1: Snapshot of Donor Login

Chapter 7

Conclusion and Future Scope

7.1 Future Scope

- Through online directory user can search any blood bank data by location.
- User can also message module.
- User can see this website and search blood bank.

7.2 Conclusion

It has been a great pleasure for me to work on this exciting and challenging project. This project proved good for me as it provided practical knowledge of not only programming in PHP web based application and no some extent Windows Application and SQL Server, but also about all handling procedure related with **“Blood Bequeath Federal”**. It also provides knowledge about the latest technology used in developing web enabled application and client server technology that will be great demand in future. This will provide better opportunities and guidance in future in developing projects independently.

Result

Result includes the information about how the operation executes and displays the result by giving various inputs.



DONOR LOGIN

The screenshot shows a 'Login' form with a blue header. The form has two input fields: 'Email Id' with the value 'pranitajejurkar14@gr' and 'Password' with masked characters '*****'. Below the fields are two buttons: a green 'Login' button and a red 'Clear' button.

Fig. Screenshot of Donor Login



DONOR REGISTRATION

The screenshot shows a 'Donor Registration' form with a blue header. The form has a large red silhouette of a person's head and shoulders on the left. To the right of the silhouette is the text 'Welcome To DONOR PANNEL' in a red, serif font.

Fig. Screenshot after login

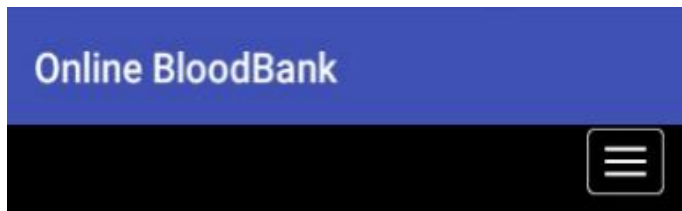


Fig. Screenshot of search option

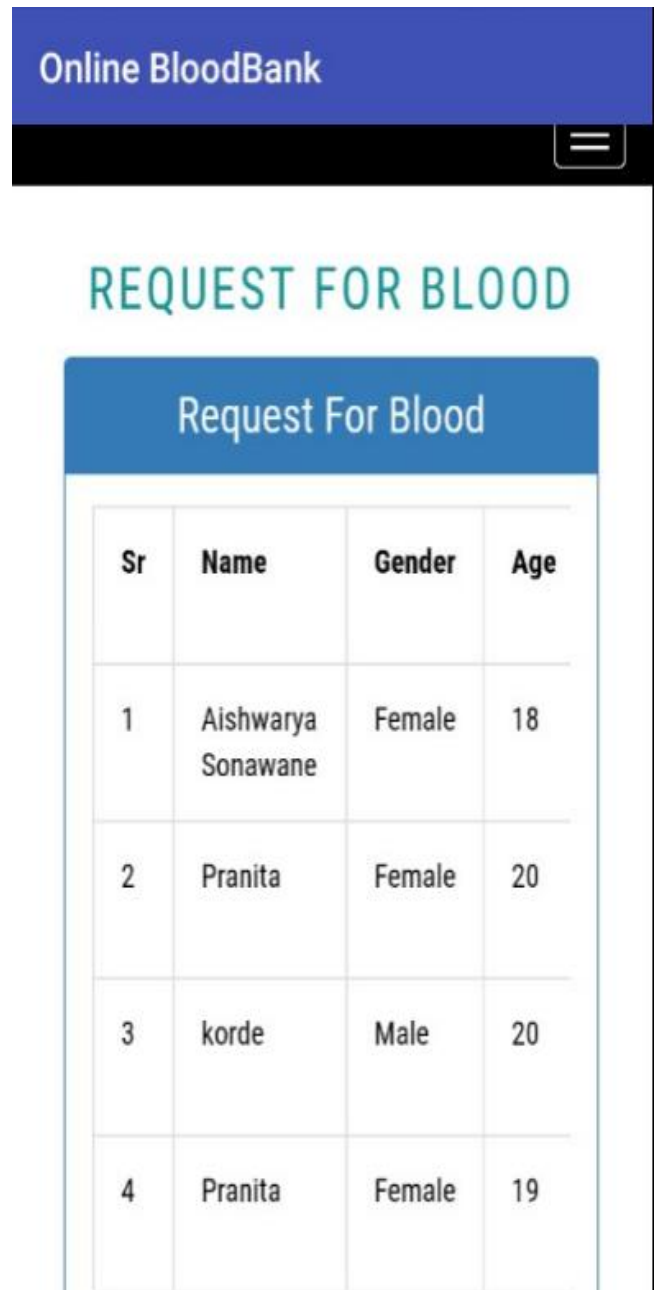


Fig. Screenshot after searching

REFERENCES

- 1) Gordon, Murray B. (1940). "Effect of External Temperature on Sedimentation Rate of Red Blood Corpuscles". *Journal of the American Medical Association*. **114** (16). doi:[10.1001/jama.1940.02810160078030](https://doi.org/10.1001/jama.1940.02810160078030).
- 2) Kim Pelis (2001). "Taking Credit: The Canadian Army Medical Corps and the British Conversion to Blood Transfusion in WWI". *Journal of the History of Medicine and Allied Sciences*. **56**: 238–77. doi:[10.1093/jhmas/56.3.238](https://doi.org/10.1093/jhmas/56.3.238). PMID 11552401.
- 3) "Red Gold: the Epic Story of Blood". PBS.
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