



SWE Phase 2

Karim Alaa Mohey Eldeen 19016172

Louay Magdy Abd El halim 19016195

Mohamed Magdy Elsayed 19016479

Youhanna Yousri Fawzy 19016899

Youssef Saber Saaid 19016924

Youssef Magdy Helmy 19016937



Added Requirements:

- Match doner / recipient based on proximity (distance).
- Support hospitals and blood banks share in providing / consuming blood units.
- Consumption analysis for hospitals and opposite for blood banks.
- Sort blood doner based on proximity.

System Main Components:

- **Account management component responsibilities:**

1. Sign up

- a. Validates all inputs (allowing only users with more than 18 years to create accounts).
- b. Registers user.
- c. Sends a verification link to the provided email address in order to confirm it.

2. Sign in

- a. Validates user's credentials.
- b. Saves user's session.
- c. Allows user to change his password (forget password)

- **User posts component responsibilities:**

- a. Creates a post to notify nearby possible blood donors.
- b. Verify that all posts field are filled and within available ranges.
- c. If the notified user accepts the notifications, the list of allowed users will be modified, and the prioritized users given to the recipient is modified
- d. Sorts users according to their distance to donation location.
- e. Deletes the post once the last time of donation has come, or the user has collected the required number of bags.

- **Messaging component responsibilities:**

- a. Sends a notification to all possible donors that meet the required criteria.
- b. Sends a notification to all users within range to inform them about a new event.
- c. Allows chatting between two parties when an approval occurs, these two parties are the donor (who confirmed) and the person in need of blood.


- Institution interaction component responsibilities:

- a. Create event in certain location.
- b. Issue notifications to nearby users to notify them about the event.
- c. Institutions can confirm transactions
 - i. User – User transaction
 - ii. Institution – User transaction
 - iii. User – Institution transaction
- d. After each day, institution's inventories are saved into files.

Prototype

Sign in

9:41



Email

Password


[Forget Password](#)

Sign In

Don't have account? [sign up](#)

Sign Up - Page 1

9:41



First name

Last name

National ID

Email

Password

Confirm Password

Next

Do you have account? [sign in](#)

Sign Up - Page 2

9:41



Date of birth

4 Nov 2001

Blood type

A+

Location

Do you Have any disease

Yes No

Back **Sign Up**

Do you have account? [sign in](#)

Home Page - Recipient

9:41

You have a current request

Alexandria General Hospital

2 Blood Bags

3 Nov. 2022 @ 3:00 PM

A+

Possible Donors

Ahmed Gamal Type **A+**

2.3 Kilometers

Mostafa Ashraf Type **O+**

3.1 Kilometers

Home **Notifications** **Request** **Events** **Account**

Chat

9:41

Ahmed Gamal Donor

Today

Hey, the case is very urgent, please don't be late.

Okay sure, can I check the location again?

It's in Alexandria General Hospital, right?

Yes. Here it is

Where are you?

I'm in Shatby, 5 minutes and I will be there.

Thanks, I am waiting.

Request

9:41

You have a current request

Alexandria General Hospital

Availability

7 Blood Bags

3 Nov. 2022 @ 3:00 PM

Required

A+

Number of bags

1

Alexandria General Hospital

Post

Home **Notifications** **Request** **Events** **Account**

Account Settings

9:41

Account Settings

Last Donation

4 DEC 2022

Change Email

asharafmohamed89@gmail.com

Change Password

Current Password

New Password

Repeat New Password

Save Settings

[Log out?](#)

Home **Notifications** **Request** **Events** **Account**

Notifications

9:41

Alexandria General Hospital

3.4 Kilometers Away

2 Blood Bags

3 Nov. 2022 @ 3:00 PM

A+

Accept

Ras El Ten Hospital

5.2 Kilometers Away

1 Blood Bag

3 Nov. 2022 @ 6:00 PM

O+

Accept

Home **Notifications** **Request** **Events** **Account**

Home Page - Donor

9:41

You have accepted a request

Alexandria General Hospital

2 Blood Bags

3 Nov. 2022 @ 3:00 PM

A+

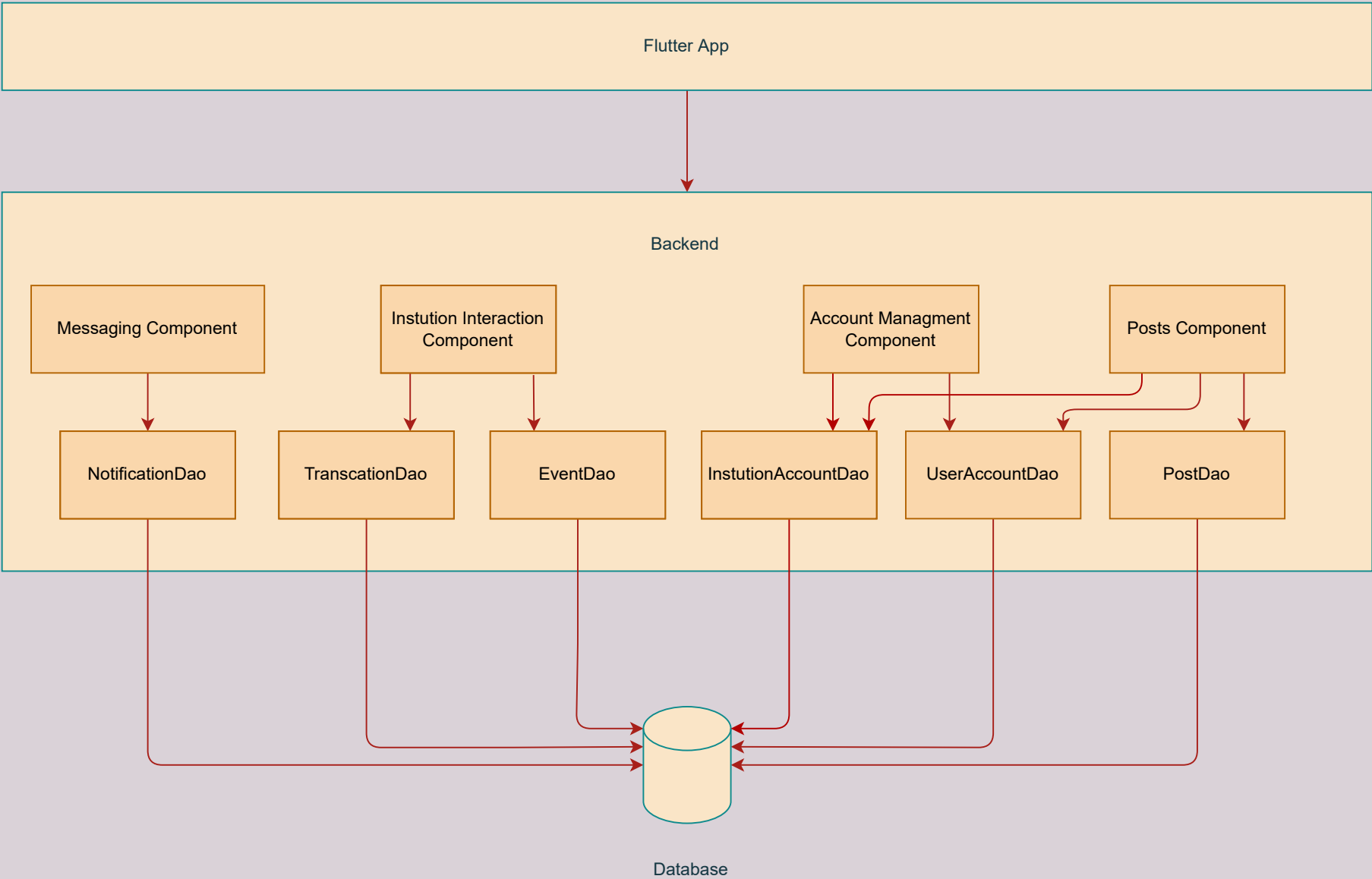
Recipient

Farid Akram Type **A+**

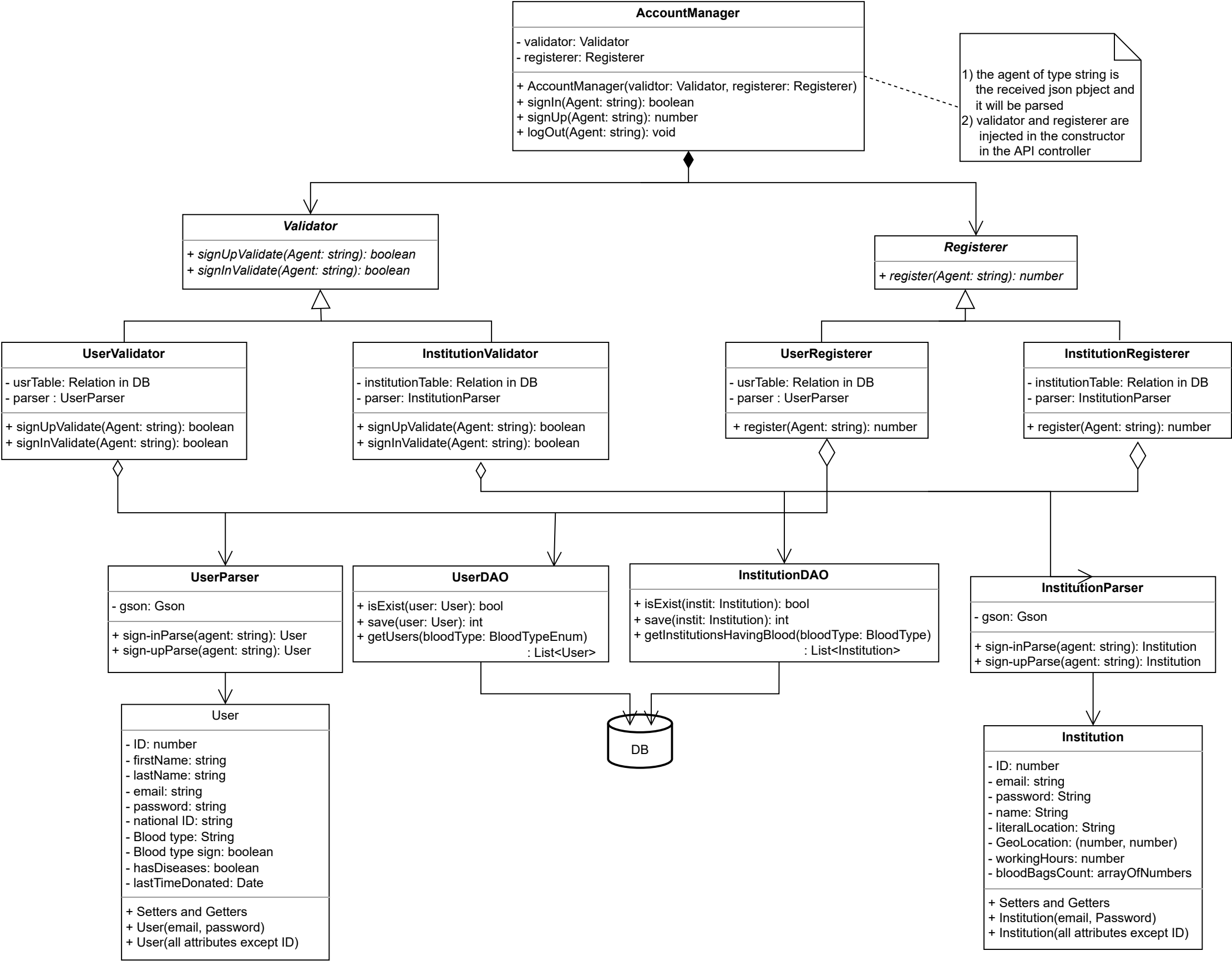
2.3 Kilometers

Home **Notifications** **Request** **Events** **Account**

Component Diagram



Account Managment Component
Class Diagram



1) the agent of type string is the received json pbject and it will be parsed
2) validator and registerer are injected in the constructor in the API controller

Used Design Patterns
1) Bridge / Template pattern
2) Chain of Responsibility within Signup
3) Facade pattern
4) Builder Pattern

Account Managment Component

CRC Cards

Account Manager	
Attributes	Collaborations
Validator	Registration API
Registerer	Registerer
	Validator

UserValidator and UserRegisterer	
Attributes	Collaborations
DB link	UserParser
Parser	JDBC
	User
	Account Manager

InstitutionValidator and InstitutionRegistere	
Attributes	Collaborations
DB link	InstitutionParser
Parser	JDBC
	Institution
	AccountManager

UserParser	
Attributes	Collaborations
Gson	User
	UserValidator
	UserRegisterer

InstitutionParser	
Attributes	Collaborations
Gson	Institution
	InstitutionValidator
	InstitutionRegisterer

User DAO	
Responsibilities	Collaborations
Check existence of user	Database
Save user	
Get Users with certain blood type	

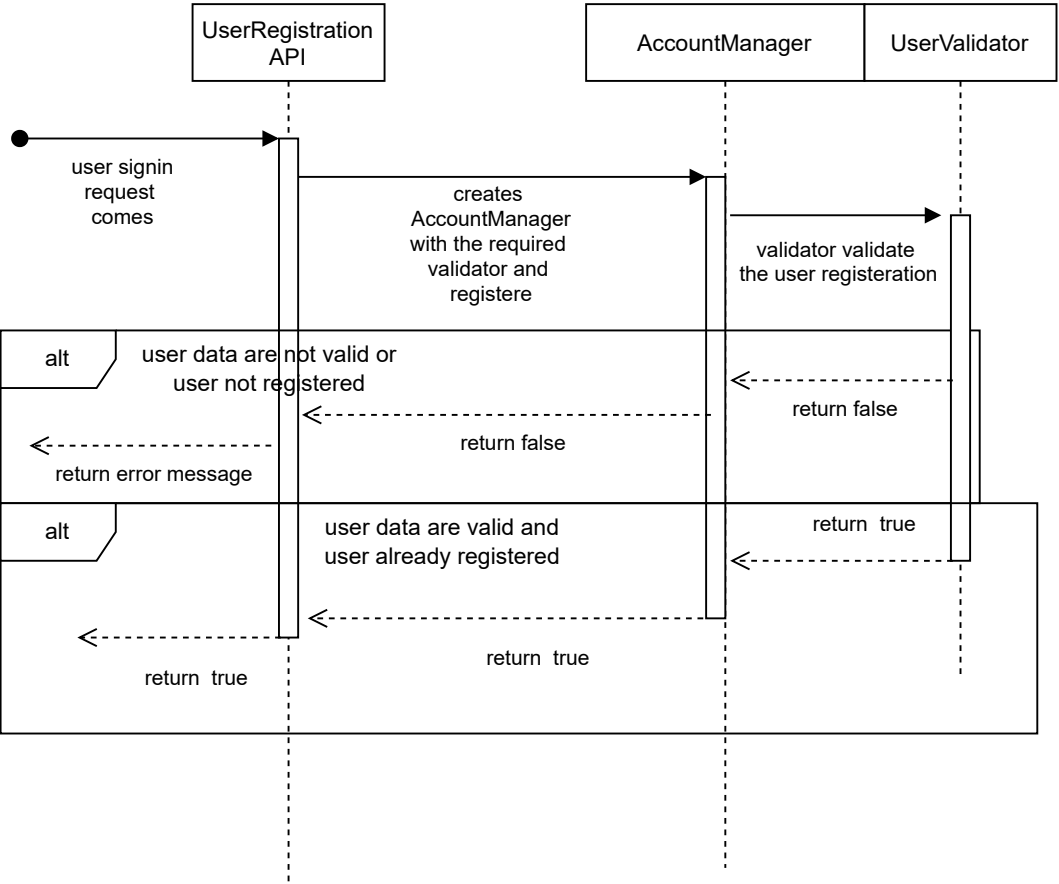
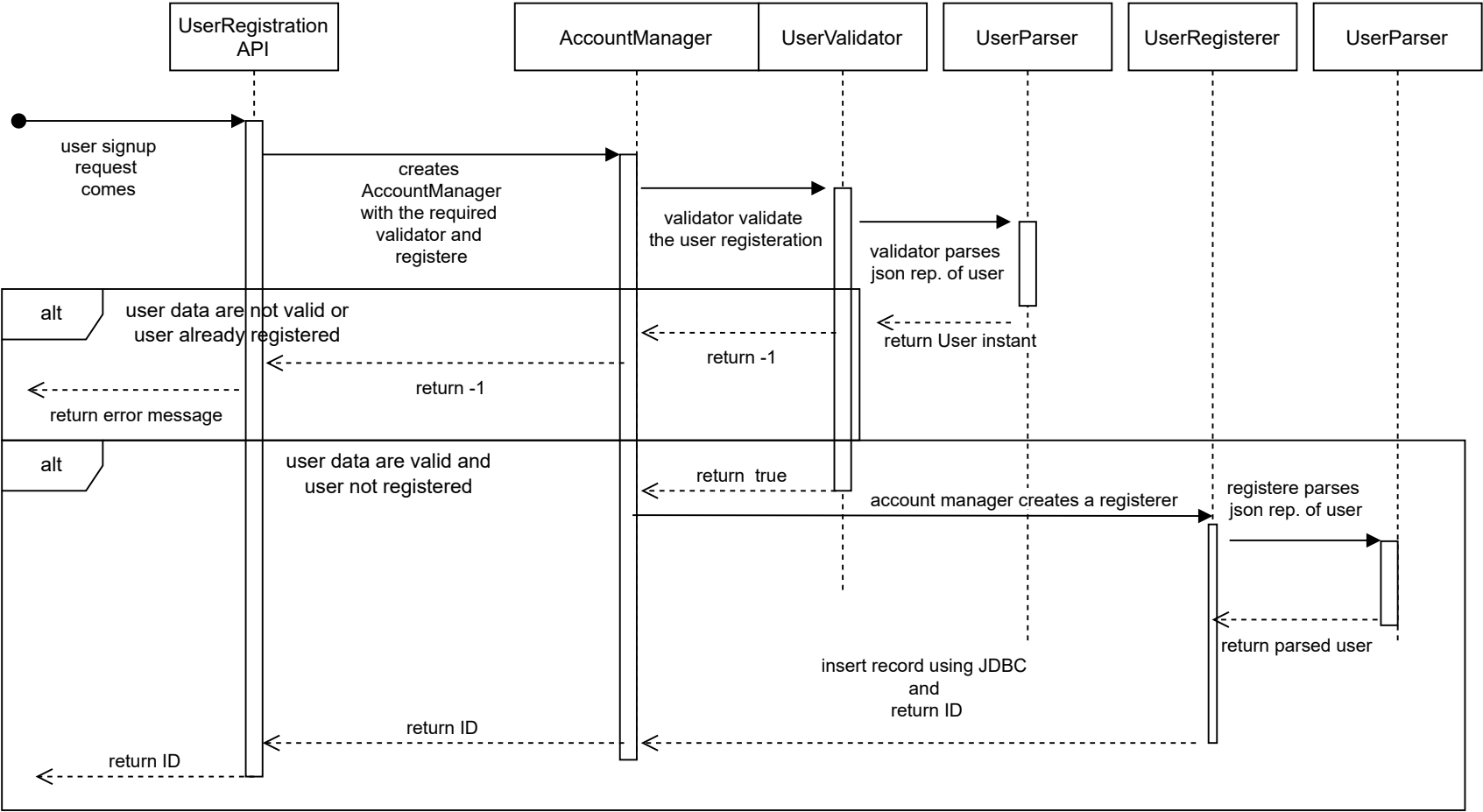
User	
Attributes	Collaborations
name	UserParser
email	UserValidator
ID	UserRegistere
BloodType	JDBC
National ID	
password	
hasDisease	
lastTimeDon	

Institution	
Attributes	Collaborations
ID	InstitutionParser
name	InstitutionValidator
email	InstitutionRegistere
password	JDBC
literalLoc.	
geo.loc.	
blood bag	
Count	

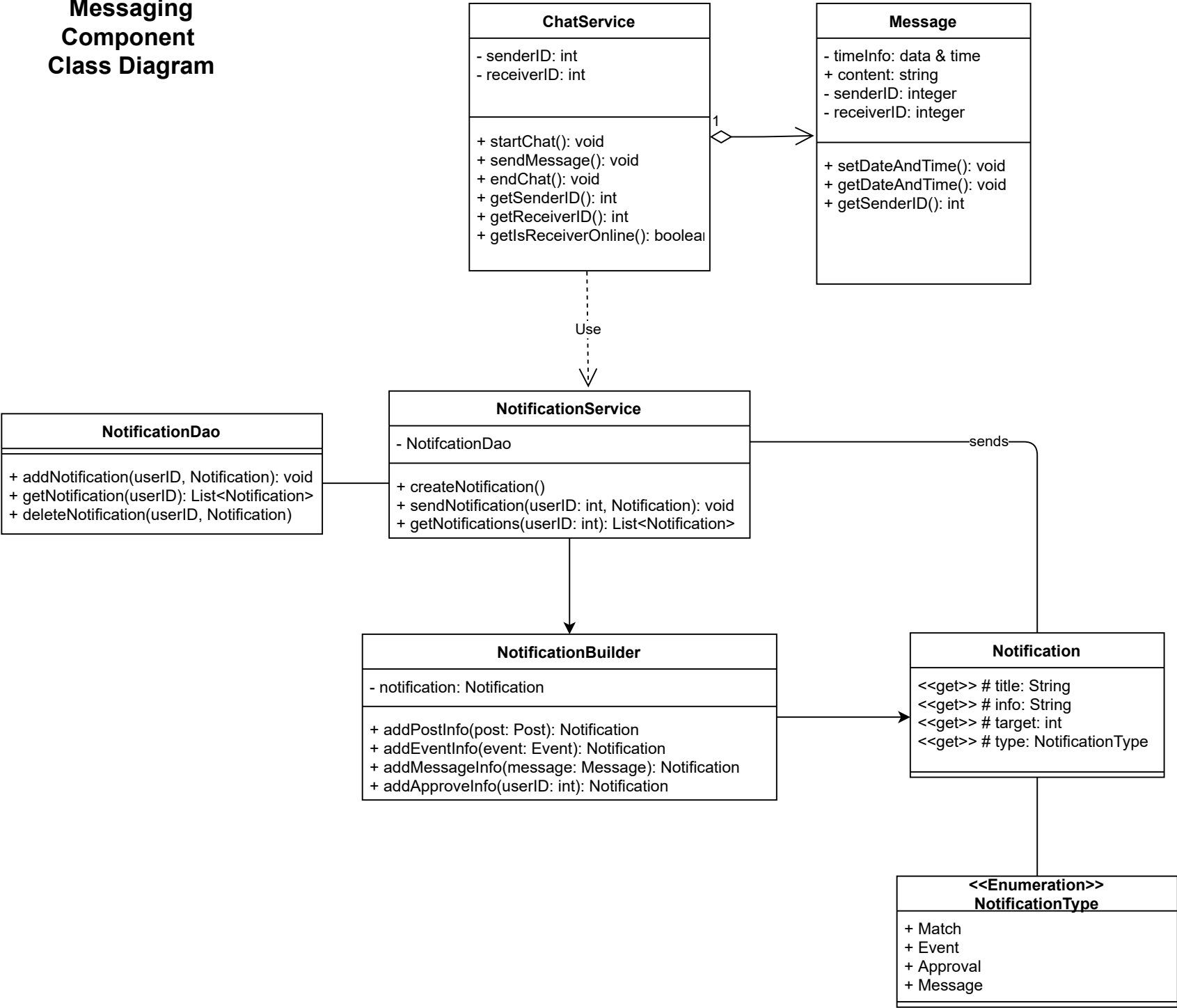
Institution DAO	
Responsibilities	Collaborations
Check existence of institution	Database
Save institution	
Get institution that have certain blood type	

Account Managment Component

Sequence Diagram



**Messaging
Component
Class Diagram**



Messaging Component CRC Cards

Chat Service	
Responsibility	Collaborations
start new chat session sends messages end chat sessions	Notification Service Message

Notification DAO	
Responsibility	Collaborations
add new notification fetch notifications of specific user delete notification	Database

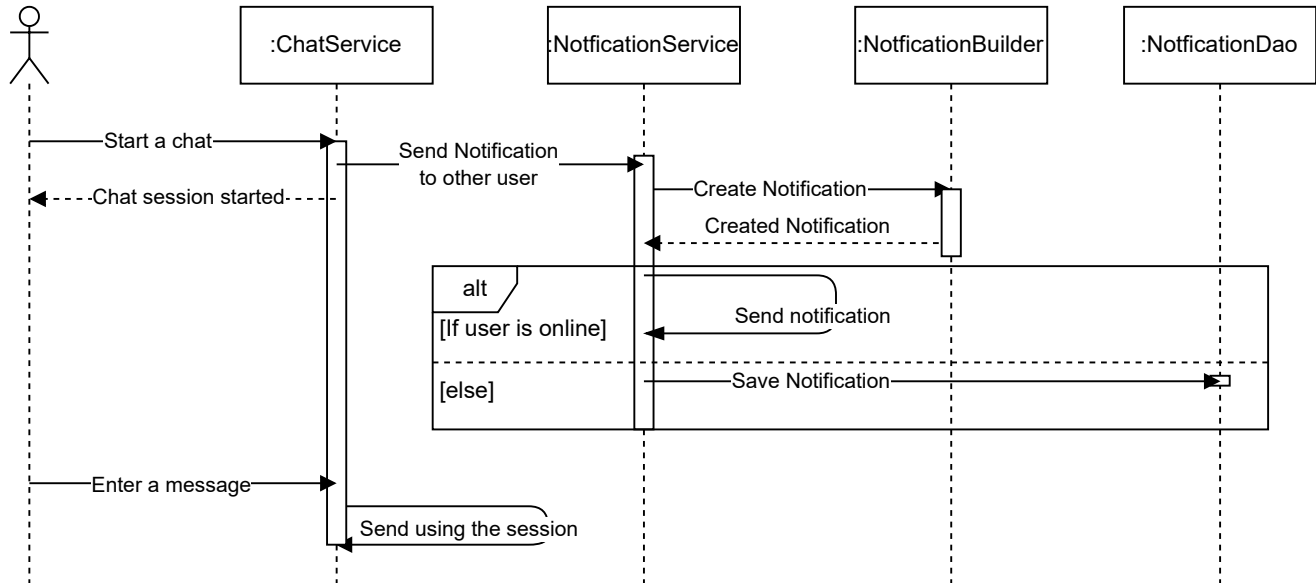
Notification Service	
Responsibility	Collaborations
sends notification gets saved notifications	Notification Builder Notification Notification DAO

Message	
Attribute	Collaborations
date and time sender ID receiver ID	

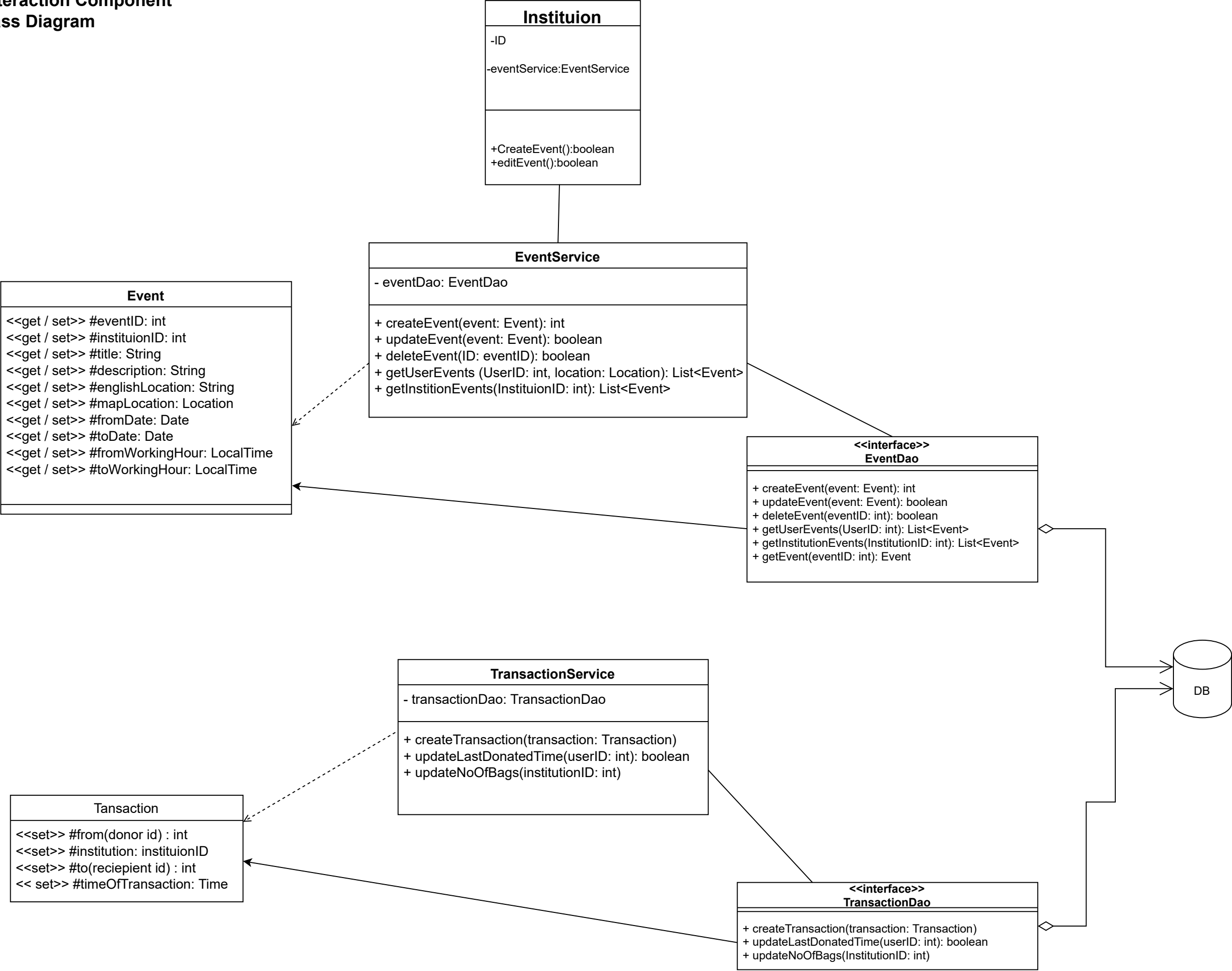
Notification Builder	
Responsibility	Collaborations
Builds notifications based on a sepecific type	Notification

Notification	
Attribute	Collaborations
title info target ID type	

Messaging Component Sequence Diagram Chat, Notification Ex.



Institution Interaction Component
Class Diagram



Institution Interaction Component CRC Cards

Event	
Attributes	Collaborations
eventID institutionID title description englishLocation	
mapLocation	
fromDate	
toDate	
fromWorkingHour	
toWorkingHour	

Transaction	
Attributes	Collaborations
from institution to timeOfTransaction	

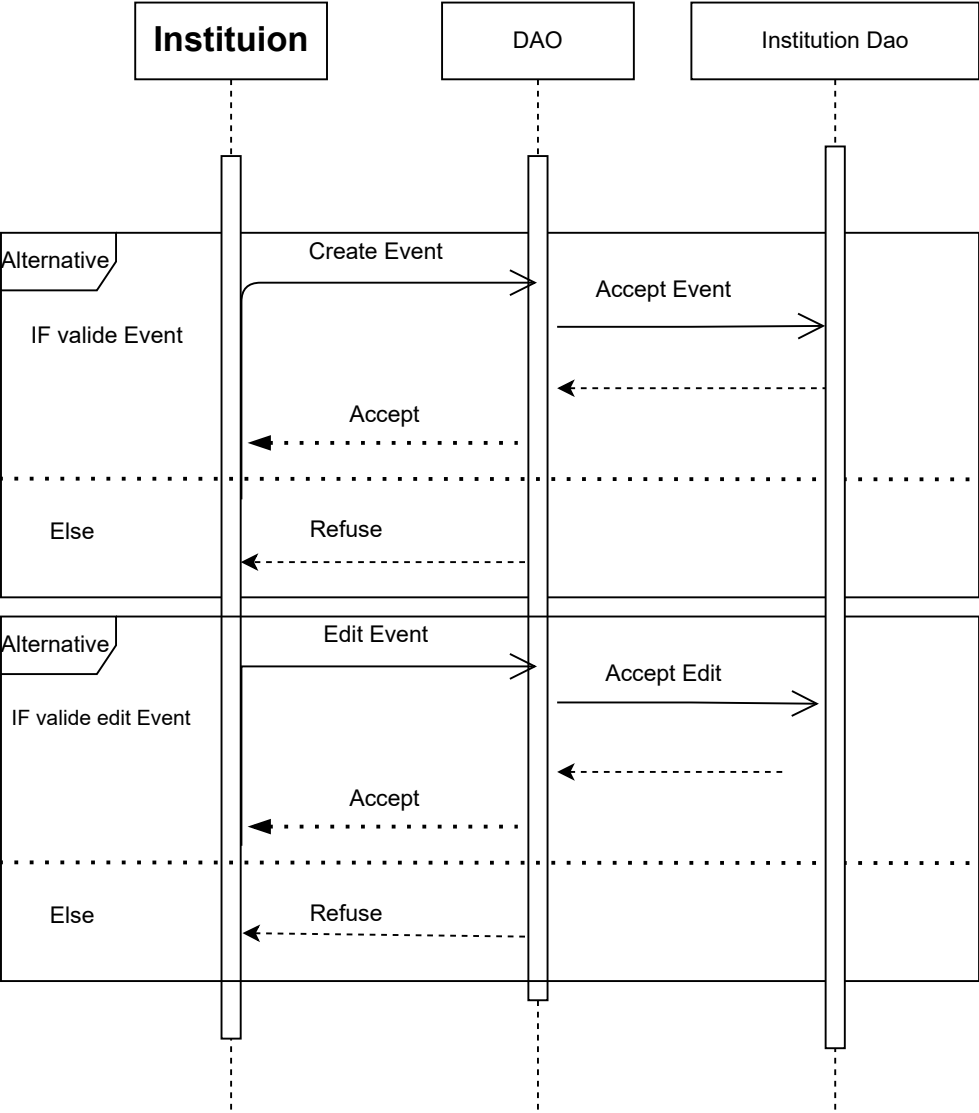
Event Service	
Responsibilities	Collaborations
Create Event	Institution
Update Event	Event
Delete Event	Event DAO
Get User Events	
Get Inst. Events	
Get Event	

Transaction Service	
Responsibilities	Collaborations
Create transaction	Transaction
Update User's last donated time	Transaction DAO
Update number of bags in inst.	

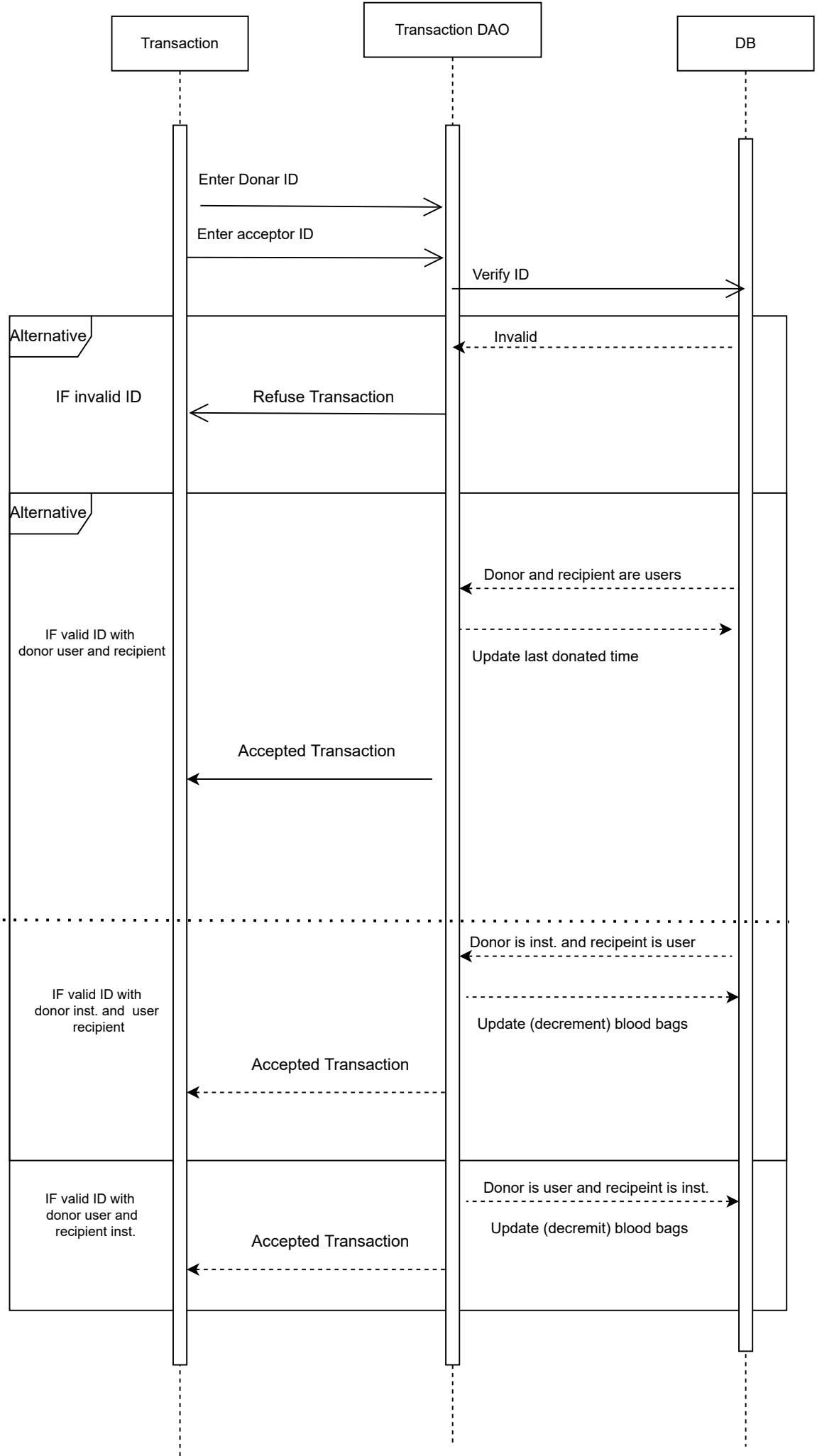
Event DAO	
Responsibilities	Collaborations
Create Event	
Update Event	
Delete Event	
Get User Events	
Get Inst. Events	
Get Event	

Transaction DAO	
Responsibilities	Collaborations
Create transaction	
Update User's last donated time	
Update number of bags in inst.	

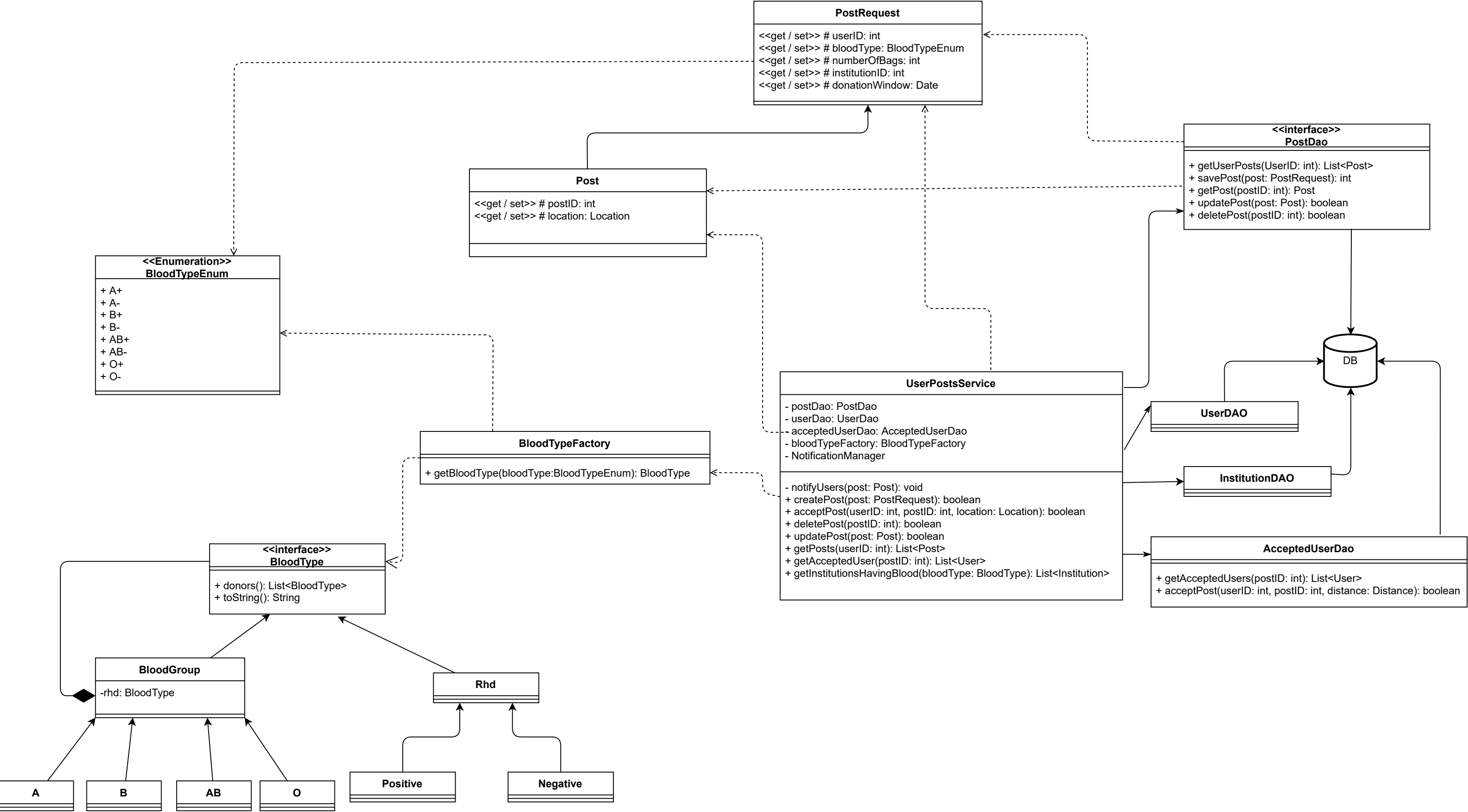
Institution Interaction
Component
Sequence Diagram
Event Activity



Institution Interaction
Component
Sequence Diagram
Transaction Activity



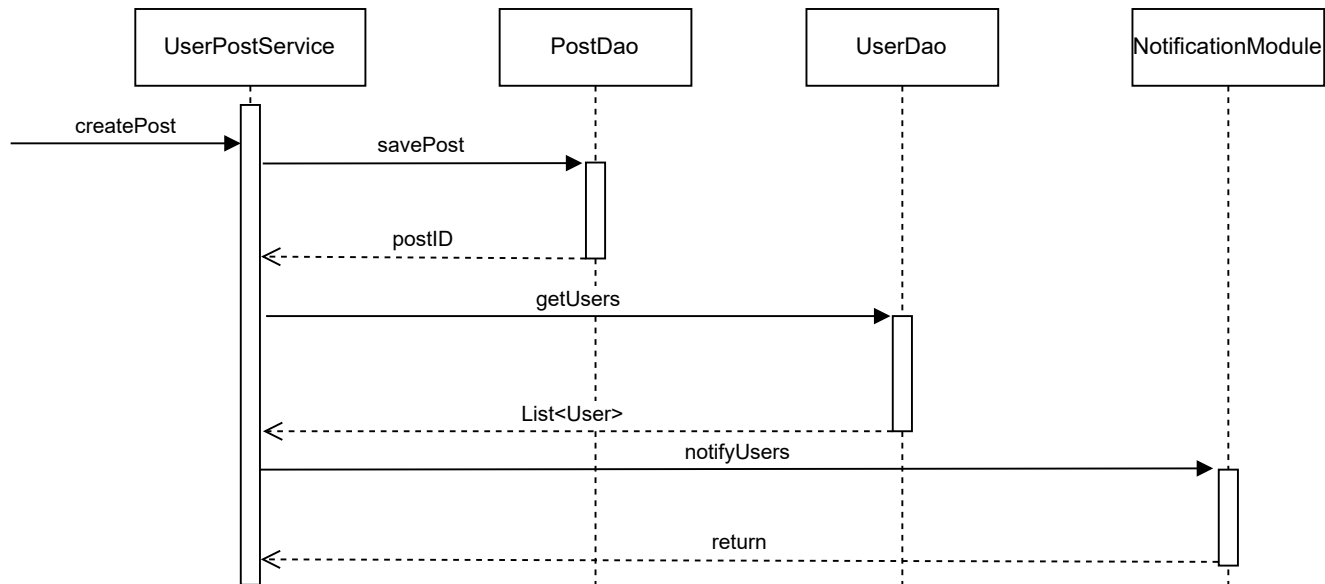
Post Component
Class Diagram



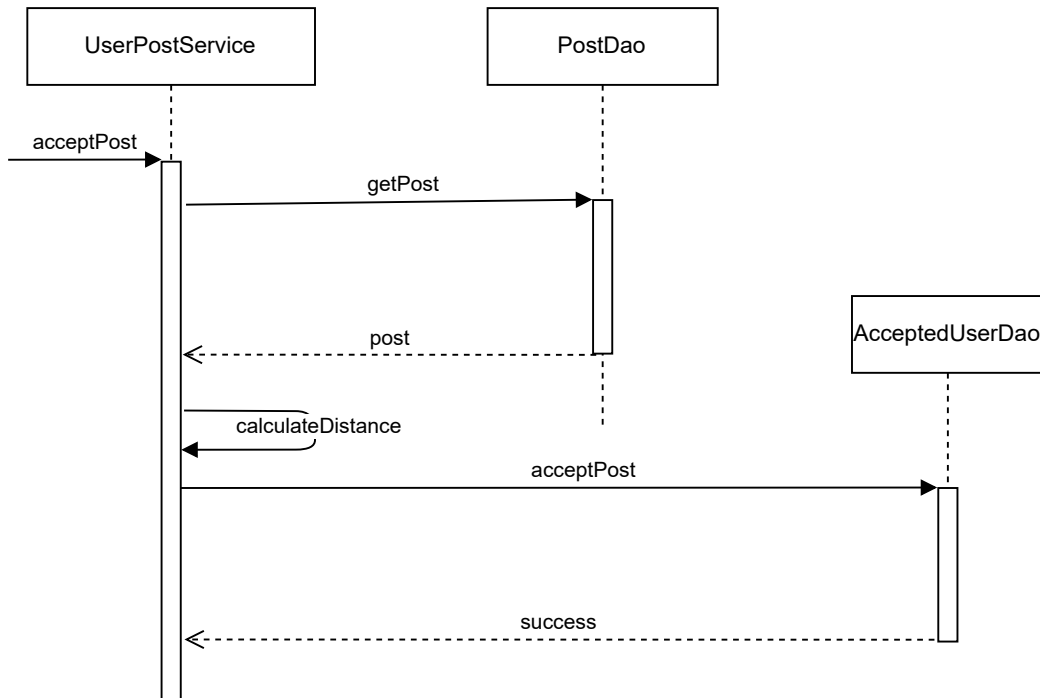
Post Component

Sequence Diagram

Request Activity



Post Component Sequence Diagram Accept Activity



Post Component
CRC Card

User Post Service	
Responsibilities	Collaborations
Create Post	Post DAO
Update Post	User DAO
Delete Post	Accepted Users DAO
Accept Post	Blood Type Factory
Get Posts	Notification Manager
Get Accepted Users	

Accepted User DAO	
Attributes	Collaborations
Get Accepted Users	
Accept Post	

Post DAO	
Responsibilities	Collaborations
Get User Posts	
Save Post	
Get Post	
Update Post	
Delete Post	

Post	
Attributes	Collaborations
Post ID	
User ID	
Blood Type	
Number Of Bags	
Donation Window	

Blood Type Factory	
Responsibilities	Collaborations
Get Blood Type	