SWE Phase 2

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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:

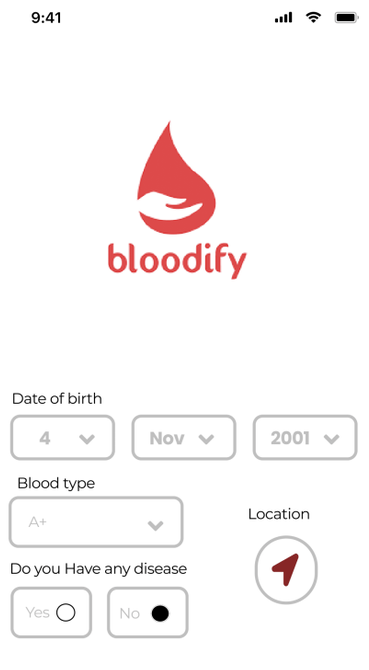
a. Create event in certain location.
b. Issue notifications to nearby users to notify them about the event.
c. Institutions can confirm transactions
    i. User – User transaction
    ii. Institution – User transaction
    iii. User – Institution transaction
d. After each day, institution's inventories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

Prototype

Sign in

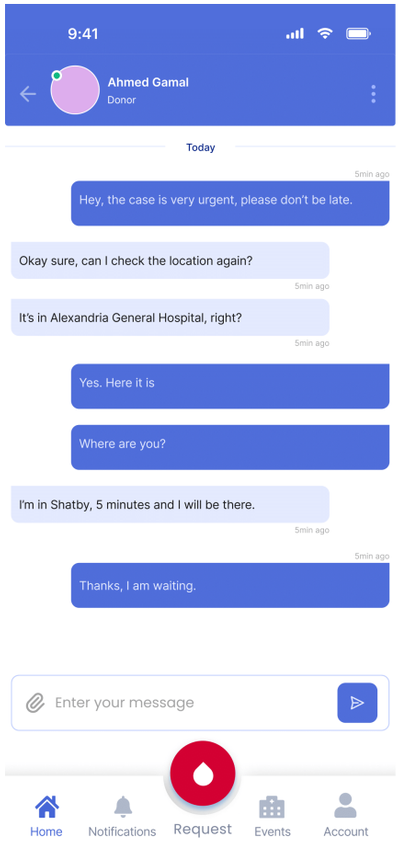
Sign Up - Page 1

Sign Up - Page 2



Home Page - Recipient

Chat



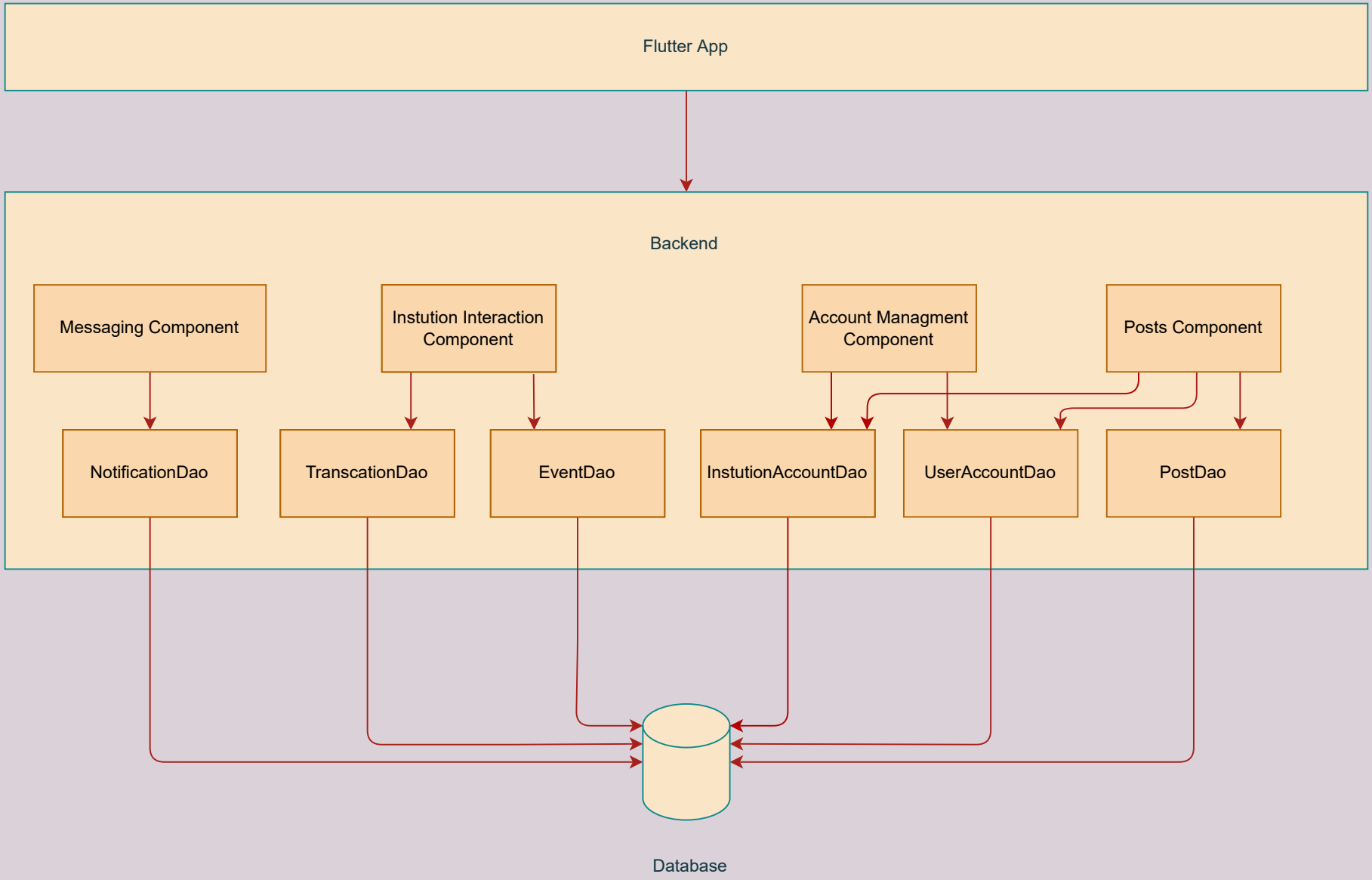
Request

Account Settings

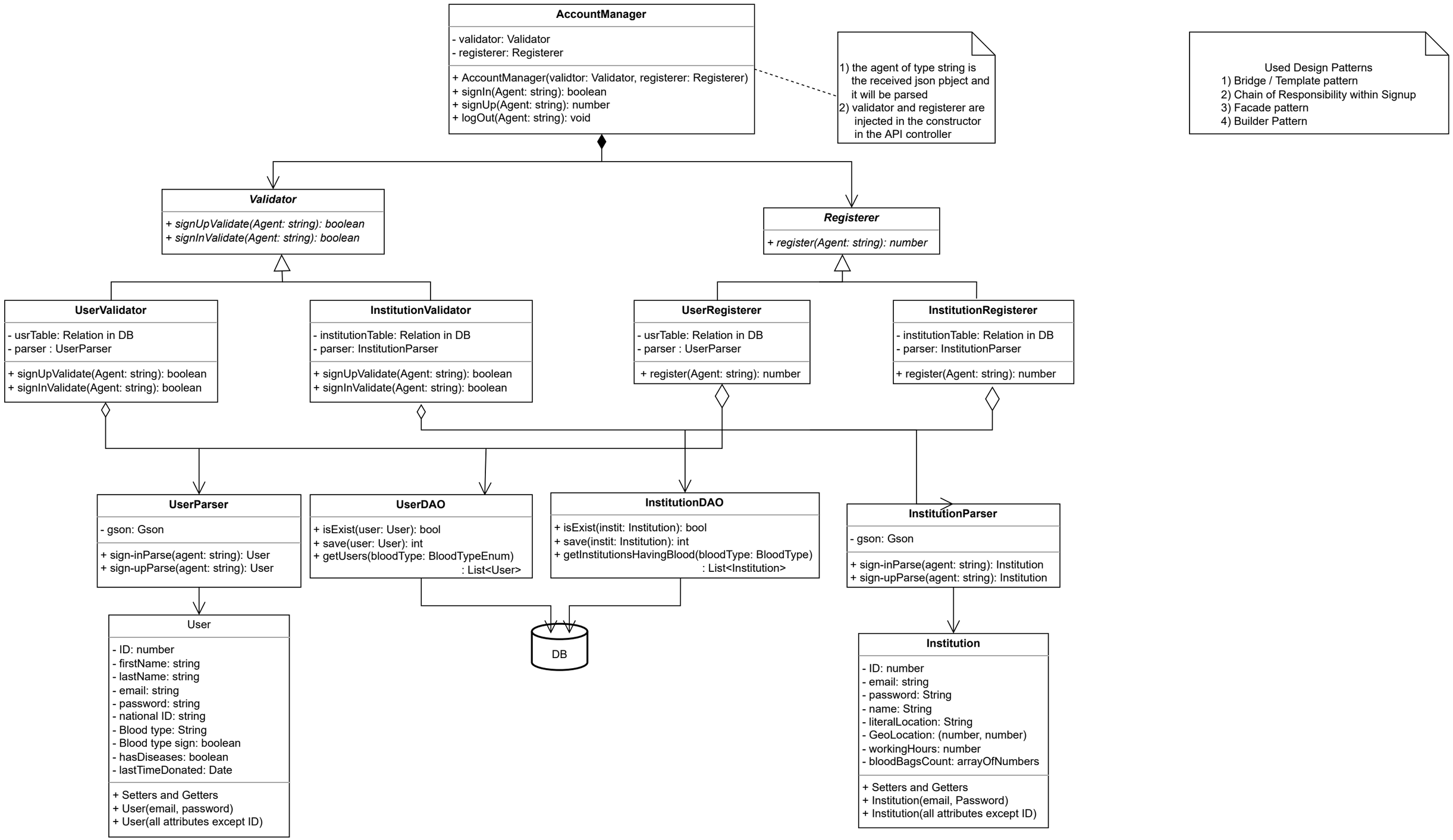
Notifications

Home Page - Donor

Component Diagram



Account Managment Component
Class Diagram



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
	InstitutionRegistrer

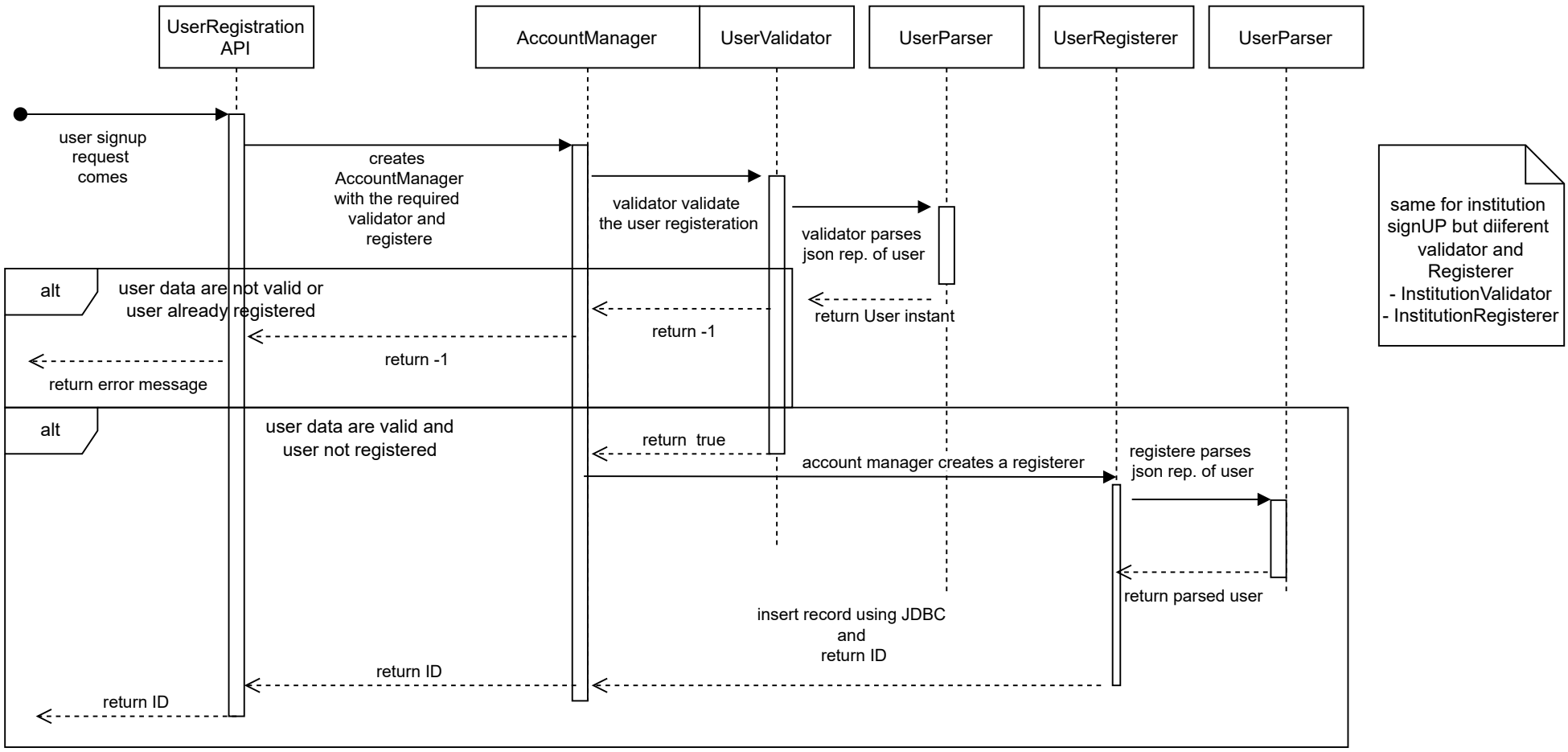
User DAO	
Responsibilities	**Collaborations**
Check existence of user	Database
Save user	
Get Users with certain blood type	

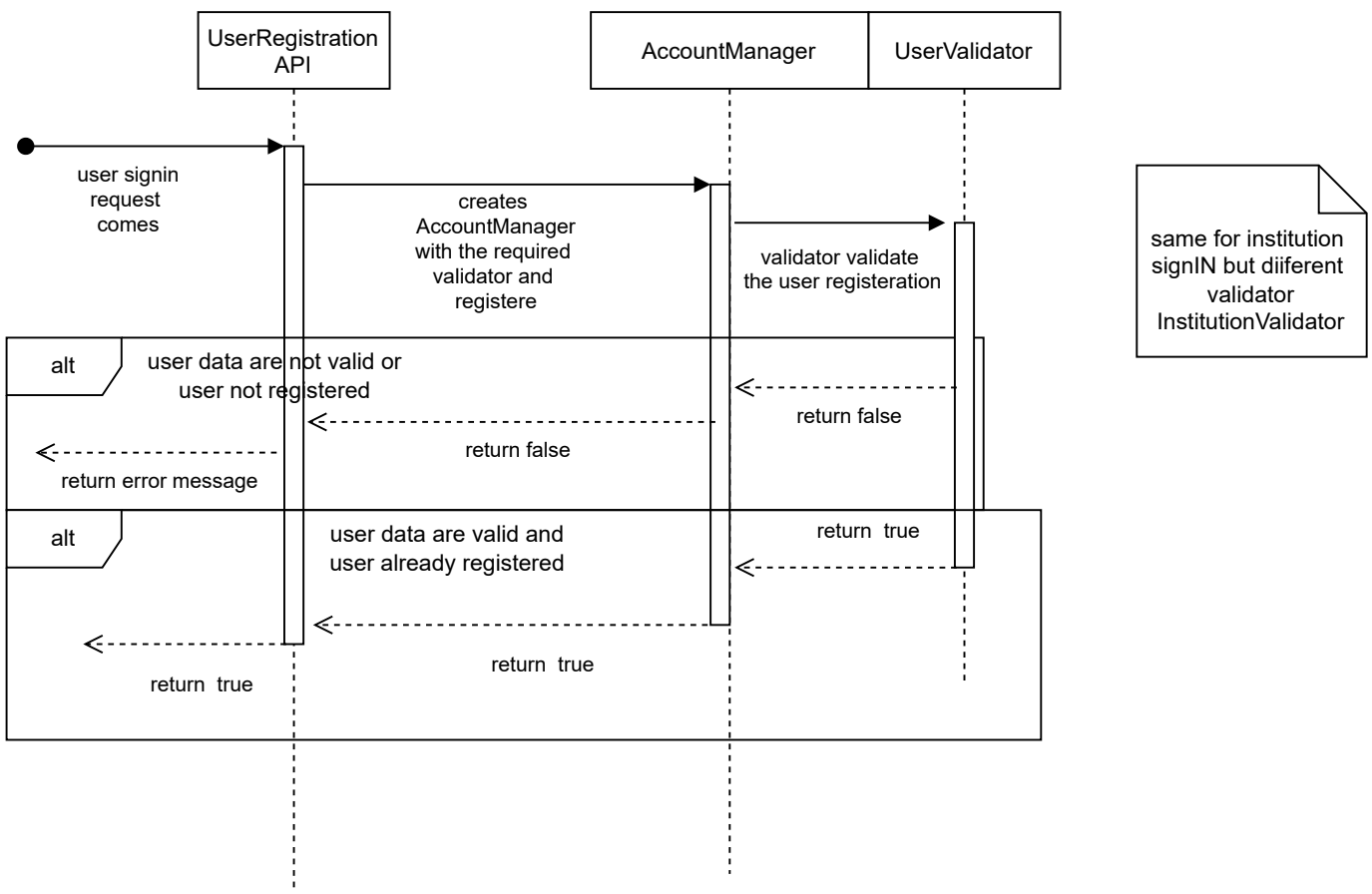
User	
Attributes	**Collaborations**
name	UserParser
email	UserValidator
ID	UserRegistere
BloodType	JDBC
National ID	
password	
hasDisease	
lastTimeDon	

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

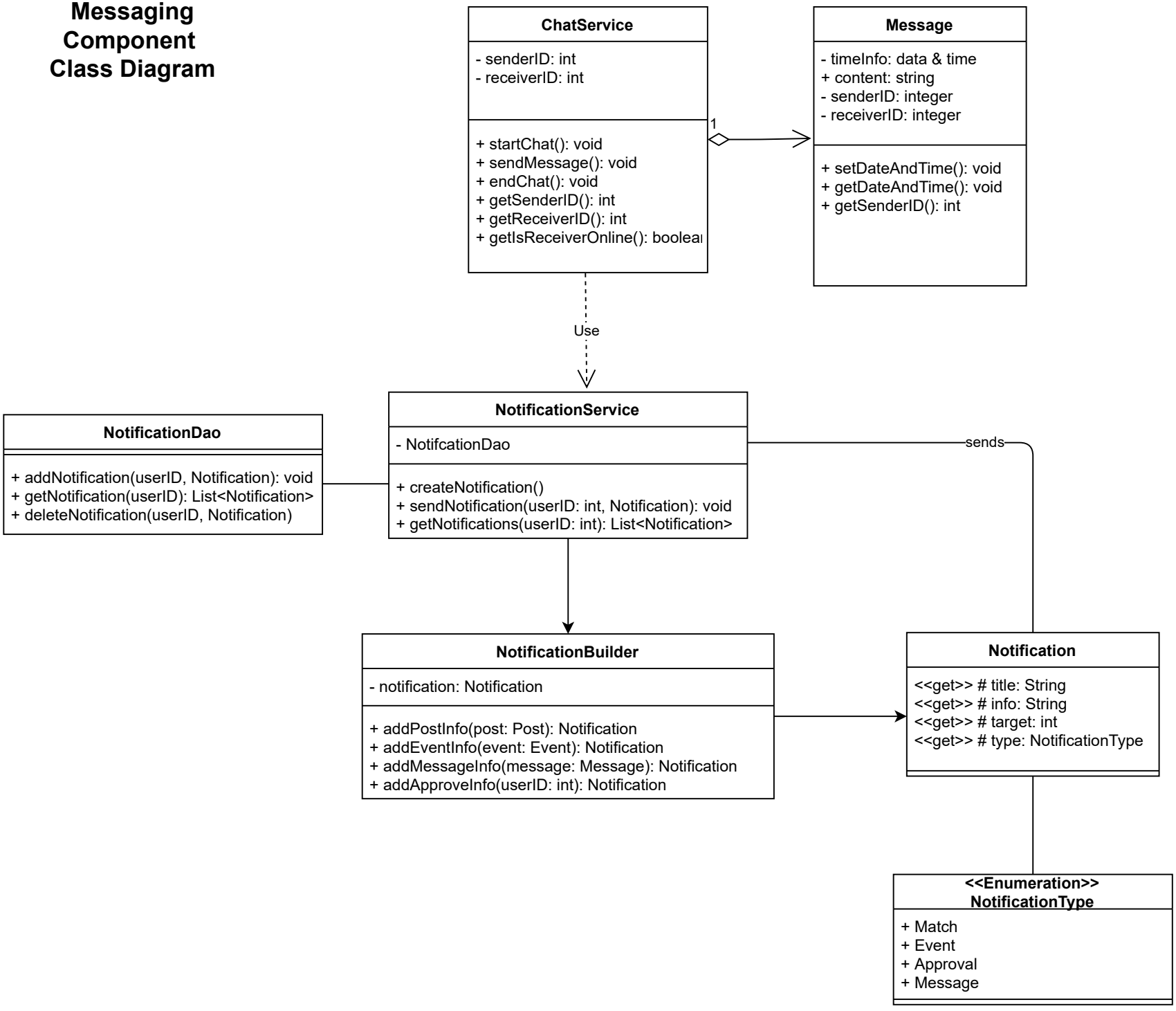
Institution DAO	
Responsibilities	**Collaborations**
Check existence of institution	Database
Save institution	
Get institution that have certain blood type	

Account Managment Component
Sequence Diagram





Messaging Component Class Diagram



Messaging Component CRC Cards

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

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

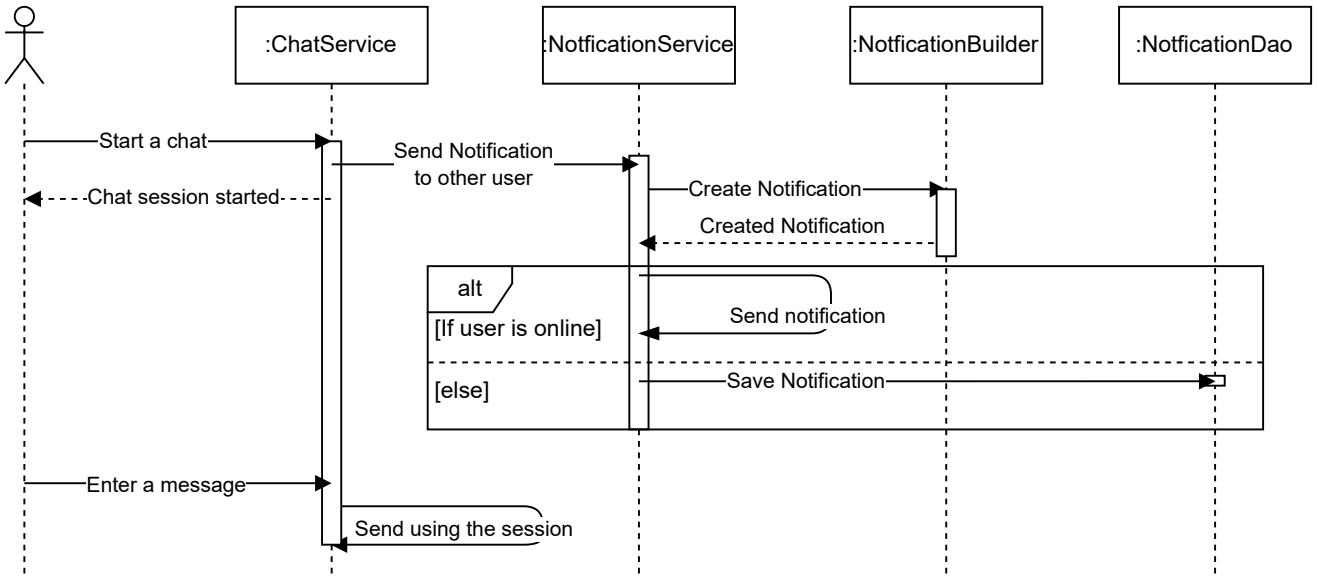
Notification Service	
Responsibility	**Collaborations**
sends notification	Notification Builder
gets saved notfications	Notification
	Notification DAO

Message	
Attribute	**Collaborations**
date and time	
sender ID	
receiver ID	

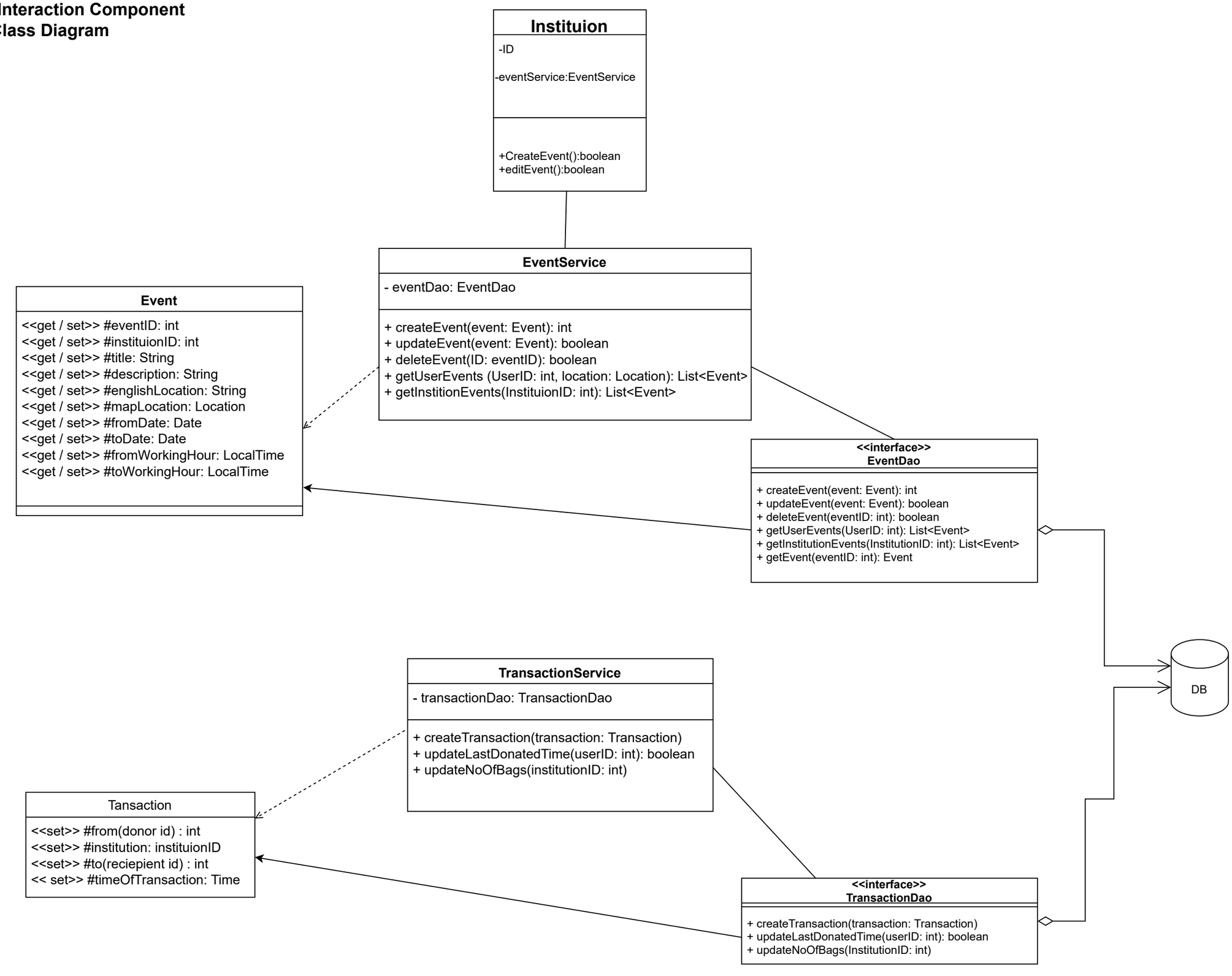
Notification Builder	
Responsibility	**Collaborations**
Builds notifications based on a sepecific type	Notification

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	

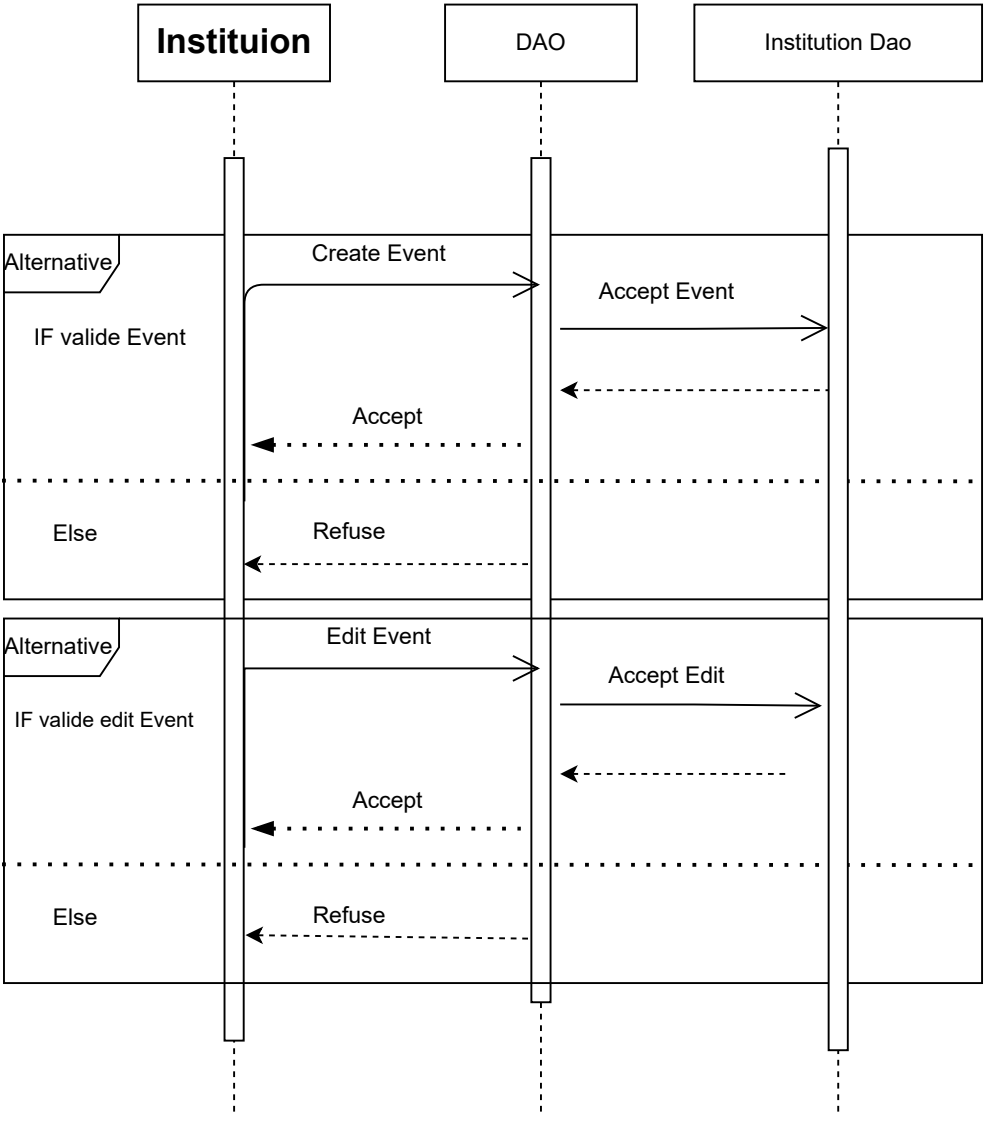
Event Service	
Responsibilities	**Collaborations**
Create Event Update Event Delete Event Get User Events Get Inst. Events	Institution Event Event DAO
Get Event	

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

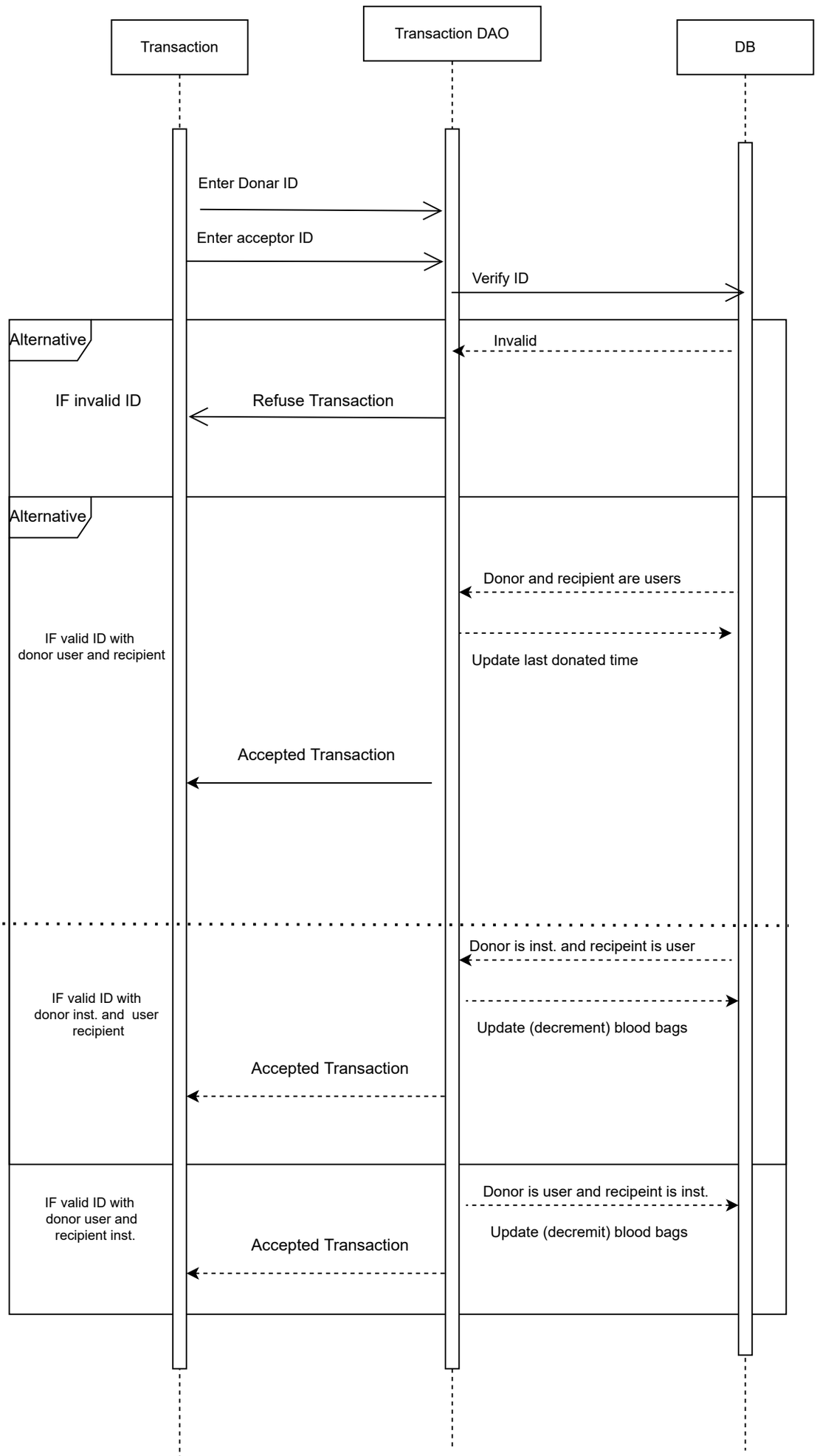
Event DAO	
Responsibilities	**Collaborations**
Create Event Update Event Delete Event Get User Events Get Inst. Events	
Get Event	

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

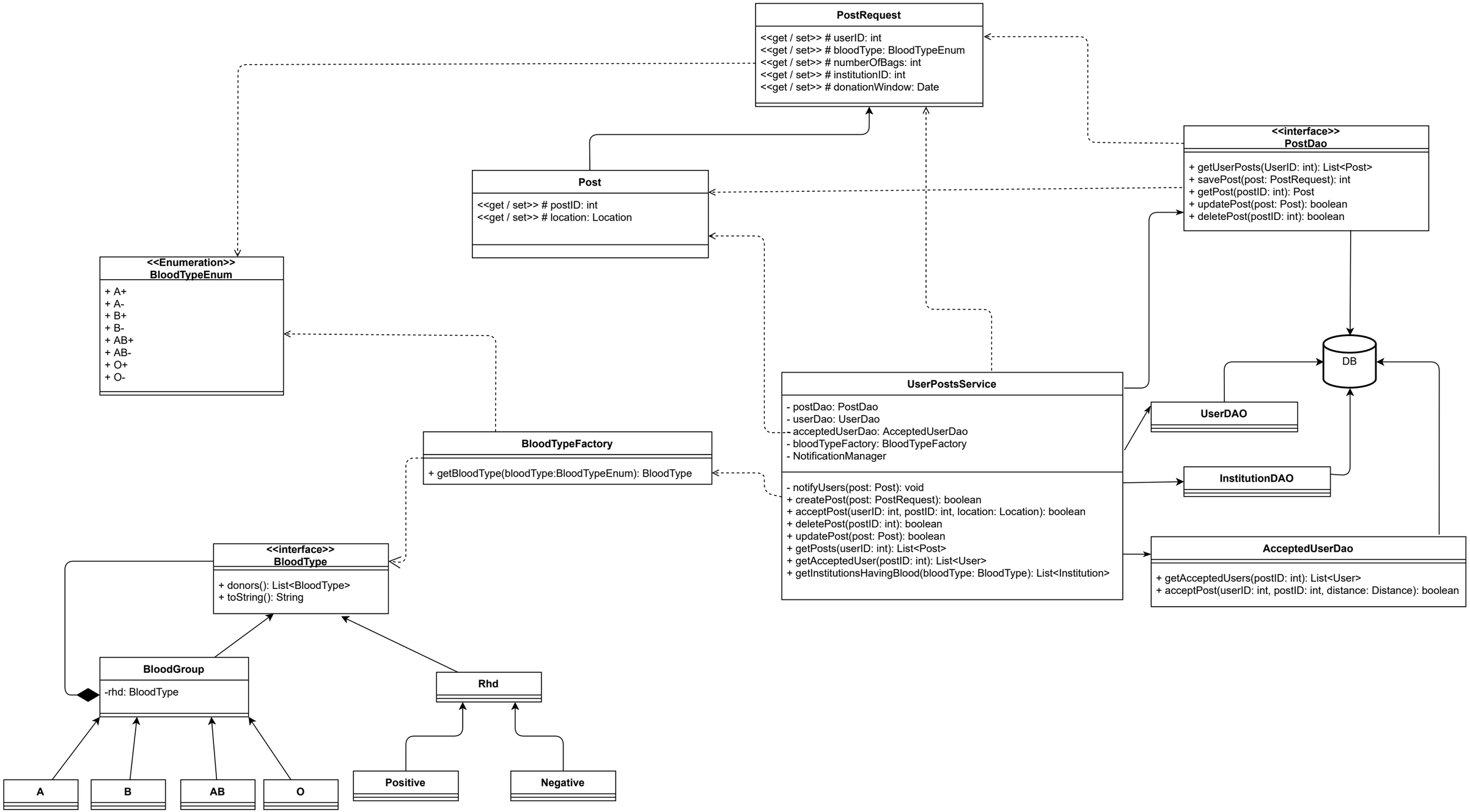
Institution Interaction Component Sequence Diagram Event Activity



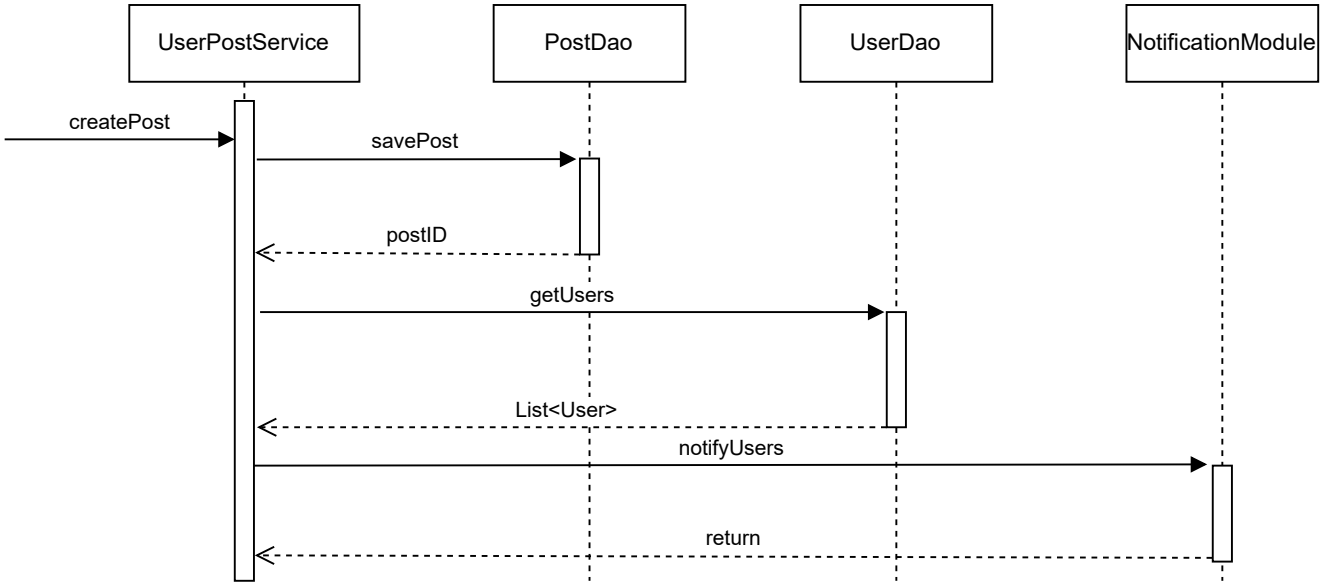
Institution Interaction
Component
Sequence Diagram
Transaction Activity



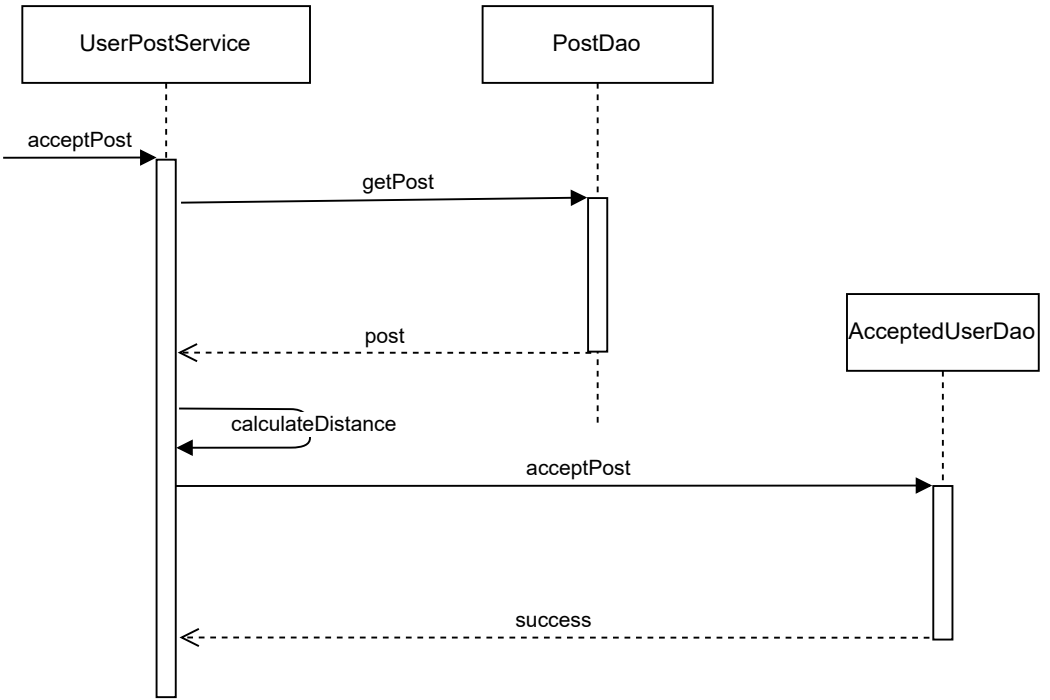
Post Component
Class Diagram



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	