D Y PATIL
INTERNATIONAL
UNIVERSITY
AKURDI PUNE

BCA Third Year

Semester : VI

Title of Project

CHAT-VERSE :- The Web Chat Application

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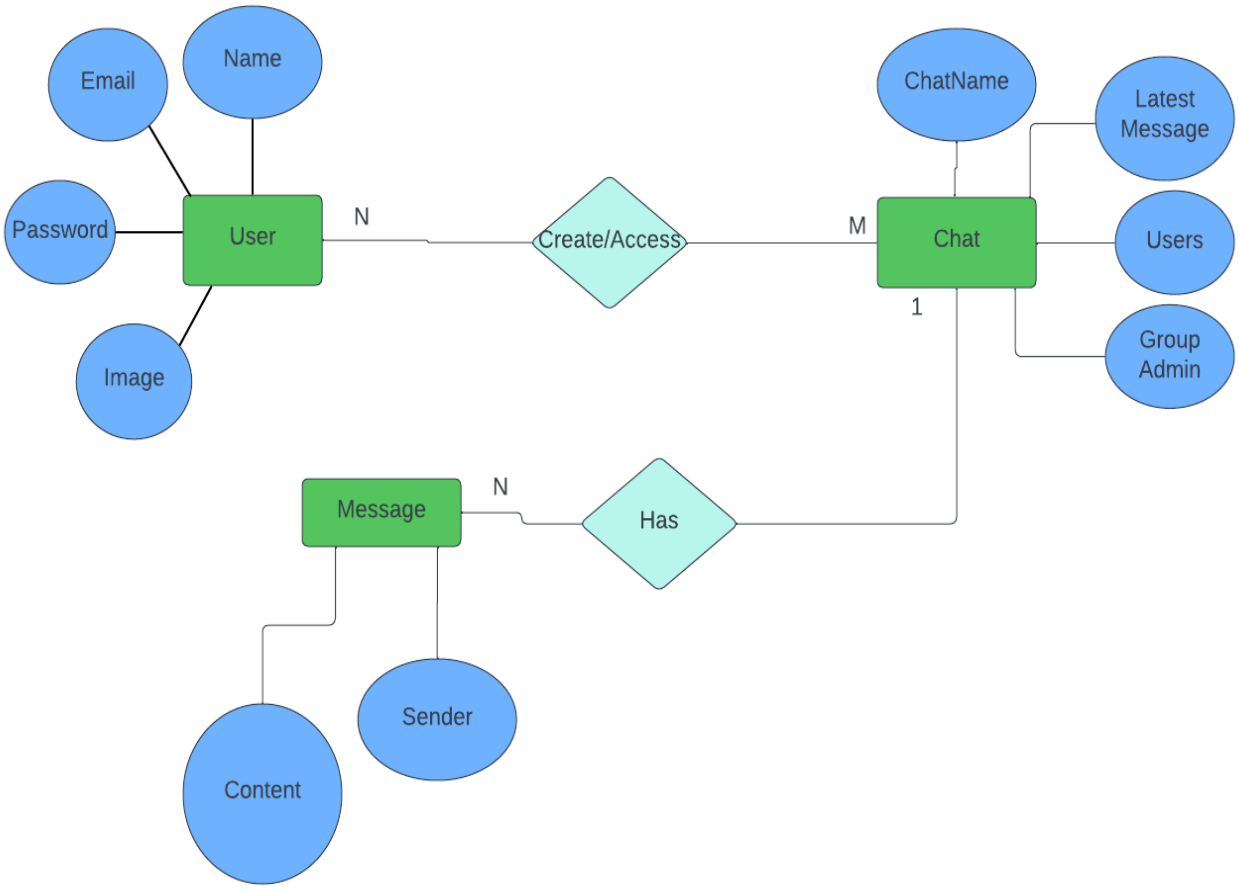
Entity Relationship Diagram

This is an ER model of a Chat Application. The entities are represented in rectangular boxes and relationships between different entities are represented by a diamond shaped box.

Here is the ER Diagram.



Data flow Diagram (DFD)

Following are application's DFD level 0, 1, 2.

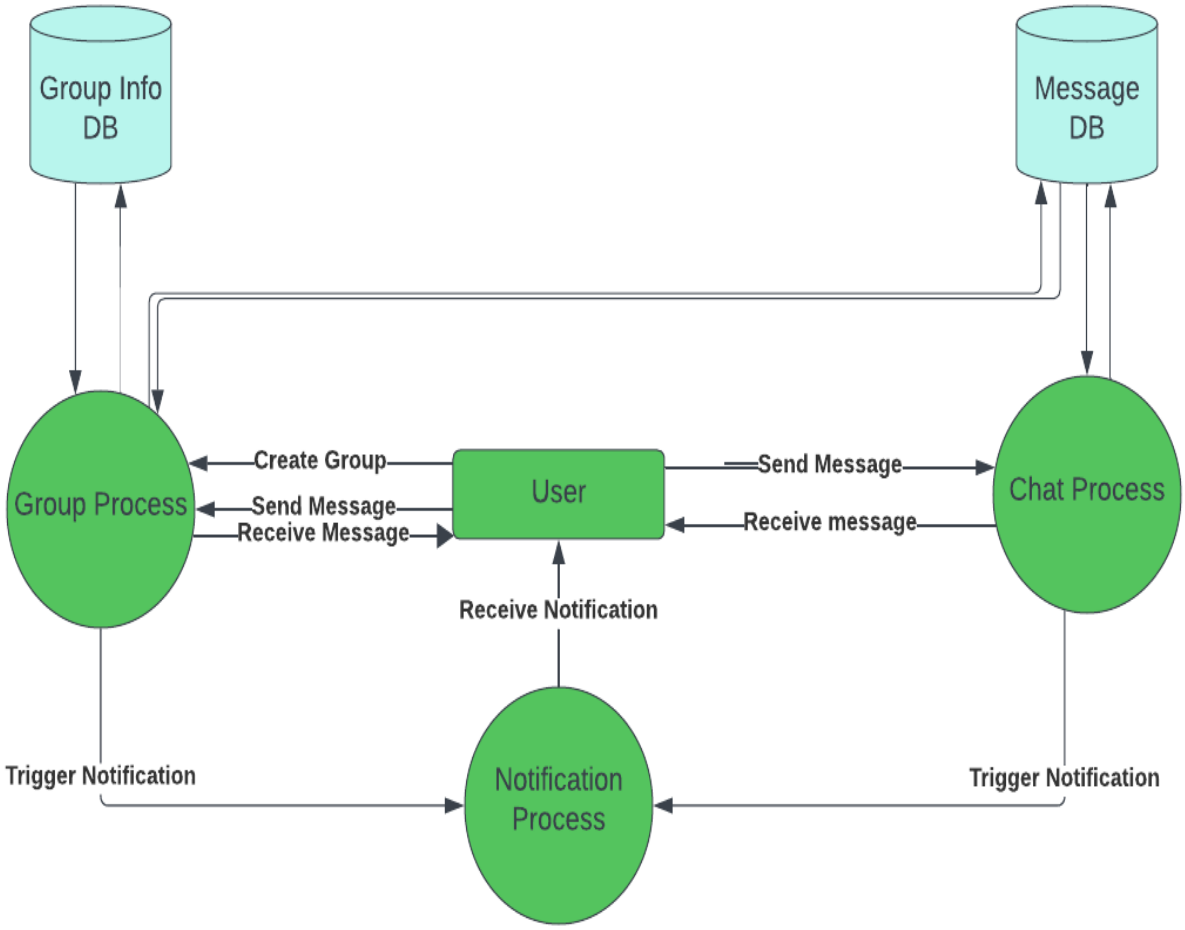
Context level (0 Level) DFD :

The Zero Level DFD is an abstract view of overall system. This is also called as Context Diagram in which entire system is represented as single process with its relationship with external entities such as admin, Customer etc.

ChatVerse DFD Level 0

Level 1 DFD :

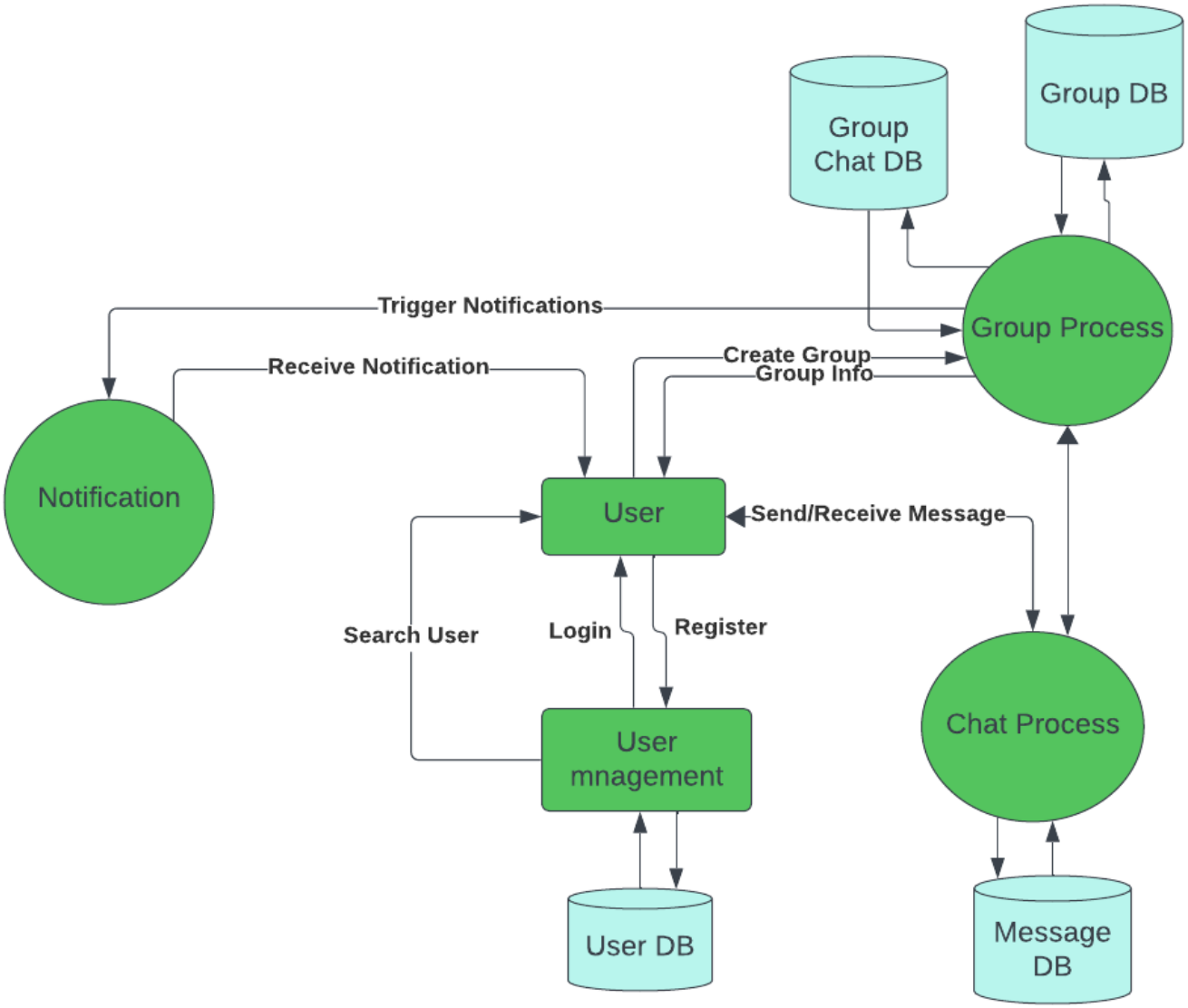
The first DFD of Chat Application shows more details of processing. Level 1 DFD list all the major sub processes that makes the entire system.



ChatVerse DFD 1

Level 2 DFD :

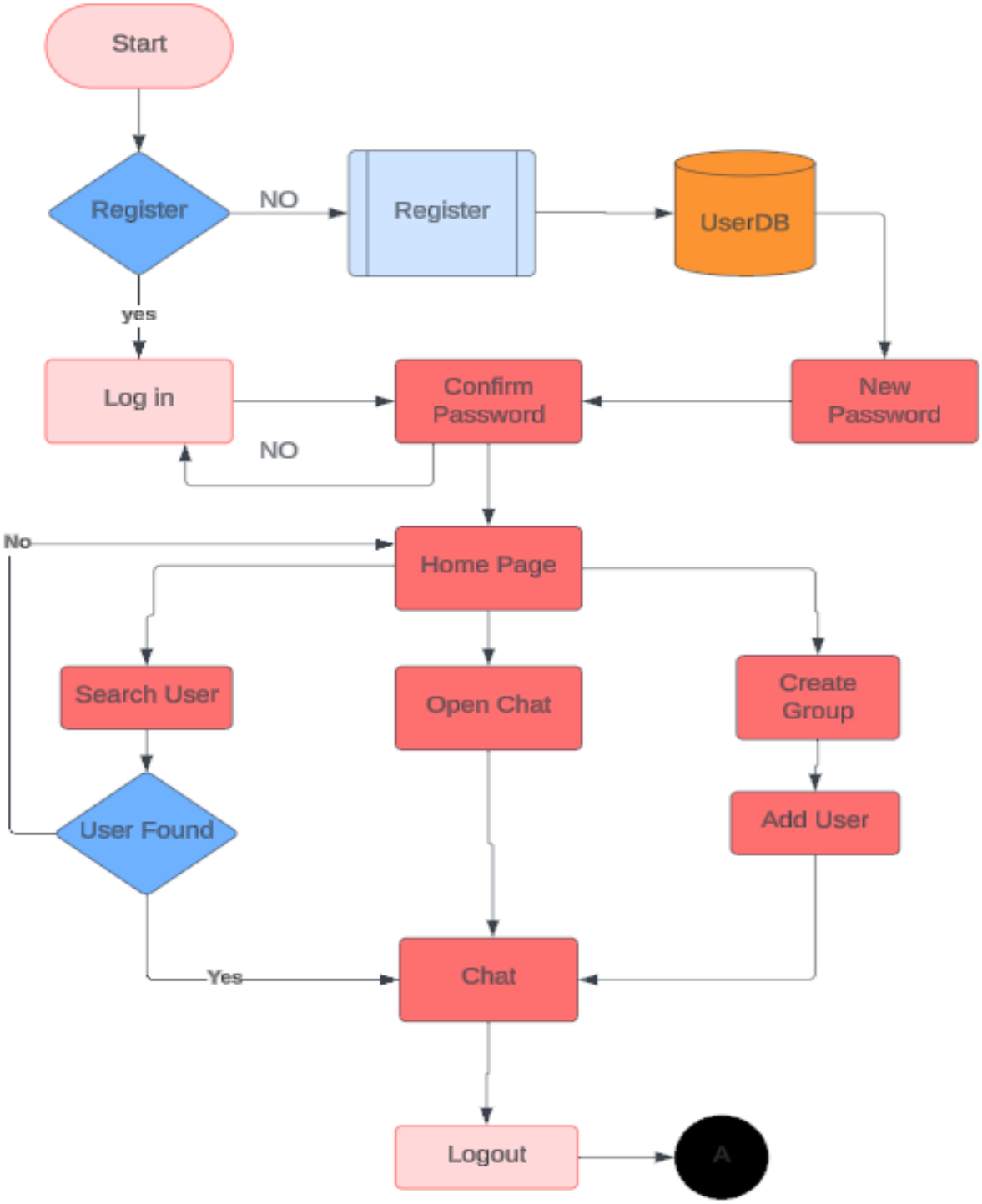
Level 2 DFD for Chat application dives even deeper into the concept of Level 1 DFD.



DFD 2

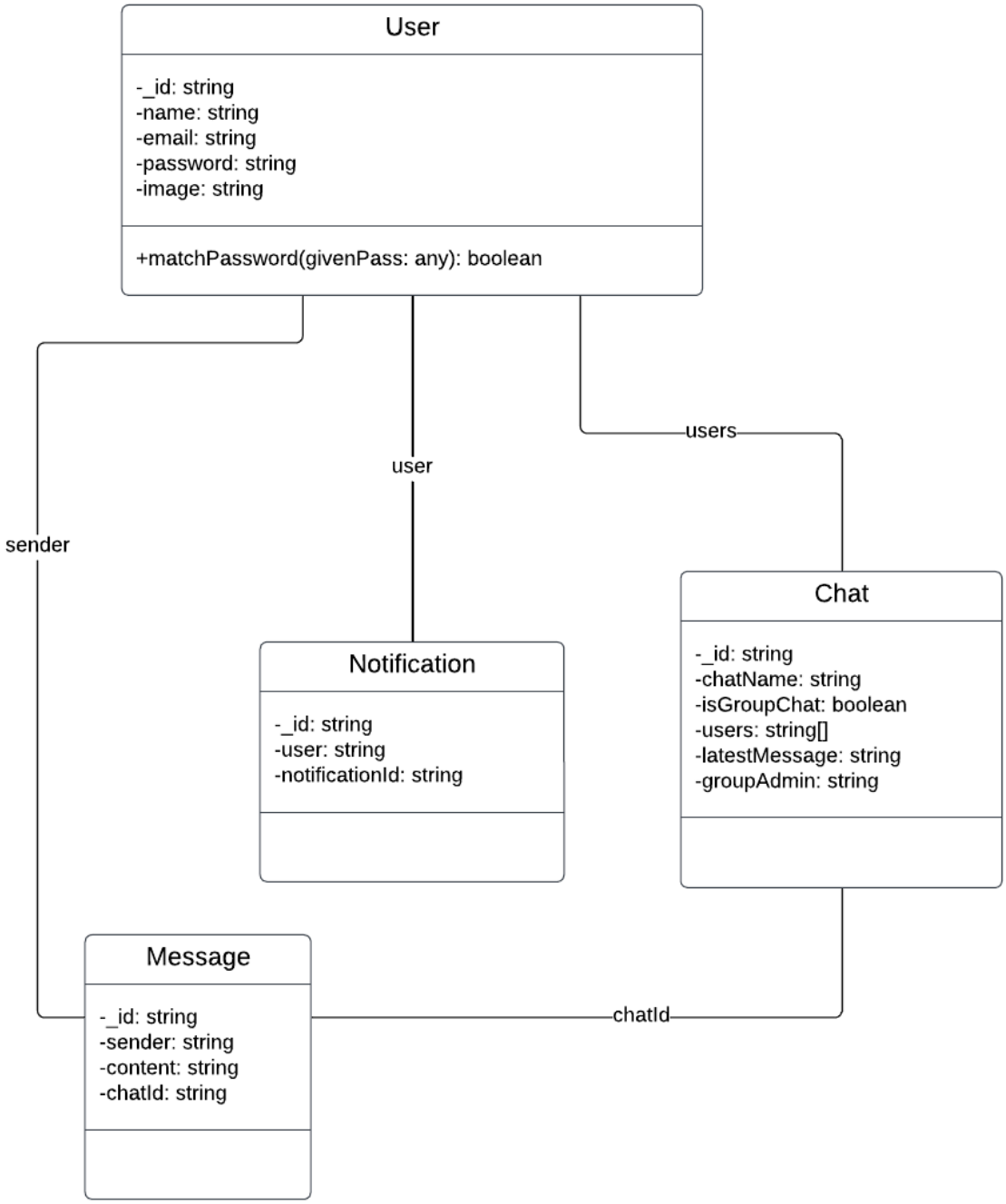
Flowchart

A flowchart is a visual representation of a process or algorithm. It is used to describe the sequence of steps and decisions required to perform a task.



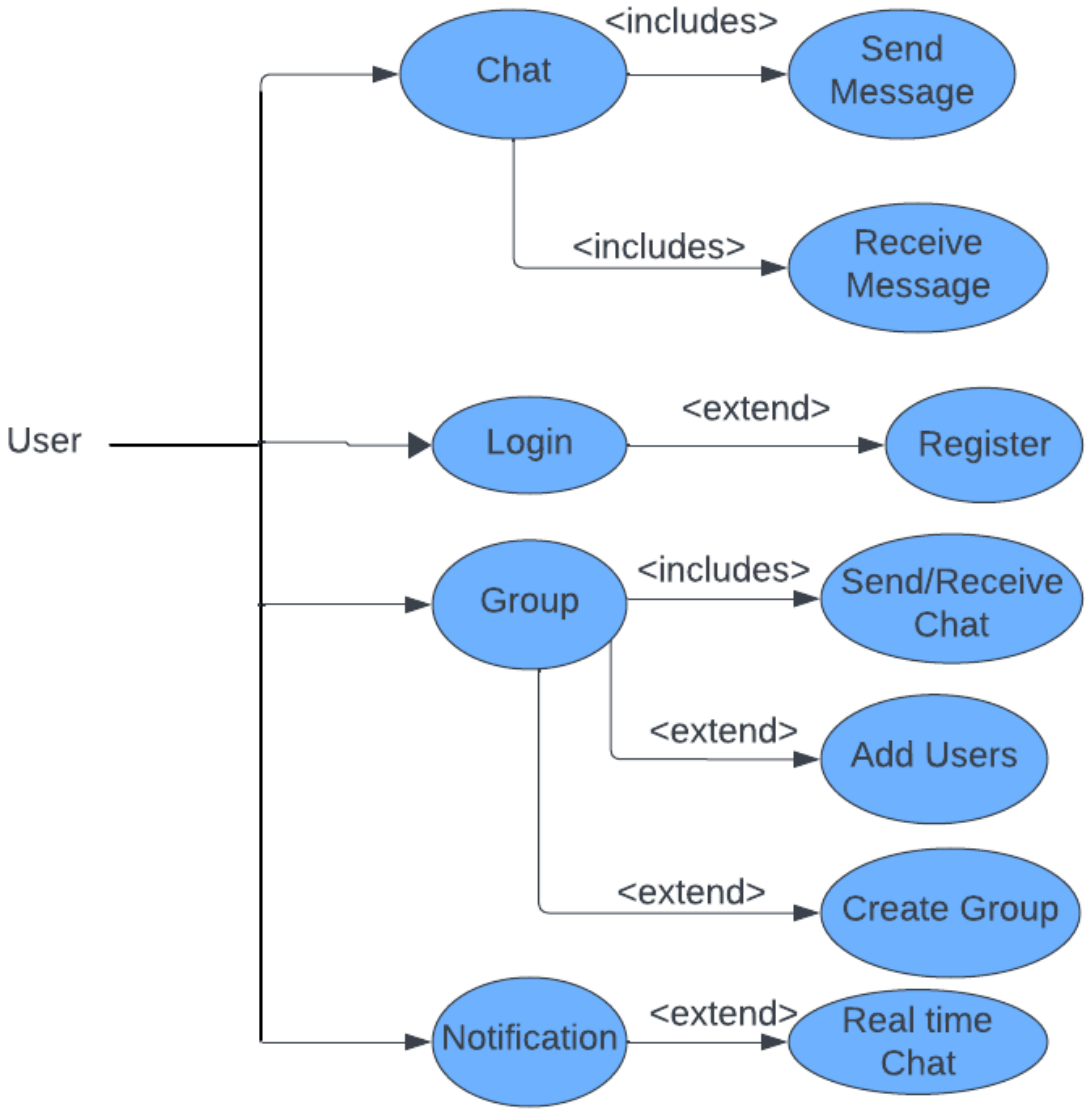
Class Diagram

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.



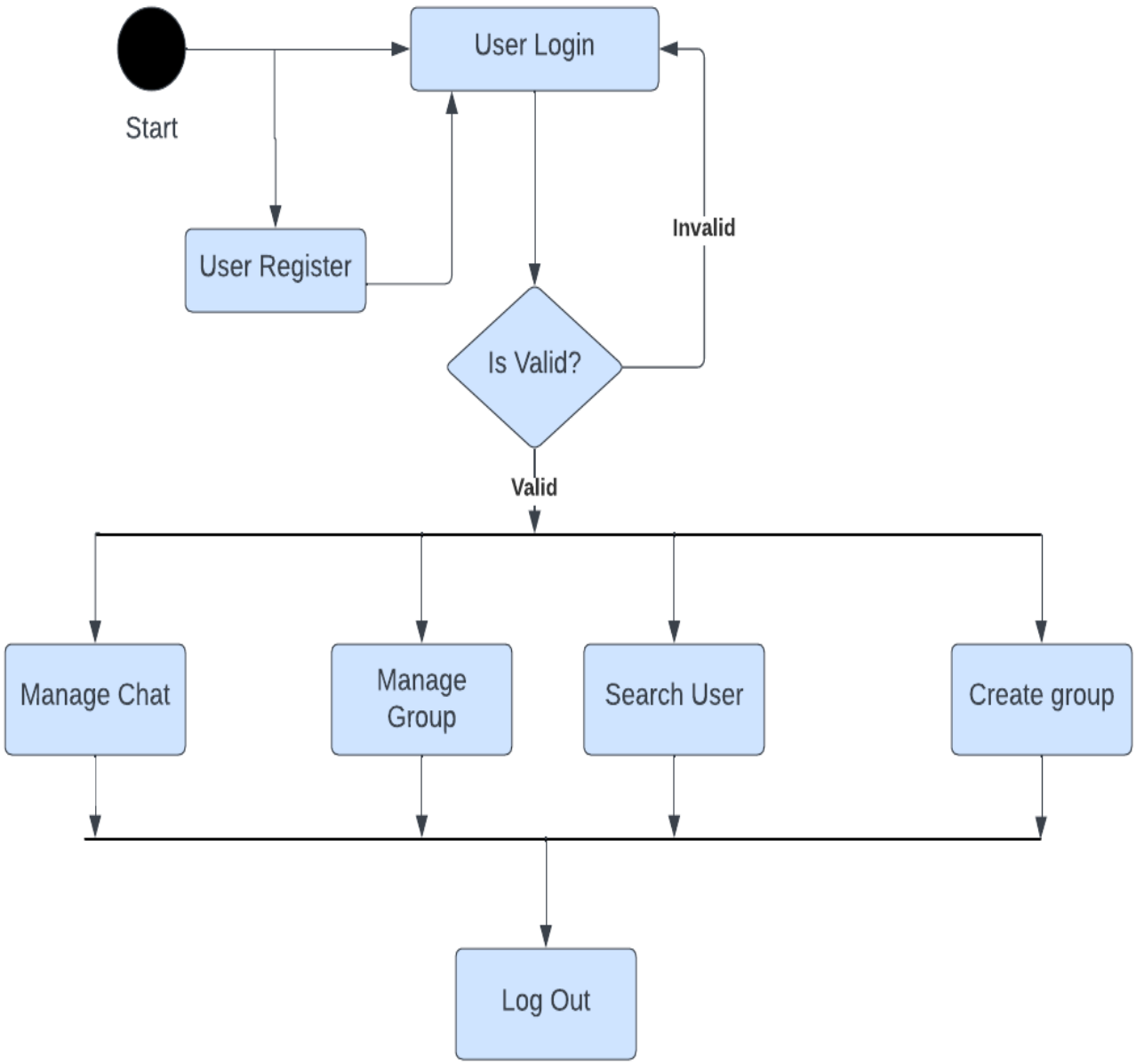
Use Case Diagram

A use case diagram is a type of Unified Modeling Language (UML) diagram that is used to model the interactions between a system and its actors.



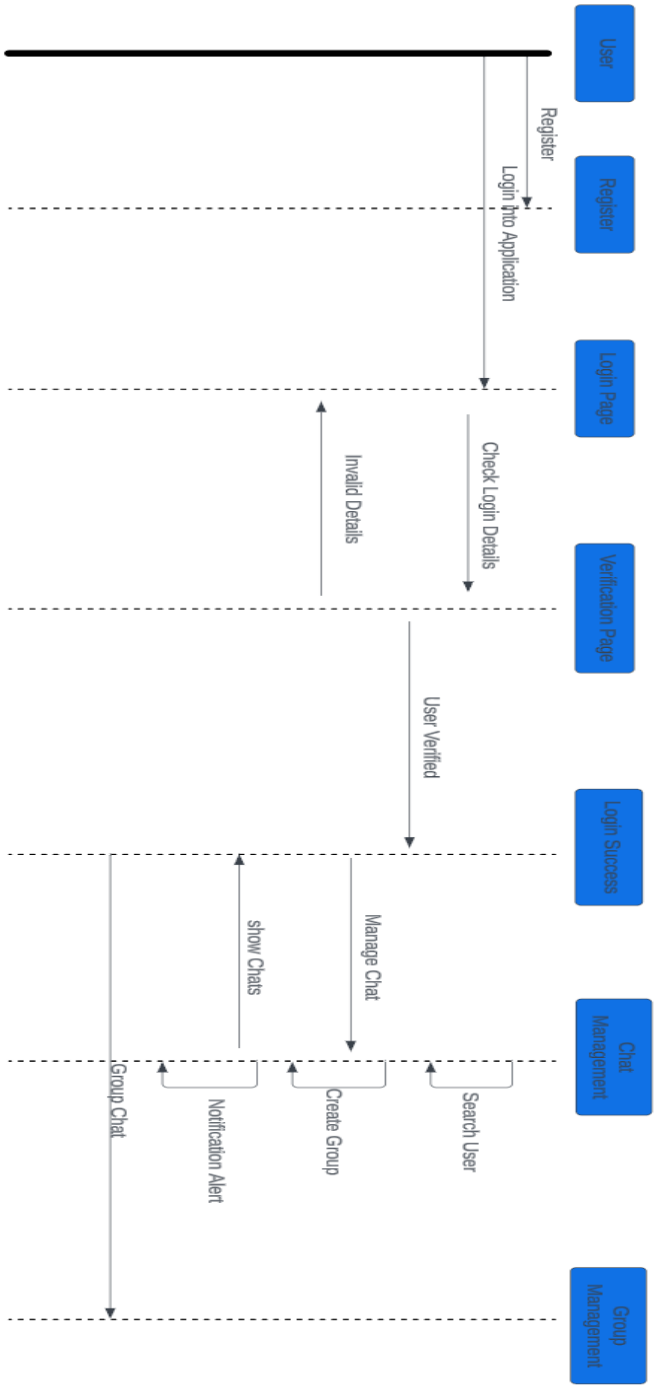
Activity Diagram

An activity diagram is a type of Unified Modeling Language (UML) diagram that is used to model the workflow of a system. It shows the flow of control between activities and the order in which they occur.



Sequence Diagram

A sequence diagram is a type of Unified Modeling Language (UML) diagram that is used to show the sequence of messages exchanged between objects and the order in which they occur.



Pseudocode

```
# Pseudocode for Chatverse


# User Authentication Functions
function login(userCredentials):
    # Authenticate the user using
    mongodb if authenticationSuccessful:
        currentUser = getUserInfo(userCredentials)
        showHomePage()
    else:
        showErrorMessage()

function logout():
    # user loggedout

function getUserInfo(userCredentials):
    # Retrieve user information from Database

# Home Page Functions
function showHomePage():


Function Chat():
    # Fetch a chat Record from
    Database return chats
```

```
function displaychats(chats):
    # Display a list of chats on the home
    page for each User friend :


# group Creation Functions
function creategroup(users):
    # Create a new Gorup in Database if
    GroupCreatedSuccessfully:
        showHomePage()
    else:
        showErrorMessage()


# Group Details Functions
function GroupDetails(users):
    Displaychats(chats)
Send Chat  Functions

function sendchat(Message){
    if messageSendSuccesfully:
         receiveResponce(message)
   else:
        showErrorMessage()
}
```

```
function receiveResponce(message):
      return response;

# Profile Page Functions
function viewProfile(user):
displayUserProfile(user)
function displayUserProfile(user):
   # Display user's profile information

# Main
Application
function main():
   if userIsLoggedIn():
      showHomePage()
   else:
      promptUserToLogIn()

main()
```

DATA DICTIONARY

User				
Field Name	Data Type	Field Length	constraint	Description
Id	ObjectId(automatically generated by MongoDB)	No specific length limit	Not null	Id of the User
name	String	25	Not null	Name of the User
password	String	10	Not null	Password Of the User
Image	String	50	Not null	Image Url of the User

Chat				
Field Name	Data Type	Field Length	constraint	Description
Id	ObjectId(automatically generated by MongoDB)	No specific length limit	Not null	Id of the Chat
Chatname	String	50	Not null	Chat Name
IsGroupChat	Boolean	2	Not null	True If it is Group chat else False
User	ObjectId	No Specific Length Limit	Not null	users participating in the chat
Latest Message	ObjectId	No Specific Length Limit	Not null	latest message in the chat
GroupAdmin	Objectid	No Specific Length Limit	NOt null	user who is the group admin

Message				
Field Name	Data Type	Field Length	constraint	Description
Id	ObjectId(automatically generated by MongoDB)	No specific length limit	Not null	Message
Content	String	50	Not null	Content in message
ChatId	ObjectId	No Specific Length Limit	Not null	chat that the message belongs to

Notification				
Field Name	Data Type	Field Length	constraint	Description
Id	ObjectId(automatically generated by MongoDB)	No specific length limit	Not null	unique identifier for the notification
User	ObjectId	No Specific Length Limit	Not null	who will receive the notification
NotificationId	ObjectId	No Specific Length Limit	Not null	message that triggered the notification

Note: ObjectId is a type provided by Mongoose, representing a unique identifier for a document in a MongoDB database.

DECISION TABLE

Condition	1	2	3	4
Userid	F	T	F	T
Password	F	F	T	T
Action				
Login to application(Home)	Access Denied	Access Denied	Access Denied	Access Granted
Manage chat	NO	NO	NO	YES
Manage group chats	NO	NO	NO	YES
Receive Notification	NO	NO	NO	YES
Search Users	NO	NO	NO	YES

F : False

T : True

Decision Tree