Group 7

Virtual Chat 3D
Use-Case Specification

Version 1.5

Revision History

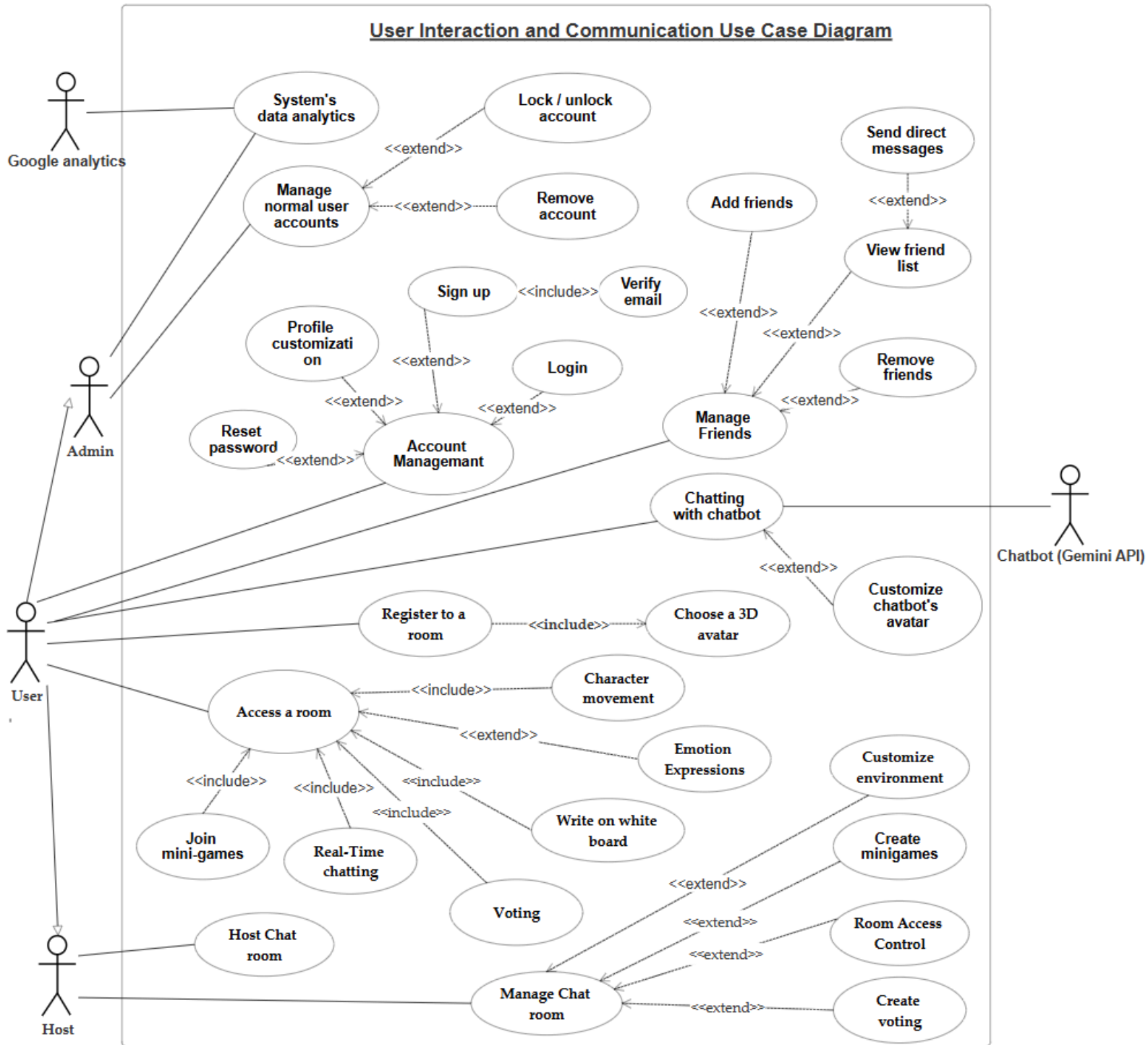| Date	Version	Description	Author
11/11/2024	1.0	Use-case Diagram	Cao Minh Quang
12/11/2024	1.1	Use-case Specification 2.1 to 2.9	Trần Đăng Tuấn
12/11/2024	1.2	Use-case Diagram	Cao Minh Quang
12/11/2024	1.3	Use-case Specification 2.9 to 2.15	Ngô Tấn Tài
14/11/2024	1.4	Use-case Diagram	Cao Minh Quang
14/11/2024	1.5	Rewrite some Use-case Specification	Lý Nghị Hoằng, Châu Vĩnh Đạt

Table of Contents

1. Use-case Model

User Interaction and Communication Use Case Diagram

2. Use-case Specifications

2.1 Use-case: User Login

Use case Name	User Login
Brief description	This use case describes how the users log in their account with their roles.
Actors	Users & Admin
Basic Flow	1. At the Log-in page, the user fill in the Account, Password 2. Then, click into "Log in"

Alternative Flows	1. Invalid Credentials:
	   o If the user enters an incorrect username or password, the system displays an error message.
	   o The user can re-enter credentials or select "Forgot Password" to recover access.
	2. Forgot Password:
	   o The user clicks on the Forgot Password link.
	   o The system prompts the user to enter their email to receive password recovery instructions.
	3. Logging in to locked account:
	   o If the account has been locked by an admin user, the system should notify the user.

Pre-conditions	1. User goes to LogInPage at the menu 2. The account must be exist
Post-conditions	The user successfully log-in their account.

2.2 Use-case: Create a new account

Use case Name	Create a new account
Brief description	This use case describes how the User creates an account.
Actors	Users
Basic Flow	1. At the Log-in page, the user clicks on the Signup button 2. Then, the user fills in their Email address, Password and Re-Enter Password 3. The user waits to receive the verification email, and then clicks the password reset link in the email.

Alternative Flows	1. User Enters an Invalid Email Format
	   o System displays an error message prompting the user to enter a valid email address.
	2. User Enters Mismatched Passwords
	   o System displays an error message informing the user that the passwords do not match.
	   o The user is asked to re-enter the password fields.
	3. User Does Not Receive Verification Email
	   o System provides an option to Resend Verification Email.
	   o If the email still isn't received, the system may suggest checking spam or junk folders or provide contact support instructions.

Pre-conditions	1. User goes to Log-In Page at the menu

	2. The Email address must not be used
	3. The user needs an active email account to receive the verification code.
Post-conditions	The users successfully create their own accounts.

2.3 Use-case: Lock/Unlock Account

Use case Name	Lock/Unlock Account
Brief description	This use case describes how the admin can lock/unlock an account.
Actors	Admin
Basic Flow	1. Admin navigates to the user management page and selects the user account. 2. The admin clicks on the Lock Account or Unlock Account option. 3. The system prompts the admin to confirm the action. 4. Admin confirms, and the system updates the account status (locked or unlocked). 5. The system notifies the admin of successful action completion and logs the activity.
Pre-conditions	1. The admin is logged in with the required permissions to manage user accounts. 2. The user account to be locked/unlocked exists within the system.
Post-conditions	The user account is either locked or unlocked based on the admin's action.

2.4 Use-case: Remove account

Use case Name	Remove account
Brief description	This use case describes how the Admin removes an account.
Actors	Admin
Basic Flow	1. Admin navigates to the user management page and selects the user account. 2. The admin clicks on the Delete Account. 3. The system prompts the admin to confirm the action. 4. Admin confirms, and the system deletes the account. 5. The system notifies the admin of successful action completion and logs the activity.
Pre-conditions	1. The admin is logged into their account. 2. The user account to be removed exists within the system.
Post-conditions	All corresponding information to the removed user must be deleted.

2.5 Use-case: Customize profile

Use case Name	Customize profile
Brief description	This use case describes how the user Customizes profile.
Actors	User

Basic Flow	1. User navigates to the account settings
	2. Edit profile: username, description, date of birth, avatar.
Pre-conditions	1. The user is logged into their account.
	2. The user is on the home page.
Post-conditions	All corresponding information to the removed user must be deleted.

2.6 Use-case: View friend list

Use case Name	View friend list
Brief description	This use case describes how the User view their friend list
Actors	User
Basic Flow	1. The user navigates to their profile page or the designated "Friends" section.
	2. The user clicks on the View Friends List option.
	3. The system retrieves the list of friends from the database.
	4. The system displays the list of friends, including their names, profile pictures, and status (e.g., online/offline).
Alternative Flows	If the user has no friends added, the system displays a message indicating the list is empty.
Pre-conditions	1. The user is logged into their account.
	2. The user has existing friends in their friend list.
Post-conditions	The user's friend list is displayed on the screen.

2.7 Use-case: Add friend

Use case Name	Add friend
Brief description	This use case describes how the User wants to expand their social network by adding new friends.
Actors	User
Basic Flow	1. Users search for the person they want to add as a friend by email/username
	2. The user clicks on the Add Friend button.
	3. The system sends a friend request to the selected user.
	4. The other user receives a notification of the friend request.
	5. If the friend request is accepted, both users are added to each other's friends list.
Alternative Flows	1. Friend Request Already Sent:
	○ If a friend request has already been sent, the system displays a message indicating that the request is pending.
	○ The user may cancel the pending request, if desired.
	2. User Already a Friend:
	○ If the selected user is already a friend, the system displays a message stating that they are already connected.
	○ The user can choose to view the existing friend's profile or send a message.

Pre-conditions	1. The user is logged into their account.
	2. The other user (potential friend) exists in the system.
Post-conditions	1. A friend request is sent to the intended user, or if accepted, the friend is added to the user's friends list.
	2. The system logs the request and/or acceptance for auditing or activity history.

2.8 Use-case: Remove friend

Use case Name	Remove friend
Brief description	This use case describes how the User remove a connection for personal reasons
Actors	User
Basic Flow	1. User navigates to their friends list and locates the friend they wish to remove.
	2. The user clicks on the Remove Friend button next to the friend's profile.
	3. The system prompts the user to confirm the removal action.
	4. The user confirms, and the system removes the friend from the user's friends list.
	5. The system notifies the user that the friend has been successfully removed.
Pre-conditions	1. The user is logged into their account.
	2. The friend to be removed exists on the user's friends list.
Post-conditions	1. The selected friend is removed from the user's friends list.
	2. The system updates both users' friend lists and logs the removal action.

2.9 Use-case: Direct message

Use case Name	Direct message
Brief description	This use case describes how the User send message to other users
Actors	User
Basic Flow	1. User opens the chat interface with the intended recipient.
	2. The user types a message in the message box.
	3. The user clicks the Send button.
	4. The system sends the message to the recipient.
	5. The recipient receives the message in their chat interface.
Alternative Flows	1. Recipient Not Available for Messaging: If the recipient is unavailable for messaging (e.g., the user is locked by Admin), the system notifies the user that they cannot send a message to this person.
Pre-conditions	1. The user is logged into their account.
	2. The recipient exists in the system and is available for messaging.
Post-conditions	1. The message is sent to the intended recipient.
	2. The system logs the message and delivers it to the recipient's inbox.

2.10 **Use-case:** Chatting with bot

Use case Name	Direct message
Brief description	This use case describes if the User wants to interact with the bot for information, assistance, or entertainment.
Actors	User
Basic Flow	1. User navigates to the chat interface and initiates a conversation with the bot. 2. The user types a message. 3. The system (bot) processes the user's input and generates an appropriate response. 4. The bot's response is displayed in the chat interface. 5. The bot's avatar emotion will change according to chat content. 6. The conversation continues with the user asking questions or interacting further as needed.
Alternative Flows	Chat content is unsafe (Harassment, Hate speech, Sexually explicit, Dangerous, Civic integrity, endangers child safety): 1. Bot refuses to respond. 2. System gives an alert.
Pre-conditions	1. The user is logged into their account. 2. The bot is available and configured to handle user requests.
Post-conditions	1. The user receives responses from the bot based on their input. 2. The system logs the conversation for quality and support purposes.

2.11 **Use-case:** Customize 3D Chat bot's avatar

Use case Name	Customize 3D Chat bot's avatar
Brief description	This use case describes how to customize the 3D avatar of the chatbot.
Actors	User
Basic Flow	1. User navigates to the chat interface and selects Customize Chatbot. 2. Import custom avatar from .vrm file (Vroid model file). 3. The user saves their change.
Pre-conditions	The user is on the home page.
Post-conditions	The user set the 3D avatar when joining the room.

2.12 **Use-case:** Create chat room

Use case Name	Host chat room
Brief description	This use case describes if the User wants to host a chat room
Actors	User
Basic Flow	- Host and Create New chat room: 1. User navigates to the Create button. 2. The user set up the settings of the room.

	3. The user clicks on the Create button.
	4. The system notifies the user that the room has been successfully created and hosted.
	5. Save room to room list.
	6. The host user joins the room.
Alternative Flow	- The host's chat room already exists:
	1. User navigates to the Room Management button.
	2. Choose room to host
	3. The system notifies the user that the room has been successfully hosted.
	4. Host user join into the room
Pre-conditions	1. The user is logged into their account.
	2. User is on the home page.
Post-conditions	1. The room is created.
	2. The host user joins the room.
	3. The system logs the creation for displays and history.

2.13   Use-case: Choose custom 3D Avatar

Use case Name	Choose custom 3D Avatar
Brief description	This use case describes how to choose custom 3D Avatar
Actors	User
Basic Flow	1. User navigates to the account settings
	2. Import custom avatar from .vrm file (Vroid model file) and set it as 3D Avatar when joining the room.
Pre-conditions	The user is on the home page.
Post-conditions	The user set the 3D avatar when joining the room.

2.14   Use-case: Room access control

Use case Name	Room access control
Brief description	This use case describes how the User control room's access
Actors	User (Host)
Basic Flow	- Edit room join scope:
	1. User navigates the Manage Button.
	2. Choose Manage scope.
	3. Set join scope of room: everyone/only friend.
	- View user in room and kick user:
	1. User navigates the Manage Button.
	2. Choose Manage User to view the list of users in the room .
	3. Click the Remove button beside the user's name in the user list to kick.
Pre-conditions	The user is in the room and is the host of the room.
Post-conditions	Edit room join scope: Room join scope is changed.
	Kick user: The room's number of users are updated.

2.15 **Use-case:** Create mini-game

Use case Name	Create Mini-game
Brief description	This use case describes if the User wants to create a mini game
Actors	User
Basic Flow	1. User navigates to the Manage button. 2. The user chooses Create Minigame. 3. The user fills in the information of the minigame. 4. The user chooses the Create button. 5. The system notifies the user that the mini-game has been successfully created.
Alternative Flow	1. There is a minigame in progress 2. The system notices the users to wait until the previous game finishes.
Pre-conditions	The user is in the room and is the host of the room
Post-conditions	The minigame is created.

2.16 **Use-case:** Join mini-game

Use case Name	Join Mini-game
Brief description	This use case describes if the User wants to join mini game
Actors	User
Basic Flow	User accepts to join in a game by choosing the Join button
Alternative Flow	There is a basic instruction about the game
Pre-conditions	1. The user is in the room 2. There is a minigame being hosted.
Post-conditions	The user is joined to the minigame .

2.17 **Use-case:** Join a chat room

Use case Name	Join a chat room
Brief description	This use case shows how User enters a room.
Actors	User
Basic Flow	1. User navigates to home page 2. The user navigate to Browse server section 3. The user fills in the IP Address and Port. 4. The user chooses the Join button. 5. The system notifies the user that the user has successfully joined.
Alternative Flow	1. The IP Address or Port is invalid. 2. The system notifies User to check and enter again.
Pre-conditions	The user has to log in.
Post-conditions	The user is joined.

2.18 Use-case: Real-time chatting

Use case Name	Real-time chatting
Brief description	This use case describes how Users communicate inside a room
Actors	User
Basic Flow	1. User navigates to Message button 2. The user enter text in to chat box 3. The user click on Sent button 4. The chat appears above user's character and in the chat box
Pre-conditions	The user is in the room
Post-conditions	1. The message is sent. 2. The system logs the messages for display and history.

2.19 Use-case: Character controlling

Use case Name	Character controlling
Brief description	This use case describes how User moves, looks around in a room and is able to play some animation (applause, waves, dancing).
Actors	User
Basic Flow	Move: - The user uses the virtual joystick to move around. Look: - The user drags the touchscreen to look around. Play Animation: 1. User navigates to animation icon 2. Click on the animation icon to view the animation list 3. Choose the animation. 4. The animation will be shown on the 3D character
Pre-conditions	1. The user is in the room. 2. The controller is normal.
Post-conditions	The character is moved/camera is rotated/The character plays animation.

2.20 Use-case: Emotions Expression

Use case Name	Emotions Expression
Brief description	This use case describes how User express emotions in the room
Actors	User
Basic Flow	1. User navigates to Emoji icon 2. Click on the Emoji icon to view the emotions list 3. Choose the emotion 4. The emotion will be shown on the 3D character
Pre-conditions	1. The user is in the room. 2. The emotions list are working normally.
Post-conditions	The character's emotion is shown.

2.21   Use-case: Voting

Use case Name	Hosting Voting
Brief description	This use case describes how User create a meeting
Actors	User

Basic Flow	Host:
	  - User navigates to the voting icon and clicks it.
	All users:
	  - Users can choose Yes/No
	System will display the result after timeout or all users in the room voted.

Alternative Flow	1. There is a voting process in progress. 2. The system notices the users to wait until the previous vote finishes.
Pre-conditions	1. The user is in the room. 2. There isn't a voting process in progress.
Post-conditions	All users get the voting result.

2.22   Use-case: Customize the environment

Use case Name	Customize the environment
Brief description	This use case describes how User design or interact with the environment in a room
Actors	User (Host)

Basic Flow	1. User navigates and clicks the Room Management button.
	2. Choose the room to edit the environment.
	3. Open edit UI
	4. Add new:
	     a. The user choose the object wanted to add
	     b. Then drag the object to the scene.
	5. Edit existed:
	     a. Choose an object by clicking it.
	     b. The user can move or rotate it.
	6. Save the edited environment.

Alternative Flow	1. The objects collapse on each other. 2. The system notices the users can not place objects in selected places.
Pre-conditions	The user is on the home page.
Post-conditions	1. The environment has changed. 2. Change is saved to the system.

2.23   Use-case: Using the whiteboard

Use case Name	Using whiteboard in chatroom
Brief description	This use case describes how Users can interact with the whiteboard in the chatroom
Actors	User

Basic Flow	1. User navigates to the whiteboard. 2. The user selects an area on the whiteboard and types their text .
Pre-conditions	1. The user joined in a chat room 2. The chat room has a whiteboard placed by the host while customizing their room.
Post-conditions	The written text is displayed on the whiteboard

2.24   Use-case: Admin users view the System's data analytics

Use case Name	Admin users view the System's data analytics
Brief description	This use case describes how Admin user can view the System's data analytics
Actors	Admin

Basic Flow	1. Admin navigates and clicks on the System Management on the home page.
	2. The admin can view or search for:
	    a. Specific logged information.
	    b. Database information from Google Analytics
	    c. Server Performance and hardware information

Pre-conditions	1. The user must be an admin. 2. The admin must be on the home page and not joined in any room.
Post-conditions	The correct information being looked up is displayed.