Group 7

Virtual Chat 3D
Vision Document

Version 2.0

Revision History

Date	Version	Description	Author
23/10/2024	1.0	Introduction about product Identifying the right customer segments Write non-functional requirement	Trần Đăng Tuấn
30/10/2024	1.1	Declare product features Rewrite non-functional requirement	Ngô Tấn Tài
3/11/2024	1.2	Fix Product feature and non-functional requirement	Châu Vĩnh Đạt, Lý Nghị Hoằng
7/11/2024	1.3	Review, format report and add reference.	Lý Nghị Hoằng
14/11/2024	2.0	Introduction update, non-functional requirement fix and admin feature update	Châu Vĩnh Đạt, Lý Nghị Hoằng

Table of Contents

Vision (Small Project)

1. Introduction

1.1 Overview

Throughout this document, we hope to shed light on our problem position, our goals, and some guiding principles for our project: VIRTUAL CHAT 3D on both functional and other relevant aspects. We will use this document as a go-to for the team throughout the development process when clarification is needed or the idea is changed or updated.

1.2 Purpose

The purpose of this document is to collect, analyze, and define high-level needs and features of the VIRTUAL CHAT 3D. The document helps the project manager and the development team clearly define and describe their vision of the project, main target problems that they have to solve, implementation goals and other objectives throughout the project.

1.3 Scope

This document describes:
- The positioning of the problem: what problem to solve and its audience to target.
- The stakeholders and users
- The product features.
- Non-functional requirements for the project.

1.4 Reference
- VRChat: https://hello.vrchat.com/
- Gather.town: https://www.gather.town/
- yourgpt.ai/chatbot: https://yourgpt.ai/chatbot/avatars
- avatar.one: https://www.avatar.one/

2. Positioning

2.1 Problem Statement

The problem of	Virtual engaging communication and interaction with friends and family.
affects	Online social spaces, online co-operating workers, chat groups, modern social activities, etc.
the impact of which is	Boring workspaces, classrooms, etc. leads to less engagement and efficient workers, students. Boredom in teenagers, which leads to negative emotion, and less proactiveness in social activities and work. The loss in connection and personal relationships of those who are introverted, isolated, or in quarantine, etc.
a successful solution would be	An attractive, positive social platform with realistic interaction between humans.

2.2 Product Position Statement

For	*General users (Students, Workers, Families, …)*

Who	*want to communicate or work with others*
The VIRTUAL CHAT 3D	*is a virtual chat app*
That	*Connect with other people, make new friends, and working together in an interactive environment*
Unlike	*Facebook, Instagram, Messenger, X, Zoom, Teams,...*
Our product	*- Personalize the appearance*
	- Easily expressing your emotions, your thoughts
	- Providing a private communication environment
	- Provide an AI that help user solve problem
	- Connect with people all around the world
	- Improve connections between people
	- Enhance working environments

3. Stakeholder and User Descriptions

3.1 Stakeholder Summary

Name	Description	Responsibilities
The app development team	Group 07 - 22CLC02, Introduction to Software Engineer	- Designing and enhancing the app. - Updating and managing the project. - Monitoring project advancement. - Guaranteeing the implementation of core features. - Making adjustments based on feedback and guidance from the supervising instructor.
Mr. Phạm Hoàng Hải Mr. Trần Duy Hoàng Mr. Ngô Ngọc Đăng Khoa	Lecturer for theory / practical sessions of the Introduction to Software Engineering course for class 22CLC02	- Overseeing the project implementation process. - Offering support, guidance, and answering questions for team members.
Basic Users	Users who need help from others but cannot ask directly and have difficulties making new friends	- Giving additional requirements and feedback to help develop the virtual chat better and better. - Reporting bugs or errors to maintain a bug-free environment.
Admin	The app owner	- Allow to access the conversation history - Restrict users who violate the community standards, and handling reports from users - Reporting bugs or errors to maintain a bug-free environment.

3.2 User Summary

Name	Description	Responsibilities	Stakeholder
Basic Users	Users mainly focus on informal chatting environment	- Create a group chat with a specific character. - Send friend requests to other users. - Using AI-powered to solve any challenge.	Self-presented
Admin	Admin mainly focus on maintenance app	- Manage, provide history of conversation if needed. - Manage users' permission	Self-presented

3.3 User Environment

- The number of people involved can vary based on the app's use cases.
    + **Social Use:** Individuals may interact in small groups (2-10) for casual socializing, which may expand depending on shared virtual events or group activities.
    + **Workspaces:** Teams of 5-50 or more may collaborate, allowing a customizable workspace that can scale based on meeting sizes or project requirements.
- With increasing adoption, the number of people interacting with the app could grow, leading to more diverse and larger group interactions.
- Task and Roles from Business Model:
    + **Social Users:** Focused on casual, enjoyable interaction in 3D spaces with friends.
    + **Corporate/Professional Users:** Use immersive workspaces to foster teamwork, conduct meetings, and manage projects.
    + **Anime/Immersive Enthusiasts:** Engage with 3D anime-inspired virtual characters, benefiting from character creation features and role-playing environments.
- Current and Future Platforms:
    + **Current:** Mobile (Android app).
    + **Future:** Desktop (Windows, macOS), VR (Oculus, HTC Vive), AR glasses, and potential compatibility with evolving VR/AR technologies to create a richer experience as the hardware ecosystem grows.

3.4 Alternatives and Competition

- *Interactive Chat Room*

	Pros	Cons
VRchat	Strong community, expanded user base, and various customization options.	VR devices are required for full experience. While PC versions exist, the platform is not designed for mobile.
Gather.town	Browser-based, easy accessibility, user friendly	2D graphics, performance affected internet quality.

- *3D Chatbot*

	Pros	Cons

avatar.one	Users can import custom characters.	The page is still in beta version with bug issues, a terrible UX design.
yourgpt.ai/chatbot/avatars	Still in the beta version, coming soon, currently unavailable.	

4. Product Features

No.	Feature	Description	Priority
1	[Online Room] Customizable 3D Virtual environment	It provides an immersive 3D space for users to interact, enabling a stronger sense of presence and realistic engagement. Includes customizable settings to tailor the virtual space.	High
2	[Online Room] Room Access Control	Hosting users can control room access, allowing only friends or opening it to all users.	High
3	[Online Room] Character controlling in Room	Allows users to control avatar movement, adding immersion to interactions within the chat room.	Medium
4	[Online Room] Real-Time chat interaction	Enable users to communicate through real-time chat	High
5	[Online Room] Emotion Expressions	Users can express emotion via 3D characters (happy, sad, surprised, relaxed, neutral, angry)	Low
6	[Online Room] Virtual Meeting Functionalities	Provides meeting functionalities within the 3D environment: white board, voting.	Medium
7	[Online Room] Mini-Game Hosting	Hosts can initiate mini-games for interactive experiences within the chat room.	Low
8	[Online Room] Customizable character	Allows users to customize 3D avatar	Medium
9	[Chatbot] Interactive Chatbot	Chatbots that interact with users to assist in navigation, and provide information. Chatbot avatars can be customized. Chatbot can interact with users by emotion according to chat content.	Medium
10	[Account] Account Management	Provides account setup, login, and profile customization options.	High
11	[Account] Normal User Feature	- Login with email/password - Sign up with email/password - Reset password via email	High
12	[Account]	- Inherits all normal user functions	Medium

	Admin User Feature	- Manage normal user accounts (lock/unlock/remove accounts) - Analytics for online users activities. - Monitor the number of 3D chat rooms. - Monitor Server running status.	
13	[Friend] Friend Management	Allows users to view their friend list and add/remove friends by username.	Medium
14	[Message] Direct Message	Enables users to send direct messages to friends	High

5.   Non-Functional Requirements

Due to the project's limited scope, it is currently designed to be compact and efficient, allowing for easier management and faster implementation.

-   Availability

The app must operate 24/7 (except during scheduled maintenance).

-   Performance

Server response: response to client requests within 1 second.

Real-Time message: the message will be delivered within 500 milliseconds.

-   Portability

Portability: Guarantee operability on mobile operating systems: Android, iOS.

-   Usability

User-Friendly Interface: Offers an intuitive and visually appealing interface that allows users to navigate the 3D environment and customize their avatars with ease. **Users can use this product without any study.**

 -   Security:

Encrypt packet in transmission: Ensure secure communication between server and client.

-   Compliance:

Protecting the confidentiality and integrity of user messages and personal information. Ensure copyrighted related policies.