

# VRoom: Proposal

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Team 2

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# *1 Overview*

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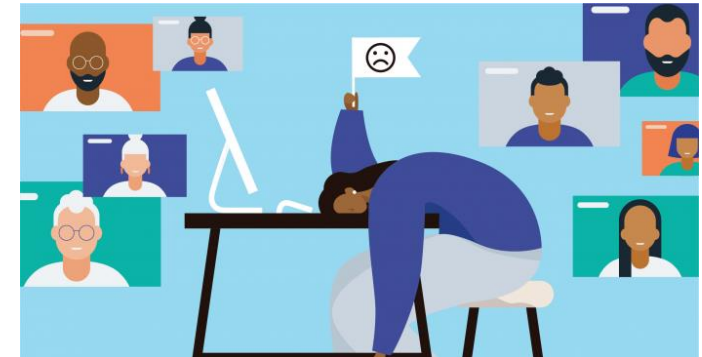
Motivation  
Item Introduction  
Market Analysis  
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Evaluation



Because of Corona virus, people are used to online meeting using Zoom, Webex, etc.

However, a lot of people are suffering from **Zoom fatigue** during online meeting these days.

It is about the exhaustion you feel after any kind of video call.



Therefore, metaverse platforms such as Gather Town are used for online meeting. The main issue of video conferencing is not just to communicate with people far away, but to **communicate well** so that they do not get tired.



VRChat is a metaverse platform which offers social VR experiences.

Currently, a 2D metaverse such as Gather Town is being used, so we will make a more realistic world in 3D. Especially, we decided to make a meeting room because we thought the meeting room is the most useful thing in the smart campus.

We will make a **metaverse meeting room platform**: VRoom.

- It is the implementation of offline meeting rooms on metaverse.
- It provides various features for smooth communication, such as a blackboard where you can write something and share your screen.
- With VRChat functionality, hosts who want to invite their teammates can create their own meeting room.

Can be used for

- Group project meeting
- Group study
- Presentation
- and other kinds of meetings



Source: <http://smarthubline.com/article/%EA%B0%A4%EB%9F%AC%EB%A6%AC/8/57/>



There are many video conference platforms such as Zoom and Webex.

Zoom is still **the most used** non-face-to-face meeting since the pandemic. But...

### 'Zoom fatigue' Problem

- Unconsciously feel that many meeting participants are looking at my face.
- Participants repeatedly check their appearance.
- You cannot move your body during a meeting.



Date (Quarter, fiscal year)	Annual meeting minutes
December 2013	200 million
June 2016	6 billion
February 2019	60 billion
Q2 Fiscal Year 2020	79 billion
Q3 Fiscal Year 2020	97 billion
Q4 Fiscal Year 2020	101 billion
Q1 Fiscal Year 2021	2.6 trillion
Q2 Fiscal Year 2021	2.0 trillion
Q3 Fiscal Year 2021 QTD	3.3 trillion

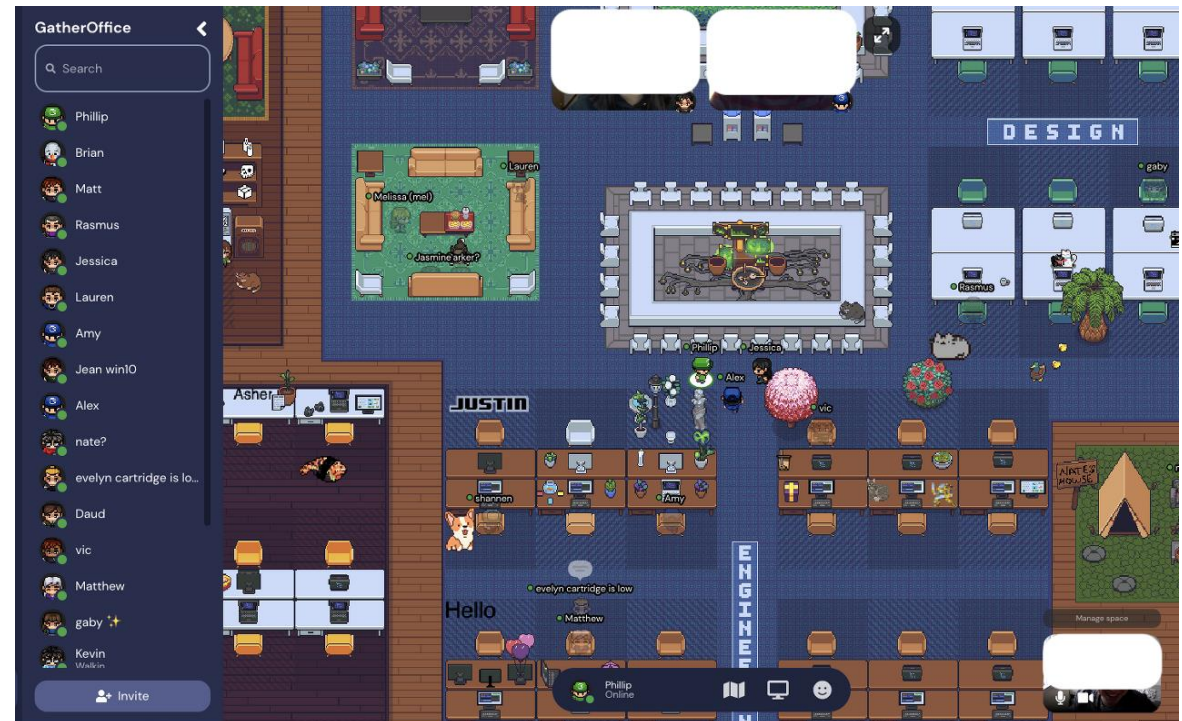
Source: <https://backlinko.com/zoom-users>



### Gather Town - 2D metaverse virtual office

Some of the companies that are tired of video conferences such as Zoom and Webex are moving to Gather Town.

Since its launch in May 2020, it has currently surpassed 1 million users.



Source: <https://brunch.co.kr/@uniher/10>



**Metapolis** - 3D metaverse virtual office for real estate brokerage platform "직방".

3D metaverse office is already becoming a reality.

Compared to the 2D metaverse office, it gives you more sense of realism and immersion.

They have plans to sell extra offices to other companies and organizations.

Additional Reference:

직방에는 사무실이 없다? 직방 메타버스 사무실 구경하고 옴!

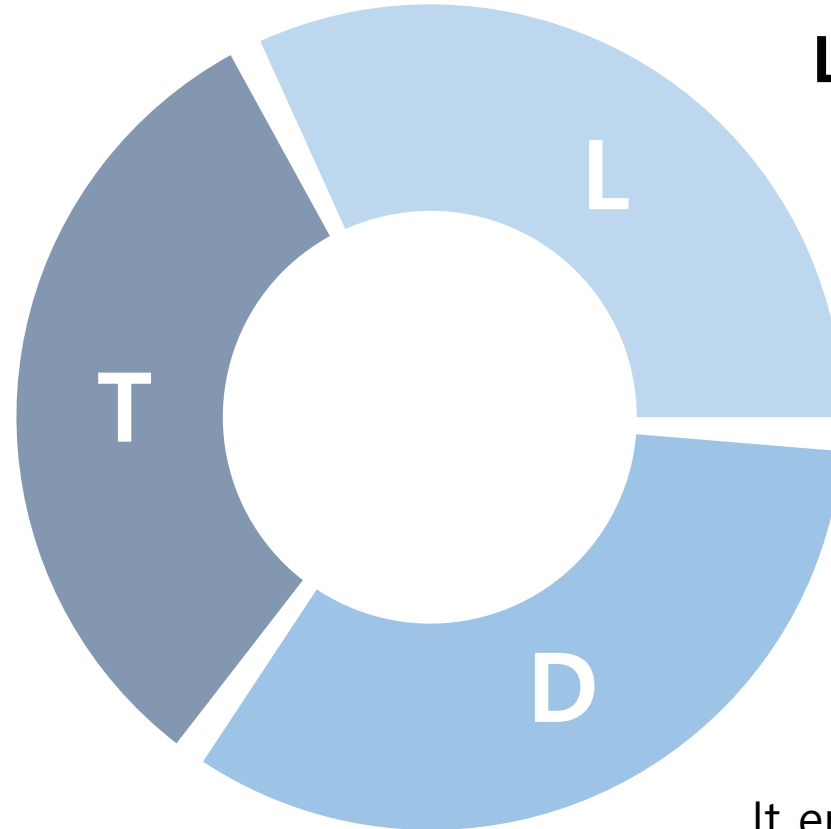
<https://youtu.be/n2Pzg-dz-Fo>



Source: <https://career.zigbang.com/7b7c5981-4457-4be2-b080-39a906d8dfe1>

### Time saving

Preparation time for actual meeting can be reduced.



### Less Zoom fatigue

By using 3D, it can reduce the fatigue felt from 2D.

### Deliver nonverbal expressions

It enables users to do non-verbal expressions such as nodding or eye movement. So we feel like we have an actual meeting.



Offline meeting



2D Online meeting



3D Online meeting

Source:

[https://ohou.se/cards/1963700?affect\\_type=CardSearch&affect\\_id=0&query=%EB%AF%B8%ED%8C%85%EB%A3%B8](https://ohou.se/cards/1963700?affect_type=CardSearch&affect_id=0&query=%EB%AF%B8%ED%8C%85%EB%A3%B8)

[https://play.google.com/store/apps/details?id=us.zoom.videomeetings&hl=en\\_US&gl=US](https://play.google.com/store/apps/details?id=us.zoom.videomeetings&hl=en_US&gl=US)

<https://www.hellot.net/mobile/article.html?no=60522>



Source: [https://mobile.newsis.com/view.html?ar\\_id=NISX20210804\\_0001537111#\\_eniple](https://mobile.newsis.com/view.html?ar_id=NISX20210804_0001537111#_eniple)

- Anyone can make their meeting room.
- Anyone can communicate online smoothly.

## metaverse meeting room

Evaluation		Score				
		1	2	3	4	5
Functionality	Can users communicate well?					
	Does it reflect users' movement well?					
Reliability	Can users access the meeting room where they want to enter well?					
	Can users use the meeting room when there is some empty room?					
	Does it prevent unwanted people from entering the meeting room?					
Efficiency	Can users communicate efficiently?					
Acceptancy	Can users understand how to use the service?					

# *2 Features*

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Main Features

Additional Features



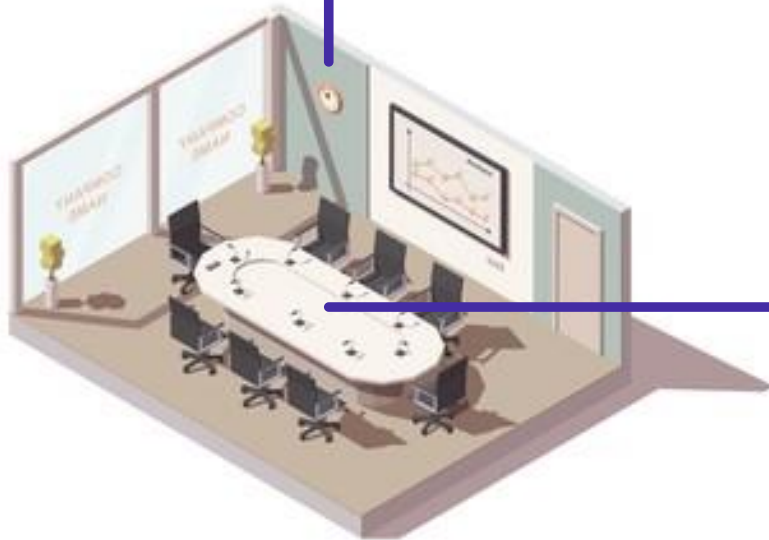
## 1. Black Board

- 2D Blackboard is available to everyone in the meeting.
- It increases the visibility to help communication.
- By using the pen objects, the user can draw on it.

## 2. Projector Screen

- Users can share their documents (such as pdfs) with other team members on it.
- It includes the function of a black board and can be implemented as a single object.





### 3. Calendar

- In some cases, such as a project with a deadline or scheduling next meeting, a calendar is needed.
- To provide convenience, a simple calendar will be placed inside the meeting room.

### 4. Voice Chat +

- The VRChat basically provides voice chatting. It allows you to speak whenever you want.
- However, in the VR(or online) meeting room, sometimes hosts should be able to mute others to concentrate on one's utterance.
- We will give the mute control to the host to make sure the meeting goes on smoothly.



### 1. Avatar

- When you enter the room, some avatars that are suitable for meeting will be provided.
- If you don't like our avatars, you can use your own avatar.

### 2. Third Person View

- By default, VRChat is fixed as a first-person view.
- Desktop users might feel uncomfortable with this setting.
- We'll add a third-person perspective so that each person can freely change their perspective.



<https://twitter.com/nano082l/status/1188383261904424960>

# *3 Development*

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Tools

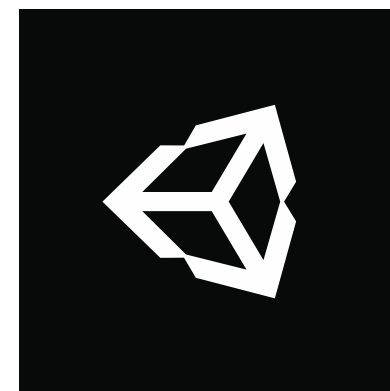
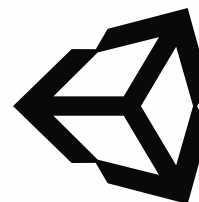
Role Distribution

Schedule

Platform: VRChat



Develop Environment: Unity 2019.4.30f1



### UI/UX Designer(2D): Kim Jinwoong

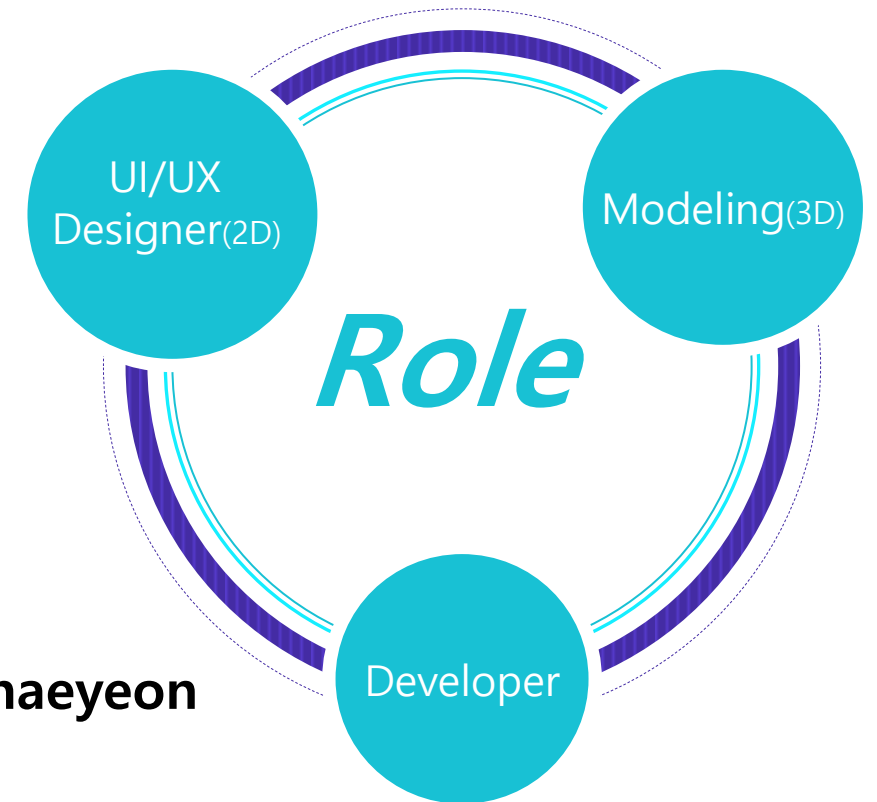
designs user interfaces and experiences that users can see at a glance.

### Modeling(3D): Lee Hyewon, Hong Seongjun

models a 3D meeting room world and avatars.

### Developer: Kim Hongbeen, Lee Jiwoo, Kim Minhee, Seo Chaeyeon

develops core functions that provide VRoom features.





Week 4: [Proposal](#)

Week 5: Confirmation of Detailed Features

Week 6: Requirement Investigation for Implementation

Week 7: Tool Study

Week 8: [Requirement Specification](#)

Week 9-10: Feature Implementation

Week 11: Feature Integration & [Design Specification](#)

Week 12: Code Review

Week 13: Testing

Week 14: Implementation & [Final Presentation](#)