

**Smart Digital Library, Metaverse Dido**

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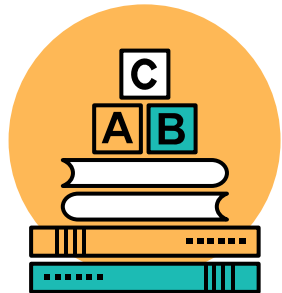
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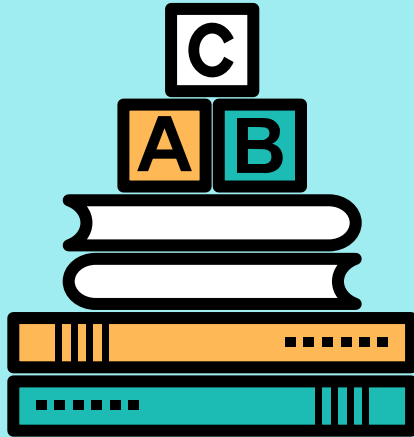
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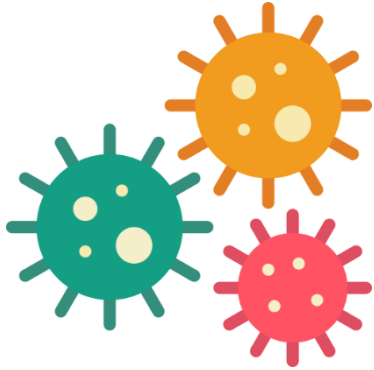
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# 1. Overview

# Background



## COVID-19

Restrictions on the use of multi-use facilities due to COVID-19



## Library

Expand the user base by connecting various media materials in the library to a virtual community



## Metaverse

Perform multiple functions such as online meeting, media room, and chatbot in the metaverse

# Background



ONLINE MEETING

01.

Online meeting service grow 3.3 times more than before COVID-19 as non-face-to-face requests increase after the pandemic

The e-book usage rate is growing at an average annual rate of 303%, reaching \$20.8 billion in the global publishing market, accounting for 18% of the total



E-BOOK

02.

Smart Digital Library, Metaverse Dido

# Background



OTT SERVICE

03.

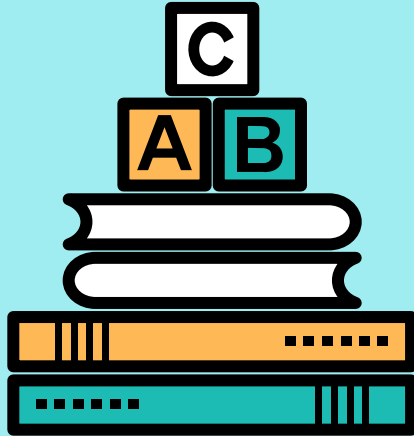
OTT captivates people's eyes and ears among non-face-to-face services, allowing users to consume desired contents anytime, anywhere, transcending time and space constraints

Chatbot creates virtual customer service agent that provide 24/7 service, and play a variety of roles including marketing, sales, and daily tasks



CHATBOT

04.



## 2. Goal & Method

Development of a Virtual Library in Unity & VR Chat for Smart Campus

# Our Goal



## ONLINE MEETING

Creating a virtual meet-up discussion facility



## KINGOBOT

Provide School Life and Academic guidance



## READING ROOM

Create an information hub that utilizes E-books database and private rooms

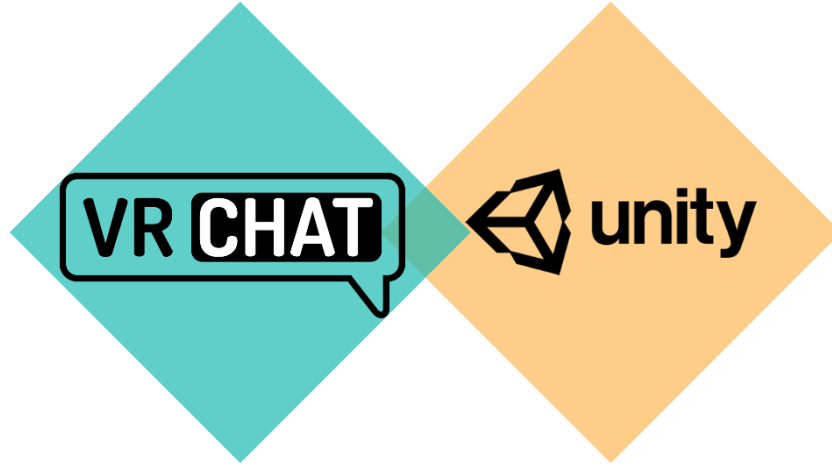


## DVD ROOM

Open streaming platform



# Development tools



**VRChat**

User Interaction  
with Library  
Environment

**Unity**

3-Dimensional  
World Creation

# Team formation

Design

Dasol Lee  
Minsu Kim

Aizat Hamizuddin

Minsu Kim

Ukcheol Choe

World  
Design

Meeting Room

Reading Room

DVD Room

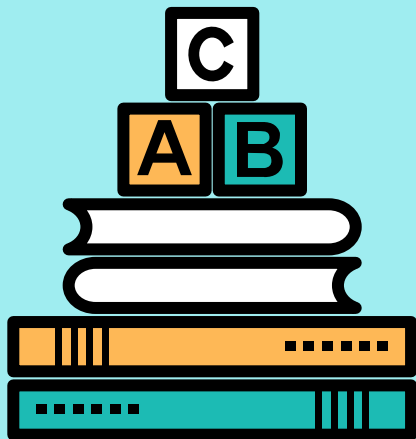
Develop

Keunha Kim

Fatdzirul Izzat

Kyunghyun Jo

Keunha Kim



# 3. implementation

Implement subsystems

# VRCHAT Constraints



UDON

01.

In VRCHAT, Only functions supported by the udon library can be used.

In addition, programming using graph scripts is basically possible, but higher-level programming is supported using C# scripts.

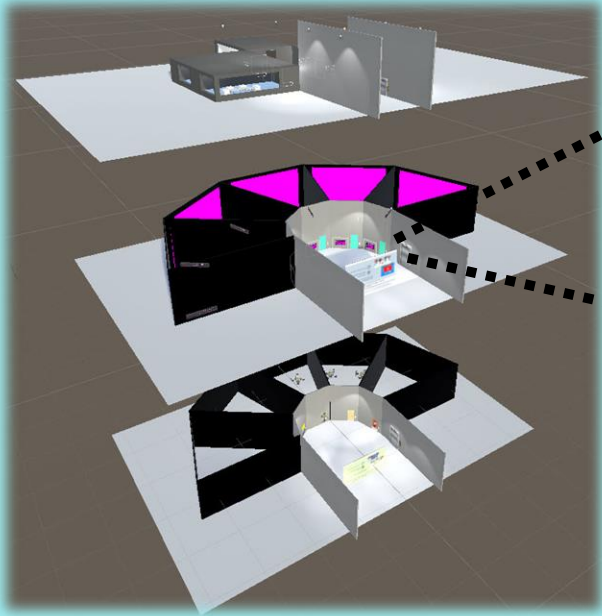
In Udon, They do not support network communication. Since the function is not supported for security reasons, information cannot be received from DB or server.



02.

Network constraint

# Metaverse Dido



It consists of three layers: Reading Room, DVD Room, and Meeting Room. Each floor can be moved using an elevator portal.

# READING ROOM



## Reservation system

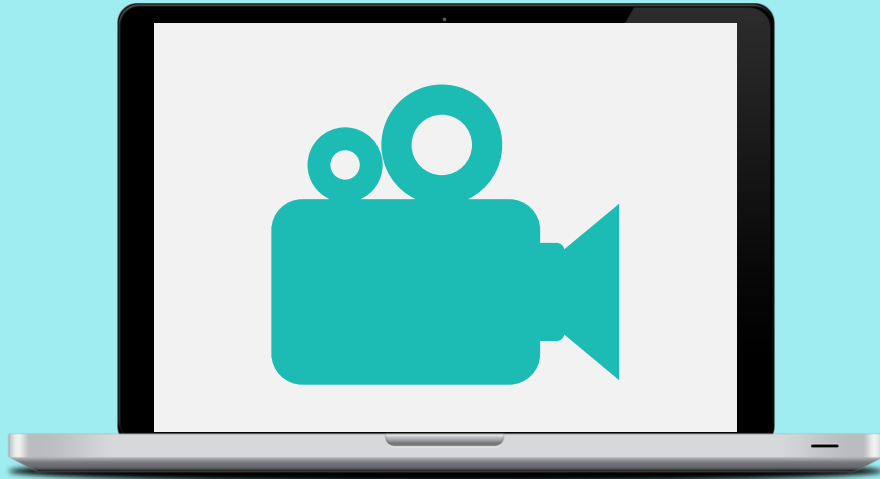
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## E-Book

5 types of books, desks and chairs that you can read.

# DVD ROOM



## **Video Streaming**

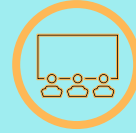
Screening by utilizing  
public API (e.g. Youtube)



## **Reservation system**

Reservation board

# ONLINE MEETING ROOM



**Video Conference  
System**



**Video View**  
Material sharing



**Seat reservation  
management**



**Annotatable Board**  
Creating an  
interface to write

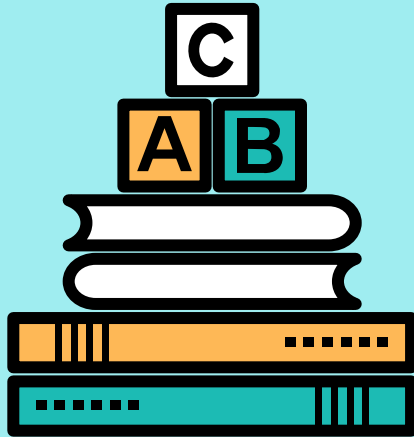


# KINGO BOT



**24-hour solution**

School Life and Academic-  
related Inquiries



## 4. Complementary

# Problem in System



## Network problem

It is impossible to bring external information.



## Variable Sync problem

The reservation system was implemented by changing the color of the board, but no way to synchronize variables was found. It will be possible to find a way and apply it.