Team 6

VOICE CAMPUS

Kang Hyunmuk
Kim Jihye
Park Jiye
Shin Wonchul
Oh Seungjun

Contents

01.

About

What is the current problem?
Intro: Motivation, Purpose
Research: Existing System, Current Problems

02.

Features

Final Goal
Detailed Goals: Blind-friendly structure
File reader and editor
Quiz & Test tool

03.

Team & Strategy

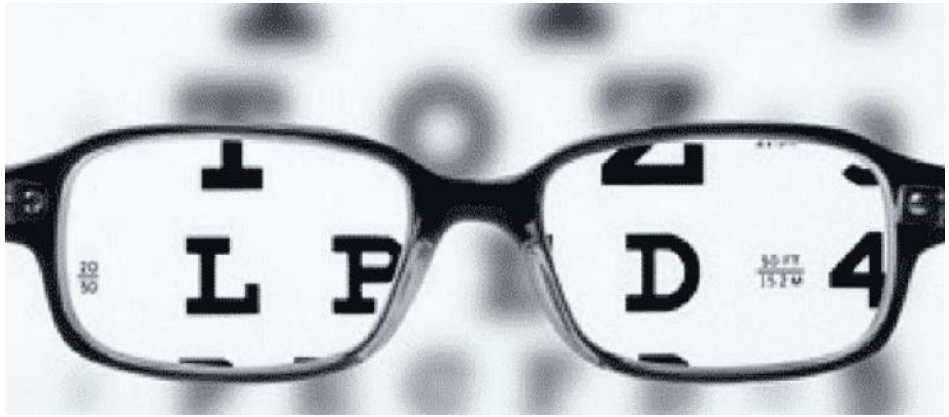
Team Organization
Development Tools
Schedule
System Structure

PART 1.
ABOUT

What is the current problem?
Intro: Motivation, Purpose
Research: Existing System, Current Problems

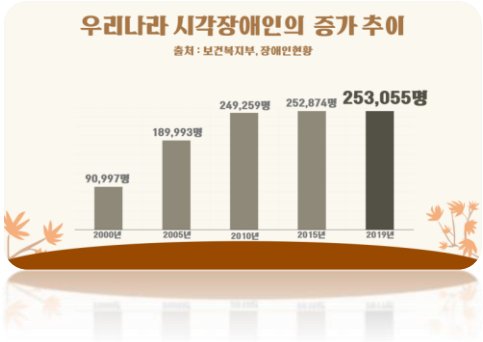
What is the current problem?

"The only thing worse **than being blind** is **having sight but no vision**."



– Helen Keller-

Motivation we decided to develop this app



Steadily increasing number of blind people in Korea [1]

About 1,500 Korean university students have a visual disability [2]

But are universities, including SKKU, providing blind people with adequate education?

Discomfort experienced by visual impairment

After Covid-19, my study is hindered by a remote lecture platform that is incompatible with the screen reader program. [2][3]

When I take the test offline, I can't read the letters properly, so I experience discomfort in the test process. [4]

After Covid-19, tasks to be done at home is increasing but finding them one by one is difficult.
It would be nice if there was a simple way to hear it at once. [2]

The general purpose to be achieved by system

Many Korean universities adopt **LearningX** as their LMS platform.

Also, **LearningX** is a system familiar to developers attending Sungkyunkwan University.

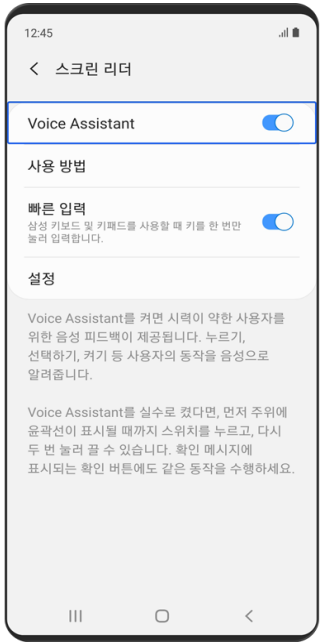
Let's make an app that is helpful to blind students that assists the LearningX!

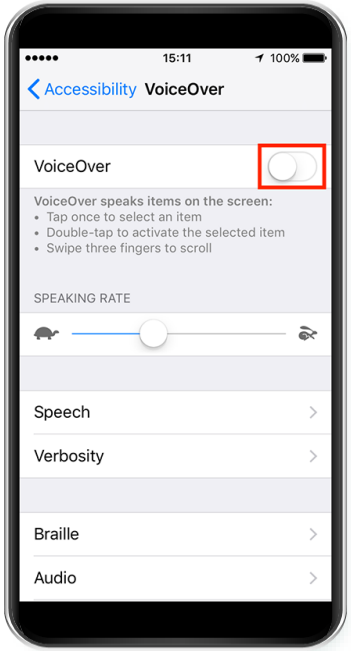
Existing systems used by blind students: Voice Assitant & Voice Over

Existing Systems (1) ▼

Voice Assistant & Voice Over

- Voice Assistant is a built-in function in Android and Voice Over is a built-in function in iOS.
- It allows you to control the mobile phone screen with a simple gesture and has a function to read alternative text aloud.





Existing systems used by blind students: Learning X mobile app

Existing Systems (2) ▼

Learning X mobile app

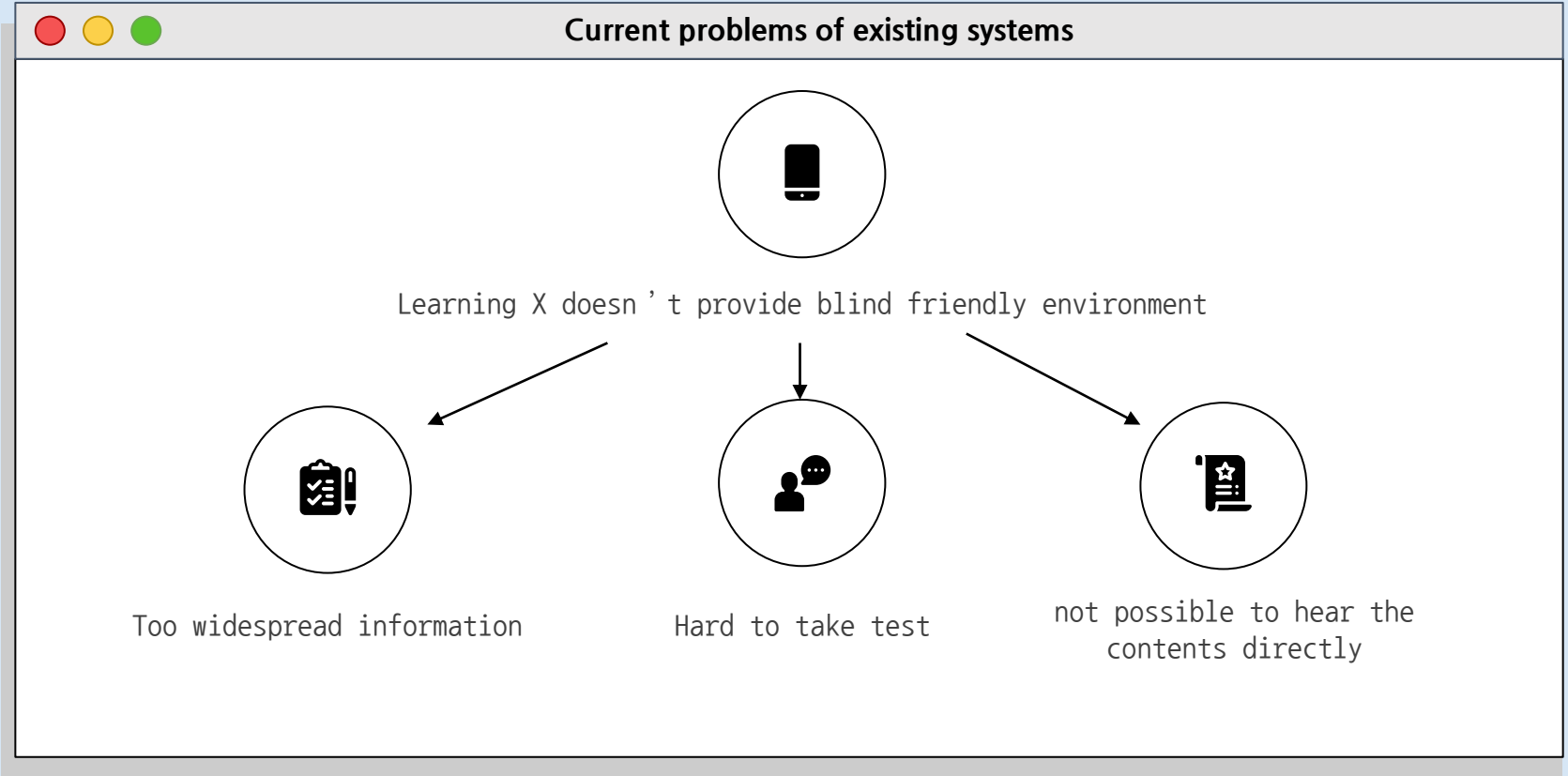
- Lecturer can upload lectures, class materials, tests, and notices.
- It has good UI, but there are too many components, so accessibility through Voice Assistant is inferior.
- To listen to the contents of the class materials, students need to download it. It is cumbersome to blind students.

Existing systems used by blind students: Learning X mobile app - test function

Existing Systems (3) ▼

Learning X mobile app(Test)

- When taking a test, students can use the "test" function of learning X.
- For visually impaired, it is difficult to write a narrative answer. Students can use voice recognition by themselves, but it is inconvenient because it is not included in the app

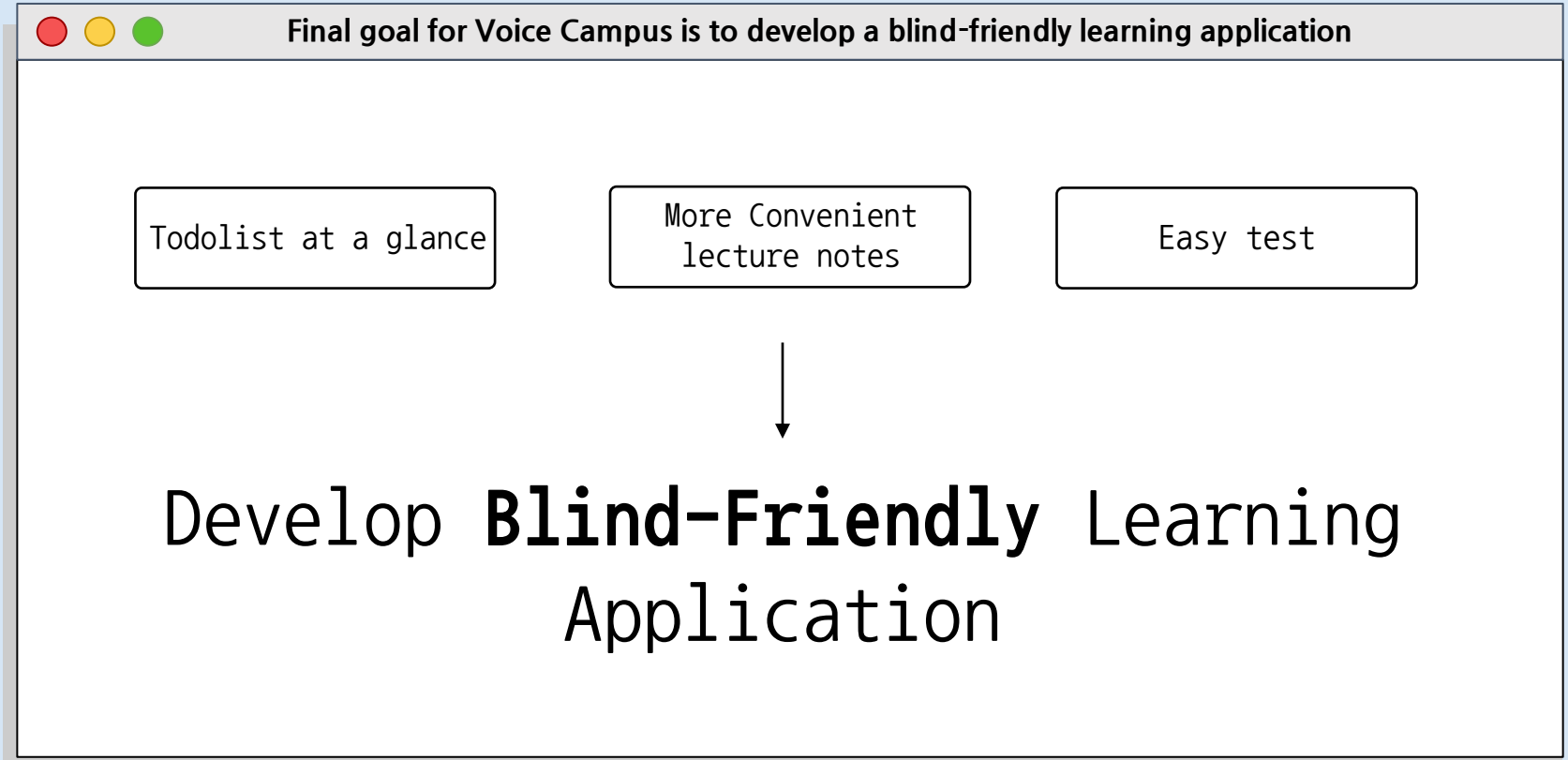

Current problems of existing systems
Learning X doesn ' t provide blind friendly environment
Too widespread information
Hard to take test
not possible to hear the contents directly

PART 2.
FEATURES

Final Goal
Detailed Goals: Blind-friendly structure
File reader and editor
Quiz & Test tool

Final Goal

Features



Voice campus provides simple UIs and structures suited for Voice Assistance

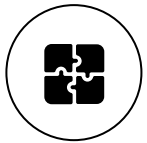
Blind-Friendly Structure

Voice Assistance

The UI well suits for the Voice Assistance technology in smartphone

Intuitive Structure

Only the core functions are picked up from Learning X API for simple, intuitive structure



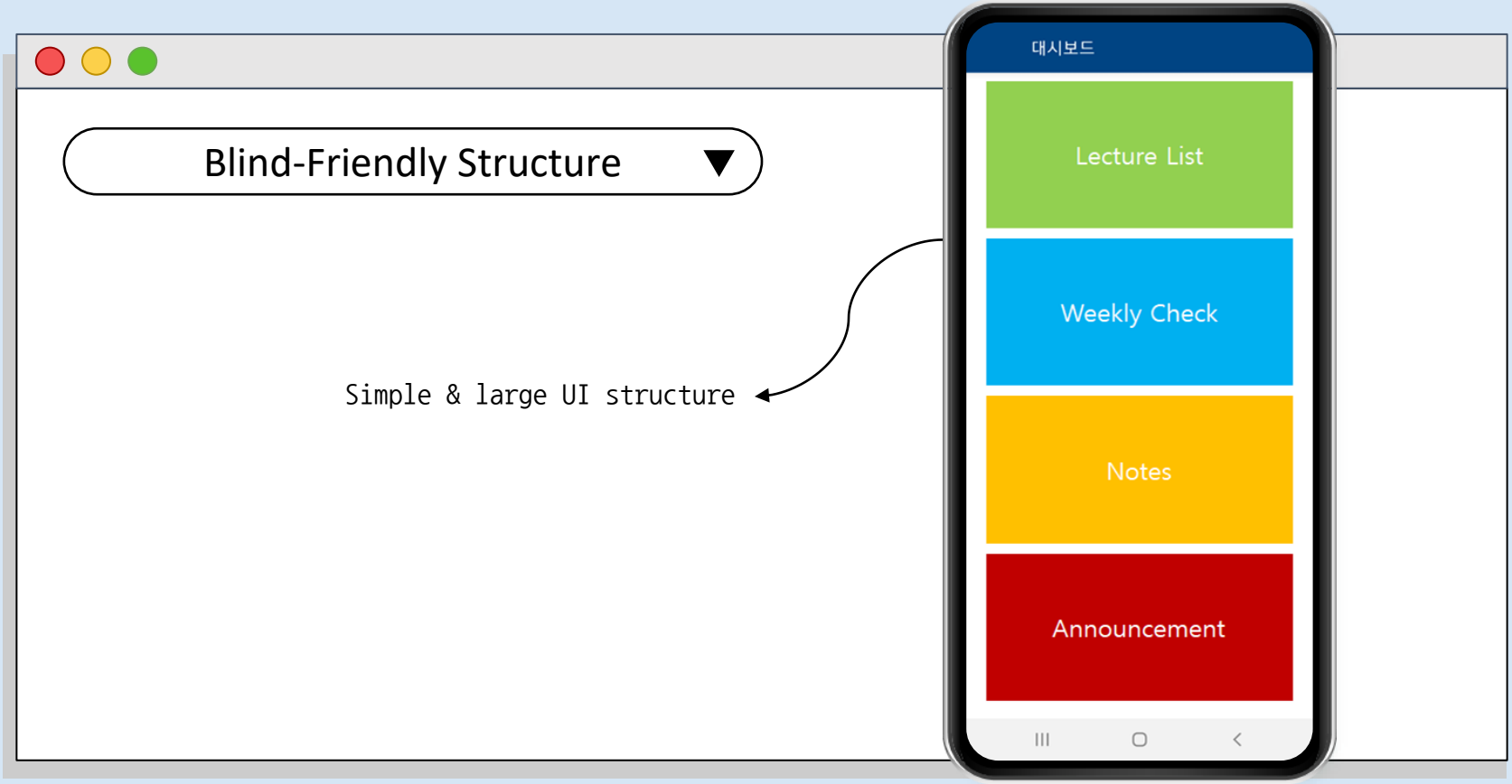
Simple UI

Large, simple buttons and minimum texts are used for sufficient exploration by Voice Assistance

Weekly Checker

Unfinished homework and lectures are tracked and shown for easy access

Features


Blind-Friendly Structure
Simple & large UI structure
대시보드
Lecture List
Weekly Check
Notes
Announcement

Utilizes TTS function and enables students to read the class material easily

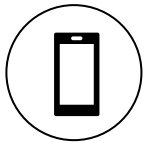
File Reader & Editor

Text to Speech(TTS)

Class materials in the Learning X server are converted into voice through TTS function

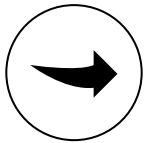
Material Editor

Support the ability to highlight important parts of the material



Increased Accessibility

The reader operates inside of the application



Increased Usability

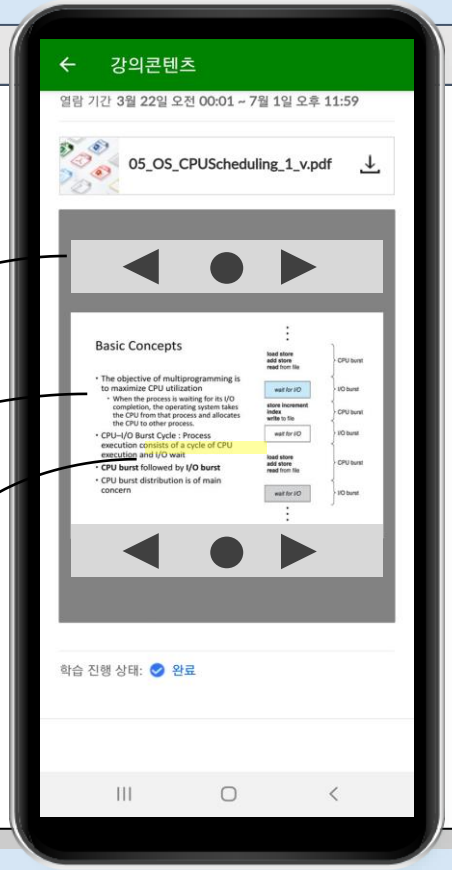
Support features such as reading previous sentence and moving to target page

File Reader & Editor ▼

Page control

Material reading

Line & Highlight control



Features

Enables student to hear and take test & quiz by applying STT and TTS functions

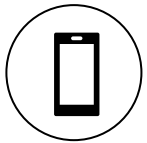
Quiz & Test Tool

Text to Speech(TTS)

Converts test and quiz questions into voice through STT function

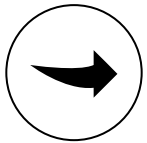
Speech to Text(STT)

Verbal answers students utter are dictated through STT function



Easy to manage

Professors can set test hour in the Learning-X application



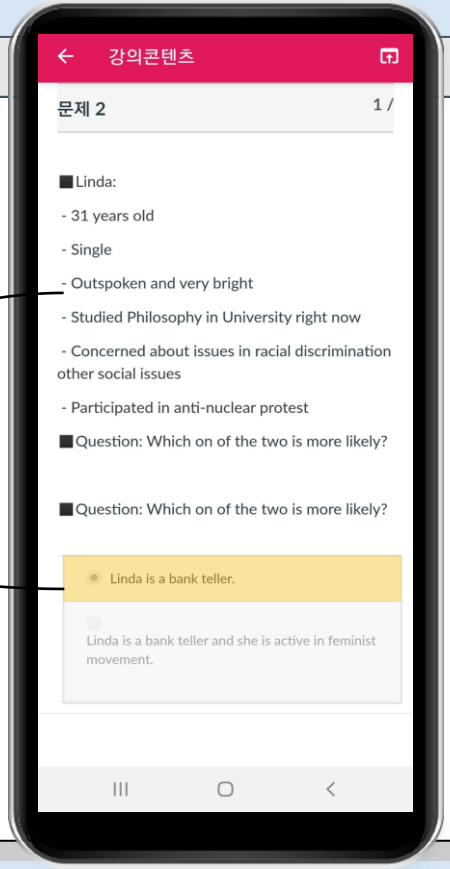
Support multiple choice

Allow students to solve multiple choice problems directly

Quiz & Test Tool

Question Reading

Multiple choice section



PART 3.
Team & Strategy

Team Organization
Development Tools
Schedule
System Structure

Team organization and roles for this project

UX/UI Designer

Jiye Park

Design UX / UI

Application Developer

Hyunmuk Kang

Jihye Kim

Develop android / iOS Application

Server Developer

Wonchul Shin

Seungjun Oh

Connect Application and Server System Integration

Frontend & Backend Tools for development

Frontend Tool

Adobe Xd

For UX/UI design

React native

For building cross-platform applications

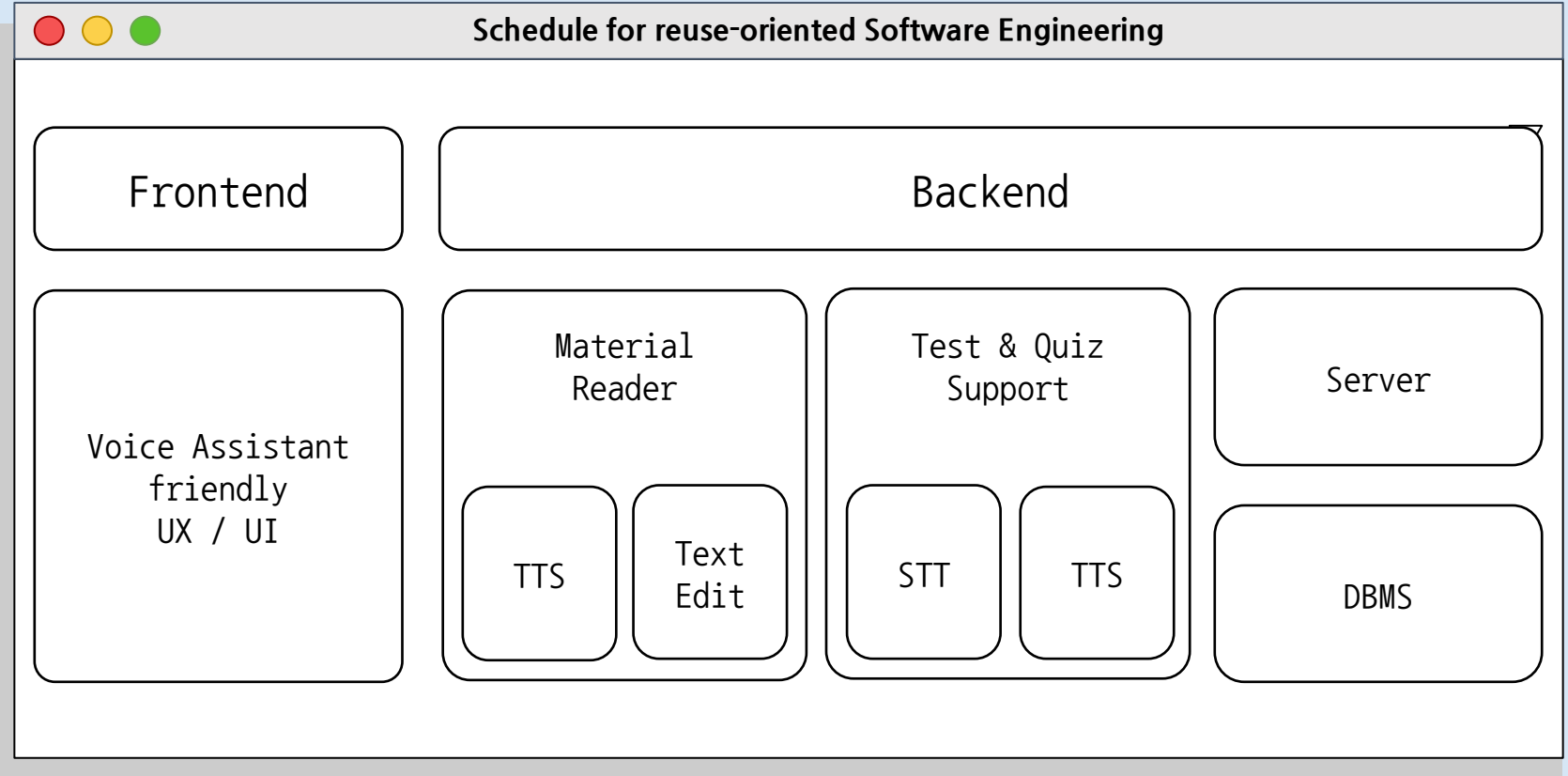
Backend Tool

For opensource

For Database Management

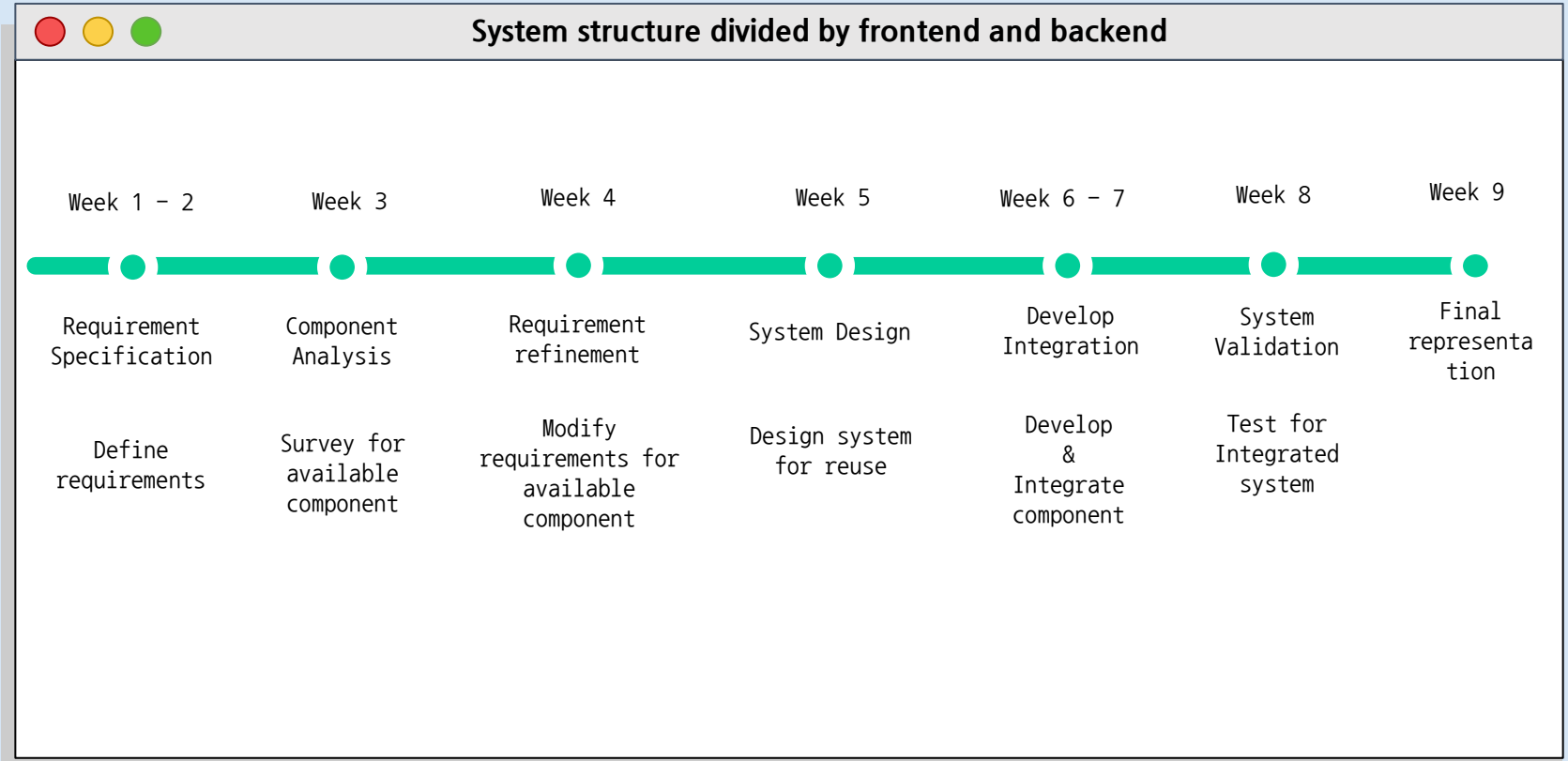
Schedule

Team & Strategy



System Structure

Team & Strategy



References

[1] 장애인 현황, 보건복지부, accessed Apr 2, 2021. https://www.index.go.kr/potal/main/EachDtlPageDetail.do?idx_cd=2768
[2] 혼자서는 하기 어려운 원격강의…시각장애 대학생에 장벽, accessed Apr 2, 2021, https://www.yna.co.kr/view/AKR20201210160000004
[3] [단독]시각장애 대학생 60% "원격강의, 공부에 지장준다", NEWSIS, accessed Apr 2, 2021, https://www.msn.com/ko-kr/news/national/%EB%8B%A8%EB%8F%85%EC%8B%9C%EA%B0%81%EC%9E%A5%EC%95%A0-%EB%8C%80%ED%95%99%EC%83%9D-60percent-%EC%9B%90%EA%B2%A9%EA%B0%95%EC%9D%98-%EA%B3%B5%EB%B6%80%EC%97%90-%EC%A7%80%EC%9E%A5%EC%A4%80%EB%8B%A4/ar-BB12iudk
[4] '혼자 잘 다닐 수 있잖아?'... 시각장애인 방치하는 대학들, OhmyNews, accessed Apr 2, 2021, http://www.ohmynews.com/NWS_Web/View/at_pg.aspx?CNTN_CD=A0002543057

Thanks !