



# MediGo

**Medicine management and duplicated drug checking  
web application using MyData**

Younghoon Lee

Jinwon Jung

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# Background



Status of prescription change after DUR warning by year  
(unit: thousand cases)

		In prescription	Among Prescription	Total
2016	Information provision	12,168	37,230	49,398
	Change prescription	996	4,904	5,900
	Change rate	8.2%	13.2%	11.9%
2017	Information provision	15,375	42,355	57,730
	Change prescription	1,556	5,688	7,244
	Change rate	10.1%	13.4%	12.5%
2018	Information provision	25,778	54,053	79,831
	Change prescription	2,653	6,959	9,612
	Change rate	10.3%	12.9%	12.0%
2019	Information provision	16,269	31,987	48,256
	Change prescription	1,596	4,011	5,607
	Change rate	9.8%	12.5%	11.6%

## DUR (Drug Utilization Review)

Information on drug safety, such as prohibition of combination, is provided in real time when prescribing or preparing drugs

**Compared to the actual DUR warning status, the rate of prescription change is very low.**

Prescription overall change rate  
after DUR warning : **12%**

Change Rate(Drug Combination  
to Avoid) : **26.6%**

Change Rate(Duplicated Drug) :  
**13.9%**

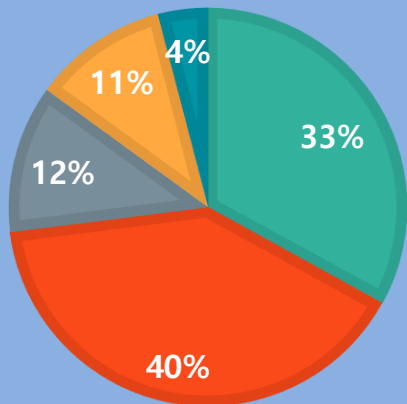




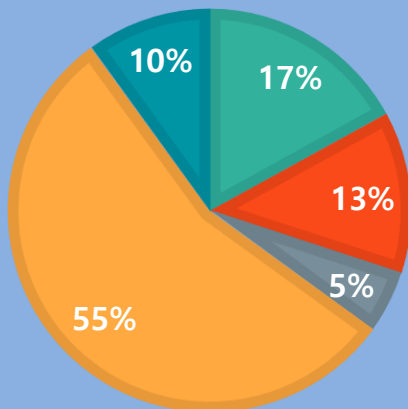
# Background



A PHARMACY

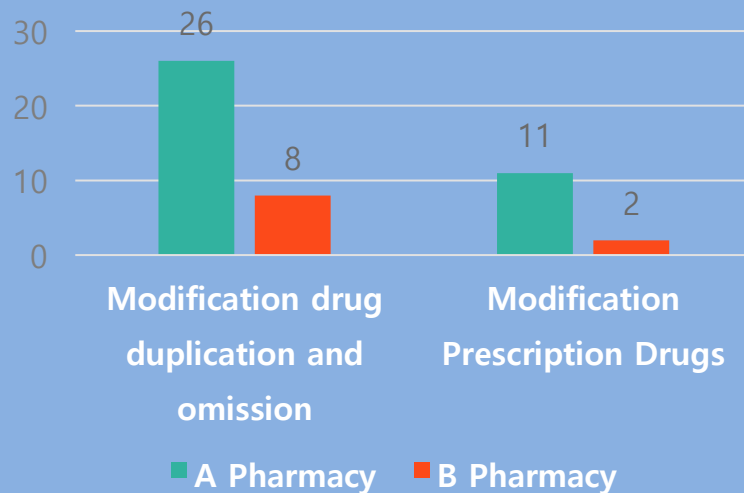


B PHARMACY



- modification of prescription drugs
- Modification of dosage, prescription days
- Modification due to DUR review
- Modifications due to patient needs
- Others

Prescription medication modification history  
(Case per Month)





# Background



## Helpy

## Paprika Care

Existing similar services provide information of medicine and warning such as combination.

However, since the **registration method of the medication is directly input**, consumers have inconveniences.



2022년 11월

13 SUN 14 MON 15 TUE 16 WED 17 THU 18 FRI 19 SAT

알람시간 ● 병용금지 ● 동일성분 ● 부작용

전체 테스트 1종, 일 3회 복용 [전문] 트로피드정5mg >

아침 점심 저녁 취침전

복용 체크

복약 등록 방법을 선택해 주세요.

약봉투/처방전 스캔등록

의약품 검색 등록

**Directly enter a prescription**

< 2022년 11월 >

일	월	화	수	목	금	토
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

급성 기관지염

전체 (1) 복약중 (1) 종료 (0)

급성 기

2022.11.1

다음 병원

등록 방법을 선택해 주세요.

직접 입력

처방전, 약봉투 찍기

취소

**Directly enter a prescription**



# Background



## Background, Problem

There are many medicine management application, but user should input user's prescription

There is No checking Duplicated medicine status

## Solution

We use **MyData** to make user more convenient

We check duplicated medicine with **MyData**



**MediGo**

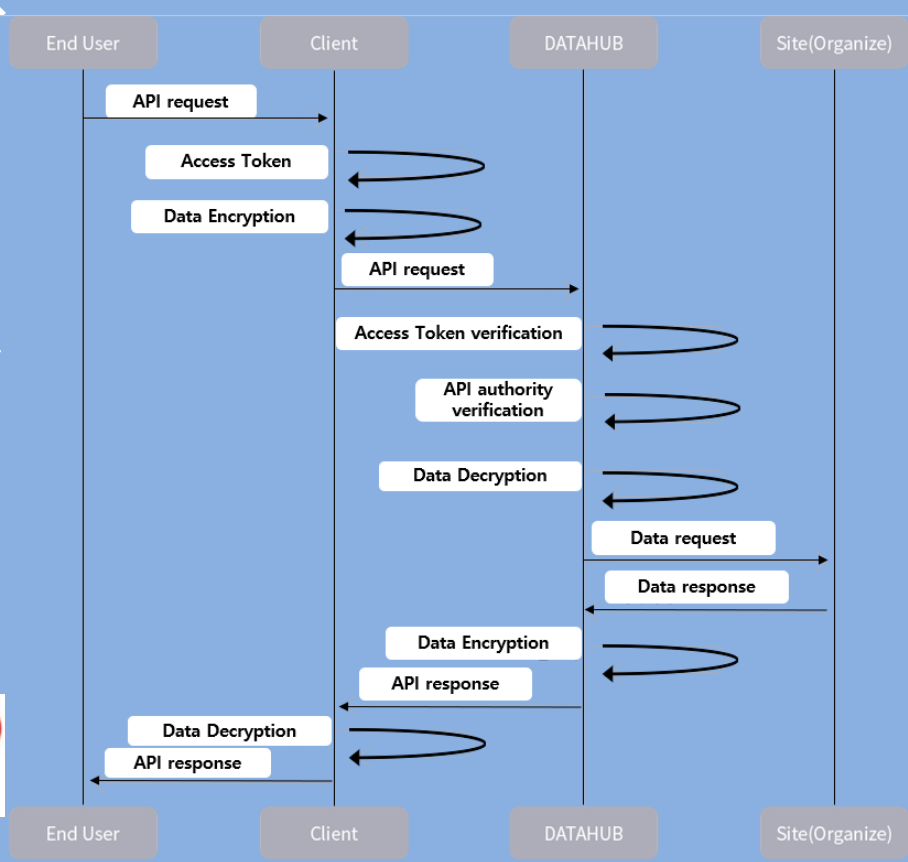
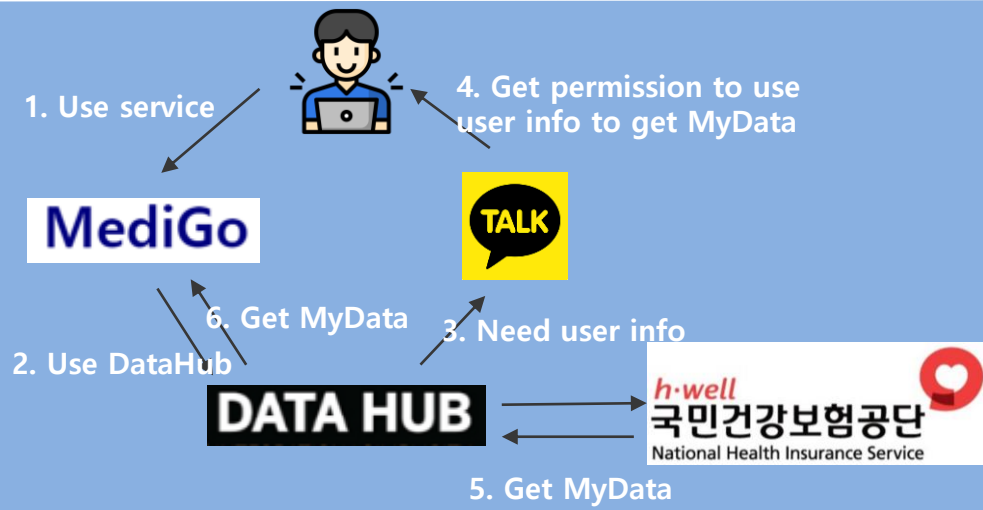
Medicine management and duplicate drug checking web application using MyData

# Service Architecture



## MyData

MyData refers to a series of processes in which an individual who is an information subject actively manages and controls his or her information and actively utilizes it in his or her personal life, from credit management, asset management, and even health management.



# Service Architecture



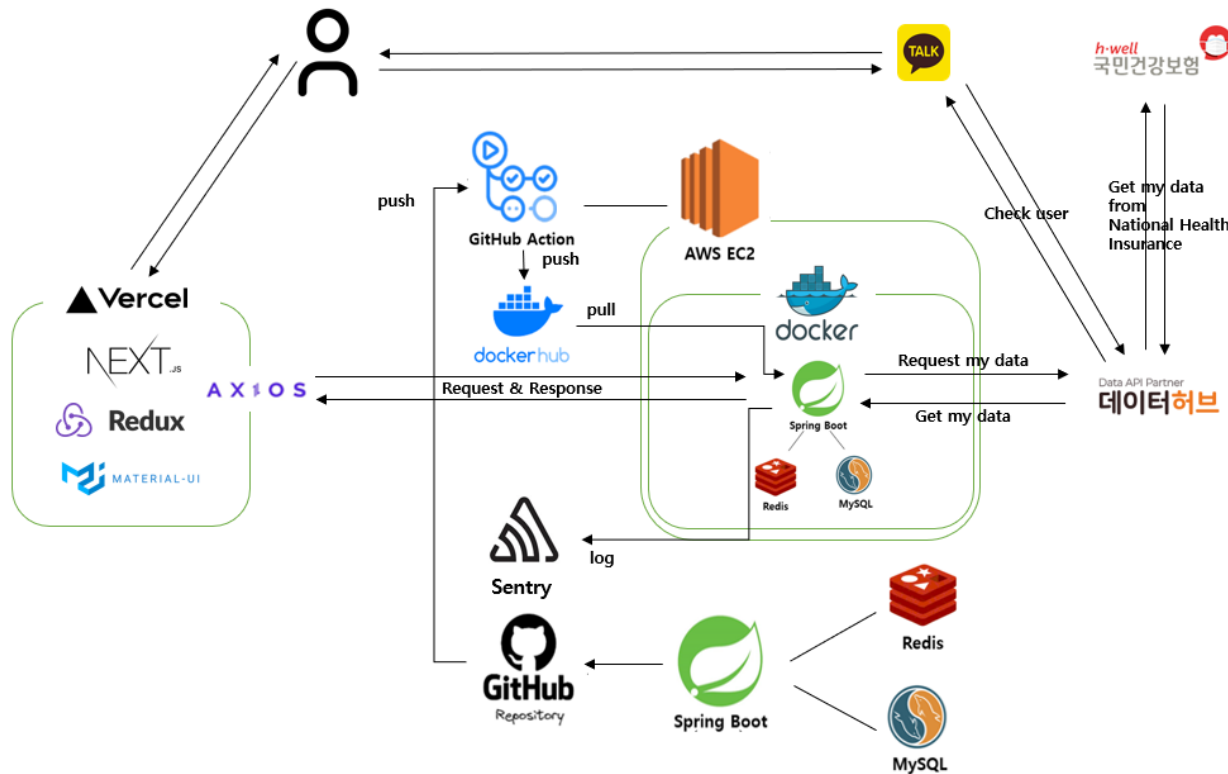
## My Data Item List (json)

data.MEDICINELIST[].TREATDSNM	<b>Name of person subject to medical treatment</b>
data.MEDICINELIST[].TREATMEDICALNM	<b>Hospital (pharmacy) name</b>
data.MEDICINELIST[].TREATDATE	<b>the day of medical treatment</b>
data.MEDICINELIST[].TREATTYPE	<b>a form of medical treatment</b>
data.MEDICINELIST[].VISITCNT	<b>Number of days of visit (hospitalization)</b>
data.MEDICINELIST[].DETAILLIST[].MEDICINENM	<b>Prescription drug name</b>
data.MEDICINELIST[].DETAILLIST[].MEDICINEEFFECT	<b>Prescription drug efficacy</b>
data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].PRODUCTNM	<b>Name of the product</b>
data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].INGREDIENTNM	<b>Ingredient name</b>

data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].MAKINGCOMPANY	<b>Manufacturer/Importer</b>
data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].SALESCOMPANY	<b>Sales Company</b>
data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].SHAPE	<b>Shape</b>
data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].ADMINISTERPATH	<b>Administer path</b>
data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].MEDICINEGROUP	<b>Medicine group</b>
data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].PAYINFO	<b>Pay information</b>
data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].ATC	<b>ATC</b>
data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].KPICLIST[].KPIC	<b>KPIC</b>
data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].DUR[].COMBINEDTABOO	<b>Combined taboo</b>
data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].DUR[].AGETABOO	<b>Age taboo</b>
data.MEDICINELIST[].DETAILLIST[].DRUGINFOLIST[].DUR[].PREGNANTTABOO	<b>Pregnant taboo</b>



# Service Architecture



**Front End**  
Next js, Redux, MUI

**Back End**  
Spring Boot, Redis,  
MySQL

**CI/CD**  
Github Action,  
AWS EC2, Docker





# Introduction and Function



MediGo



Google Login

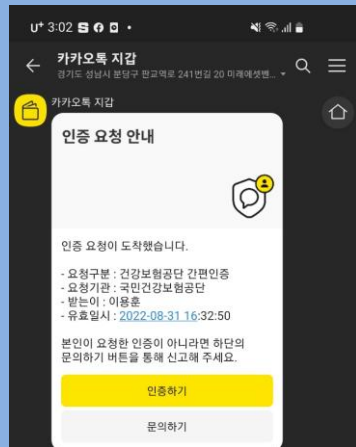
Medicine management and  
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Click the button below and  
check the authentication  
message on your Kakao Talk

CONTINUE

An **authentication** message is  
received through the Kakao  
Talk of User.



Click the button below after  
Kakao Talk authentication

CONTINUE

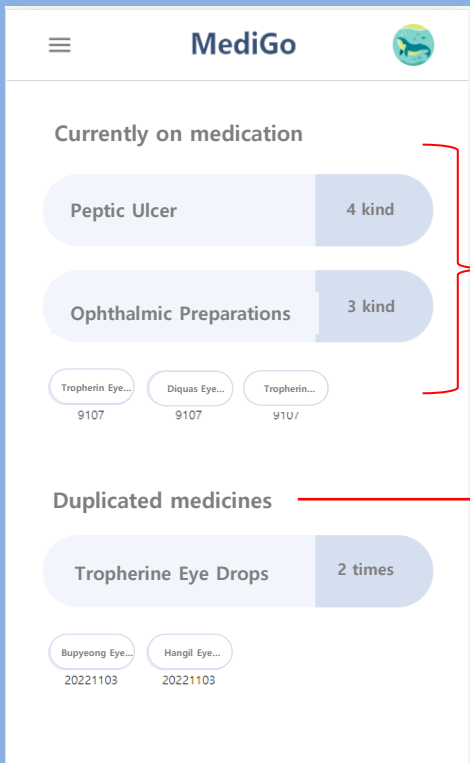
After completing Kakao Talk  
authentication, **user can load**  
MyData.



# Function



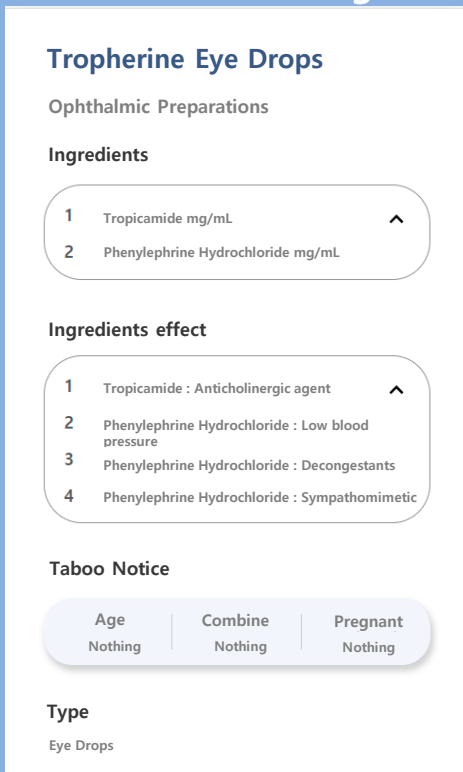
## Main Page



Users can check what **kind of medication they are currently** taking.

Users can check for **duplicate prescribed medicines**. They can check the **name and date of the hospital** that issued the duplicate prescription.

## Medicine Detail Page



Users can check information about the **ingredients, effects, taboos, and type** of medicine.





# Function



## Calendar - Medication

November 2022

<

>

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Medication

Treatment

**Hangaram Pharmacy (Namdong-daero)**

LOXALEX CAP

Peptic Ulcer

3

Timorol 8 hours ER Tab.

Antipyretic painkiller

3

LOSPA Tab.

Antispasmodics

3

Mipid Tab.

Peptic Ulcer

3

**Onnuri Pharmacy (Bupyeong-daero)**

Diquas Eye Drops 3%

Eye Drops

1

Users can check which pharmacy prescribed **which medicine** on that date and how many **medication** were prescribed.

## Calendar - Treatment

November 2022

<

>

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Medication

Treatment

**Outpatient Clinic**

Bupyeong Ophthalmology Clinic

(Bupyeong-daero, Bupyeong-gu)

**Dental Clinic**

Jieum Dental Clinic

(Dongil-ro, Nowon-gu)

Users can check what **kind of treatment** they received at **which hospital** on that date.







# Function




## Update MyData Status


 **MediGo** 


20221103

Prescription pharmacy

Hangaram Pharmacy (Namdong-daero)

  
Days  
of medication


  
Number  
of medication


  
Total number  
of medication


20221103

Outpatient Clinic

Bupyeong Ophthalmology Clinic (Bupyeong-daero)

  
Days  
of medication

  
Number  
of medication

  
Total number  
of medication

Month

Update

User can update their newly prescribed medicine data by entering **the number of days of the medicine, the number of daily medication, and the total number of medication.**

They need to get MyData with authorization to MyData hub

## Application Run

 **MediGo** 

복용중인 약

안과용제

3종

진경제

1종

국소마취제

1종

중복 약물

트로페린점안액

2개





# Conclusion



## Yonghoon Lee

- While using external libraries using MyData, I was able to experience objectifying of complicated json and processing data with Database.
- It was possible to build a CICD infrastructure and develop services using data.
- Although I experienced minor errors while dealing with complicated data, I was able to gain development experience while solving them.

## Jinwon Jung

- It was a good experience to use tools such as TypeScript and Next js that I haven't used often to use MyData.
- However, I was very disappointed that I couldn't render the page with SSG, so I couldn't utilize big advantage of Next js.

**Application Run :** [https://drive.google.com/file/d/1JRxwN2ObsEvT6dgauZERFCaYopEG\\_wF/view?usp=sharing](https://drive.google.com/file/d/1JRxwN2ObsEvT6dgauZERFCaYopEG_wF/view?usp=sharing)