

# LGSI-2023 Smart Winery System



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# Introduction



Oak Barrel



Luxury



variety



# Introduction



**Doyong Kwon**

- Team Leader
- WebOS
- Wine Algorithm
- AI Chat Bot



**Dohyeon Jeong**

- Data preprocess
- Android



**Wonseok Han**

- Crawling
- Android



**Jaeyun Lim**

- MongoDB
- API
- AWS Server



**Jun Choi**

- MongoDB
- API
- Wine Algorithm
- Barcode generator

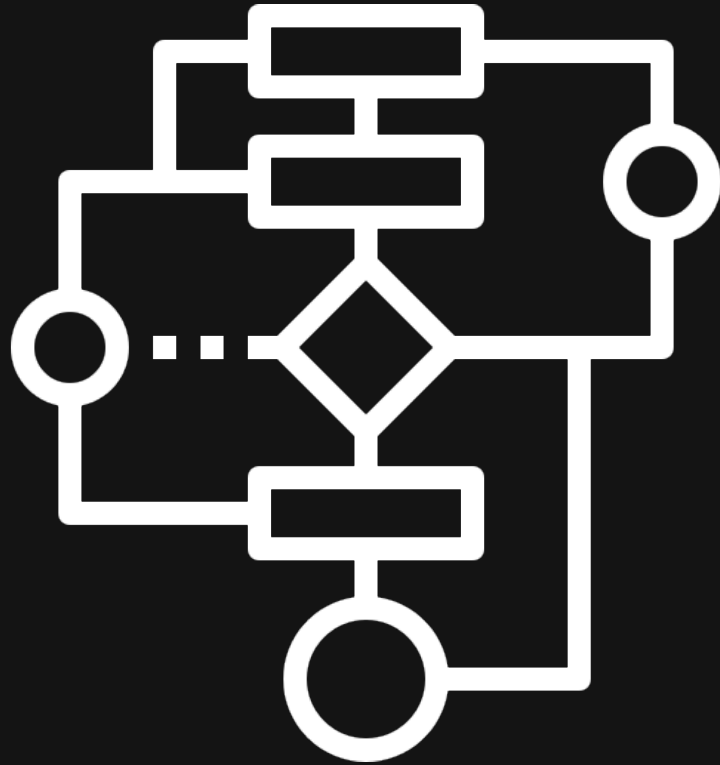


**Seohyun Park**

- Figma
- Android

# Main Feature

- Algorithm

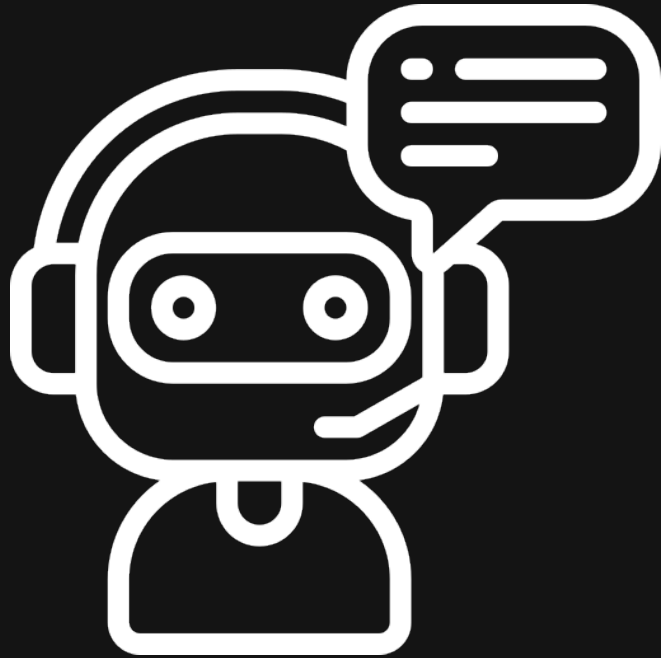


- Calculate Average Temperature of Wines & Set Temperature of each floor
- Search Optimal Location to Store Wine & Show Sequence of Setting Wine Cellar Status



# Main Feature

- AI Chat Bot



- Recommend the Wine for User  
Ex) It's our anniversary, Can you recommend wine?
- Get Wine & Pairing Information





# Main Feature

- Application

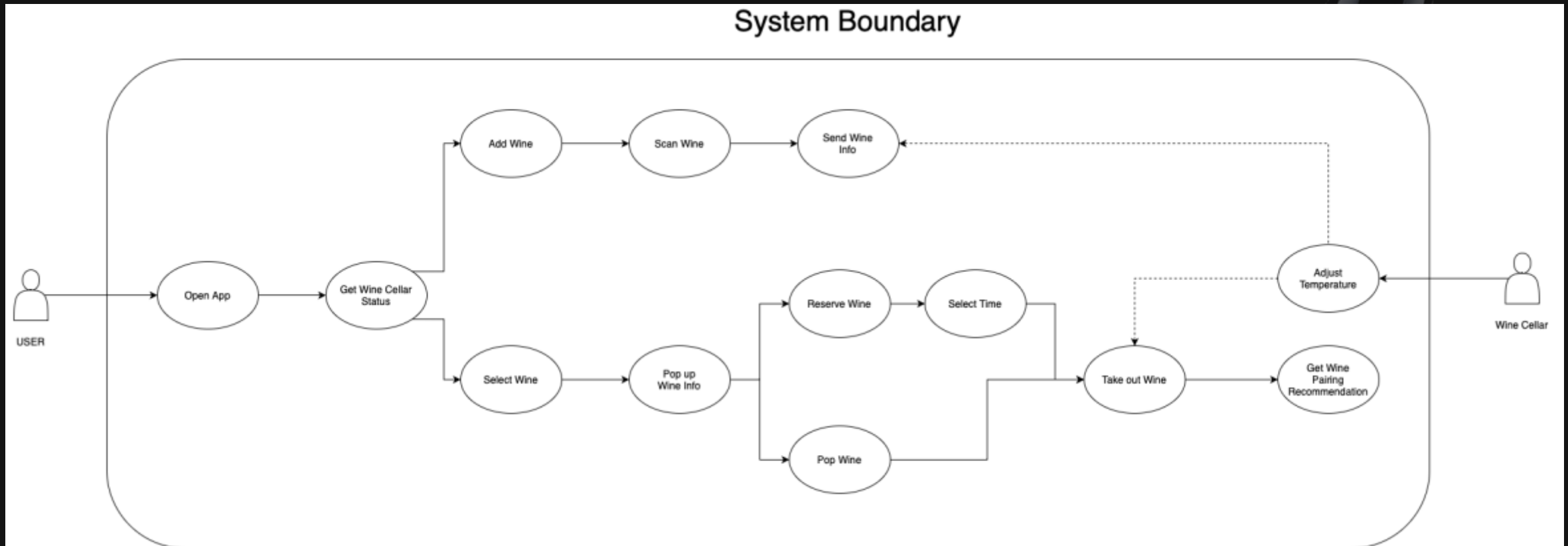
webOS



- WebOS: Imbedded Wine Cellar Application (Check and Control Cellar Status, Chat Bot)
- Android: Mobile Wine Cellar Application (Check and Control Cellar Status, Reserve Wine, Insert New Wine)



# Use Case: Overall





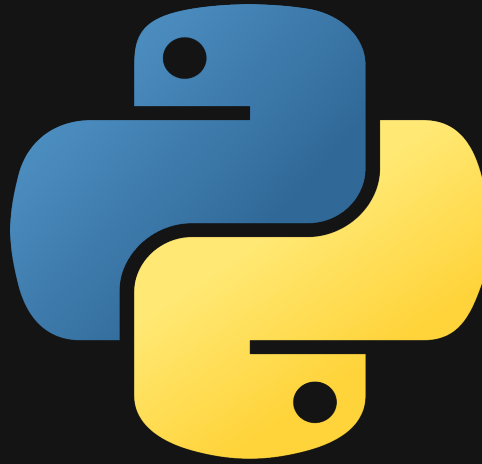
# System Architecture



# Web Crawling



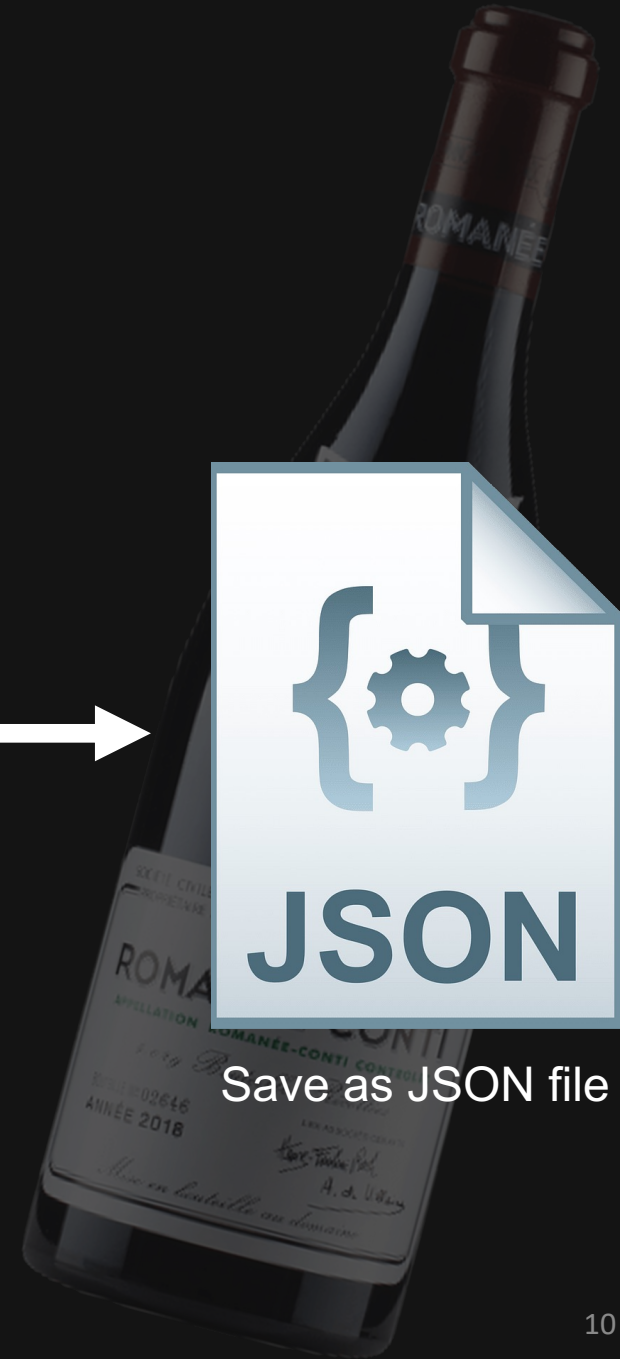
Wine21.com Website



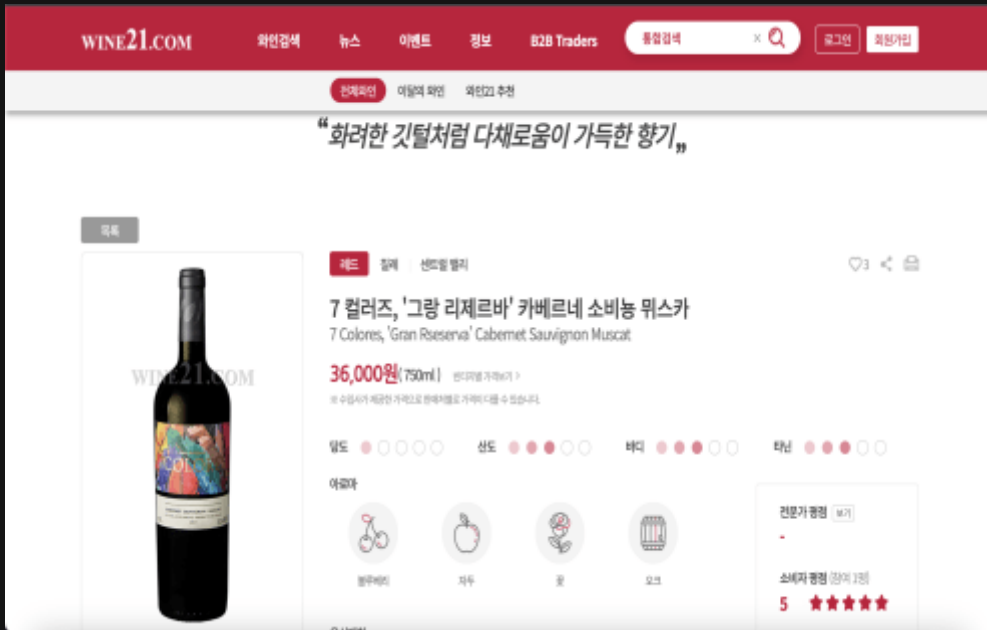
Crawling using selenium and python



Save as JSON file



# Web Crawling



```
▼ root: {} 400 items
▼ 0:
  kor_name: "7 컬러즈, '그랑 리제르바' 카베르네 소비뇽 뫼스카"
  eng_name: "7 Colores, 'Gran Rserve' Cabernet Sauvignon Muscat"
  imgsrc: "https://wine21.speedgabia.com/WINE_MST/IMAGE/01690000/T0169203_002.png"
  r_type: "레드"
  price: 2250
  sweet: 1
  acid: 3
  body: 3
  tannin: 3
  ▼ aroma:
    ▼ https://wine21.speedgabia.com/02_images/icon2/ico-berry.png: {} 1 item
      @: "블루베리"
    ▼ https://wine21.speedgabia.com/02_images/icon2/ico-apple.png: {} 1 item
      @: "자두"
    ▼ https://wine21.speedgabia.com/02_images/icon2/ico-flower.png: {} 1 item
      @: "꽃"
    ▼ https://wine21.speedgabia.com/02_images/icon2/ico-oak.png: {} 1 item
      @: "오크"
  ▼ pairing:
    ▼ https://wine21.speedgabia.com/02_images/icon2/ico-food-cow.png: {} 1 item
      @: "스테이크"
    ▼ https://wine21.speedgabia.com/02_images/icon2/ico-food-pizza.png: {} 1 item
      @: "피스타"
    ▼ https://wine21.speedgabia.com/02_images/icon2/ico-food-fruit.png: {} 1 item
      @: "자두"
  rating: "5"
  temp: 17
  type: "Red"
```

Name, Image sources, Type, Price, Taste, Aroma, Pairing Information

# Data Preprocessing

1. Merging JSON Files Containing Wine Information.
2. Convert Price Information from Won to Rupee.
3. Extract Aroma and Pairing Types.
4. Korean-English Translation  
(Make python dictionary for translation and map to wine information)
5. Listing Image Sources for Image Output.  
(For wine, aroma, pairing information)

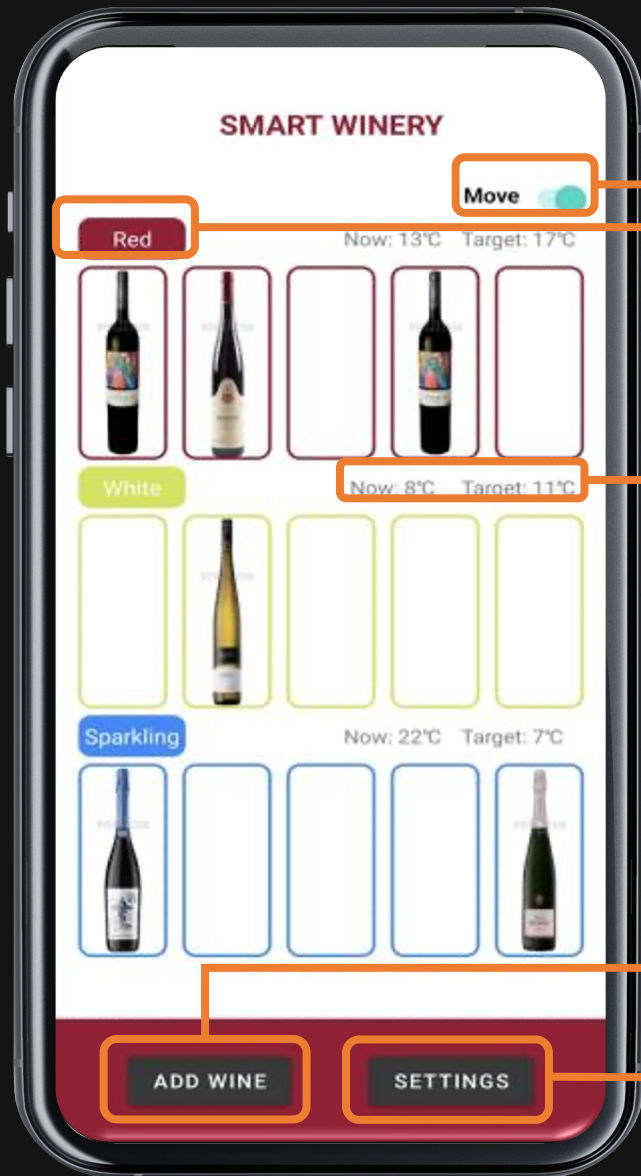


# Application Feature: Android









Switch(Move/Info)

Layer type information

Display current temperature  
and Target temperature

Move to Barcode Scan Page

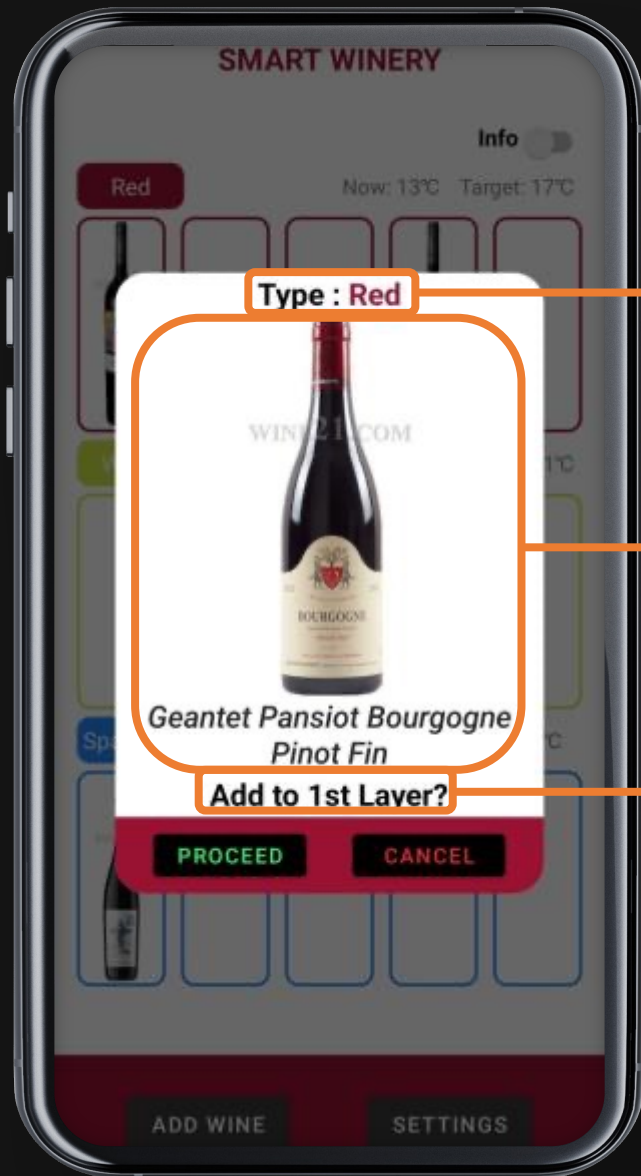
Move to Setting Page





Scan wine barcode

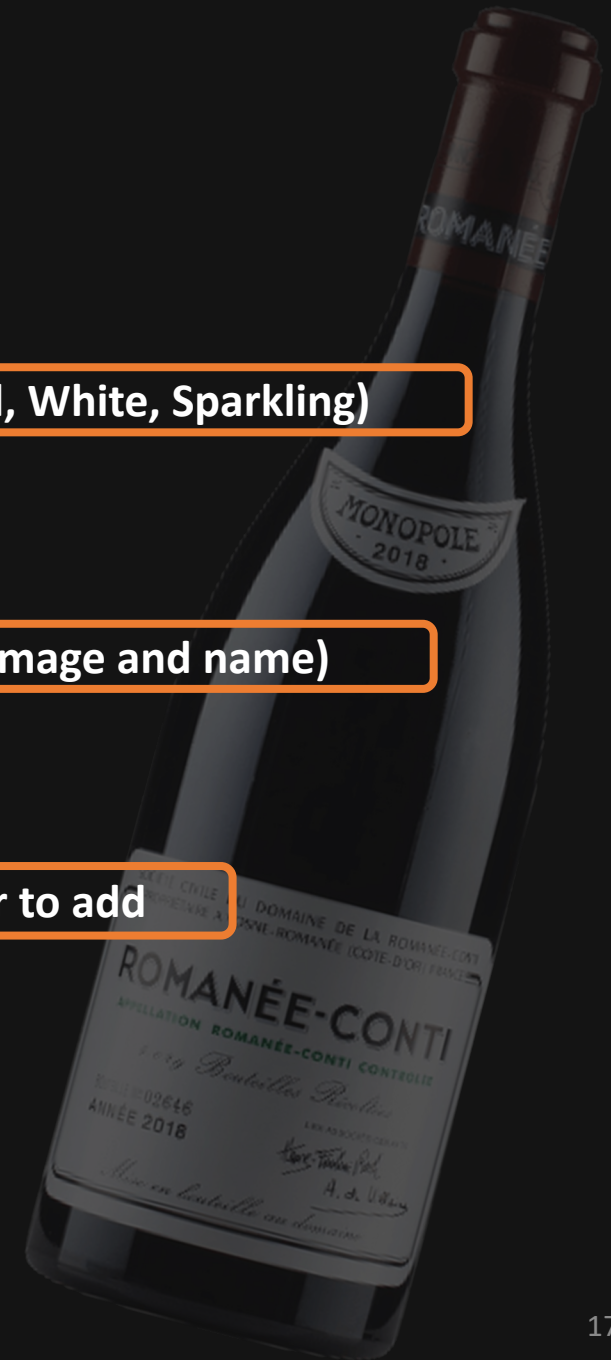


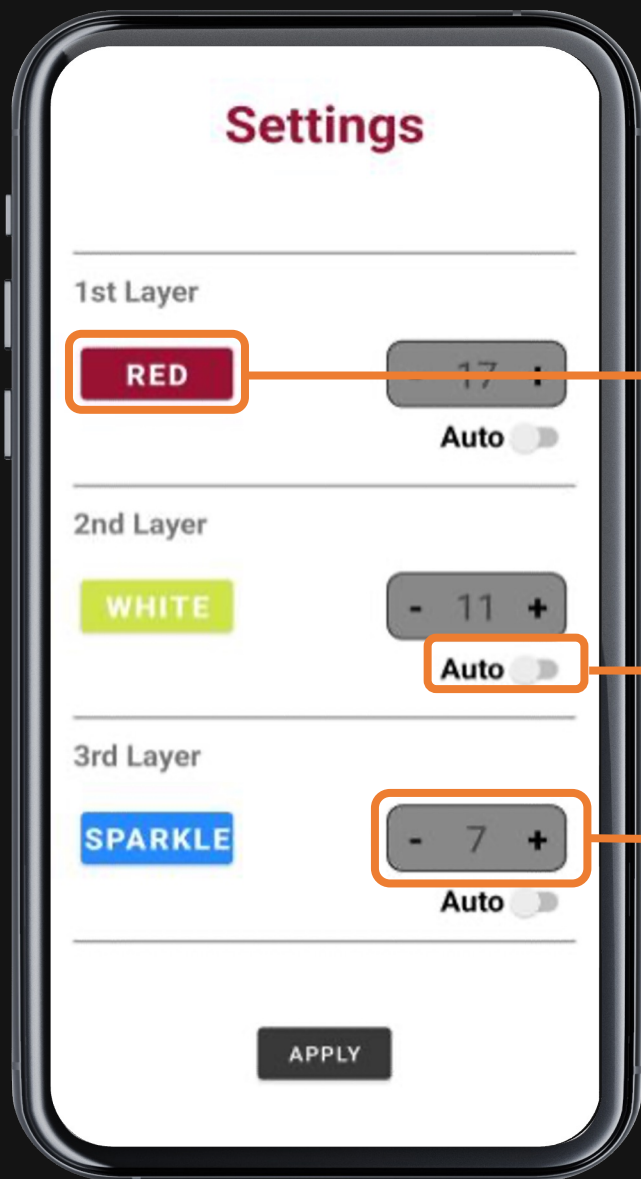


Wine type info(Red, White, Sparkling)

Display wine info(Image and name)

Indicate which layer to add



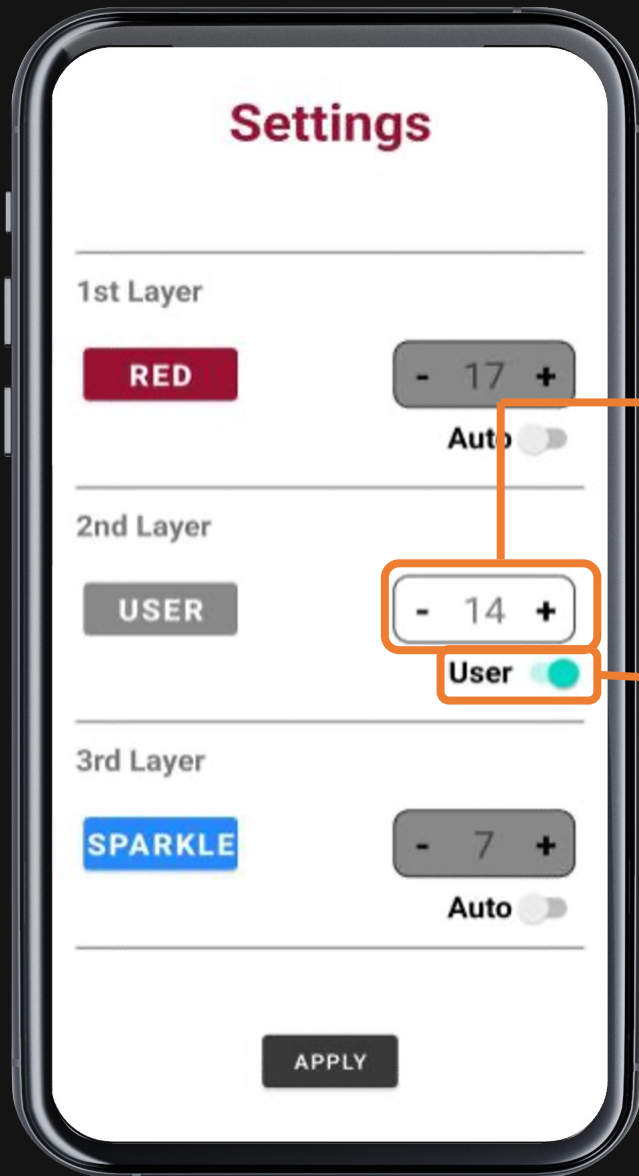


Wine type status of Layer (RED, WHITE, SPARKLE, USER)  
Can change to other type only if the layer is empty

Mode change (Auto/User)

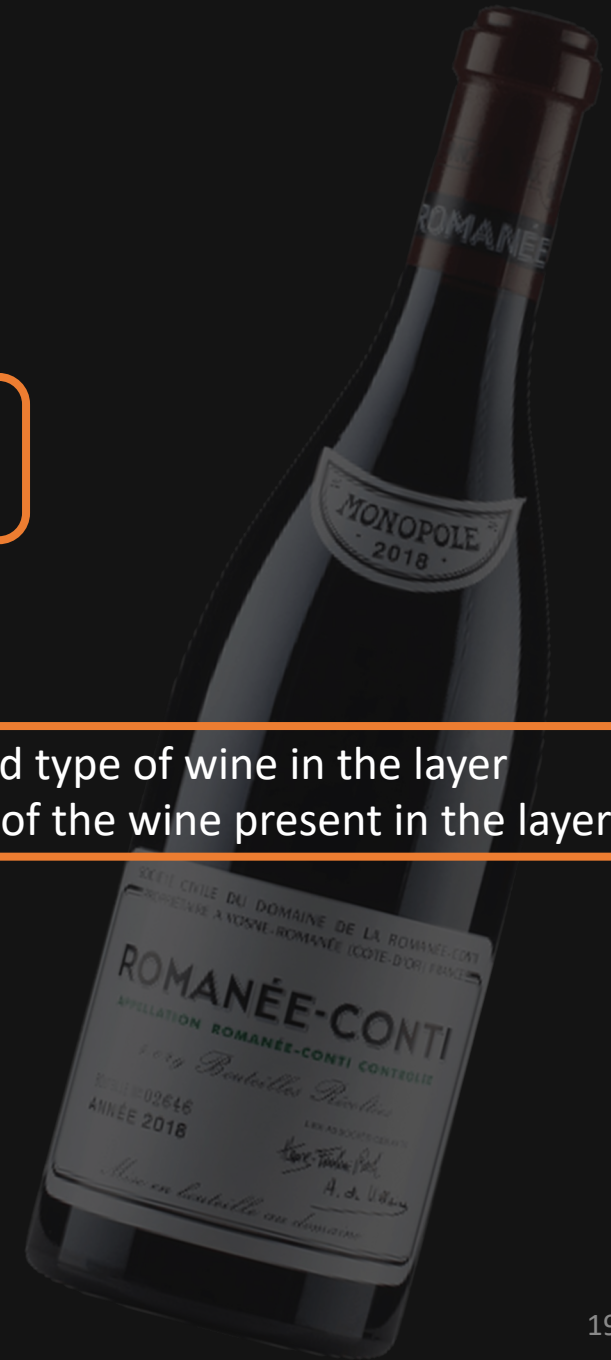
Adjust the temperature  
automatically in Auto mode





Adjust the temperature manually  
Enabled in User mode

Disabled when there are mixed type of wine in the layer  
When clicked, switches to the type of the wine present in the layer







Name of wine

Profile of wine

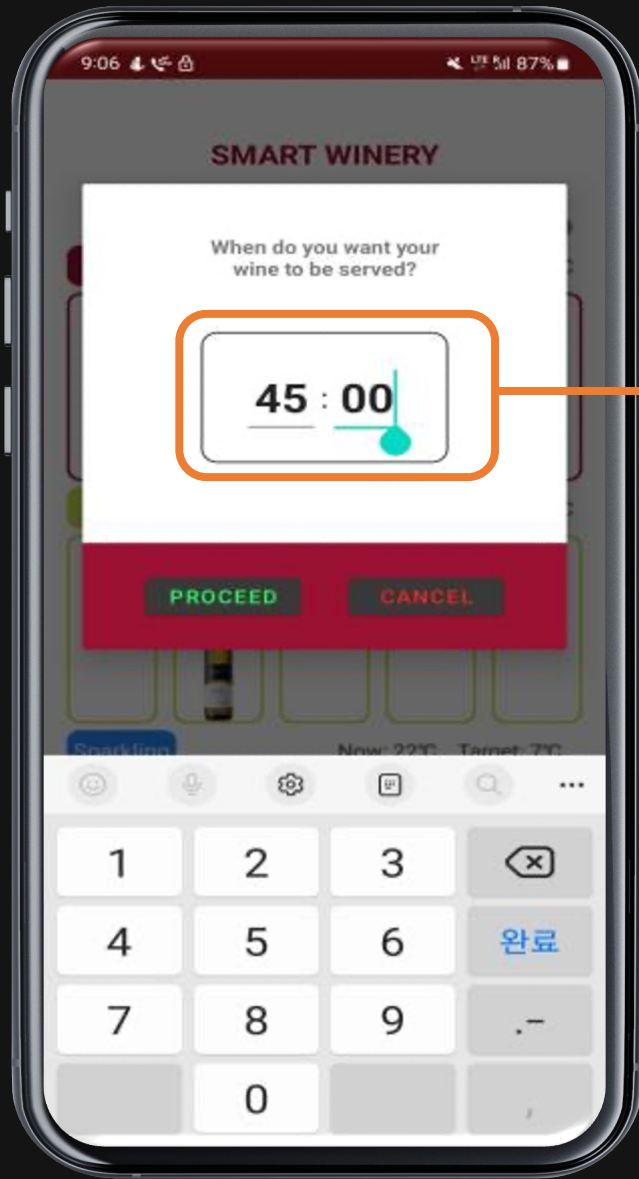
Aroma and  
recommended pairing

Pops up a reservation dialog

Removes the wine from cellar







Set the timer to the desired time  
Toast message when the wine is ready



# Application Feature: WebOS



# Wine Cellar Dashboard

Storage

Feature Menu



Layer Type

White

Sparkling

Red



Now: 13°C  
Target: 11°C

Now: 8°C  
Target: 7°C

Now: 22°C  
Target: 17°C

Temperature

# Wine Cellar Dashboard



## Wine Information



Sparkling  
**Finest 1531 Blanquette de Limoux**

Aroma



apple



croissant

Pairing



champagne



salad



fruit

Sweet



Acid



Body



Tannin



Price: ₹2812

temperature: 7°C

Now: 13°C

Target: 11°C

Now: 8°C

Target: 7°C

Drink

Delete Wine

# Wine Cellar Dashboard



## Chatting with Wine Chat Bot



White

chat bot

It's my birthday, Can you recommend wine for today?

For your birthday, why not try a bottle of bubbly? A sparkling wine is always a great way to celebrate the day! Prosecco, Cava, and Champagne are all excellent choices. Cheers to you!

Sparkling

chat bot

Thank you, but I like white wine. Can you recommend again?

Yes, of course. I recommend trying a Sauvignon Blanc. It is a dry white wine with a bright, fruity flavor and can also be a great pairing with fish or light salads.

Type a Message

Send

Send Message

Red



## Wine Cellar Dashboard



### Choose Wine to Move

- Archil Guniava, Ts...
- Finest 1531 Blanq...
- Christmas Asti
- Pietro Dal Cero A...
- Chateau Cantena...
- La Rioja Alta Gran...

### Choose Location

White

Occupied

Available

Available

Available

Available

Sparkling

Occupied

Available

Occupied

Selected

Available

Red

Occupied

Occupied

Occupied

Available

Available

Apply

Apply Change

Choose  
Wine to  
Move



# Wine Cellar Dashboard

Choose Mode

Smart Mode On/Off

## Setting



Smart Mode On

Mode

White

Target: 11°C

Change Temperature



Smart Mode On

Mode

Sparkling

Target: 7°C



Smart Mode On

Mode

Red

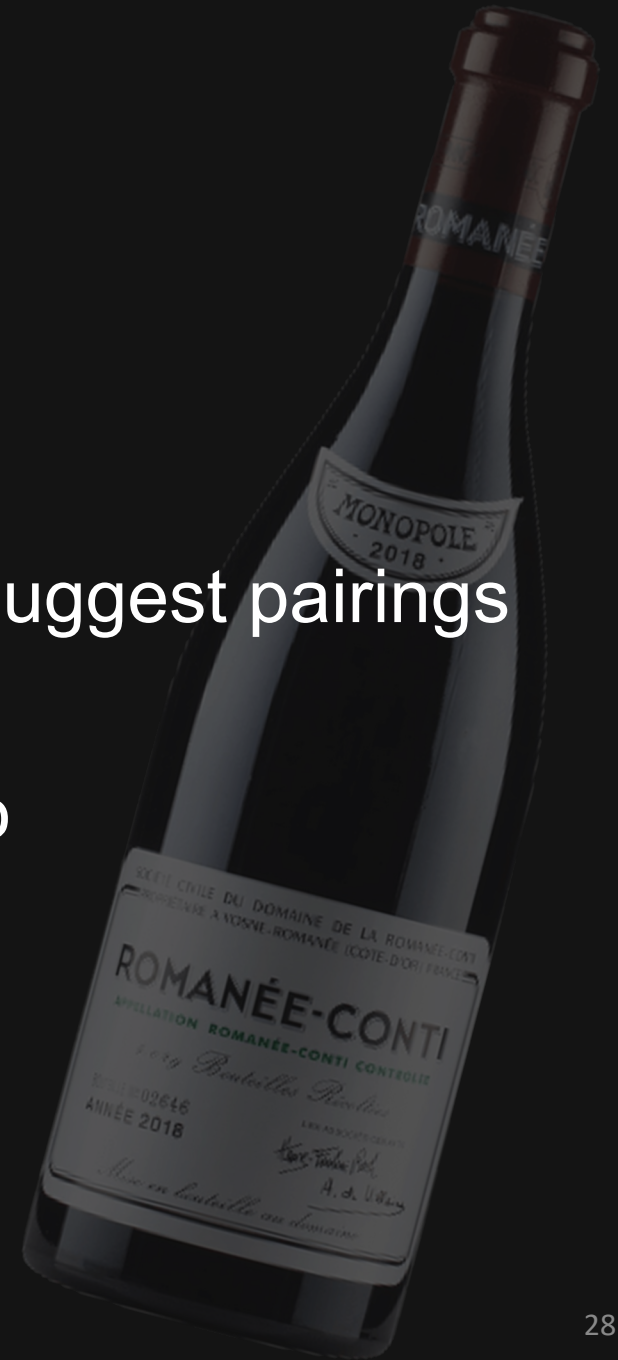
Target: 17°C

Apply

Apply Change

# Further Improvements

1. Implement TTS to communicate with GPT
2. Check remaining foods in refrigerator and Suggest pairings
3. Use Fine-tuning model instead of 3.5 turbo



# Q&A



# Thank You for Listening

