PY-IL

프로젝트 최종발표

날씨에 따른 옷차림을 자동 추천

조원

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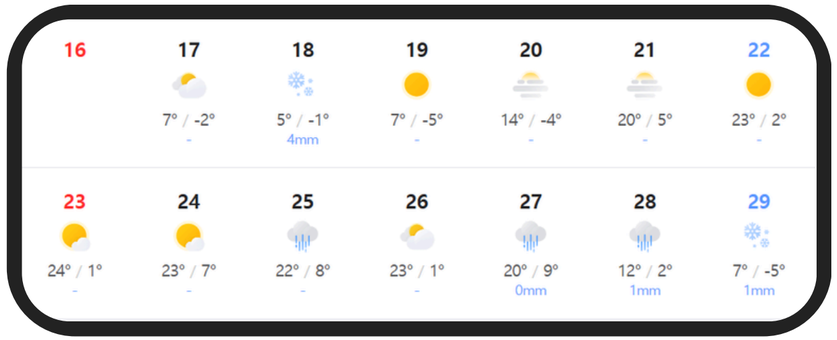
INTRODUCTION

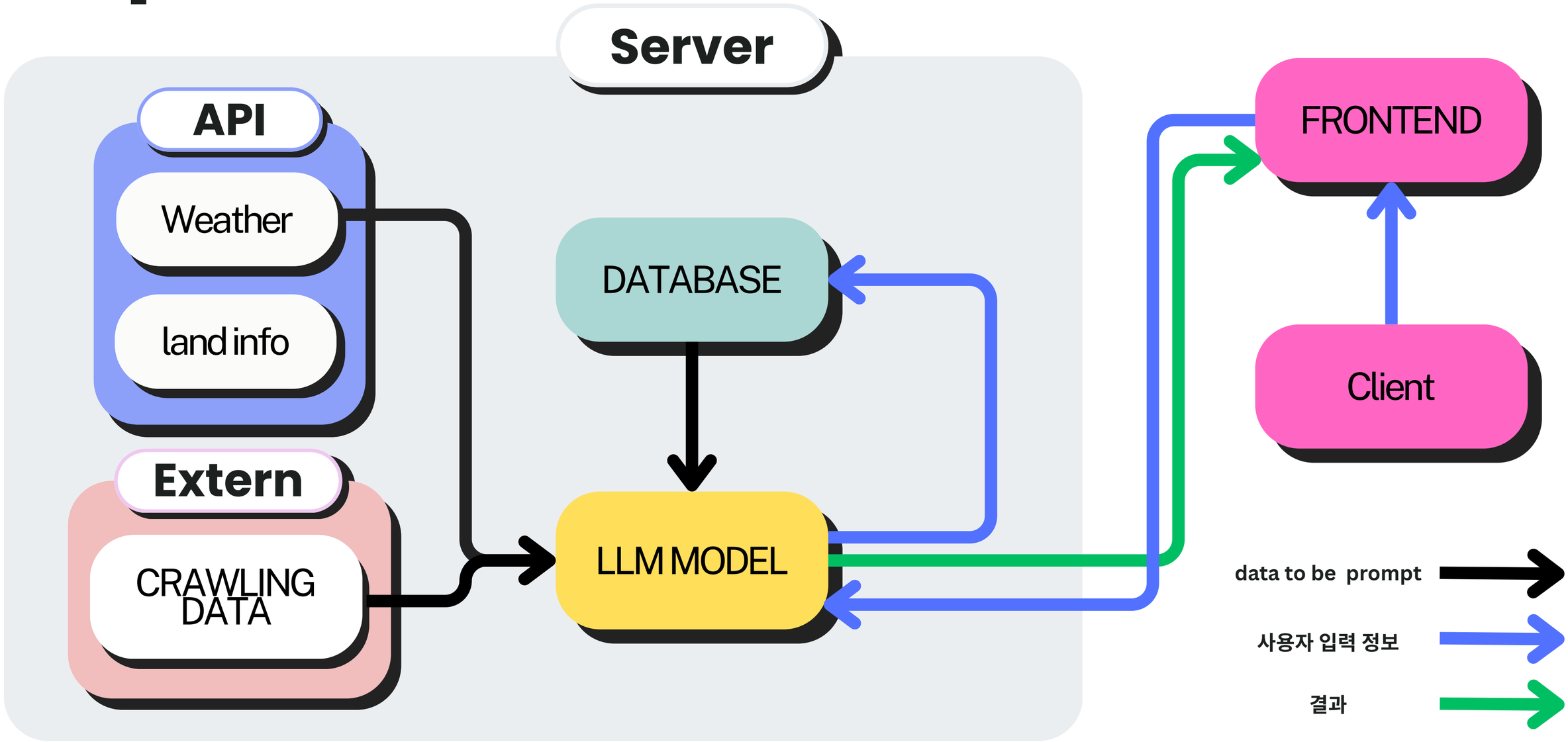
오락가락하는
날씨

그런 날씨에 맞는
의상 추천

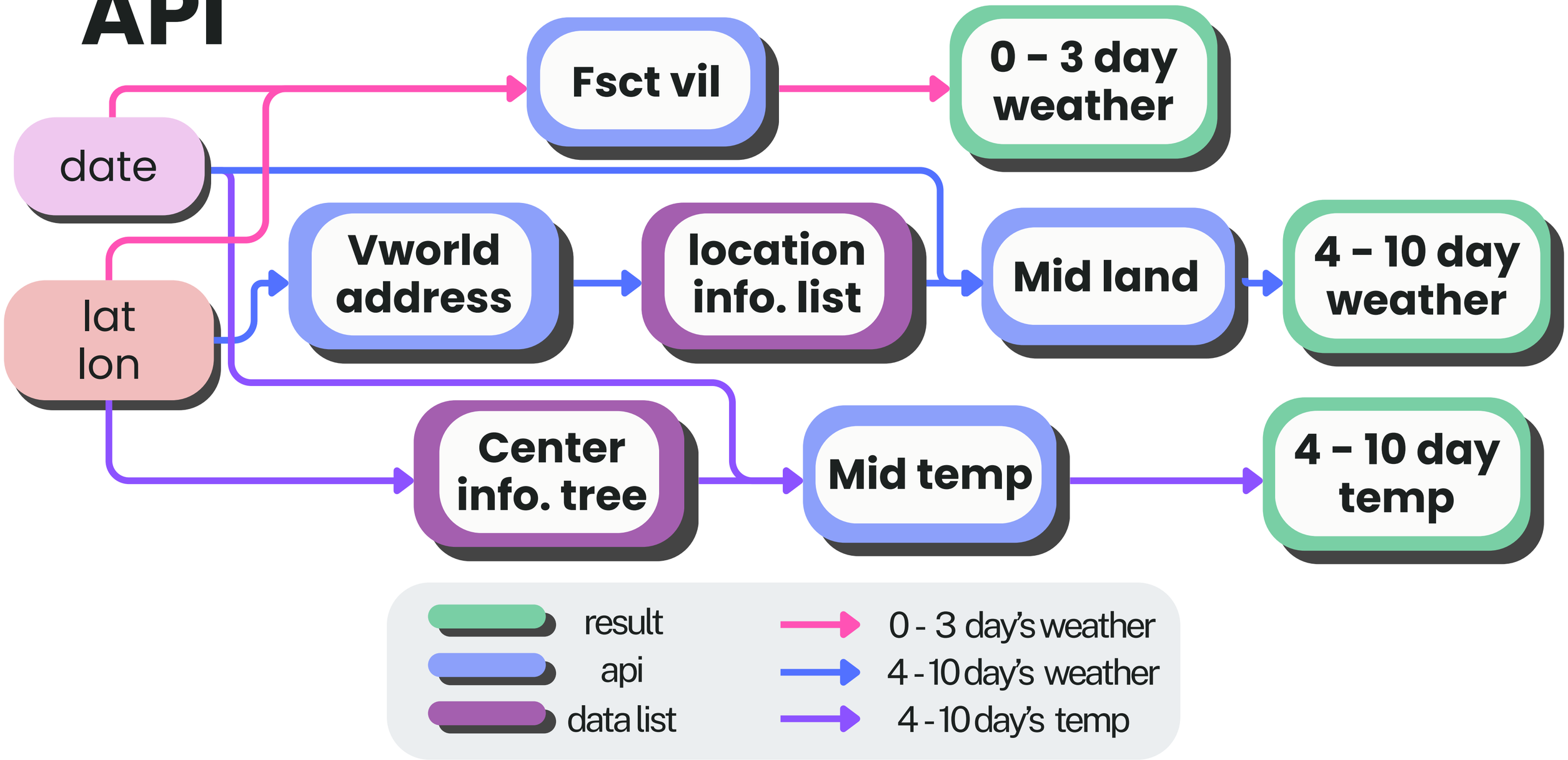


날씨에 따른 옷차림을 자동 추천

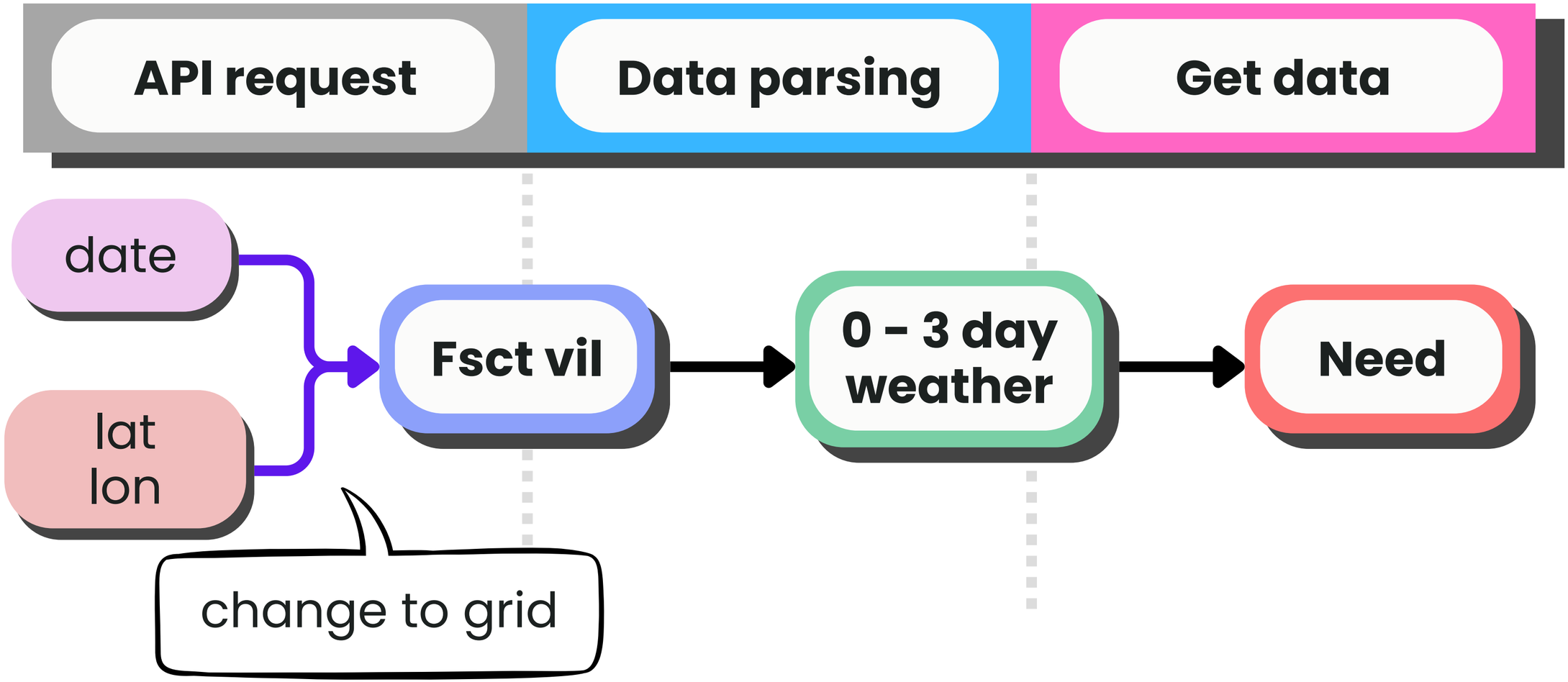
Implemenation flow



API


Fsct vil
0 – 3 day weather
date
Vworld address
location info. list
Mid land
4 – 10 day weather
lat
lon
Center info. tree
Mid temp
4 – 10 day temp
result
api
data list
0 - 3 day's weather
4 - 10 day's weather
4 - 10 day's temp

API


API request
Data parsing
Get data
date
lat
lon
Fsct vil
0 – 3 day weather
Need
change to grid

latitude, longitude to grid

$$\phi_r = \phi \times \frac{\pi}{180} \qquad \text{(latitude in radians)}$$

$$\lambda_r = \lambda \times \frac{\pi}{180} \qquad \text{(longitude in radians)}$$

$$\lambda_0 = \text{olon} \qquad \text{(origin longitude)}$$

$$\text{ra} = \frac{r_e \cdot s_f}{\left[\tan\left(\frac{\pi}{4} + \frac{\phi_r}{2}\right)\right]^{s_n}} \qquad \text{(projected radius)}$$

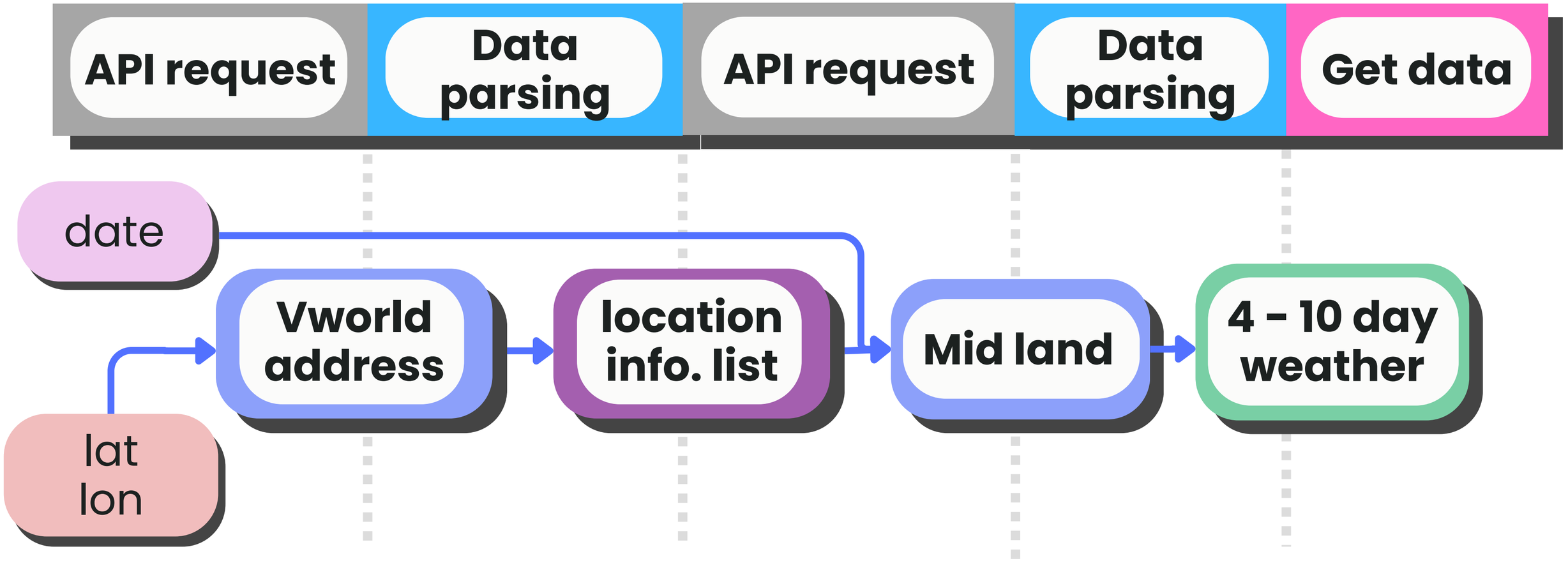
$$\Delta\lambda = \lambda_r - \lambda_0 \qquad \text{(longitude difference)}$$

$$\theta = s_n \cdot \Delta\lambda \qquad \text{(rotated angle)}$$

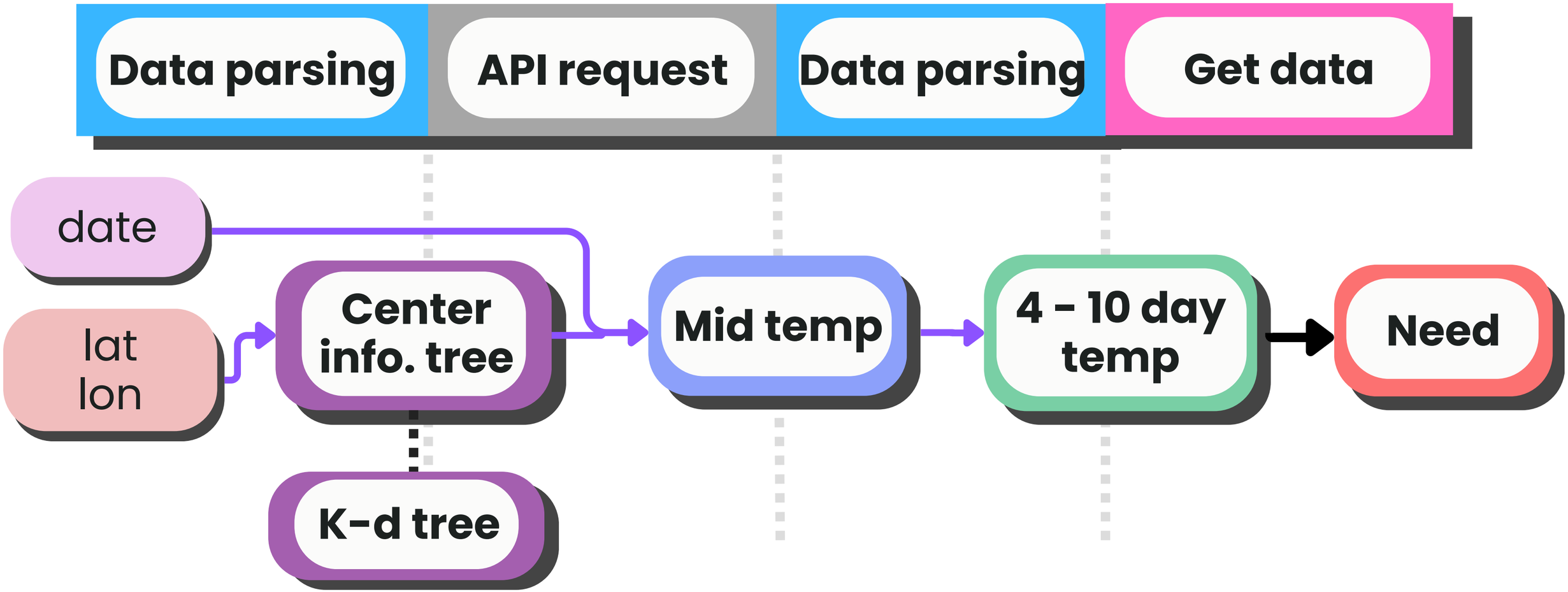
$$x = \lfloor \text{ra} \cdot \sin(\theta) + X_O + 0.5 \rfloor \qquad \text{(grid X coordinate)}$$

$$y = \lfloor r_o - \text{ra} \cdot \cos(\theta) + Y_O + 0.5 \rfloor \qquad \text{(grid Y coordinate)}$$

API

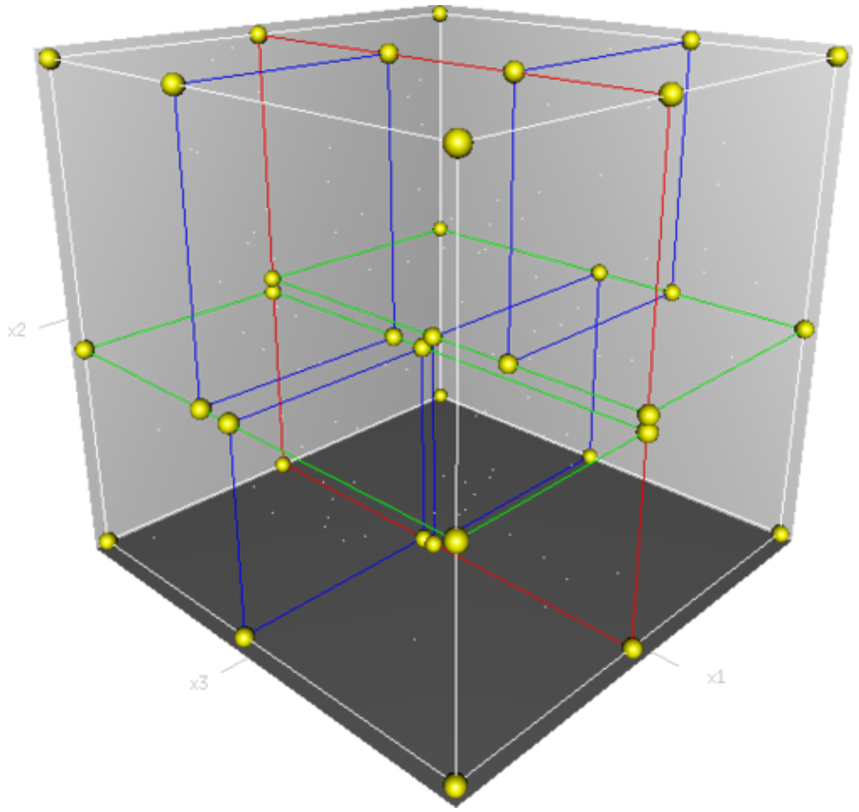

API request
Data parsing
API request
Data parsing
Get data
date
lat
lon
Vworld address
location info. list
Mid land
4 - 10 day weather

API

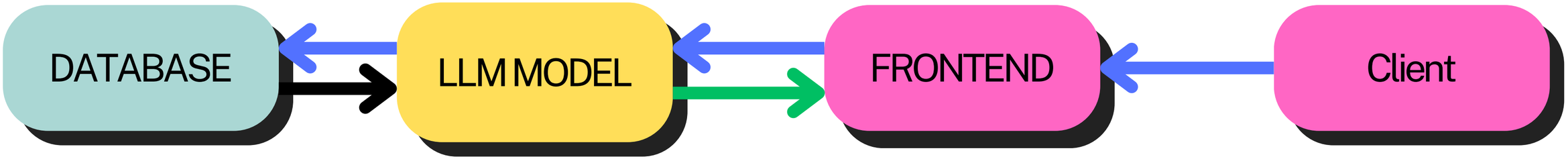

Data parsing
API request
Data parsing
Get data
date
lat
lon
Center info. tree
K-d tree
Mid temp
4 - 10 day temp
Need

k - d tree

x→y→z→x→...



DATABASE

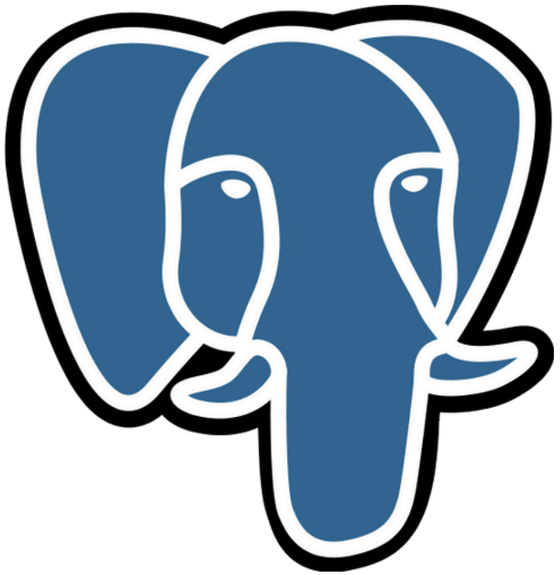


data to be prompt

사용자 입력 정보

결과

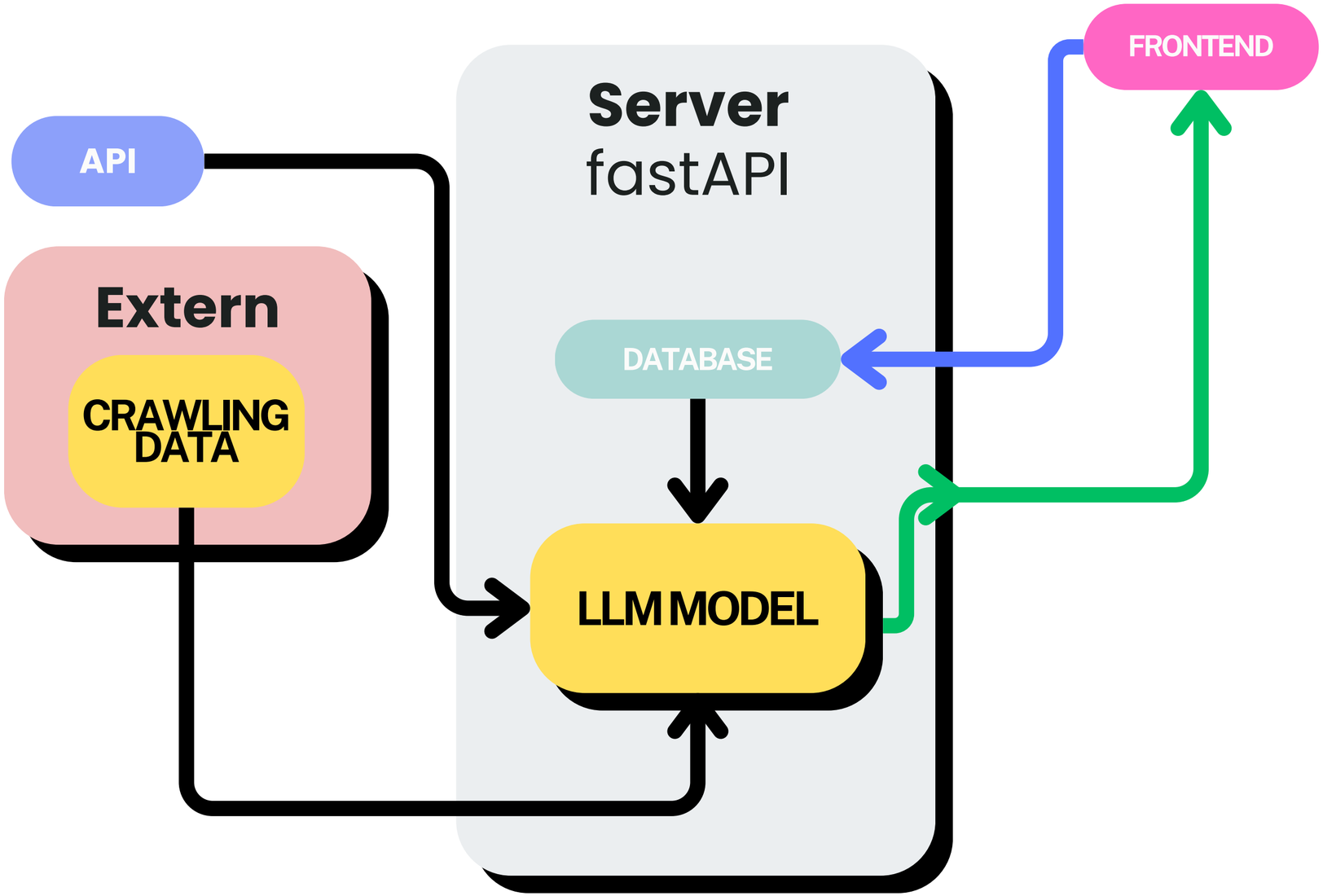
DATABASE



PostgresSQL

pgAdmin 4

EXTERN & SERVER FASTAPI



- 옷 데이터 수집: 웹 크롤링을 통해 의류 정보를 수집
- AI 기반 추천: LLM 모델을 사용하여 상황에 맞는 의상 자동 추천
- FastAPI로 서버 구현: 백엔드 서버를 FastAPI로 구축
- 데이터 연동: API, 사용자 입력, 데이터베이스

EXTERN & SERVER FASTAPI

Extern

CRAWLING DATA

- 옷 재질과 종료 데이터 수집
- BeautifulSoup

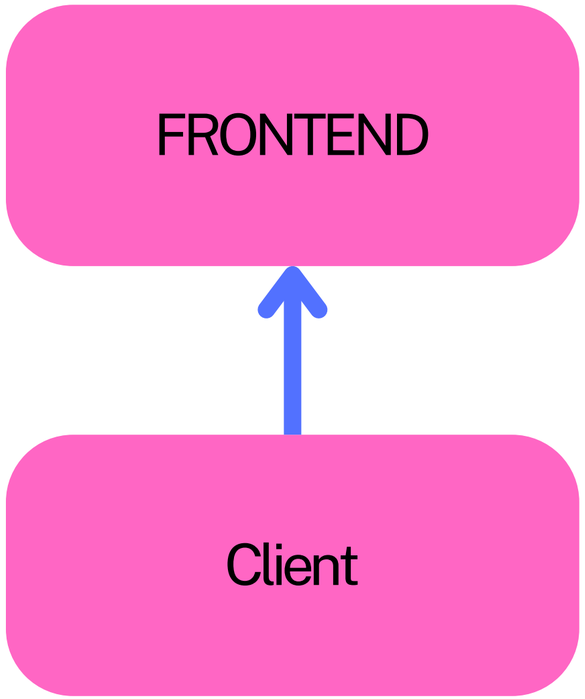
LLM MODEL

- 절달 받은 날씨, 사용자 데이터, 옷 정보 그리고 입력 데이터를 gemini에게 넘기고 결과 생성
- 동시에 사진 프롬프트 받아서 그 프롬프트으로 webui_server으로 사진 생성

Server
fastAPI

- get/post
- 로그 설정 및 초기 환경 구성
- 회원 가입 및 로그인 처리
- 메인 페이지 및 입력 수집
- 날씨 데이터 연동 및 LLM 추천 요청
- 결과 페이지 출력

FRONTEND



사용자 정보, 외출 정보, 위치정보
추천 결과 (의상 샘플과 각각에 대한 설명)

사용자 정보(gender, age, height, weight)
외출정보(date, environment, destination)
위치정보

FRONTEND

Sign Up

Create your account to get started

User ID *

Password *

Sex *

Select Sex

Age *

Height (cm) *

Weight (kg) *

Create Account

Already have an account? Login here

Welcome Back

Sign in to your account

User ID

Password

Log In

Don't have an account? Sign up here

외출하실 정보를 입력해주세요

외출하실 날짜를 선택해주세요.

mm/dd/yyyy

활동 환경을 선택해주세요.

실외 실내

활동하실 장소를 입력해주세요.

목적지를 입력하세요

제출 및 날씨 요청

옷차림 추천 결과

Outfit 1: Casual Comfort at the Beach Materials, Types, Colors: Linen Shorts: Light-colored (khaki, light blue, or gray) linen shorts. Oversized T-Shirt: Breathable cotton or linen blend oversized t-shirt in a solid, muted color (navy, olive green, or charcoal). Sandals/Flip-Flops: Waterproof, rubber or synthetic sandals. Why it Fits: Linen and cotton are breathable for the humidity, the shorts allow for movement and comfort on the beach, and the dark color avoids being too flashy and also hides that you're a bit overweight.

Outfit 2: Rain-Ready and Stylish Materials, Types, Colors: Performance Joggers: Lightweight, quick-drying performance joggers in a dark color (black, dark gray, or navy). Henley T-shirt: Moisture-wicking Henley T-shirt, in gray or navy. Denim Jacket: Dark-wash Denim Jacket (only if the rain is light and temperature drops a bit). Why it Fits: The performance fabric wicks away moisture from rain and sweat, the joggers are comfortable and provide some protection from the elements, and the Henley and denim jacket adds a layer of style.

Outfit 3: Relaxed Beach Vibes Materials, Types, Colors: Linen Pants: Light-colored (white, cream, or beige) linen pants (rolled up at the ankles). Basic T-shirt: Light-colored (white, light blue) basic cotton t-shirt. Espadrilles or Boat Shoes: Canvas or breathable fabric espadrilles or boat shoes. Why it Fits: The light colors reflect heat, the linen pants are breathable and comfortable for beach walks, and the shoes are appropriate for a relaxed beach environment.

실행 결과

감사합니다

Q&A