포팅 메뉴얼

▼ 1. 프로젝트 기술스택

1) **이슈관리** : Jira
2) **형상관리** : Git
3) **커뮤니케이션** : Mattermost, Webex, notion, Google Sheets, Figma,
4) **개발환경** :
   - ✔️ OS : Window 10
   - ✔️ IDE :
     - IntelliJ
     - VSCode
     - HeidiSQL
     - VIM
   - ✔️ Database :
     - DBMS: Mariadb 10.3.38
     - SearchEngine: ElasticSearch 8.6.2
   - ✔️ Server: AWS EC2
   - ✔️ OS: Ubuntu 20.04 LTS (Focal Fossa)
   - ✔️ File Server: AWS S3
   - ✔️ CI/CD: Jenkins, Docker, Nginx
5) **상세 기술**
   - ✔️ Front-End
     - axios : 1.3.4
     - chart.js : 4.2.1
     - css-loader : 6.7.3
     - eslint : 8.36.0
     - eslint-config-airbnb : 19.0.4
     - eslint-config-airbnb-typescript : 17.0.0
     - eslint-config-prettier : 8.7.0
     - eslint-plugin-prettier : 4.2.1
     - lint : 0.8.19
     - lottie-react : 2.4.0
     - node-sass : 8.0.0
     - prettier : 2.8.5
     - react : 18.2.0
     - react-chartjs-2 : 5.2.0
     - react-dom : 18.2.0
     - react-icons : 4.8.0
     - react-kakao-maps-sdk : 1.1.7
     - react-redux : 8.0.5
     - react-router-dom : 6.9.0
     - react-scripts : 5.0.1
     - react-slick : 0.29.0
     - redux : 4.2.1
     - redux-saga : 1.2.3
     - sass-loader : 13.2.0

- slick-carousel : 1.8.1
- style-loader : 3.3.1
- swiper : 9.2.0
- tailwindcss : 3.2.7
- typescript : 4.9.5
- v6 : 0.0.0
- web-vitals : 2.1.0 @

✔️ Back-End

- spring-boot-starter-web
- spring-boot-starter-security
- spring-boot-starter-oauth2-client
- spring-boot-starter-data-jpa
- mariadb-java-client
- lombok
- springfox-swagger-ui:3.0.0
- querydsl-jpa
- querydsl-apt
- json:20220320
- jjwt:0.9.1
- jaxb-runtime:2.3.2
- spring-cloud-starter-aws:2.0.1.RELEASE
- bom:2.15.0
- s3
- gson:2.8.6
- spring-boot-starter-data-elasticsearch:2.6.2
- okhttp:3.14.9

▼ 2. 서버 세팅

1) Jenkins 설치

```
apt-get update -y
apt-get upgrade -y
apt-get install ca-certificates curl software-properties-common \
apt-transport-https gnupg lsb-release docker.io nginx docker-compose -y
docker pull jenkins/jenkins:lts
sudo docker run -d -p 8080:8080 -v /jenkins:/var/jenkins_home \
-v /var/run/docker.sock:/var/run/docker.sock \
-v /usr/local/bin/docker-compose:/usr/local/bin/docker-compose \
--name jenkins \
-u root jenkins/jenkins:lts \
```

2) 개발환경 버전에 맞게 설치 (nodejs, python)

```
docker exec -it jenkins bash
cd /home/
apt-get install libbz2-dev wget tar
wget https://www.python.org/ftp/python/3.9.10/Python-3.9.10.tgz
tar -xvzf Python-3.9.10.tgz
cd ./Python-3.9.10
./configure
make -j4
make install
```

node js 는 이 링크를 따라한다. https://github.com/nodesource/distributions

4) nginx

- nginx 설치 및 세팅

```
sudo apt-get install nginx -y
service start nginx
service status nginx
```

- nginx 설정 파일 찾기(위치가 버전 및 OS마다 조금씩 다름)

```
find / -name nginx.conf
```

- cerbot 설치 (설치 도중, 이메일 입력 등을 통해 설정한다)

```
sudo snap install certbot --classic
certbot --nginx
```

- /etc/nginx/nginx.conf 변경하기

```
user www-data;
worker_processes auto;
pid /run/nginx.pid;
include /etc/nginx/modules-enabled/*.conf;

events {
  worker_connections 768;
  # multi_accept on;
}

http {

  ##
  # Basic Settings
  ##

  sendfile on;
  tcp_nopush on;
  tcp_nodelay on;
  keepalive_timeout 65;
  types_hash_max_size 2048;
  # server_tokens off;

  # server_names_hash_bucket_size 64;
  # server_name_in_redirect off;

  include /etc/nginx/mime.types;
  default_type application/octet-stream;

  ##
  # SSL Settings
  ##

  ssl_protocols TLSv1 TLSv1.1 TLSv1.2 TLSv1.3; # Dropping SSLv3, ref: POODLE
  ssl_prefer_server_ciphers on;

  ##
  # Logging Settings
  ##

  access_log /var/log/nginx/access.log;
  error_log /var/log/nginx/error.log;

  ##
  # Gzip Settings
  ##

  gzip on;

  # gzip_vary on;
  # gzip_proxied any;
  # gzip_comp_level 6;
  # gzip_buffers 16 8k;
  # gzip_http_version 1.1;
  # gzip_types text/plain text/css application/json application/javascript text/xml application/xml application/xml+rss text/j

  ##
  # Virtual Host Configs
  ##

  include /etc/nginx/conf.d/*.conf;
  include /etc/nginx/sites-enabled/*;

  server {
    server_name sanneomeo.site www.sanneomeo.site j8a301.p.ssafy.io j8a301.p.ssafy.io;

    proxy_set_header Host $host;
    proxy_set_header X-Real-IP $remote_addr;
    proxy_set_header X-Forward-For $proxy_add_x_forwarded_for;
```

```
    proxy_set_header X-Forward-Proto $scheme;


    location / {
      proxy_pass http://localhost:3000/;
    }

    location /api/ {
      rewrite ^/api/(.*)$ /$1 break;
      proxy_pass http://localhost:9090/;
      proxy_http_version 1.1;
      proxy_set_header Upgrade $http_upgrade;
      proxy_set_header Connection "upgrade";
    }

    location /recommend/ {
      rewrite ^/recommend/(.*)$ /$1 break;
      proxy_pass http://localhost:5000/;
      proxy_http_version 1.1;
      proxy_set_header Upgrade $http_upgrade;
      proxy_set_header Connection "upgrade";
    }

    error_page 500 502 503 504 /50x.html;
    location = 50x.html {
      root /usr/share/nginx/html;
    }


    listen 443 ssl; # managed by Certbot
        ssl_certificate /etc/letsencrypt/live/sanneomeo.site/fullchain.pem; # managed by Certbot
        ssl_certificate_key /etc/letsencrypt/live/sanneomeo.site/privkey.pem; # managed by Certbot
        include /etc/letsencrypt/options-ssl-nginx.conf; # managed by Certbot
        ssl_dhparam /etc/letsencrypt/ssl-dhparams.pem; # managed by Certbot

  }


  server {

    if ($host = www.sanneomeo.site) {
            return 301 https://$host$request_uri;
        } # managed by Certbot

    if ($host = sanneomeo.site) {
          return 301 https://$host$request_uri;
        } # managed by Certbot

    if ($host = j8a301.p.ssafy.io) {
      return 301 https://$host$request_uri;
    } # managed by Certbot


    listen  80;
    server_name sanneomeo.site www.sanneomeo.site j8a301.p.ssafy.io;
    return 404; # managed by Certbot

  }
}
```

- nginx 재실행(service nginx restart는 껐다 켜져서 사용중이면 불편을 끼침)

```
nginx -t
service nginx reload
```

▼ 3. 빌드 상세내용

1) **Spring DockerFile**

```
FROM azul/zulu-openjdk:11
WORKDIR /spring
COPY ./build/libs/[프로젝트명]-0.0.1-SNAPSHOT.jar server.jar
ENTRYPOINT ["java", "-jar", "server.jar"]
```

2) **Flask DockerFile**

```
FROM python:3.9
COPY . /flask
WORKDIR /flask
RUN pip3 install -r requirements.txt
RUN chmod 777 /flask/wsgi.py
CMD ["python3.9", "wsgi.py"]
```

3) **React DockerFile**

```
FROM node:18
WORKDIR /react
COPY . .
RUN npm install -g serve
CMD serve -s build
```

4) docker-compose.yml

```
version: "3"

services:
  spring:
    container_name: spring
    build: ./backend/sanneomeo
    ports:
      - "9090:9090"
    volumes:
      - /spring:/image
    restart: on-failure
  flask:
    container_name: flask
    build: ./backend/flask
    ports:
      - "5000:5000"
    volumes:
      - /flask:/image
    restart: on-failure
  react:
    container_name: react
    build: ./frontend/overmountain
    ports:
      - "3000:3000"
    volumes:
      - /react:/image
    restart: on-failure
```

5) **Pipeline**

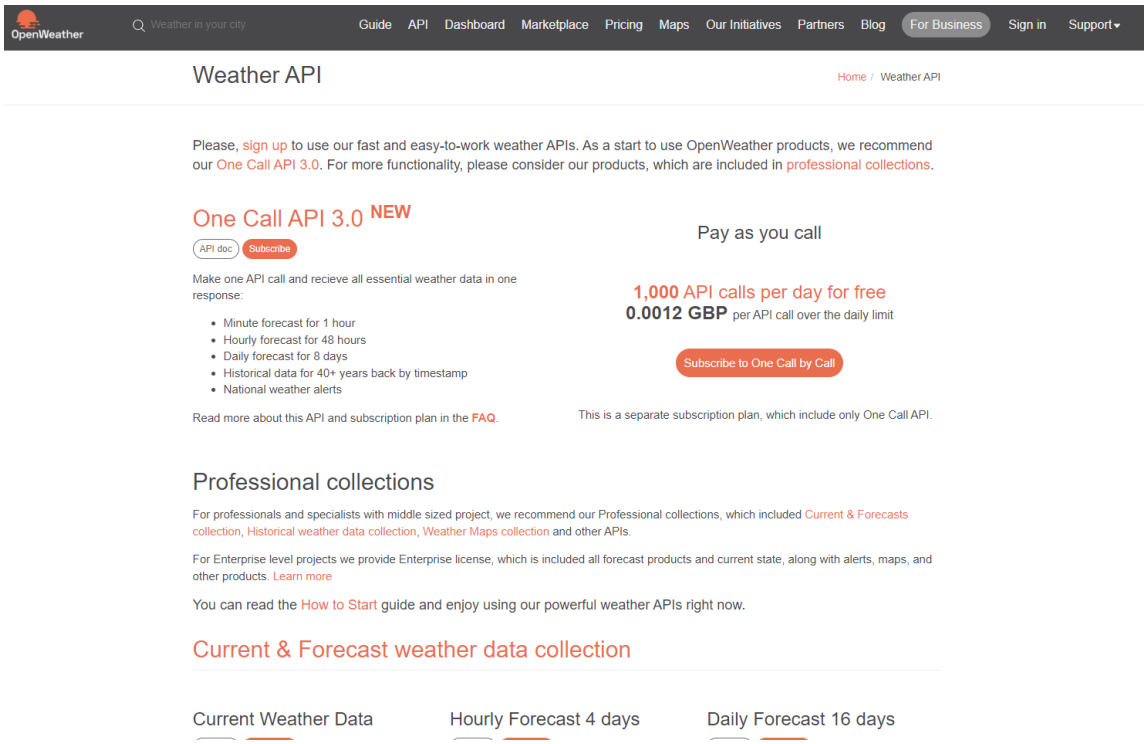
```
pipeline {
    agent any
    stages {
        stage('Init') {
            steps {
                // catchError {
                //     deleteDir()
                // }
                sh "ls"
            }
        }
        stage('GitHub Repository Clone') {
            steps {
                git branch: 'develop', credentialsId: '9f75da46-3be4-40b6-964c-bfbd81c57fb0', url: 'https://lab.ssafy.com/s08-b
                sh "cp -rf /var/jenkins_home/application.yml ./backend/sanneomeo/src/main/resources/"
                sh "cp -rf /var/jenkins_home/DBInfo.py ./backend/flask/DBInfo/"
                sh "cp -rf /var/jenkins_home/env ./frontend/overmountain/.env"
            }
        }
        stage('Spring docker') {
            steps {
                dir("./backend/sanneomeo"){
                    echo "Spring"
                    sh "chmod +x gradlew"
                    sh "./gradlew clean build --exclude-task test"
                    sh "ls"
                }
            }
```

```
        }
        stage('Flask  docker') {
      steps {
        dir("./backend/flask"){
                    echo "Flask"
                    sh "python3.9 -m pip install --disable-pip-version-check --upgrade pip"
                    sh "rm requirements.txt"
                    //sh "cp -rf /var/jenkins_home/requirements.txt ./"
                    sh "pip3 freeze > requirements.txt"
                    sh "pip3 install -r requirements.txt"
                }
      }
    }
        stage('React Docker') {
      steps {
        dir("./frontend/overmountain"){
                    echo "React"
                    sh "npm i"
                    sh "npm run build --production"
                }
      }
    }
    stage('Docker compose down') {
            steps {
                catchError {
                    echo 'docker compose down'
                    sh 'docker-compose -f docker-compose.yml down'
                }
            }
    }
        stage('docker-compose') {
            steps {
                dir("./"){
                    echo 'docker compose'
                    sh "docker-compose -f docker-compose.yml up -d --build"
                }
            }
        }
    }
}
```

▼ 4. 외부 서비스

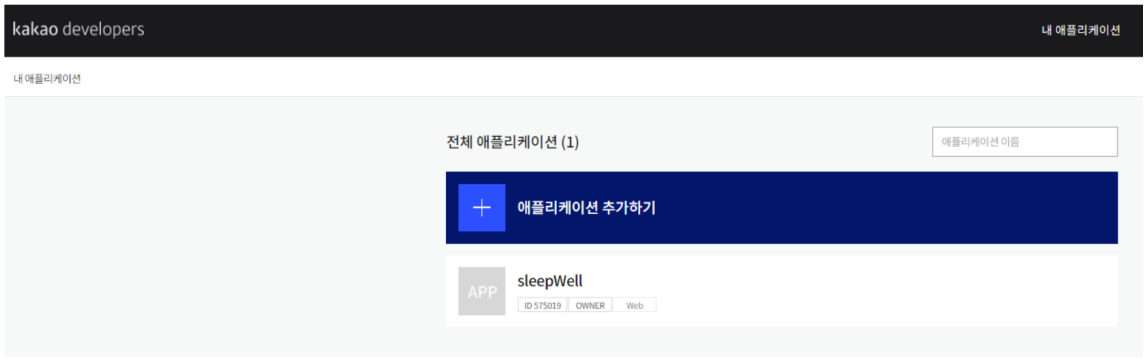
1) 날씨 API

https://openweathermap.org/ 를 이용한다.



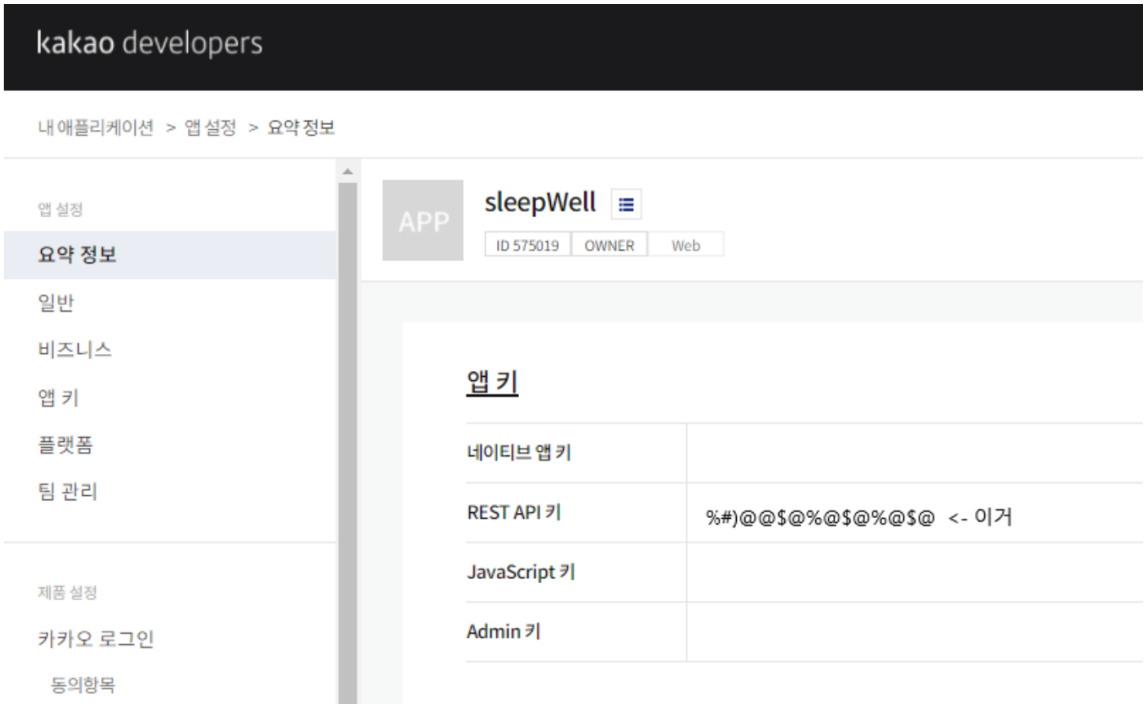
2) **kakao API**

애플리케이션

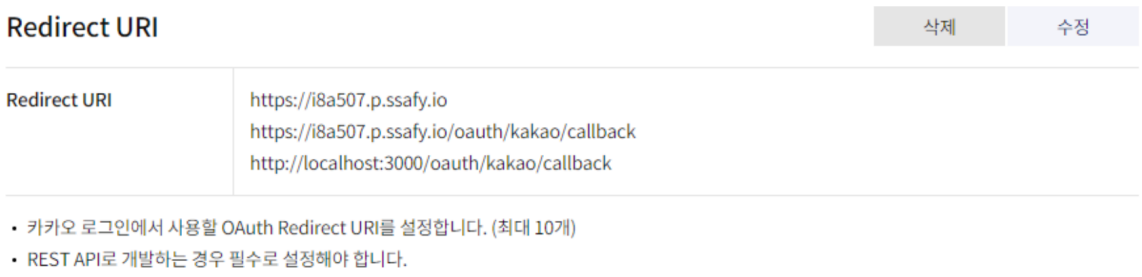


- cliend_id와 redirect_uri를 받아와서 {REST_API_KEY}와 {REDIRECT_URI}에 채워주어야 한다.
- 두 가지를 얻으려면 우선 애플리케이션을 생성한다.

Redirect Url 추가



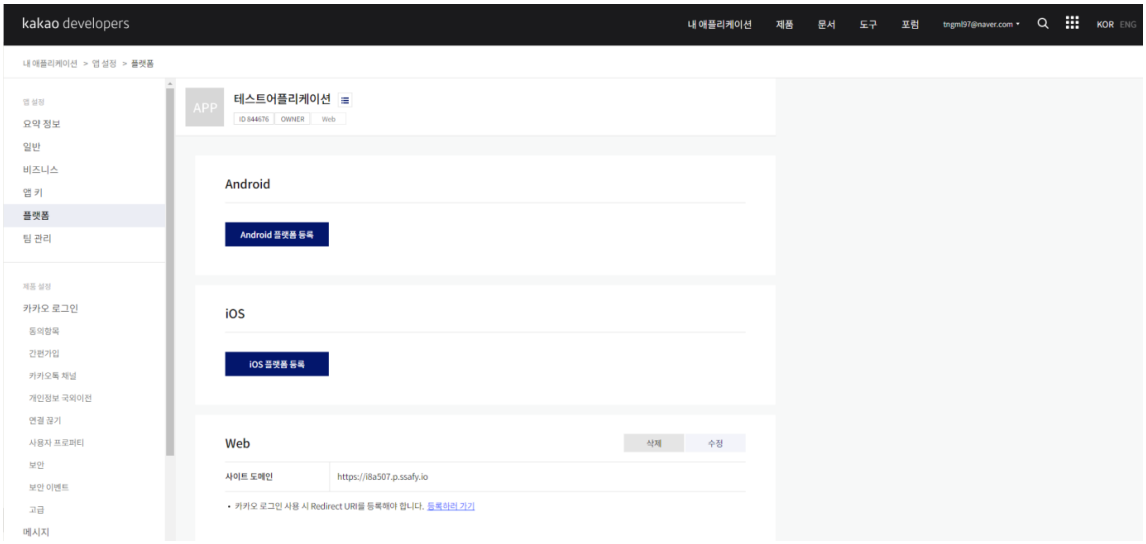
- cliend_id는 kakao developers에서 내 애플리케이션을 추가했을 때 생기는 REST_API 키를 넣어주면 되고, Redirect URI는 카
  카오 로그인 메뉴에 들어가서 추가를 해준다.



- Redirect URI는 반드시 프론트에서 접근할 수 있는 Host로 지정해주어야 한다.

- 왜냐하면 여기에서 인가 코드 받고 넘기고 등등 모든 작업이 이루어져야 하는데 프론트엔드가 접근할 수 없는 Host로 지정을 해버
  리면 말 그대로 접근을 못하니 아무것도 할 수 없다.
  (localhost:8080 등... 대신 이건 백엔드에서 자체 테스트할 때 사용할 수 있다)

플랫폼 추가



- Web에서 사용할 것이기 때문에 Web 플랫폼에 사이트 도메인을 추가한다.