🔪 프로젝트 사용 도구

• 이슈 관리 : JIRA

• 형상 관리 : GitLab

• 커뮤니케이션 : Notion, Mattermost

• 디자인 : Figma

• CI / CD : Jenkins

🔌 개발 환경

Frontend

VSCode

React

JavaScript

• **node.js**: 22.13.0

Backend

IntelliJ

• **openJDK**: 17

Spring Cloud

 DB : MariaDB, Redis, MongoDB

Infra

Server : AWS EC2
 Ubuntu 22.04 LTS

• **Docker**: 27.3.1

• Docker Compose :

v2.30.3

• **Nginx**: 1.18.0

📔 외부 서비스

Gitlab OAuth: application-secrets.properties에 해당 내용 작성

Liveblocks: public-key, private-key application-secrets.properties에 해당 내용

작성

OpenAI(GPT): .env에 해당 내용 작성

🔐 환경 변수

Frontend: .env

```
VITE_OPENAI_API_KEY=
VITE_BASE_URL=
VITE_AI_BASE_URL=
VITE_LIVEBLOCKS_SECRET_KEY=
VITE_LIVEBLOCKS_PUBLIC_KEY=
```

Backend: application.properties, application-secrets.properties

- discovery-service (Eureka)
 - 。 따로 숨겨야 할 데이터가 없어서 secrets 파일이 존재하지 않음

```
### application.properties

server.port=8761

spring.application.name=discovery-service

eureka.client.register-with-eureka=false
eureka.client.fetch-registry=false
```

gateway-service

```
### application.properties

spring.application.name=gateway-service

server.servlet.encoding.charset=UTF-8
server.servlet.encoding.enabled=true
server.servlet.encoding.force=true
spring.profiles.active=secrets

spring.cloud.gateway.discovery.locator.enabled=true
```

```
# Timezone
spring.jackson.time-zone=Asia/Seoul
spring.jpa.properties.hibernate.jdbc.time_zone=Asia/Seoul
# Auth Service
spring.cloud.gateway.routes[0].id=auth-service
spring.cloud.gateway.routes[0].uri=lb://AUTH-SERVICE
spring.cloud.gateway.routes[0].predicates[0]=Path=/auth-servi
spring.cloud.gateway.routes[0].predicates[1]=Method=GET, POST
spring.cloud.gateway.routes[0].filters[0]=RemoveRequestHeader
spring.cloud.gateway.routes[0].filters[1]=RewritePath=/auth-s
# Auth Service-GitLab Data
spring.cloud.gateway.routes[1].id=auth-service-gitlab
spring.cloud.gateway.routes[1].uri=lb://AUTH-SERVICE
spring.cloud.gateway.routes[1].predicates[0]=Path=/auth-servi
spring.cloud.gateway.routes[1].predicates[1]=Method=GET
spring.cloud.gateway.routes[1].filters[0]=RemoveRequestHeader
spring.cloud.gateway.routes[1].filters[1]=RewritePath=/auth-s
### USER-SERVICE
# Getting User Data By Username or ID
spring.cloud.gateway.routes[2].id=user-service-getUser
spring.cloud.gateway.routes[2].uri=lb://USER-SERVICE
spring.cloud.gateway.routes[2].predicates[0]=Path=/user-servi
spring.cloud.gateway.routes[2].filters[0]=RemoveRequestHeader
spring.cloud.gateway.routes[2].filters[1]=RemoveRequestHeader
spring.cloud.gateway.routes[2].filters[2]=RewritePath=/user-s
# Register
spring.cloud.gateway.routes[3].id=user-service-join
spring.cloud.gateway.routes[3].uri=lb://USER-SERVICE
spring.cloud.gateway.routes[3].predicates[0]=Path=/user-servi
spring.cloud.gateway.routes[3].predicates[1]=Method=POST
spring.cloud.gateway.routes[3].filters[0]=RemoveRequestHeader
spring.cloud.gateway.routes[3].filters[1]=RewritePath=/user-s
```

```
# Test
spring.cloud.gateway.routes[4].id=user-service-welcome
spring.cloud.gateway.routes[4].uri=lb://USER-SERVICE
spring.cloud.gateway.routes[4].predicates[0]=Path=/user-servi
spring.cloud.gateway.routes[4].predicates[1]=Method=GET
spring.cloud.gateway.routes[4].filters[0]=RemoveRequestHeader
spring.cloud.gateway.routes[4].filters[1]=RemoveRequestHeader
spring.cloud.gateway.routes[4].filters[2]=RewritePath=/user-s
# Auth Service-GitLab Data
spring.cloud.gateway.routes[5].id=auth-service-gitlab
spring.cloud.gateway.routes[5].uri=lb://AUTH-SERVICE
spring.cloud.gateway.routes[5].predicates[0]=Path=/auth-servi
spring.cloud.gateway.routes[5].predicates[1]=Method=GET
spring.cloud.gateway.routes[5].filters[0]=RemoveRequestHeader
spring.cloud.gateway.routes[5].filters[1]=RewritePath=/auth-s
# Remaining User Service
spring.cloud.gateway.routes[6].id=user-service
spring.cloud.gateway.routes[6].uri=lb://USER-SERVICE
spring.cloud.gateway.routes[6].predicates[0]=Path=/user-servi
spring.cloud.gateway.routes[6].predicates[1]=Method=POST, GET
spring.cloud.gateway.routes[6].filters[0]=RemoveRequestHeader
spring.cloud.gateway.routes[6].filters[1]=RewritePath=/user-s
### PROJECT SERVICE
spring.cloud.gateway.routes[7].id=project-service
spring.cloud.gateway.routes[7].uri=lb://PROJECT-SERVICE
spring.cloud.gateway.routes[7].predicates[0]=Path=/project-se
spring.cloud.gateway.routes[7].predicates[1]=Method=POST, GET
spring.cloud.gateway.routes[7].filters[0]=RemoveRequestHeader
spring.cloud.gateway.routes[7].filters[1]=RewritePath=/projec
### application-secrets.properties
server.port={포트 번호}
```

```
# Eureka
eureka.client.register-with-eureka=true
eureka.client.fetch-registry=true
# 로컬 환경
eureka.client.service-url.defaultZone=http://127.0.0.1:8761/e
# 배포 환경
#eureka.client.service-url.defaultZone=http://discovery-serviceureka.instance.preferIpAddress=true
```

· auth-service

```
### application.properties
spring.application.name=auth-service
server.servlet.encoding.charset=UTF-8
server.servlet.encoding.enabled=true
server.servlet.encoding.force=true
spring.profiles.active=secrets
# Timezone
spring.jackson.time-zone=Asia/Seoul
spring.jpa.properties.hibernate.jdbc.time_zone=Asia/Seoul
### application-secrets.properties
server.port={포트 번호}
#Eureka
eureka.client.register-with-eureka=true
eureka.client.fetch-registry=true
```

```
eureka.client.service-url.defaultZone=http://127.0.0.1:8761/e
#eureka.client.service-url.defaultZone=http://discovery-servi
eureka.instance.preferIpAddress=true
# OAuth 2.0
oauth.gitlab.url.auth=https://lab.ssafy.com/oauth/authorize
oauth.gitlab.url.token=https://lab.ssafy.com/oauth/token
oauth.gitlab.url.api=https://lab.ssafy.com/api/v4
oauth.gitlab.client-id={클라이언트 ID}
oauth.gitlab.client-secret={secret KEY}
oauth.gitlab.redirect-uri=https://goodidea.world/gateway/auth
# Redis
spring.redis.host={Redis 호스트 주소}
spring.redis.port={Redis 포트 번호}
spring.redis.password={Redis 비밀번호}
# JWT Key
jwt.secret-key={JWT KEY}
```

user-service

```
### application.properties

spring.application.name=user-service

server.servlet.encoding.charset=UTF-8
server.servlet.encoding.enabled=true
server.servlet.encoding.force=true
spring.profiles.active=secrets

# JPA settings
spring.jpa.hibernate.ddl-auto=update
spring.jpa.properties.hibernate.format_sql=true
```

```
spring.jpa.properties.hibernate.show-sql=true
spring.jpa.properties.hibernate.dialect=org.hibernate.dialect
spring.sql.init.mode=always
# Timezone
spring.jackson.time-zone=Asia/Seoul
spring.jpa.properties.hibernate.jdbc.time_zone=Asia/Seoul
### application-secrets.properties
#port number
server.port={포트 번호}
#Eureka
eureka.client.register-with-eureka=true
eureka.client.fetch-registry=true
eureka.client.service-url.defaultZone=http://127.0.0.1:8761/e
#eureka.client.service-url.defaultZone=http://discovery-servi
eureka.instance.preferIpAddress=true
#DB
spring.datasource.url=jdbc:mariadb://{호스트 주소}:{포트 번호}/{D
spring.datasource.username={DB username}
spring.datasource.password={DB password}
# JWT Key
jwt.secret-key={JWT KEY}
```

• project-service

```
### application.properties
```

```
spring.application.name=project-service
server.servlet.encoding.charset=UTF-8
server.servlet.encoding.enabled=true
server.servlet.encoding.force=true
spring.profiles.active=secrets
# JPA settings
spring.jpa.hibernate.ddl-auto=update
spring.jpa.properties.hibernate.format_sql=true
spring.jpa.properties.hibernate.show-sql=true
spring.jpa.properties.hibernate.dialect=org.hibernate.dialect
spring.sql.init.mode=always
# Timezone
spring.jackson.time-zone=Asia/Seoul
spring.jpa.properties.hibernate.jdbc.time_zone=Asia/Seoul
# JPA settings
spring.jpa.hibernate.ddl-auto=update
spring.jpa.properties.hibernate.format_sql=true
spring.jpa.properties.hibernate.show-sql=true
spring.jpa.properties.hibernate.dialect=org.hibernate.dialect
spring.sql.init.mode=always
# Timezone
spring.jackson.time-zone=Asia/Seoul
spring.jpa.properties.hibernate.jdbc.time_zone=Asia/Seoul
### application-secrets.properties
```

♥ GoodIdea 포팅 메뉴얼 8

```
# port number
server.port={포트 번호}
# Eureka
eureka.client.register-with-eureka=true
eureka.client.fetch-registry=true
eureka.client.service-url.defaultZone=http://127.0.0.1:8761/e
#eureka.client.service-url.defaultZone=http://discovery-servi
eureka.instance.preferIpAddress=true
#DB
spring.datasource.url=jdbc:mariadb://{호스트 주소}:{포트 번호}/{D
spring.datasource.username={DB username}
spring.datasource.password={DB password}
# MongoDB Configuration
spring.data.mongodb.uri=mongodb://{DB username}:{DB password}
# JWT Key
jwt.secret-key={JWT KEY}
liveblocks_secret_key={라이브블록 secret key}
```

💾 배포

尾 Nginx 설정

sudo nano /etc/nginx/sites-available/default

```
server {
    server_name goodidea.world;
```

```
listen [::]:443 ssl ipv6only=on; # managed by Certbot
listen 443 ssl; # managed by Certbot
ssl_certificate /etc/letsencrypt/live/goodidea.world/full
ssl_certificate_key /etc/letsencrypt/live/goodidea.world/
include /etc/letsencrypt/options-ssl-nginx.conf; # manage
ssl_dhparam /etc/letsencrypt/ssl-dhparams.pem; # managed
    location / {
            proxy_pass http://localhost:3000/;
            proxy_set_header X-Real-IP $remote_addr;
            proxy_set_header X-Forwarded-For $proxy_add_x
            proxy_set_header X-Forwarded-Proto $scheme;
            proxy_set_header Host $host;
    }
    location /jenkins/ {
            proxy_pass http://localhost:8080/jenkins/;
            proxy_set_header X-Real-IP $remote_addr;
            proxy_set_header X-Forwarded-For $proxy_add_x
            proxy set header X-Forwarded-Proto $scheme;
            proxy_set_header Host $host;
    }
    location /gateway/ {
                          proxy_pass http://localhost:800
            proxy_set_header X-Real-IP $remote_addr;
            proxy_set_header X-Forwarded-For $proxy_add_x
            proxy_set_header X-Forwarded-Proto $scheme;
            proxy_set_header Host $host;
    }
    location /eureka/ {
            proxy_pass http://localhost:8761/;
                                                # 유레카 서
            proxy_set_header X-Real-IP $remote_addr;
            proxy_set_header X-Forwarded-For $proxy_add_x
```

```
proxy_set_header X-Forwarded-Proto $scheme;
                proxy_set_header Host $host;
        }
        location /ws/ {
                proxy_pass http://localhost:1234;
                proxy_http_version 1.1;
                proxy_set_header Upgrade $http_upgrade;
                proxy_set_header Connection "upgrade";
                proxy_set_header Host $host;
        }
}
server {
    if ($host = goodidea.world) {
        return 301 https://$host$request_uri;
    } # managed by Certbot
        listen 80 default_server;
        listen [::]:80 default_server;
        server_name goodidea.world;
    return 404; # managed by Certbot
}
```

Docker 설정

Docker 설치

https://docs.docker.com/engine/install/ubuntu/

```
# Add Docker's official GPG key:
sudo apt-get update
```

• Jenkins (젠킨스 컨테이너 안에 도커 설치)

```
// 도커 방식 설치
cd /home/ubuntu && mkdir jenkins-data
sudo ufw allow 8080/tcp sudo ufw reload sudo ufw status
sudo docker run -d -p 8080:8080 -v /home/ubuntu/jenkins-data:
sudo docker logs jenkins
sudo docker stop jenkins sudo docker ps -a
// 환경 설정 변경
cd /home/ubuntu/jenkins-data
```

```
mkdir update-center-rootCAs
wget https://cdn.jsdelivr.net/gh/lework/jenkins-update-center.
sudo sed -i 's#https://updates.jenkins.io/update-center.json#
sudo docker restart jenkins
// 도커 안에 도커 설치
// 도커 컨테이너 실행
sudo docker run -d \
-p 8081:8080 \
-p 50000:50000 \
--name jenkins \
-e JENKINS_OPTS="--prefix=/jenkins" \
-v /home/ubuntu/jenkins-data:/var/jenkins home \
-v /var/run/docker.sock:/var/run/docker.sock \
-u root \
jenkins/jenkins:latest
// 젠킨스 컨테이너 접속
docker exec -it jenkins /bin/bash
cat /etc/issue
// 위의 도커 설치 과정 반복
```

• Docker-Compose.yml 사용

같은 도커 네트워크를 사용하여 컨테이너 주소를 쉽게 각 컨테이너 이름으로 설정 할 수 있다

eureka.client.service-url.defaultZone=http://discovery-service:8761/eureka

```
networks:
msa-network:
external: true
```

```
driver: bridge
services:
 discovery-service:
    container_name: discovery-service
    image: ssafy/discovery-service
    ports:
      - "8761:8761"
    networks:
      - msa-network
    environment:
      - EUREKA_INSTANCE_HOSTNAME=discovery-service
      - EUREKA CLIENT SERVICE URL DEFAULTZONE=http://discover
    healthcheck:
      test: ["CMD", "curl", "-f", "http://localhost:8761/eure
      interval: 30s
      timeout: 10s
      retries: 5
 gateway-service:
    container name: gateway-service
    image: ssafy/gateway-service
    ports:
      - "8000:8000"
    networks:
      - msa-network
    depends_on:
      - discovery-service
    environment:

    EUREKA_CLIENT_SERVICE_URL_DEFAULTZONE=http://discover

 auth-service:
    container_name: auth-service
    image: ssafy/auth-service
    ports:
      - "8001:8001"
    networks:
      - msa-network
```

```
depends_on:
    - discovery-service
    - gateway-service
  environment:
    - EUREKA_CLIENT_SERVICE_URL_DEFAULTZONE=http://discover
user-service:
  container name: user-service
  image: ssafy/user-service
  ports:
    - "8002:8002"
  networks:
    - msa-network
  depends_on:
    - discovery-service
    - gateway-service
  environment:
    - EUREKA_CLIENT_SERVICE_URL_DEFAULTZONE=http://discover
project-service:
  container_name: project-service
  image: ssafy/project-service
  ports:
    - "8003:8003"
  networks:
    - msa-network
  depends_on:
    - discovery-service
    - gateway-service
  environment:
    - EUREKA_CLIENT_SERVICE_URL_DEFAULTZONE=http://discover
frontend:
    container name: frontend
    image: ssafy/frontend
    ports:
      - "3000:80"
    networks:
```

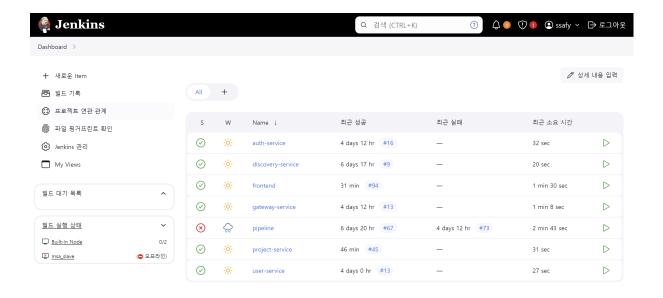
- msa-network depends on:

- gateway-service

```
31-50-129:~$ docker ps
IMAGE
ubuntu@ip-172-
CONTAINER ID
                                                      COMMAND
                                                                                       CREATED
                                                                                                                  STATUS
                                                                       NAMES
d43d6a4293a1
                    ssafy/frontend
                                                      "nginx -g 'daemon of...'
                                                                                                                  Up 7 minutes
                                                                                       7 minutes ago
                                                                        frontend
cp
cbc4506bf35b
                                                                    app.jar"
                    ssafy/project-service
                                                      "java -jar
                                                                                                                  Up About an hour
                                                                                       About an hour ago
/tcp
0c35effb493e
                                                                       project-service
                    ssafy/user-service
                                                                    app.jár'
                                                                                        4 days ago
                                                                                                                  Up 4 days
                                                      user-service
"java -jar app.jar" 4
auth-service
/tcp
af302ba71eec
                    ssafy/auth-service
                                                                                        4 days ago
                                                                                                                  Up 4 days
/tcp
45658aed54db
                                                                                       4 days ago
                    ssafy/gateway-service
                                                      "java -jar app.jar'
                                                                                                                  Up 4 days
                                                                       p.jan
gateway-service
coint s…" 5 days ago
/tcp
c7820ac4cbee
                                                      "docker-entrypoint.s..." 5 days s
nervous_engelbart
"java -jar app.jar" 6 days ago
discovery-service
(hip/tini -- /u..." 9 days ago
                    ipirozhenko/y-websocket
                                                                                                                  Up 5 days
/tcp
7d71bbfb21f2
                    f93bec74d6c6
                                                                                                                  Up 6 days (unhealthy)
/tcp
2ab05c58c24b
                    jenkins/jenkins:latest
                                                                                                                  Up 6 days
```

🔊 Jenkins 파이프라인 구축

각 서비스 별로 브렌치를 나눠 따로 개발할 수 있게 구축



• Back ⇒ 다 비슷하여 대표로 project-service 파이프라인을 올린다

```
pipeline {
   agent any
   environment {
```

16

```
MATTERMOST_ENDPOINT = 'https://meeting.ssafy.com/hook
    MATTERMOST_CHANNEL = '169fae57d05ab09848da924eee76e36'
}
options {
    buildDiscarder(logRotator(numToKeepStr: '3'))
}
tools {
    nodejs 'nodejs'
}
stages {
    stage('Git clone') {
        steps {
            script {
                echo "Cloning repository..."
                git branch: 'dev-project_service',
                    credentialsId: 'gitlab_account',
                    url: 'https://lab.ssafy.com/s11-final
                echo "Clone complete."
            }
        }
    }
    stage('Remove existing container') {
        steps {
            script {
                def serviceName = "project-service"
                def containerId = sh(script: "docker ps --
                def imageName = "ssafy/${serviceName}"
                if (containerId) {
                    sh "docker stop ${containerId} || tru
                    sh "docker rm -f ${containerId} || tr
                    sh "docker rmi ${imageName} || true"
                }
            }
```

```
}
        }
stage('Secret download') {
            steps {
                parallel (
                     "project-service secret": {
                         withCredentials([file(credentialsId:
                             sh '''
                             ls -al backend/project-service/sr
                             cp $PROJECT_SECRET_FILE backend/p
                             cat backend/project-service/src/m
                             1 1 1
                         }
                    },
                )
            }
        }
        stage('Build services') {
            parallel {
                 stage('Build Project Service') {
                     steps {
                         dir('backend/project-service') {
                             sh '''
                             ls -la
                             chmod +x ./gradlew
                             ./gradlew clean build -x test
                             docker build -t ssafy/project-ser
                             1 1 1
                         }
                    }
                }
            }
        }
```

```
stage('Container up') {
            steps {
                sh '''
                docker compose up -d --no-deps project-servic
            }
        }
    }
    post {
        success {
            script {
                sendNotification('good', '빌드 성공')
                cleanWs()
            }
        }
        failure {
            script {
                sendNotification('danger', '빌드 실패')
                cleanWs()
            }
        }
    }
}
def sendNotification(String color, String status) {
    def gitCommitterName = sh(script: "cd ${env.WORKSPACE} &&
    def gitCommitMessage = sh(script: "cd ${env.WORKSPACE} &&
    mattermostSend(
        color: color,
        message: """${status}: GoodIDEA 프로젝트 서비스 :bulb: #
        커밋 작성자 : ${gitCommitterName}
        커밋 메시지 : ${gitCommitMessage}
        (<${env.BUILD_URL}|Details>)""",
        endpoint: MATTERMOST_ENDPOINT,
        channel: MATTERMOST CHANNEL
```

```
)
}
```

Front

```
pipeline {
    agent any
    environment {
        MATTERMOST_ENDPOINT = 'https://meeting.ssafy.com/hook
        MATTERMOST_CHANNEL = '169fae57d05ab09848da924eee76e36'
        FRONTEND_IMAGE = 'ssafy/frontend'
        FRONTEND CON = 'frontend'
    }
    options {
        buildDiscarder(logRotator(numToKeepStr: '3'))
    }
    tools {
        nodejs 'nodejs'
    }
    stages {
        stage('Workspace Cleanup') {
            steps {
                script {
                    echo "Cleaning workspace..."
                    cleanWs() // 빌드 전 작업 디렉토리를 정리하여 이
                }
            }
        }
        stage('Git clone') {
            steps {
                script {
                    echo "Cloning repository..."
```

```
git branch: 'dev-FE',
                credentialsId: 'gitlab_account',
                url: 'https://lab.ssafy.com/s11-final
            echo "Clone complete."
        }
    }
}
stage('Remove existing container') {
    steps {
        script {
            def serviceName = "frontend"
            def containerId = sh(script: "docker ps --
            if (containerId) {
                sh "docker stop ${containerId} || tru
                sh "docker rm -f ${containerId} || tr
                sh "docker rmi ssafy/frontend || true
            }
        }
    }
}
stage('Secret download') {
    steps {
        withCredentials([file(credentialsId: 'fronten
            sh '''
            ls -1
            if [ -f frontend/.env ]; then
                rm frontend/.env
            fi
            cp $FrontFile frontend/.env
            chmod 644 frontend/.env
            111
        }
    }
}
```

```
stage('Frontend build') {
            steps {
                sh '''
                cd frontend
                npm install
                npm run build
                docker build --no-cache -t $FRONTEND_IMAGE .
            }
        }
        stage('Container up') {
            steps {
                sh '''
                docker compose up -d --no-deps frontend
                1 1 1
            }
        }
    }
    post {
        success {
            script {
                sendNotification('good', '빌드 성공')
                cleanWs()
            }
        }
        failure {
            script {
                sendNotification('danger', '빌드 실패')
                cleanWs()
            }
        }
    }
}
def sendNotification(String color, String status) {
```

• .env 와 application-secrets.properties 를 secret-file에 추가해준다.

Credentials

