

**EMOCON
2017 S/S**

REST API SDK Generator

@artishan



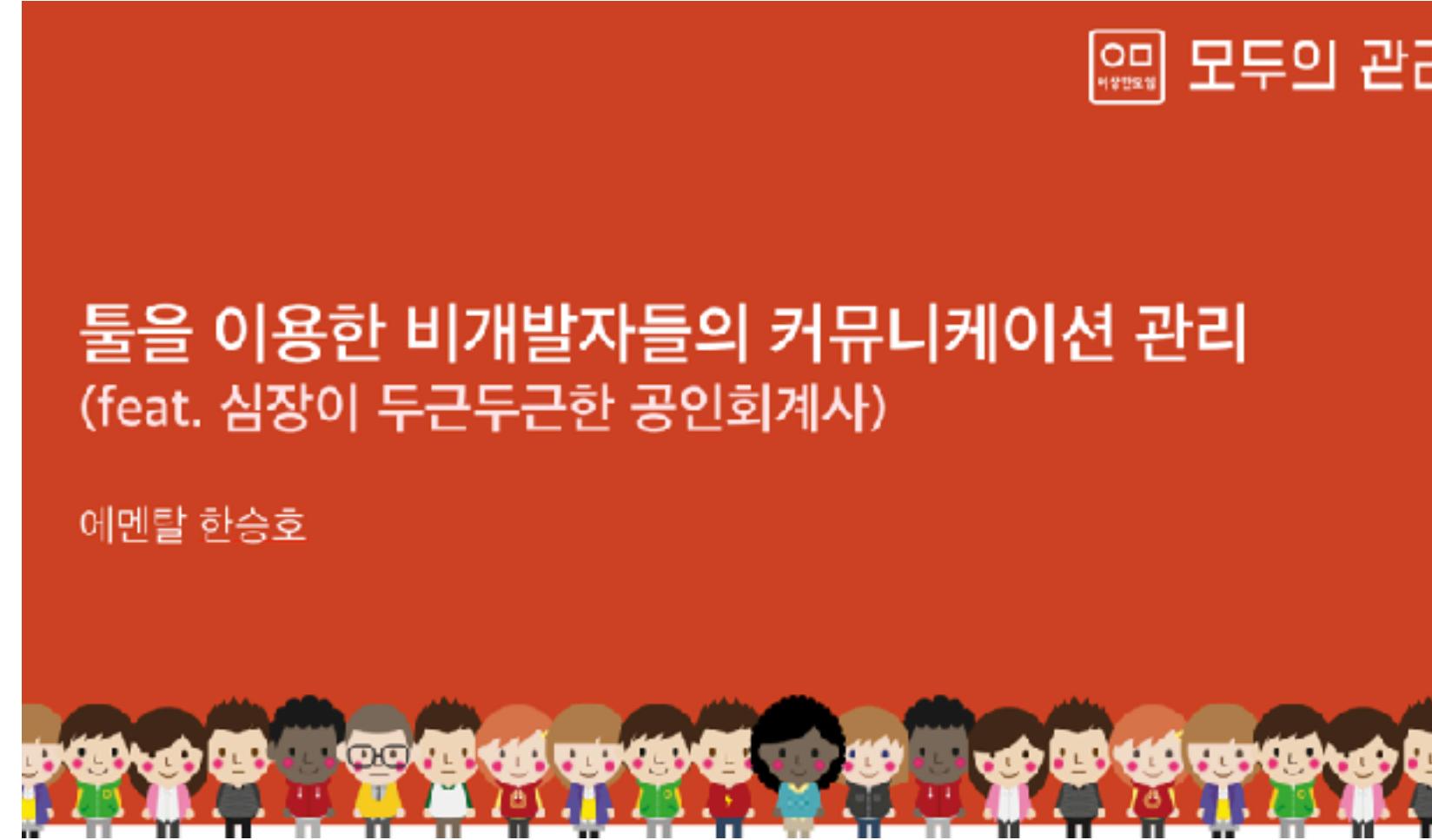
한승호 @artishan



에멘탈 CTO



shilpe0304



툴을 이용한 비개발자들의 커뮤니케이션 관리 (feat. 심장이 두근두근한 공인회계사)

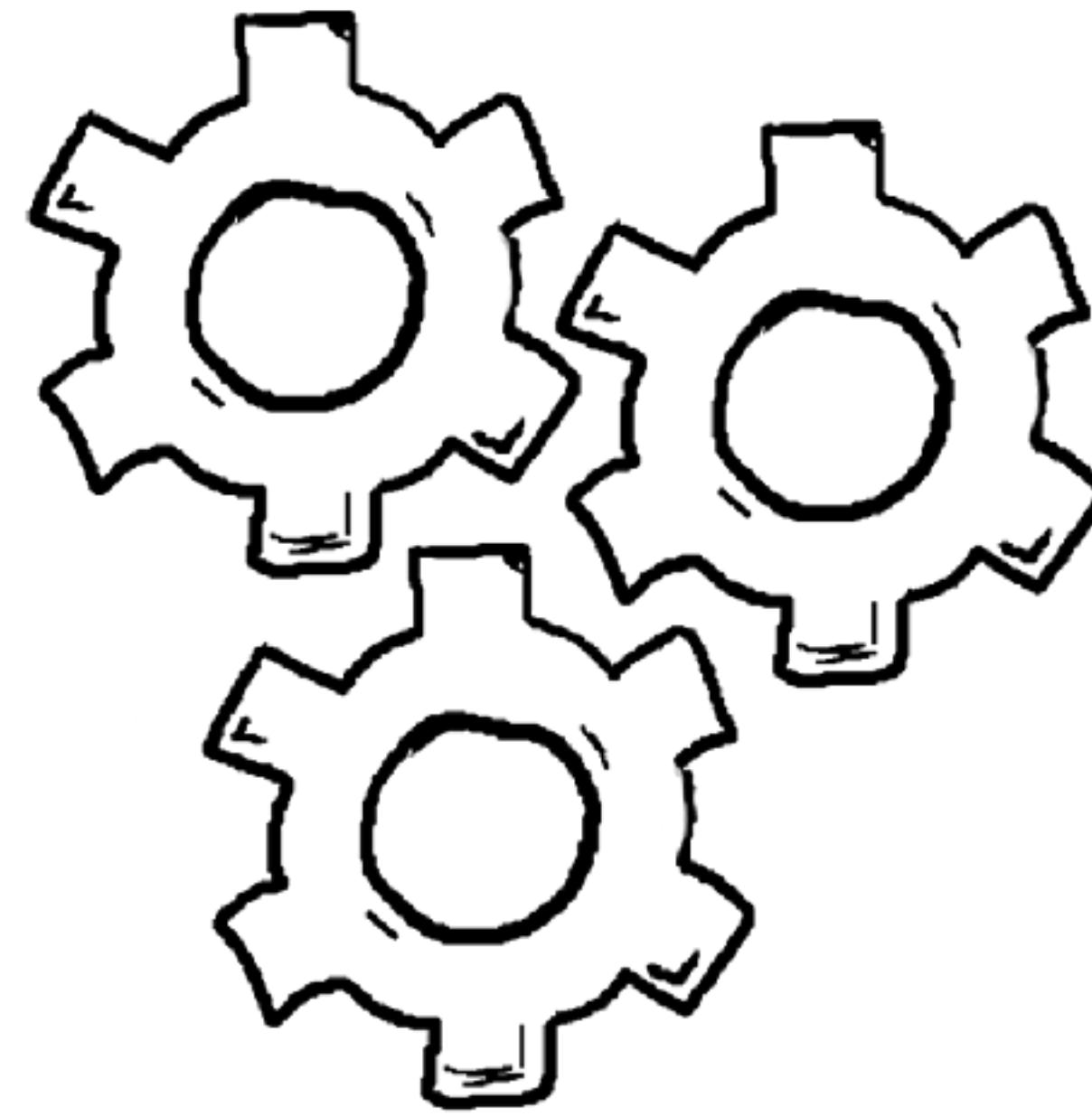
신생 스타트업을 운영하며 비전공자와 함께
협업툴(지라, 컨플루언스, 슬랙)을 활용한 협업 경험, 업무흐름



Front-end pipeline 끝판 체험

프론트엔드를 개발부터 배포까지의 과정을
자동화 하기 위하여 사용된 도구(Gulp, Webpack)에 관한 소개 및 실습

#실무경험 #업무흐름 #자동화 #에멘탈홍보



MicroServices 기반의 REST API 개발을 위한

REST API SDK Generator

#SDK #MicroServices #TypeScript #Swagger #RestAPI #MonoRepo

1. Parameter, Payload, Method, URI

/users/{email} VS /users/{name}

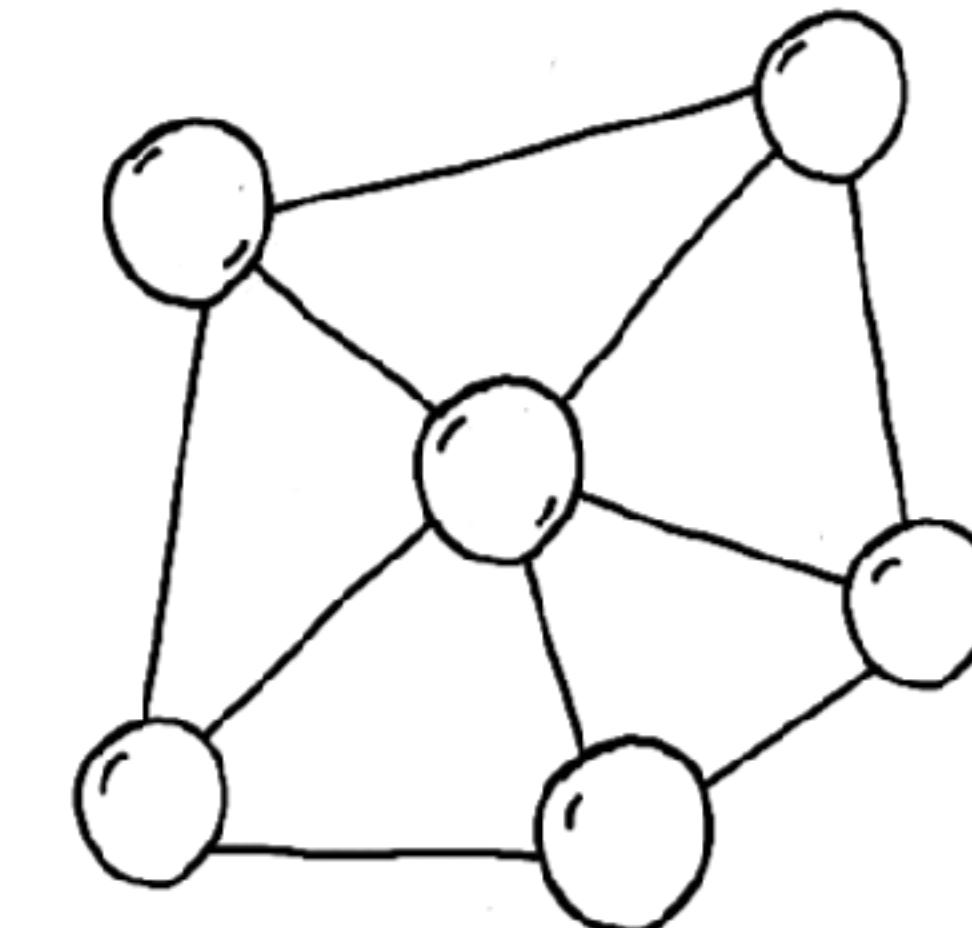
camelCase VS PascalCase

POST /users/{id} VS PUT /users/{id}

/signin VS /login

2. 반복되는 API Request function 생성

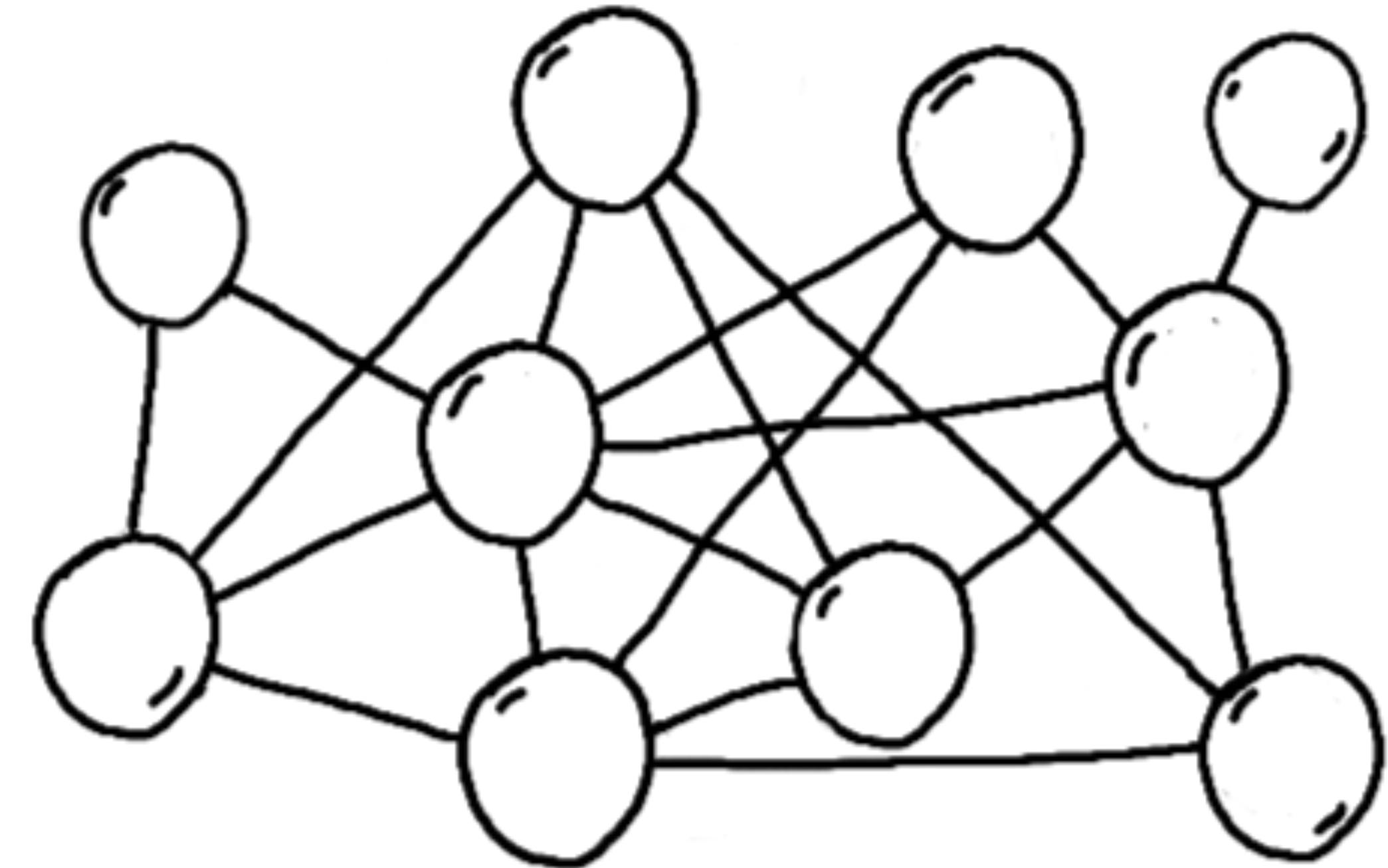
get('/signin', headers, body, true); *언어* 플랫폼



API 개선, 수정에 따른 부담감 감소 필요

마이크로서비스 기반의 REST API 개발의 난제

1. 인증 시스템 (OAuth, JWT, Custom…)
2. Private API를 호출하는 Public API
3. 다른 API를 연속적으로 호출하는 API



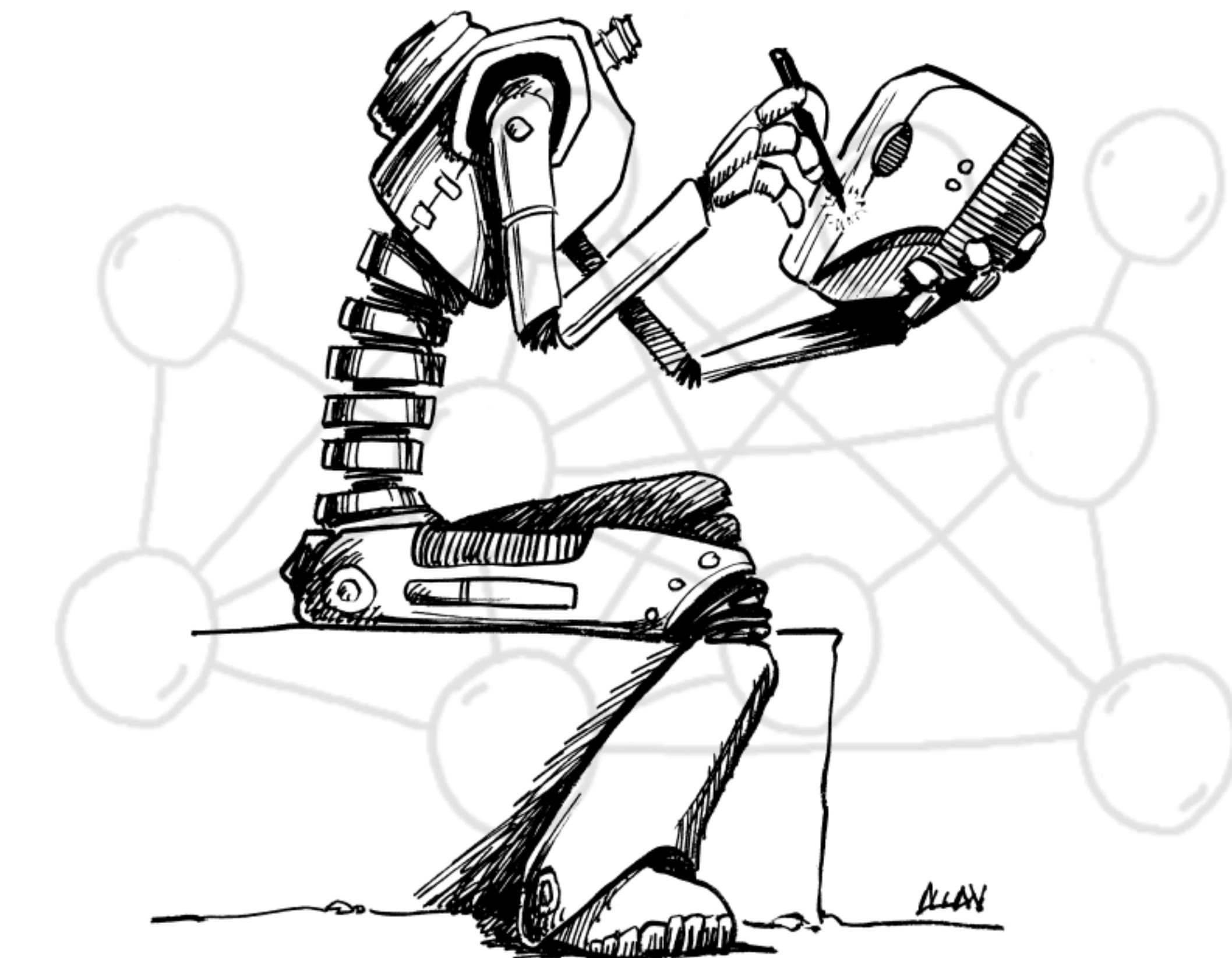
Rest API 의존성 완화 필요

간편한 API 요청을 위하여 SDK를 개발하자!



~~간편한 API 요청을 위하여 SDK를 개발하자!~~

간편한 API 요청을 위하여 **SDK Code generator**를 만들자!



수능에 일하기 위하여
여러분은 일을 한다

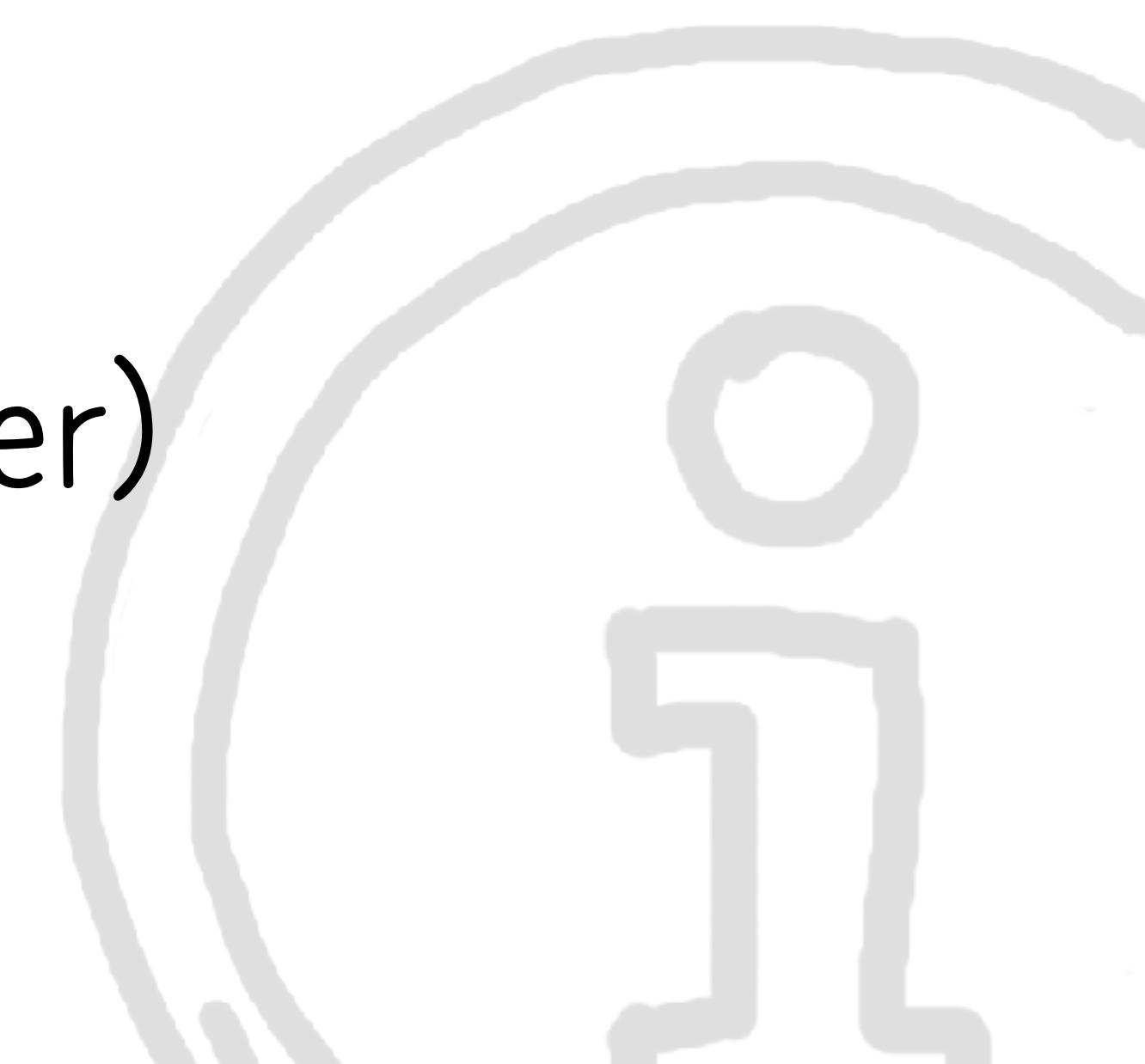
셀프노예 아티Stan

프로젝트 환경

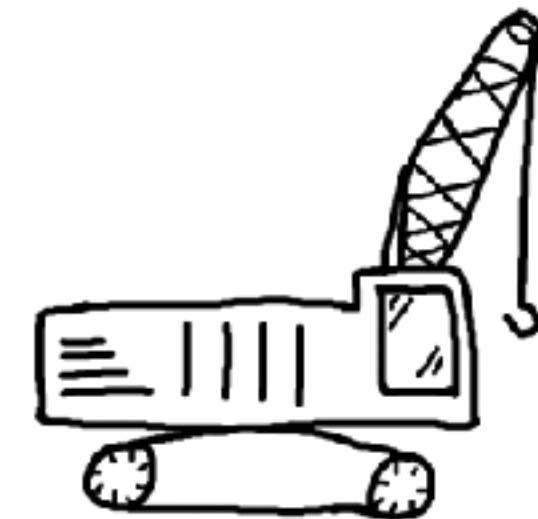
TypeScript

클라이언트: WEB(Angular1, Angular2)
MOBILE(IONIC2-RxJS)
서버: NodeJs(Hapi, JWT+)

-
- Public API 100, Private API 40
 - One SDK, Many Platform(web, server)
 - Private Package Manager



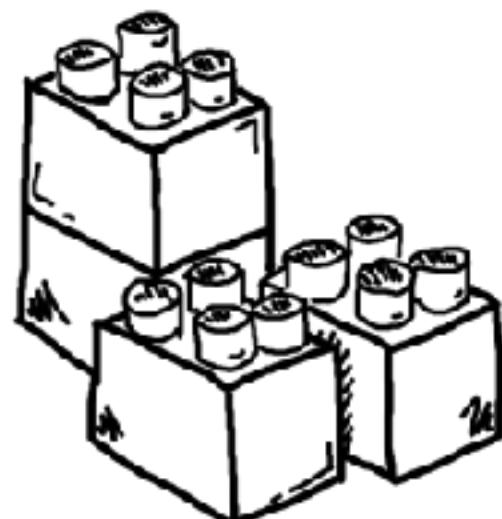
요구사항 정리



Type definition이 지원되는 Javascript SDK 생성기



Client(browser), Server(node), Promise, RxJS를
지원하는 HTTP 요청 Adapter



비공개 패키지 관리, 연속적인 개발



Source(Route map) -> Swagger.json -> SDK Generate -> SDK Usage



Watch 420 Unstar 7,601 Fork 783

<https://github.com/hapijs/hapi>

Watch 133 Unstar 4,610 Fork 457

<https://github.com/hapijs/joi>

Watch 22 Star 436 Fork 172

<https://github.com/glennjones/hapi-swagger>

```
{  
  method: 'GET',  
  path: '/users/{id}/sessions',  
  handler: listUserSessions,  
  config: {  
    auth: {  
      strategy: 'sso',  
      scope: ['sdk']  
    },  
    description: 'listUserSessions',  
    notes: '유저 세션 목록',  
    tags: ['api', 'sso', 'sdk'],  
    validate: {  
      params: {  
        id: joi.string().required().description('SSO ID & 이메일')  
      },  
      headers: joiAuthHeader()  
    },  
    plugins: {  
      'hapi-swagger': {  
        responses: {  
          '200': joiSuccessResponse('유저 세션 목록', joi.array().req  
        }  
      }  
    }  
  }  
}
```

Source(Route map) -> Swagger.json -> SDK Generate -> SDK Usage

GET

/sso/users/{id}/sessions listUserSessions

Implementation Notes

유저 세션 목록

Response Class (Status 200)

유저 세션 목록

Model Example Value

```
[  
  "string"  
]
```

Response Content Type application/json

Parameters

Parameter	Value	Description	Parameter Type	Data Type
authorization	(required)	JWT token	header	string
id	(required)	SSO ID & 이메일	path	string

Response Messages

HTTP Status Code	Reason	Response Model	Headers
404	존재하지 않는 유저	Model Example Value	

```
{  
  "statusCode": 404,  
  "error": "Not Found",  
  "message": "SS:LIUSACTK:40401"  
}
```

Try it out!

```
"/sso/users/{id}/sessions": {  
  "get": {  
    "summary": "listUserSessions",  
    "operationId": "getSsoUsersIdSessions",  
    "description": "유저 세션 목록",  

```

Source(Route map) -> Swagger.json -> SDK Generate -> SDK Usage

```
/不  
* {{&description}}  
* @method  
{{#externalDocs}}  
* @see {@link {{&url}}|{{#description}}}{ {{&description}}}{  
{{/externalDocs}}}  
* @name {{&className}}#{{&methodName}}  
{{#parameters}}  
{{^isSingleton}}* @param {{= <% %>= }}{{<%&type%>}}<%={{{ }}=%>  
{{/parameters}}  
* @returns {Promise<{{&resultInterface}}>}  
*/  
{{&summary}}({{{&argument}}}: Promise<{{&resultInterface}}>)  
let url: string = '{{&path}}';  
let data: object = {};  
let queryParameters: object = {};  
let headers: object = {};  
{{#isFormParameter}}  
let form: any = {};  
{{/isFormParameter}}  
{{#headers}}  
headers['{{&name}}'] = {{&value}};  
{{/headers}}  
{{#parameters}}
```

Code Template

```
/**  
 * 유저 세션 목록  
 * @method  
 * @name ApiSso#getUserSessions  
 * @param {string} id - SSO ID & 이메일  
 * @returns {Promise<IUserSession>}  
*/  
listUserSessions(id: string): Promise<IUserSession> {  
    let url: string = '/sso/users/{id}/sessions';  
    let data: object = {};  
    let queryParameters: object = {};  
    let headers: object = {};  
    url = url.replace(/\{id\}/gi, String(id));  
    if (id === undefined) {  
        return Promise.reject(new Error('Missing req'))  
    }  
    return this.request('GET', url, data, headers,  
});
```

SDK Source

Source(Route map) -> Swagger.json -> SDK Generate -> SDK Usage

```
};

const updatedProfile: any = await bznav.sso.updateUser(ssoId, updateData);
await bznav.sso.l
reply({
  m ↗ listAccountSession() any
  name: upd ↗ listCode(codeType: string) any
  email: up ↗ listService() any
  avatar: u ↗ listUser() any
  phone: up ↗ listUserSessions(id: string) any
});  
catch (err) m ↗ checkMail(body: ICheckMail) any
switch (err) m ↗ getSyncCredential() any
// sso.up
case 'SS': m ↗ sendVerificationMail() () (+ overloads)
  reply(r m ↗ deleteCode(code: string, body: IDele...); any
  break; m ↗ deleteSession(sessionId: string) any
default: m ↗ deleteUser(id: string) any
  reply(r m ↗ getProfile() any
  m ↗ updateProfile({body: TUpdateProfile}) (+ ov
Press ⌘. to choose the selected (or first) suggestion and insert a doc π
```

Documentation for listUserSessions

[any, method] **ApiSso.listUserSessions([string] id)**

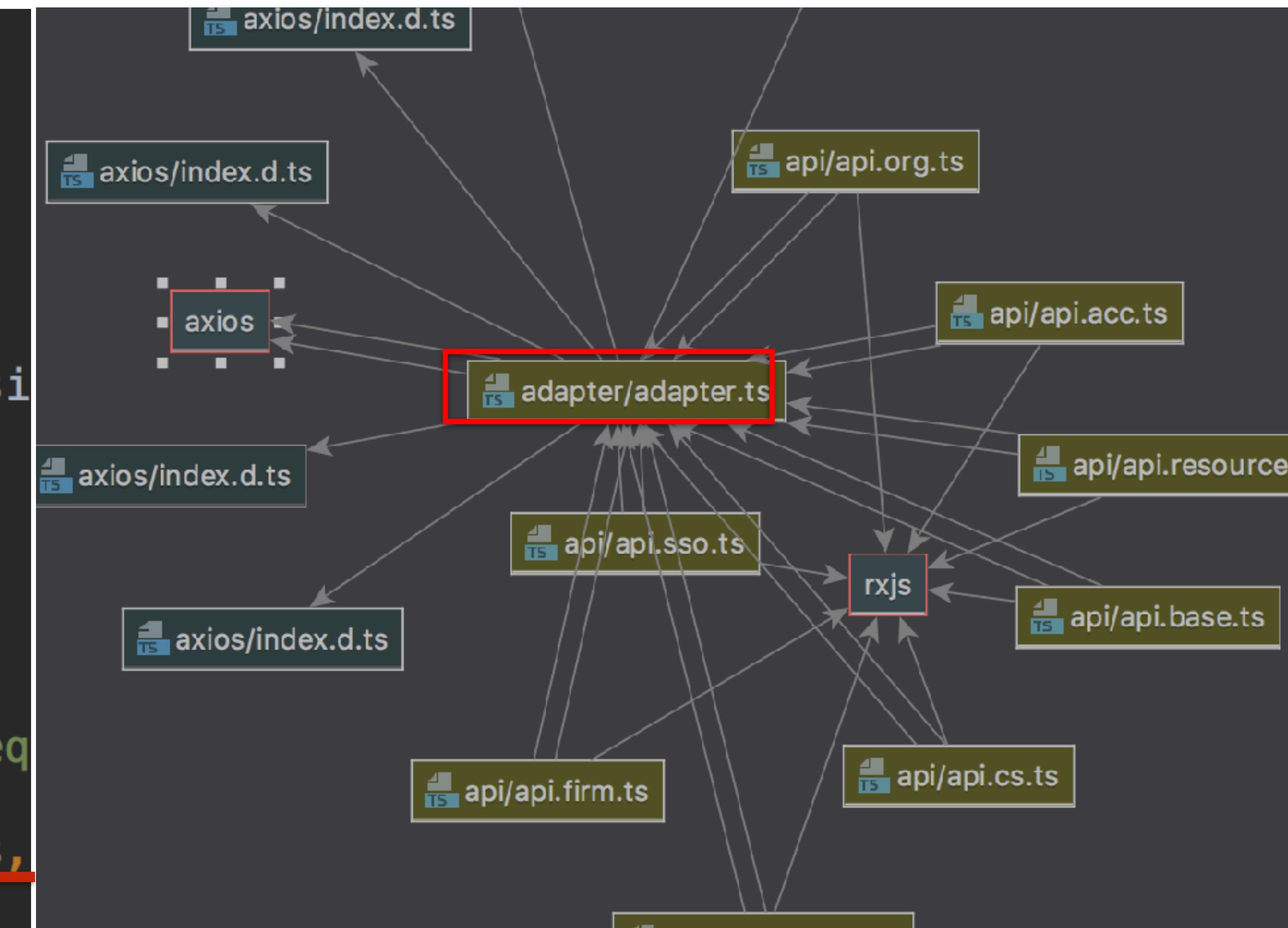
유저 세션 목록

Parameters:
id - SSO ID & 이메일

Returns:
Promise

생성된 SDK 코드를 위한 HTTP 요청이 어댑터 선택

```
/**  
 * 유저 세션 목록  
 * @method  
 * @name ApiSso#getSsoUsersIdSessions  
 * @param {string} id - SSO ID & 이메일  
 * @returns {Promise<IUserSession>}  
 */  
  
listUserSessions(id: string): Promise<IUserSession> {  
    let url: string = '/sso/users/{id}/sessions';  
    let data: object = {};  
    let queryParameters: object = {};  
    let headers: object = {};  
    url = url.replace(/\{id\}/gi, String(id));  
    if (id === undefined) {  
        return Promise.reject(new Error('Missing request ID'))  
    }  
    return this.request('GET', url, data, headers,  
        http request adapter  
    );  
}
```



어댑터 선택은 SDK 전체적인 성능, 사용성(다양한 옵션 지원 여부)을 좌우합니다



Client(browser), Server(node)에
HTTP 요청이 가능한 어댑터

AXIOS

<https://github.com/mzabriskie/axios>

Watch ▾

347

★ Unstar

16,421

Fork

900

SUPER AGENT

<https://github.com/visionmedia/superagent>

Watch ▾

219

★ Star

10,159

Fork

955

- MIT
- ES6-promise
- NPM Typings(d.ts)
- Dependencies 1
- AWS Javascript SDK

- MIT
- Promise X
- NPM Typings(d.ts) X
- Dependencies 10

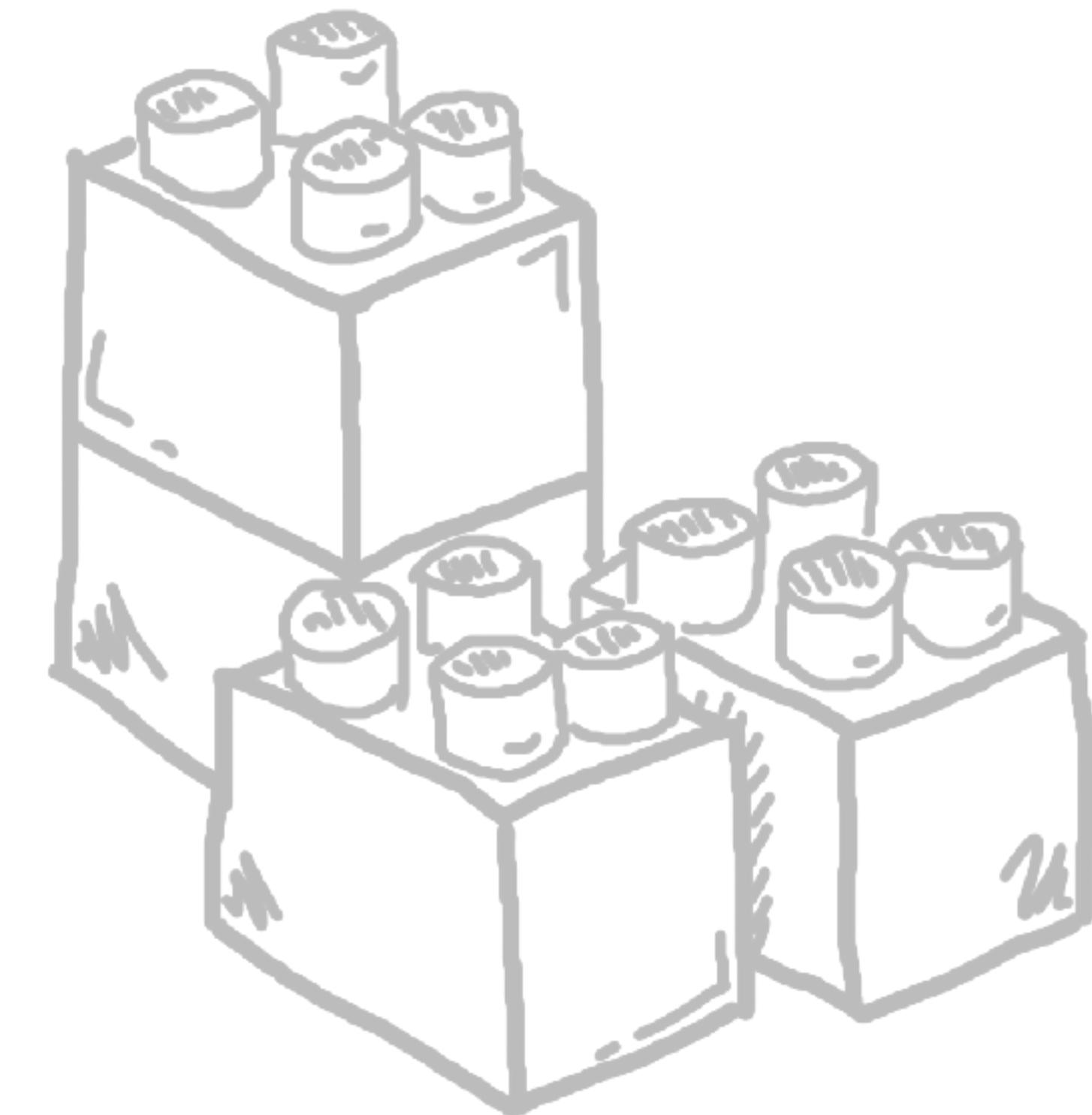
비공개 패키지 관리, 연속적인 개발

Private NPM Server

Private Git Tag

Monorepo & NPM Link

npm pack...



Private NPM Server

직접 구성

- 자체 서버 구성은 부담
- 활성화된 오픈소스가 없음

호스팅

- NPM Orgs는 유저당 월 7달러
- Gemfury 최소 월 25달러
- 추가적인 유저 권한 관리

과금, 관리, 계정, 권한

npm Orgs	npm Orgs <small>PRD</small>	npm Enterprise
Organize packages and teams into permissions groups	Collaborate on private packages alongside open source code	Self-hosting and powerful add-ons for very large companies
Create an Org	Create a paid Org	Learn about Enterprise
 Pricing	Free	\$7 / month / user from \$20 / month / user
 Search and install public packages	Yes	Yes Yes
 Publish and download open source packages	Unlimited	Unlimited Unlimited
 Publish and download private packages		Unlimited Unlimited

Private GIT Tag

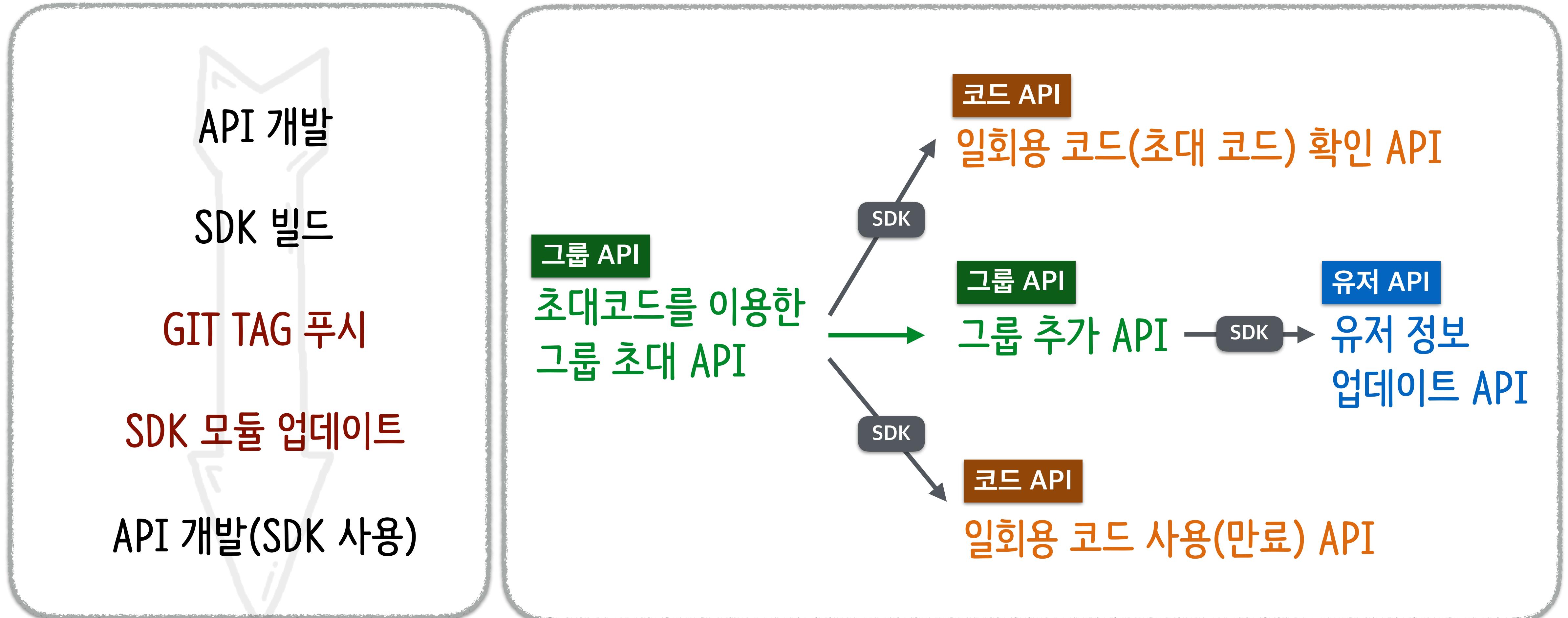
```
angular-ui-mask": "1.0.0",  
"angular-ui-router": "^1.0.0-beta.3",  
"angular-ui-sortable": "^0.16.1",  
"axios": "^0.15.3",  
"breeze-client": "^1.6.2",  
"bznav-sdk": "git+ssh://git@bitbucket.org/!@#!@#/emmental-sdk.git#v1.19.0",  
"c3": "^0.4.11",  
"c3-angular": "^1.3.1"
```

배포 = GIT Tag, 접근 권한 = GIT Repo 권한

```
~/.ssh/id_rsa && chmod 600 ~/.ssh/id_rsa && touch ~/.ssh/known_hosts
```

CI & CD에서 인증관련 RSA 추가

연속적인 개발이 불가능한 GIT TAG 방식



다른 API에서 사용하려면
API를 변경하고 푸시가 필수

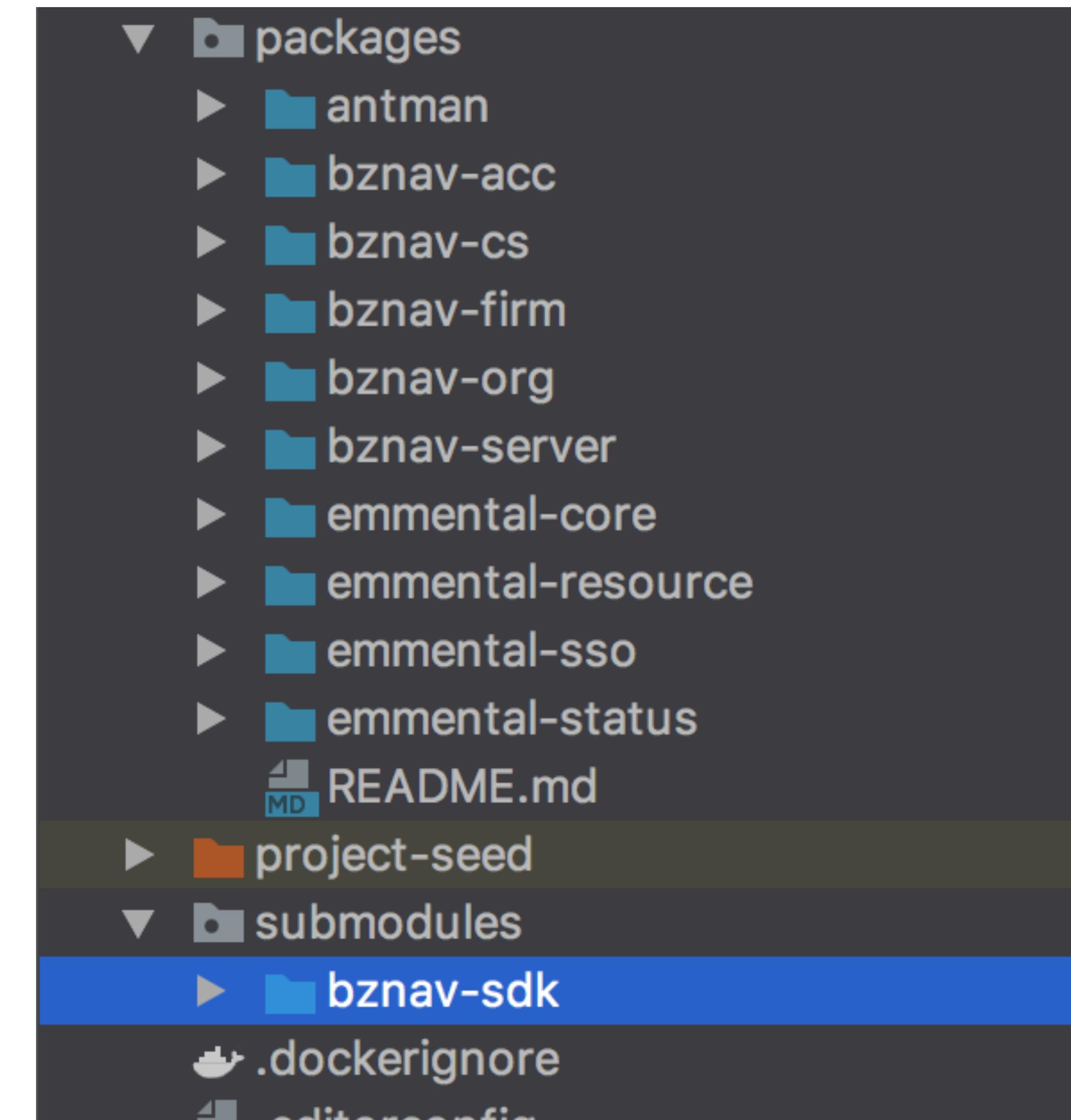
서비스가 나누어지거나 모듈이 분리되어 개발이 되는 경우
반복적인 GIT PUSH가 필요 (v1.4.9999..)

Monorepo 구조로 SDK 빌드없는 개발

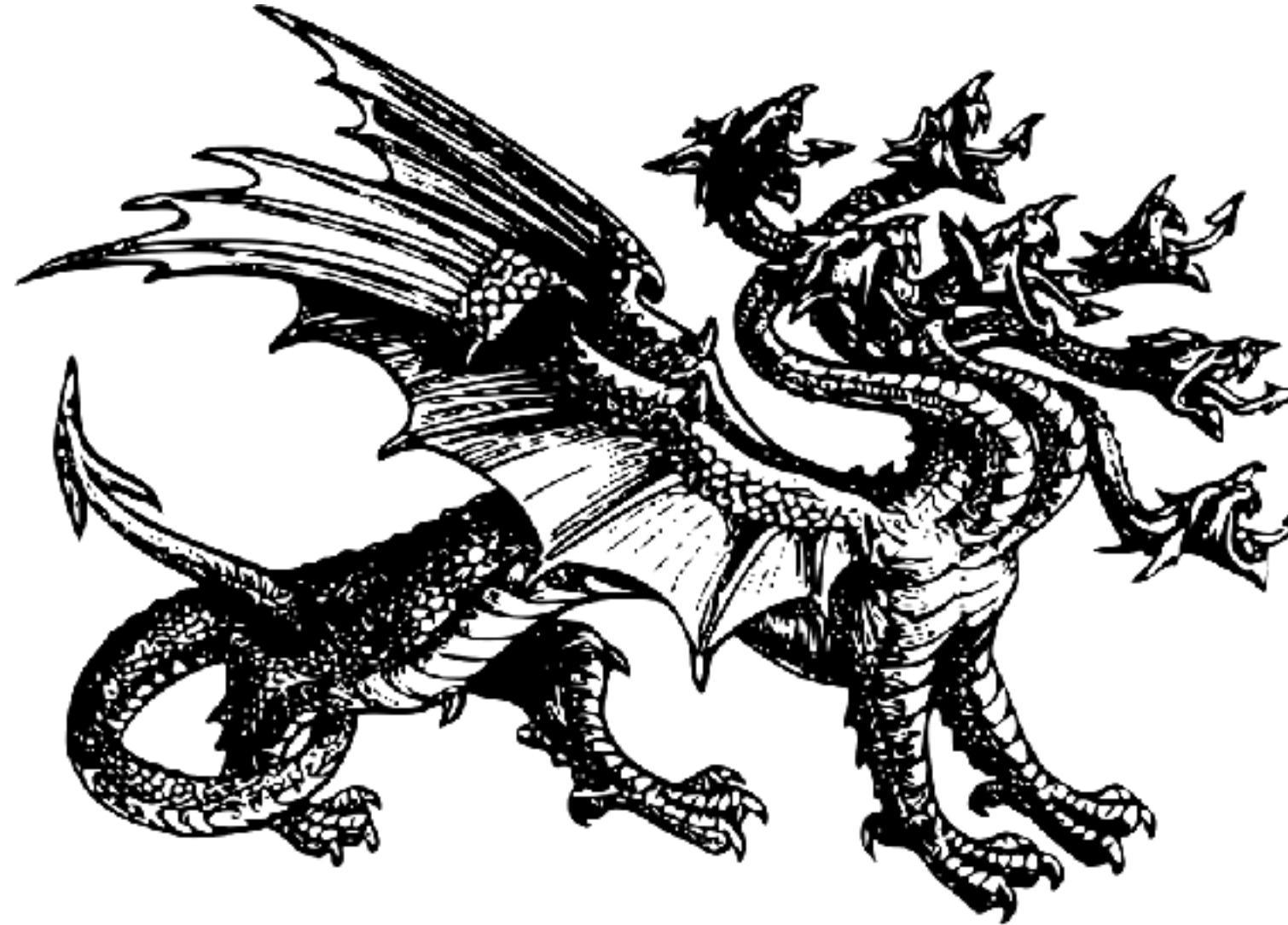
One Repo, Many Module

Babel, React, Angular, Ember, Meteor, Jest

<https://github.com/babel/babel/blob/master/doc/design/monorepo.md>

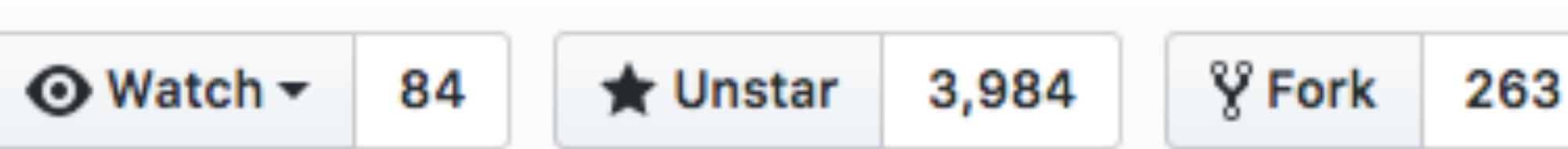


Monorepo 관리 모듈



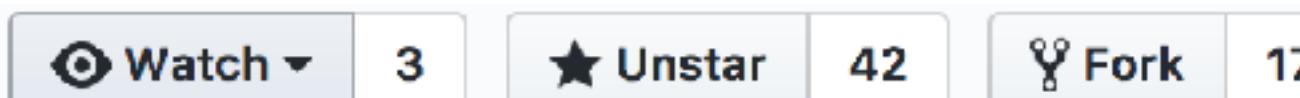
Lerna 레르나

<https://github.com/lerna/lerna>



NPM Workspace

<https://github.com/mariocasciaro/npm-workspace>



```
$ lerna bootstrap
```

```
$ lerna publish
```

```
$ lerna exec ls
```

```
$ lerna exec --scope module1 ls
```

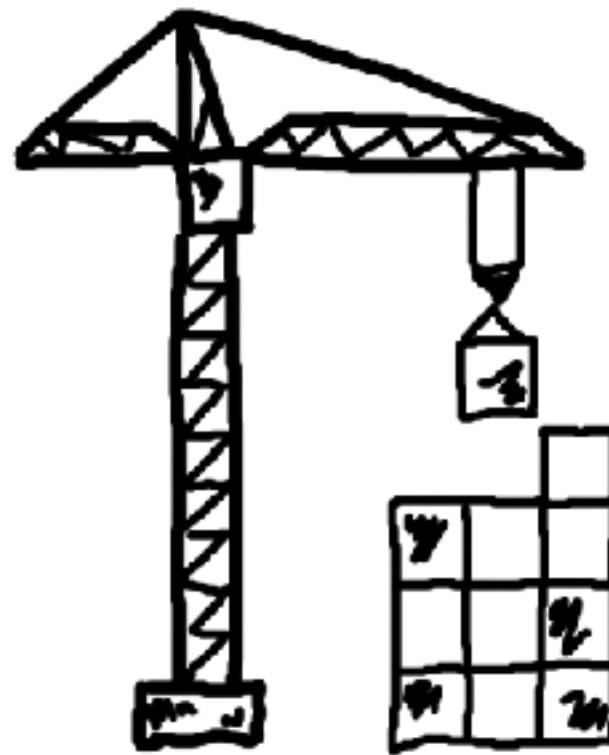
&

```
$ npm link module1
```

```
await bznav.sso.l
reply({m ↳ listAccountSession() ACCOUNT 모듈
  name: updm ↳ listCode(codeType: string) INTERNAL 모듈
  email: upm ↳ listService() SERVICE 모듈
  avatar: um ↳ listUser() USER 모듈
  phone: upm ↳ listUserSessions(id: string) USER 모듈
});m ↳ checkMail(body: ICheckMail) INTERNAL 모듈
catch (err) m ↳ getSyncCredential() AUTH 모듈
switch (err) m ↳ sendVerificationMail() USER 모듈 (+ overload)
  // sso.upm ↳ deleteCode(code: string, body: IDeleteCodeBody) INTERNAL 모듈
  case 'SS':m ↳ reply(r) INTERNAL 모듈
    break; m ↳ deleteSession(sessionId: string) AUTH 모듈
  default: m ↳ deleteUser(id: string)
```



Press ⌘. to choose the selected (or first) suggestion and insert a



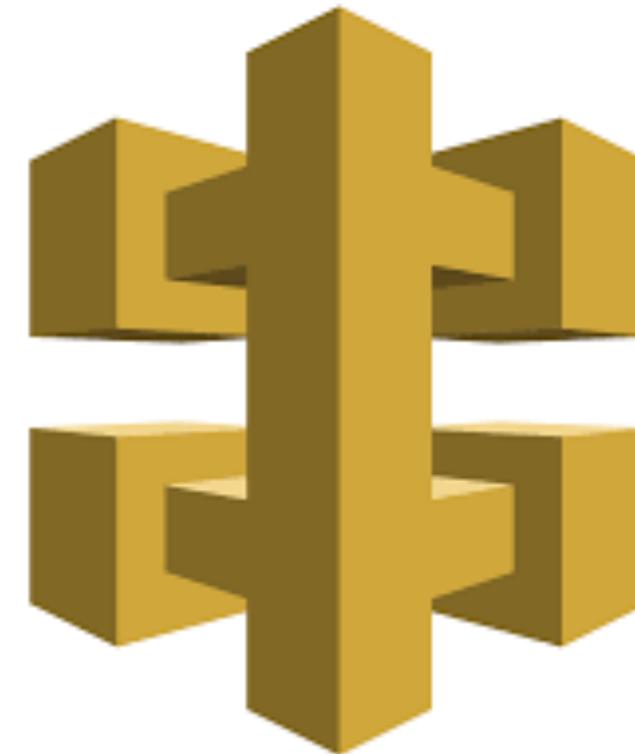
SDK Generator 도입후 아름다운 개발 환경

- API SPEC(Parameter, Method, URI) 변경 부담감 축소
- Function Call 만으로 모든 기능 사용 가능
- SDK Repo가 서비스 API 전체 Change Log 역할
- 개별 Rest API 기능 축소, 재사용성의 극대화, 캐싱 강화
- 서버, 클라이언트 개발시 변경, 추가된 API에 빠르게 대응
- Async를 통한 Javascript 비동기 문제 해결



SDK 나아가 API Management

AWS API Gateway



API Test Automated



Support Any Language



MANY API! MANY MODULE! MANY AGENT!



INKTOBER
2015
2

Thanks

Speaker

han@hansh.kr

job@emmental.co.kr