CardiVu(BPM) API

- 스마트폰 카메라(RGB)을 이용하여 생체 정보(심장박동, 심박변이도, 스트레스)를 추론하는 시스템
- 데이터바우처 기업을 위한 CardiVu(BPM) API

CardiVu(BPM) API 특징

- 측정 데이터 주기
 - 30초 이후 BPM 추론 시작, 1초 간격으로 갱신(HRV까지 추론하기 때문에 60초)
 - ·실시간 beat인 PPI은 BPM으로 제공(BPM/60 = PPI로 사용 가능)
- 측정 기간
 - 시간의 제한 없이 시작 신호로 시작해서 끝 신호까지 측정할 수 있게 구현 (현재 10분까지 측정 테스트 완료)

CardiVu(BPM) API 관련 Git 주소

- CardiVu API Web Demo (Web, https://www.cardivu.com/api/ 서버에 포함)
 https://github.com/SmartDinc/CardiVu API Demo.git
- CardiVu API Android Demo
 - 최신 버전(22.07.08): Android 12 (SDK 32) 업데이트 완료

https://github.com/SmartDinc/Cardivu_Android_Demo.git

CardiVu(BPM) API : 발급 된 키 입력 위치

Web

Android

```
val CompanyCode = "CompanyCode" // 회사코드
val CompanyKey = "CompanyKey" // 회사 인증키
val CompanyClient = "CompanyClient_Key" // 회사의 회원별 고유키
```

Cardivu_Android_Demo/app/src/main/java/net/sdcor/cardivu_android_demo/fragment/HomeFragment.kt Cardivu_Android_Demo/app/src/main/java/net/sdcor/cardivu_android_demo/fragment/MeasureFragment.kt

CardiVu(BPM) API 기능 정리

• 1. 측정('/measure', methods=['POST']) : 홍채 변수 저장 및 변수 갯수 조회

• 2. 결과('/measure_result', methods=['POST']) : 홍채 변수 저장 및 변수 갯수 조회

• 3. 조회('/select_result', methods=['POST']) : 결과 데이터 조회

• 3-1. Option에 따른 분류

Option = 0 : 마지막 결과 가져오기

Option = 1 : 전체 평균 결과 가져오기

Option = 2 : 상세 결과 가져오기

CardiVu(BPM) API : Option에 따른 분류 예시, 데모 기준 : http://127.0.0.1:7782/result

• Option = 0 : 마지막 결과 가져오기

("Data":[{"BPM":57.27729797,"CREATED_TIME":"Tue, 19 Jul 2022 19:17:08 GMT","GQ_COUNT":251,"HF_P":63.74522781,"IDX":31336 19:04:46 GMT","RMSSD":21.86863518,"SDNN":27.46292877,"STARTIDX":90220,"STRESS":55,"UUID":"CompanyCode_CompanyKey_(

• Option = 1 : 전체 평균 결과 가져오기

```
언체 평균 결과 가져오기
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```

CardiVu(BPM) API : Option에 따른 분류 예시, 데모 기준 : http://127.0.0.1:7782/result

• Option = 2 : 상세 결과 가져오기

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```
const CardiVuAPI_Domain_Link = CardiVuAPI_Domain + "api/select_result";
                                                                                                                                                                                               const CompanyCode = "CompanyCode";
                                                                                                                                                                                                const CompanyKey = "CompanyKey";
                                                                                                                                                                                                                                                                                                                                                       // 회사의 회원별 고유키
                                                                                                                                                                                               let START_IDX = 90220;
                                                                                                                                                                                                                                                                                                                                                      // 첫 시작시 홍채 변수 IDX, 임의로 90220 입력함
                                                                                                                                                                                                                                                                                                                                                       // 마지막 홍채 변수 IDX, 임의로 90287 입력함
                                                                                                                                                                                               let LAST_IDX = 90287;
                                                                                                 .O."MEASURE_END_TIME":"Tue, 19 Jul 2022 19:09:01 GMT","MEASURE_START_TIME":"Tue, 19 Jul 2022 19:04:46 GMT", "RMSSD":0, "SDNN":0, "STARTIDX":90220, "STRESS":0, "UUID":"CompanyCode_CompanyKey_CompanyClient_Key"]
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O,"UUID":"CompanyCode_CompanyKey_CompanyClient_Key"}]}

const CardiVuAPI_Domain = "https://www.cardivu.com/";

CardiVu(BPM) API 기능 정리

• 4. 최소한 BPM만 출력되는 페이지('/minimize', methods=['POST'])

```
: 데모 기준 : <a href="http://127.0.0.1:7782/minimize">http://127.0.0.1:7782/minimize</a>
                                                                                                     // BPM List
                                                                                                     let BPM_List = []
• 30초 이후 BPM 출력
  ▶ {CountIDX: 28, LAST_IDX: 90248, START_IDX: 90220}
  ▶ {CountIDX: 29, LAST_IDX: 90249, START_IDX: 90220}
  ▶ {CountIDX: 30, LAST_IDX: 90250, START_IDX: 90220}
  ▶{BPM: 57.9, CountIDX: 31, LAST IDX: 90251, START IDX: 90220, UUID: 'CompanyCode CompanyKey CompanyClient Key'}
  ► [57.9]
  ▶{BPM: 57.9, CountIDX: 32, LAST IDX: 90252, START IDX: 90220, UUID: 'CompanyCode CompanyKey CompanyClient Key'}
  ▶ (2) [57.9, 57.9]
  ▶ {BPM: 58.2, CountIDX: 33, LAST IDX: 90253, START IDX: 90220, UUID: 'CompanyCode CompanyKey CompanyClient Key'}
  ▶ (3) [57.9, 57.9, 58.2]
  ▶ {BPM: 58.2, CountIDX: 34, LAST IDX: 90254, START IDX: 90220, UUID: 'CompanyCode CompanyKey CompanyClient Key'}
  ▶ (4) [57.9, 57.9, 58.2, 58.2]
  ▶{BPM: 58.2, CountIDX: 35, LAST_IDX: 90255, START_IDX: 90220, UUID: 'CompanyCode_CompanyKey_CompanyClient_Key'}
  ▶ (5) [57.9, 57.9, 58.2, 58.2, 58.2]
  ▶{BPM: 58.2, CountIDX: 36, LAST_IDX: 90256, START_IDX: 90220, UUID: 'CompanyCode_CompanyKey_CompanyClient_Key'}
  ▶ (6) [57.9, 57.9, 58.2, 58.2, 58.2, 58.2]
  ▶{BPM: 58.3, CountIDX: 37, LAST_IDX: 90257, START_IDX: 90220, UUID: 'CompanyCode_CompanyKey_CompanyClient_Key'}
  ▶ (7) [57.9, 57.9, 58.2, 58.2, 58.2, 58.2, 58.3]
  ▶ {8PM: 58.1, CountIDX: 38, LAST_IDX: 90258, START_IDX: 90220, UUID: 'CompanyCode_CompanyKey_CompanyClient_Key'}
  ▶ (8) [57.9, 57.9, 58.2, 58.2, 58.2, 58.2, 58.3, 58.1]
```

// 30초 이후 BPM 값 호출 및 List에 저장되는 부분

BPM_List.push(json['BPM']);

console.log(BPM_List);

if (CountIDX > 30) {

CardiVu(BPM) API 기능 입력 변수

• Cardivu_W/api/view/cardivu_api_view.py에 해당 되는 변수

• CompanyCode: 기업 코드

• CompanyKey: 기업 키

• CompanyClient: 기업 고객 식별키

• date: 측정 시작 시간

• data: 홍채 데이터

• START_IDX: 측정시작 IDX

• LAST_IDX: 측정종료 IDX

• Option: 옵션

CardiVu(BPM) API 기능 결과 변수 - 1 -

• Cardivu_W/api/service/cardivu_api_service.py 에 해당 되는 변수

• IDX: 측정 데이터의 IDX

• CREATED_TIME: 데이터 생성 시간

• MEASURE_START_TIME: 측정 시작 시간

• MEASURE_END_TIME: 측정 마지막 시간

• STARTIDX: 측정시작 IDX

• LASTIDX: 측정종료 IDX

CardiVu(BPM) API 기능 결과 변수 - 2 -

• Cardivu_W/api/service/cardivu_api_service.py 에 해당 되는 변수

• GQ_COUNT: 노이즈의 영향이 적은 진행 시간(초)

• BPM: 심박수

• SDNN: 심박변이도(SDNN)

• RMSSD: 심박변이도(RMSSD)

• LF_P: 심박변이도(LF%)

• HF_P: 심박변이도(HF%)

• STRESS: 스트레스

기타: 도움되는 설정 방법

opency-4.6.0-android-sdk 설치 경로

-> https://github.com/opency/opency/releases

