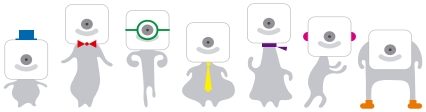
HVC-C2W Sample Code (Android)

Outline

This documentation describes the method on how to use sample code for HVC-C2 on an Android platform.

This sample code will create an account, connect the camera, execute face detection and face recognition, and obtain the results.

The detection results will be displayed as text data on the screen.

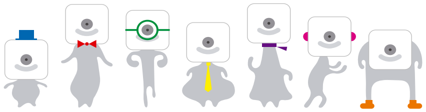


1. Items Required

- HVC-C2W (B5T-003001)
- API key, app ID

  ※Apply for them with the API Key Application Form on the Sensing Egg Project members’ site.
- Android device
- Environment supporting the build of an Android program

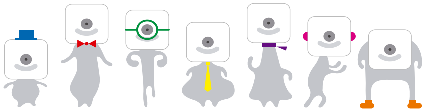
  ※This sample project used Android Studio



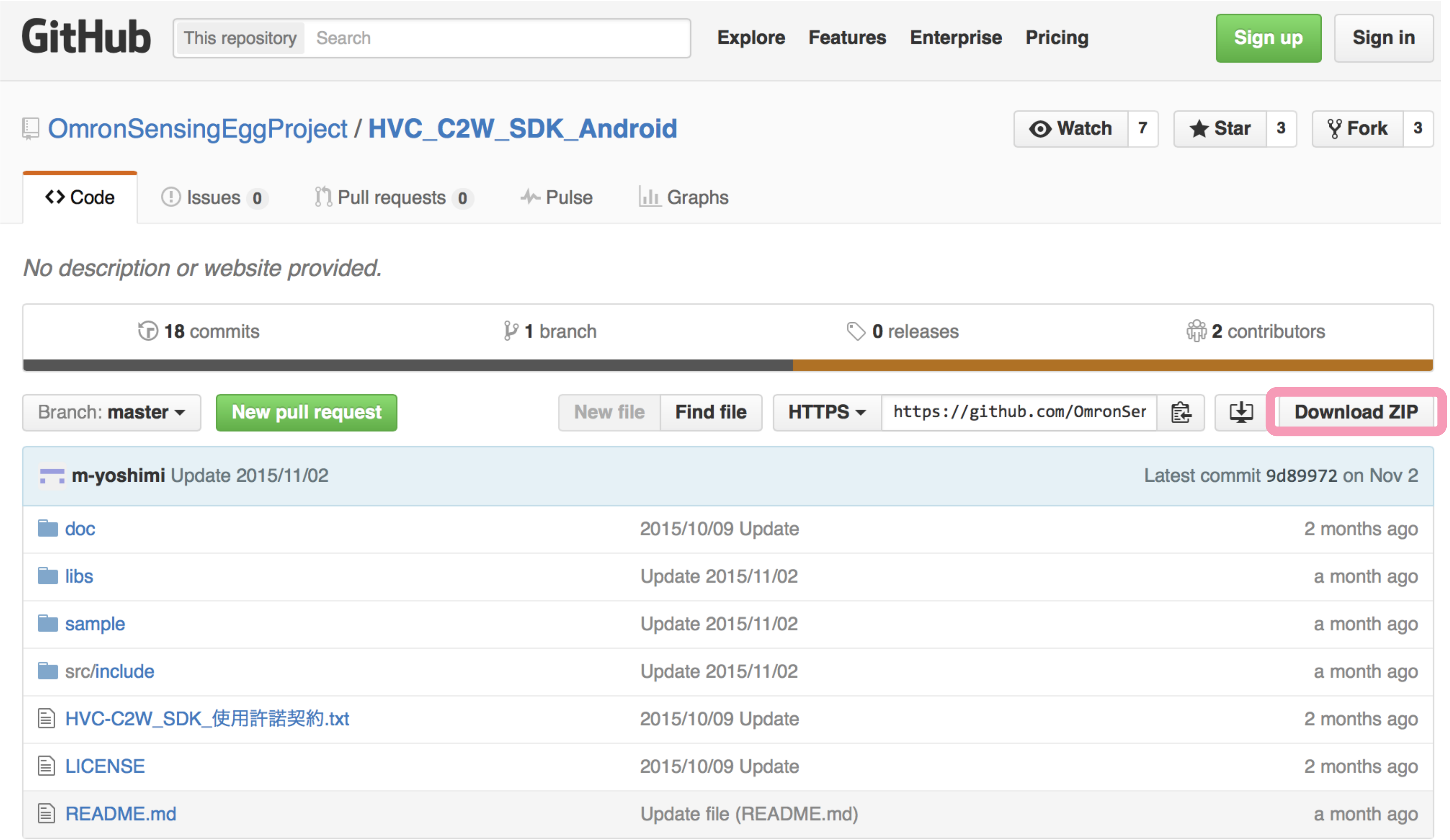
2.1 Obtain Sample Code

- Download the sample code for HVC-C2W in a designated folder.
- Download URL

https://github.com/OmronSensingEggProject/HVC_C2W_SDK_Android



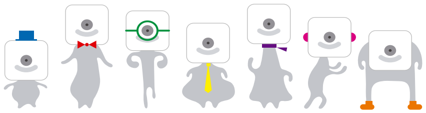
2.2 Download Sample Code


GitHub
This repository
Search
Explore
Features
Enterprise
Pricing
Sign up
Sign in
OmronSensingEggProject / HVC_C2W_SDK_Android
Watch 7
Star 3
Fork 3
Code
Issues 0
Pull requests 0
Pulse
Graphs
18 commits
1 branch
0 releases
2 contributors
Branch: master
New pull request
New file
Find file
HTTPS
https://github.com/OmronSer
Download ZIP

No description or website provided.

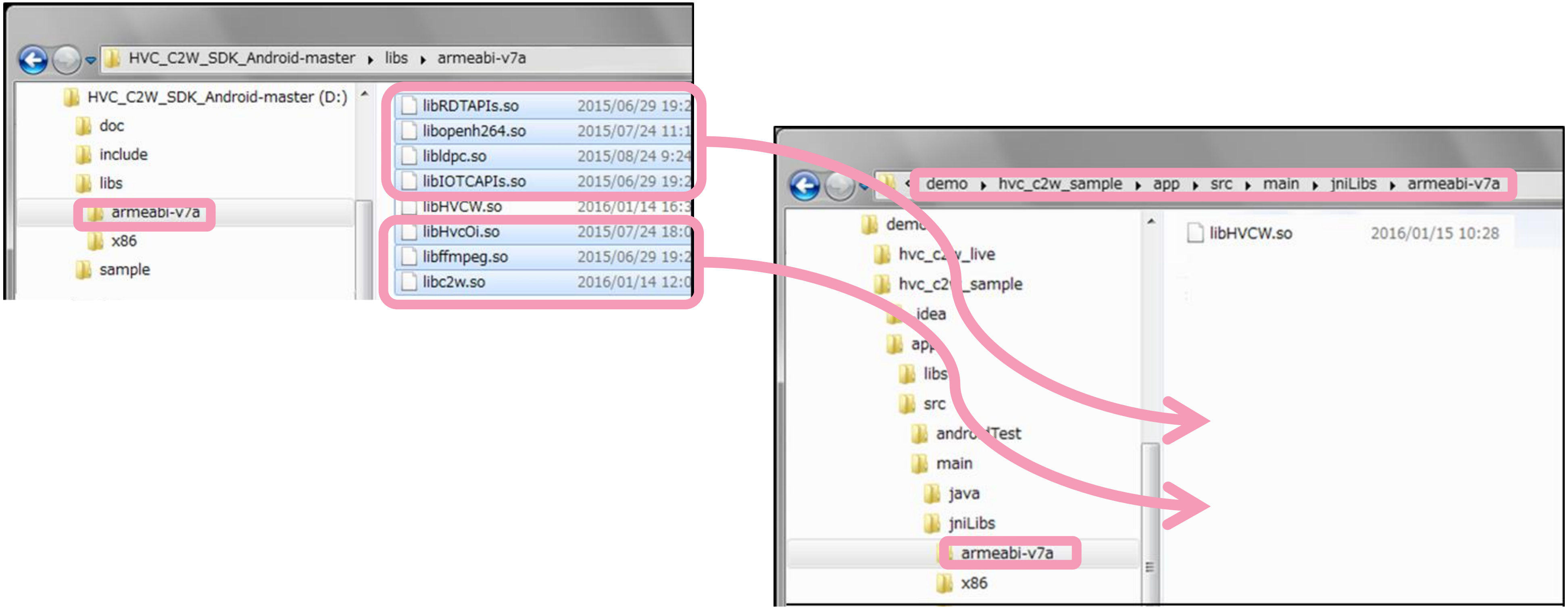
m-yoshimi Update 2015/11/02 — Latest commit 9d89972 on Nov 2

doc	2015/10/09 Update	2 months ago
libs	Update 2015/11/02	a month ago
sample	Update 2015/11/02	a month ago
src/include	Update 2015/11/02	a month ago
HVC-C2W_SDK_使用許諾契約.txt	2015/10/09 Update	2 months ago
LICENSE	2015/10/09 Update	2 months ago
README.md	Update file (README.md)	a month ago



3.1 Copy SDK Library (armeabi-v7a)

- Copy the SDK library in “libs” > “armeabi-v7a” to the sample code.



HVC_C2W_SDK_Android-master ▸ libs ▸ armeabi-v7a

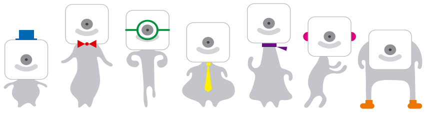
HVC_C2W_SDK_Android-master (D:)
doc
include
libs
armeabi-v7a
x86
sample

libRDTAPIs.so 2015/06/29 19:2
libopenh264.so 2015/07/24 11:1
libldpc.so 2015/08/24 9:24
libIOTCAPIs.so 2015/06/29 19:2
libHVCW.so 2016/01/14 16:3
libHvcOi.so 2015/07/24 18:0
libffmpeg.so 2015/06/29 19:2
libc2w.so 2016/01/14 12:0

demo ▸ hvc_c2w_sample ▸ app ▸ src ▸ main ▸ jniLibs ▸ armeabi-v7a

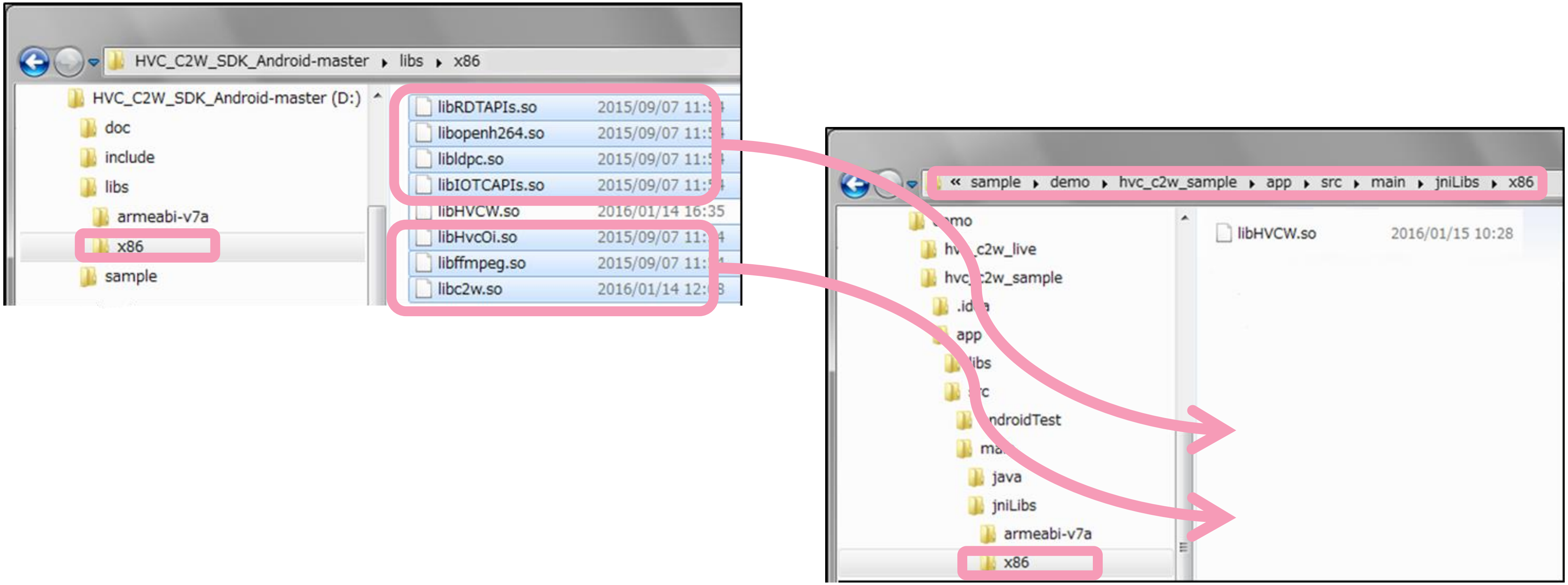
dem
hvc_c v_live
hvc_c2 _sample
idea
app
libs
src
andro Test
main
java
jniLibs
armeabi-v7a
x86

libHVCW.so 2016/01/15 10:28



3.2 Copy SDK Library (x86)

- Copy the SDK library in “libs” > “x86” to the sample code.



HVC_C2W_SDK_Android-master ▸ libs ▸ x86

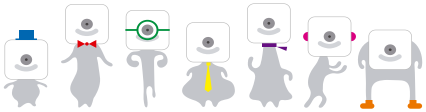
- HVC_C2W_SDK_Android-master (D:)
  - doc
  - include
  - libs
    - armeabi-v7a
    - x86
  - sample

libRDTAPIs.so	2015/09/07 11:
libopenh264.so	2015/09/07 11:
libldpc.so	2015/09/07 11:
libIOTCAPIs.so	2015/09/07 11:
libHVCW.so	2016/01/14 16:35
libHvcOi.so	2015/09/07 11:
libffmpeg.so	2015/09/07 11:
libc2w.so	2016/01/14 12:

« sample ▸ demo ▸ hvc_c2w_sample ▸ app ▸ src ▸ main ▸ jniLibs ▸ x86

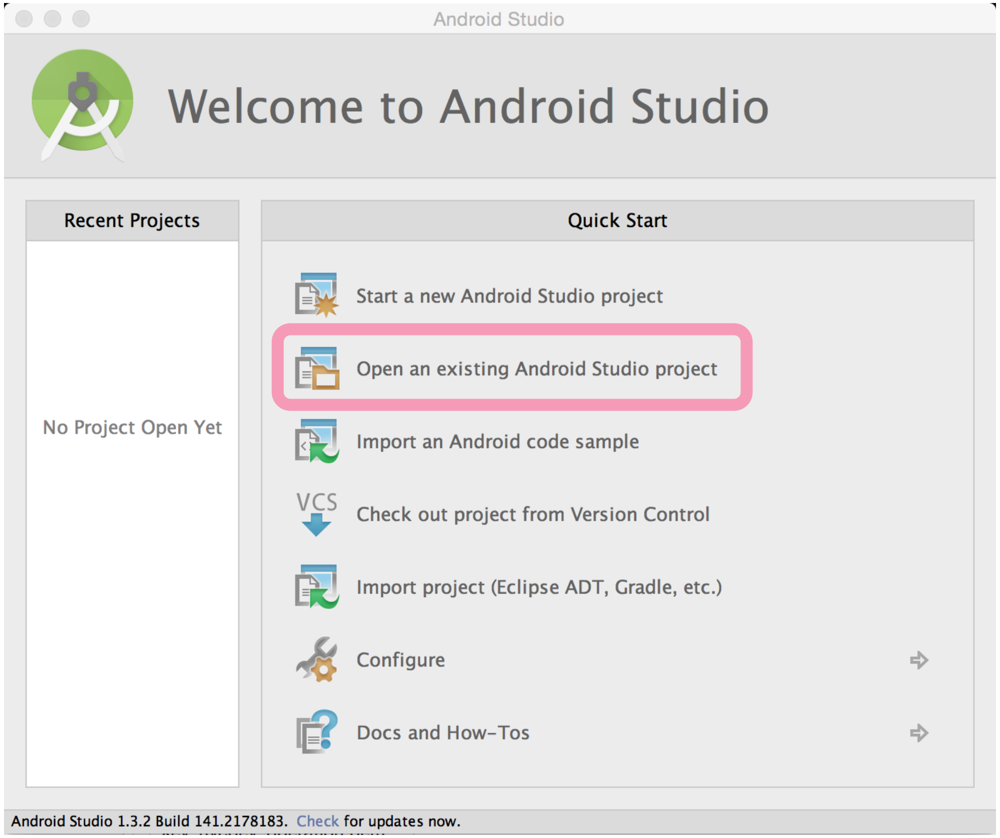
- mo
  - c2w_live
  - hvc 2w_sample
    - .id
    - app
      - ibs
      - c
        - ndroidTest
        - ma
          - java
          - jniLibs
            - armeabi-v7a
            - x86

libHVCW.so	2016/01/15 10:28



3.3 Open Project

- Run Android Studio and select “Open an existing Android Studio project”.



Android Studio

Welcome to Android Studio

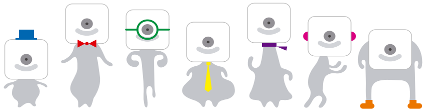
Recent Projects

No Project Open Yet

Quick Start

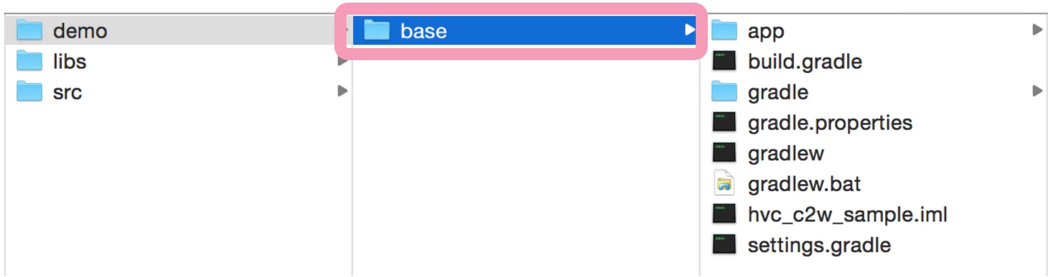
- Start a new Android Studio project
- Open an existing Android Studio project
- Import an Android code sample
- Check out project from Version Control
- Import project (Eclipse ADT, Gradle, etc.)
- Configure
- Docs and How-Tos

Android Studio 1.3.2 Build 141.2178183. Check for updates now.



3.4 Select Project

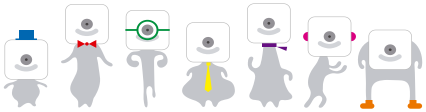
- Select the downloaded sample code from “sample” > “demo” > “base”.



demo
libs
src

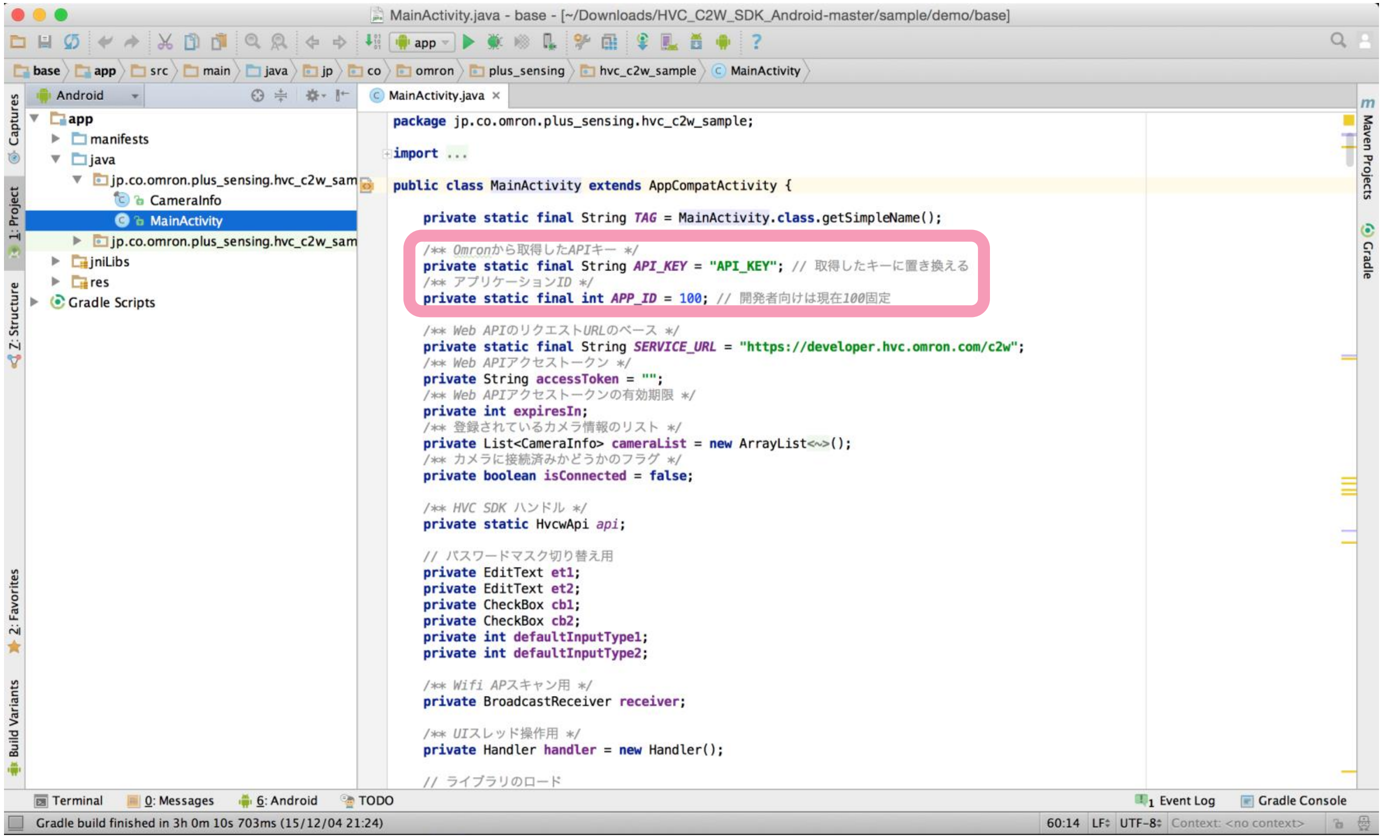
base

app
build.gradle
gradle
gradle.properties
gradlew
gradlew.bat
hvc_c2w_sample.iml
settings.gradle



4. Input API Key and App ID

- Open the file selecting “Project” > “app” > “java” > “MainActivity”.
- Input the API key and App ID distributed.

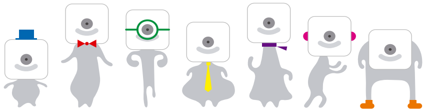


MainActivity.java - base - [~/Downloads/HVC_C2W_SDK_Android-master/sample/demo/base]

```java
package jp.co.omron.plus_sensing.hvc_c2w_sample;

import ...

public class MainActivity extends AppCompatActivity {

    private static final String TAG = MainActivity.class.getSimpleName();

    /** Omronから取得したAPIキー */
    private static final String API_KEY = "API_KEY"; // 取得したキーに置き換える
    /** アプリケーションID */
    private static final int APP_ID = 100; // 開発者向けは現在100固定

    /** Web APIのリクエストURLのベース */
    private static final String SERVICE_URL = "https://developer.hvc.omron.com/c2w";
    /** Web APIアクセストークン */
    private String accessToken = "";
    /** Web APIアクセストークンの有効期限 */
    private int expiresIn;
    /** 登録されているカメラ情報のリスト */
    private List<CameraInfo> cameraList = new ArrayList<~>();
    /** カメラに接続済みかどうかのフラグ */
    private boolean isConnected = false;

    /** HVC SDK ハンドル */
    private static HvcwApi api;

    // パスワードマスク切り替え用
    private EditText et1;
    private EditText et2;
    private CheckBox cb1;
    private CheckBox cb2;
    private int defaultInputType1;
    private int defaultInputType2;

    /** Wifi APスキャン用 */
    private BroadcastReceiver receiver;

    /** UIスレッド操作用 */
    private Handler handler = new Handler();

    // ライブラリのロード
```

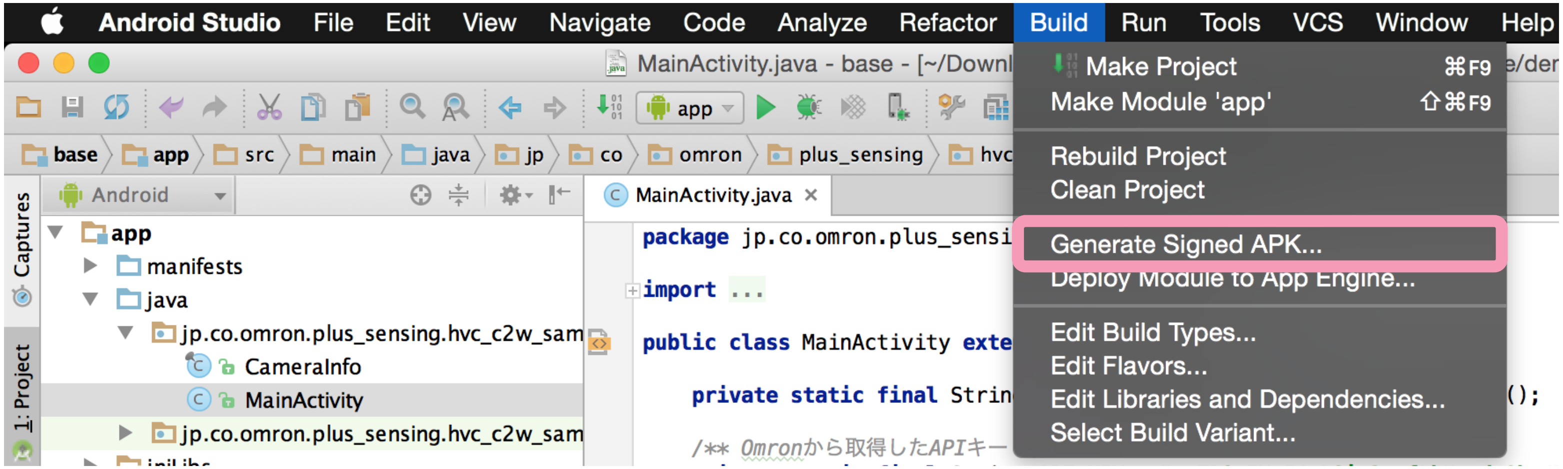
Gradle build finished in 3h 0m 10s 703ms (15/12/04 21:24)

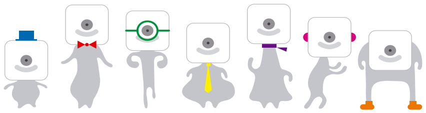
app
base
app
src
main
java
jp
co
omron
plus_sensing
hvc_c2w_sample
MainActivity
Android
MainActivity.java
app
manifests
java
jp.co.omron.plus_sensing.hvc_c2w_sam
CameraInfo
MainActivity
jp.co.omron.plus_sensing.hvc_c2w_sam
jniLibs
res
Gradle Scripts
Captures
1: Project
7: Structure
2: Favorites
Build Variants
Maven Projects
Gradle
Terminal
0: Messages
6: Android
TODO
1 Event Log
Gradle Console
60:14
LF÷
UTF-8÷
Context: <no context>



5.1 Generate APK File

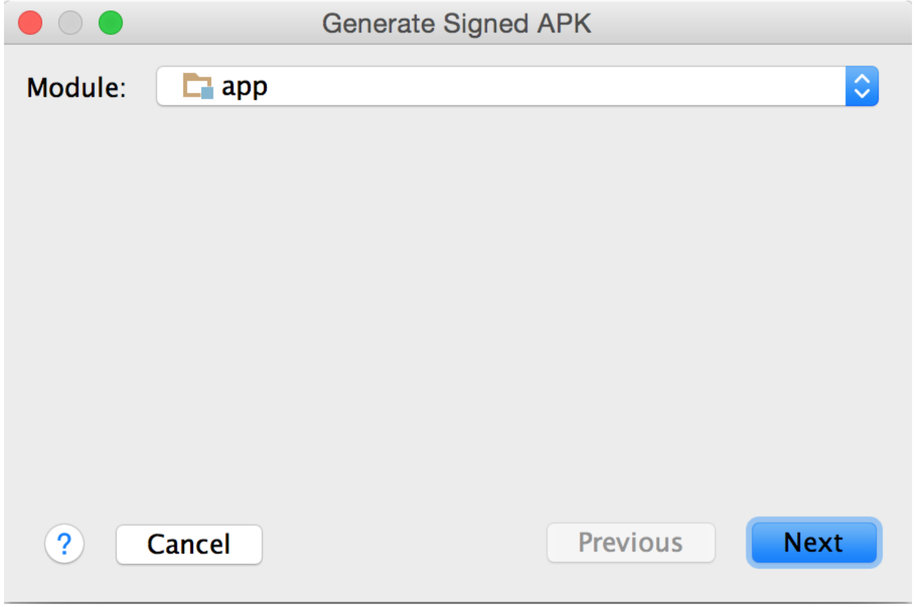
- Select “Build” > “Generate Signed APK” to generate the APK file.


Android Studio
File
Edit
View
Navigate
Code
Analyze
Refactor
Build
Run
Tools
VCS
Window
Help
MainActivity.java - base - [~/Downl
app
base
app
src
main
java
jp
co
omron
plus_sensing
hvc
Android
MainActivity.java
app
manifests
java
jp.co.omron.plus_sensing.hvc_c2w_sam
CameraInfo
MainActivity
jp.co.omron.plus_sensing.hvc_c2w_sam
Captures
1: Project
package jp.co.omron.plus_sensi
import ...
public class MainActivity exte
private static final Strin
/** Omronから取得したAPIキー
Make Project ⌘F9
Make Module 'app' ⇧⌘F9
Rebuild Project
Clean Project
Generate Signed APK...
Deploy Module to App Engine...
Edit Build Types...
Edit Flavors...
Edit Libraries and Dependencies...
Select Build Variant...

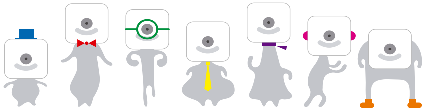


5.2 Generate APK File

- Press “Next”.

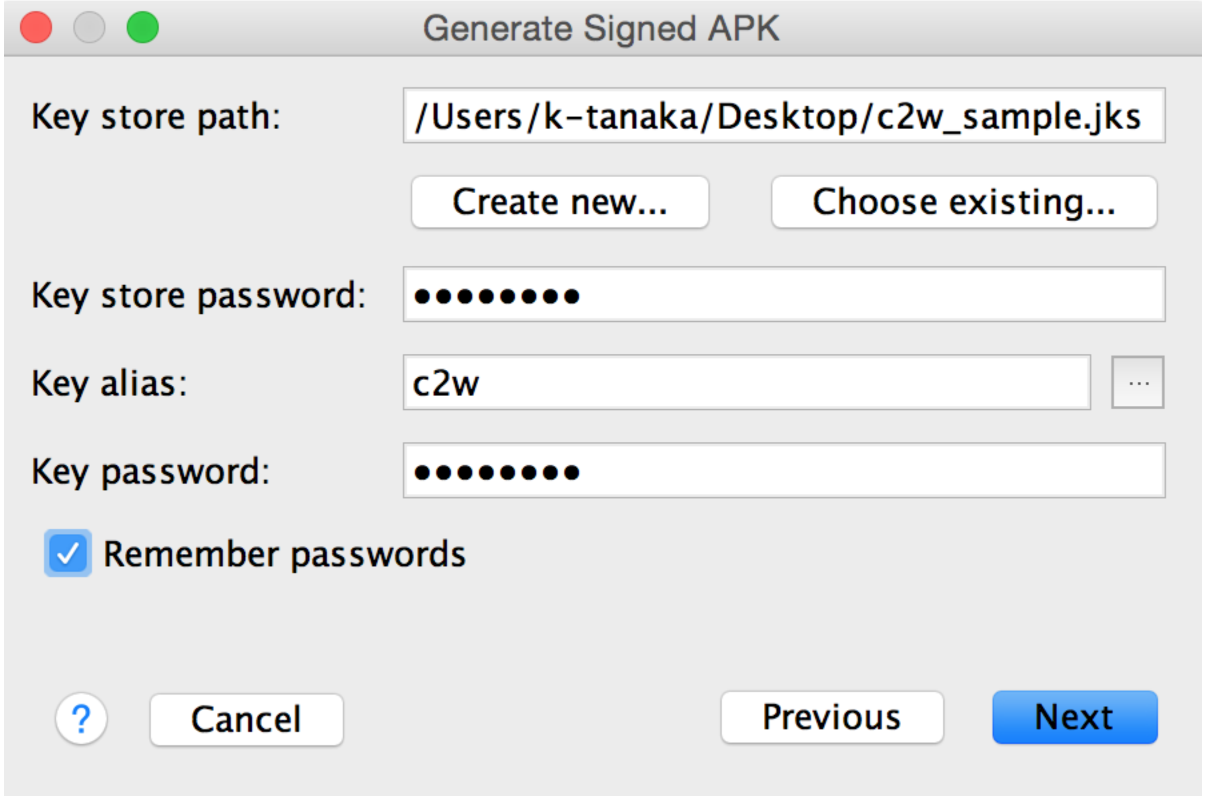

Generate Signed APK
?
Cancel
Previous
Next

Module: app



5.3 Generate APK File

- Select the key store path if there is one already existing.
- Select “Create new” otherwise.



Generate Signed APK

Key store path: /Users/k-tanaka/Desktop/c2w_sample.jks

Create new...
Choose existing...

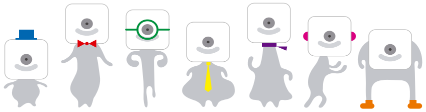
Key store password: ●●●●●●●●●

Key alias: c2w

Key password: ●●●●●●●●●

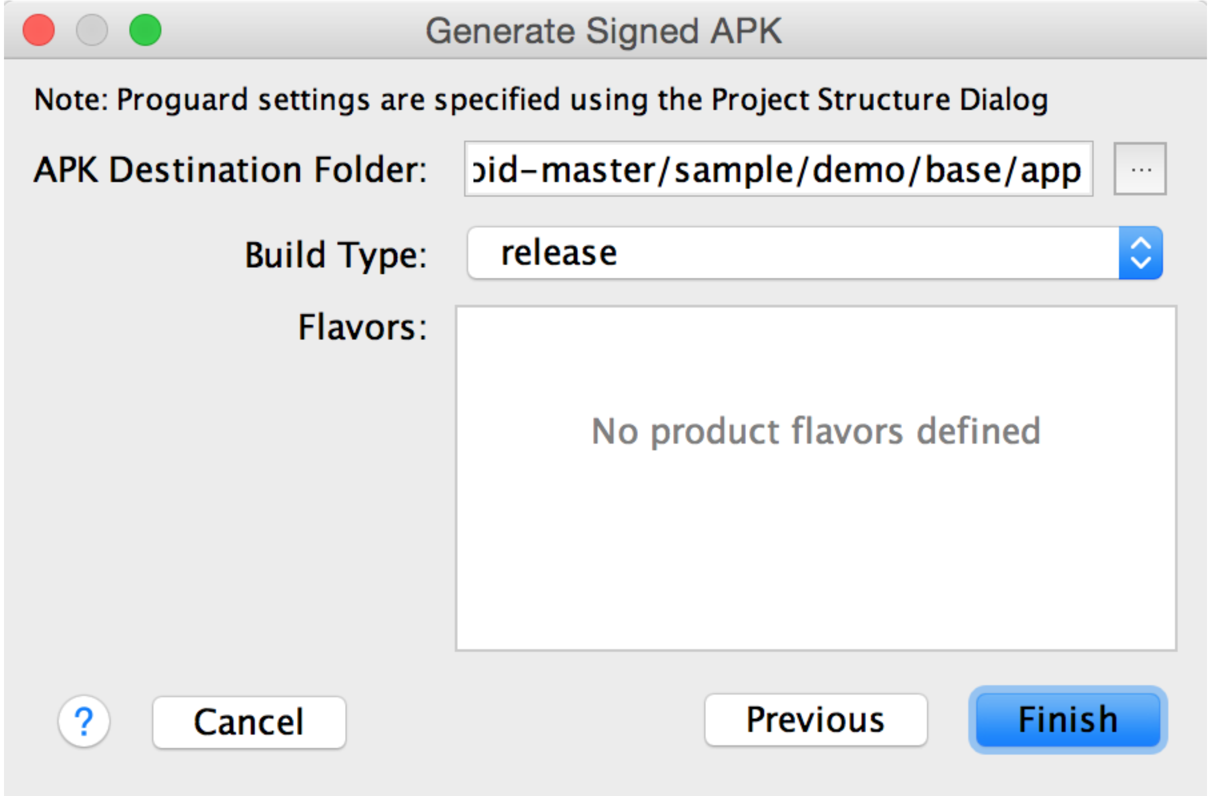
☑ Remember passwords

?
Cancel
Previous
Next



5.4 Generate APK File

- Press “Finish”.



Generate Signed APK

Note: Proguard settings are specified using the Project Structure Dialog

APK Destination Folder: oid-master/sample/demo/base/app

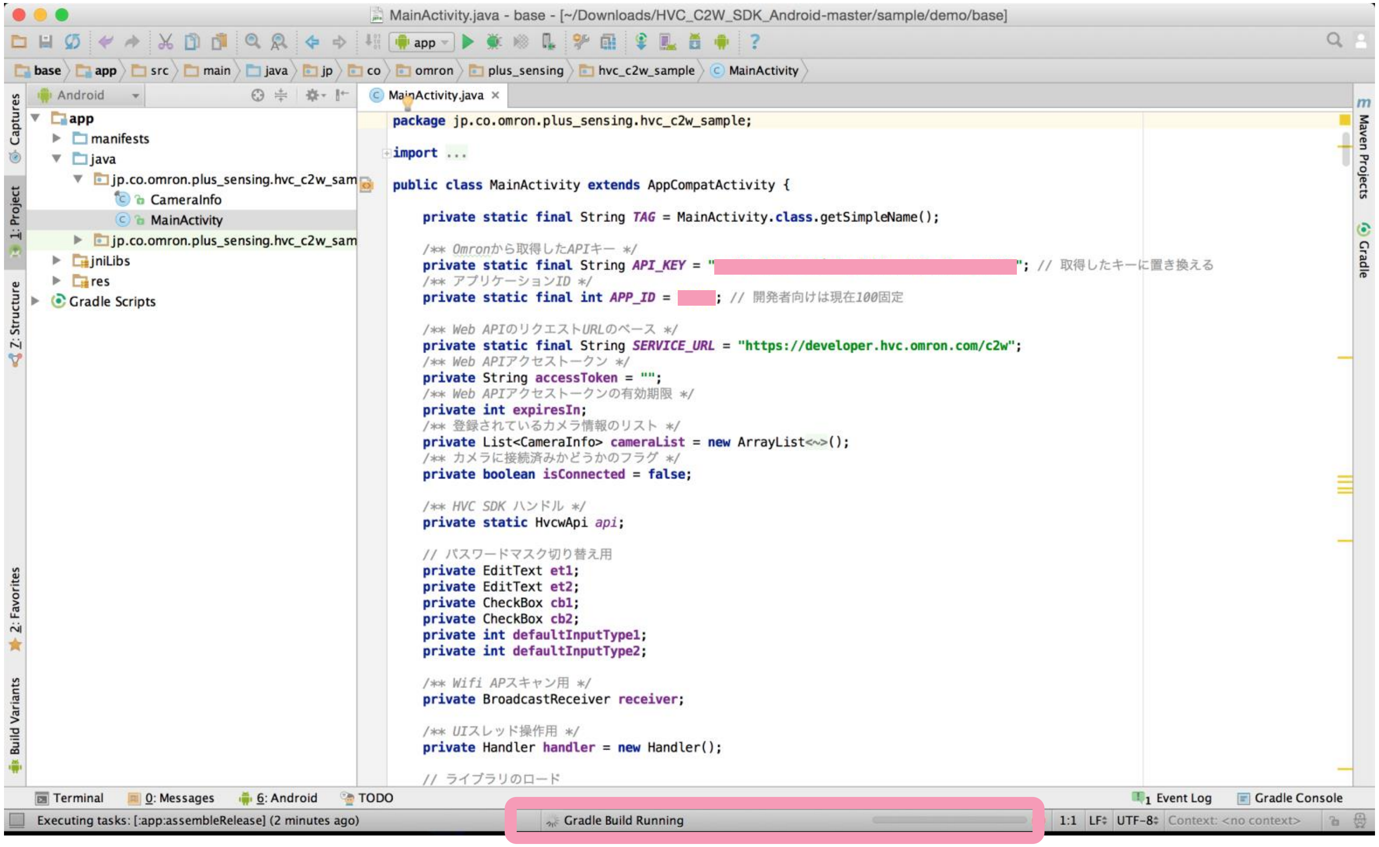
Build Type: release

Flavors: No product flavors defined

...
?
Cancel
Previous
Finish

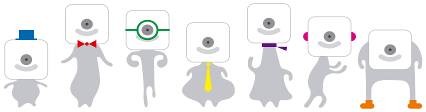
5.5 Generate APK File

- “Gradle Build Running” will be displayed


MainActivity.java - base - [~/Downloads/HVC_C2W_SDK_Android-master/sample/demo/base]
app
base
app
src
main
java
jp
co
omron
plus_sensing
hvc_c2w_sample
MainActivity
Android
MainActivity.java
app
manifests
java
jp.co.omron.plus_sensing.hvc_c2w_sam
CameraInfo
MainActivity
jp.co.omron.plus_sensing.hvc_c2w_sam
jniLibs
res
Gradle Scripts
Captures
1: Project
7: Structure
2: Favorites
Build Variants
Maven Projects
Gradle
Terminal
0: Messages
6: Android
TODO
Event Log
Gradle Console
1:1
LF
UTF-8
Context: <no context>

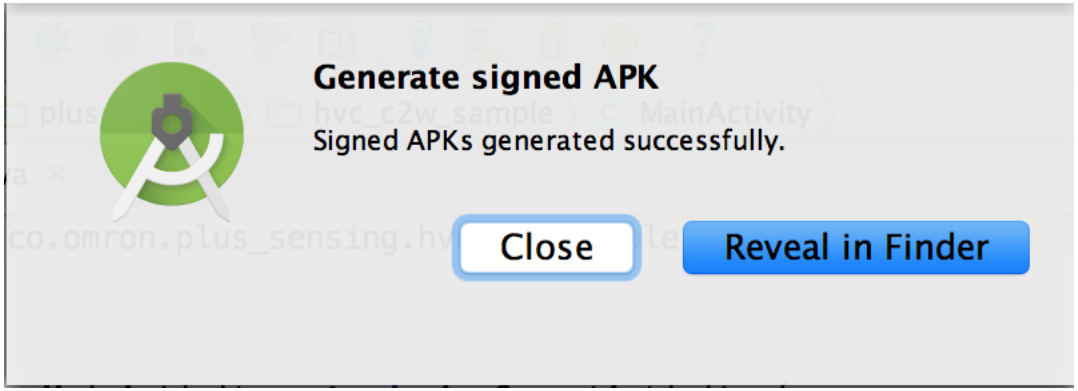
```
package jp.co.omron.plus_sensing.hvc_c2w_sample;

import ...

public class MainActivity extends AppCompatActivity {

    private static final String TAG = MainActivity.class.getSimpleName();

    /** Omronから取得したAPIキー */
    private static final String API_KEY = "[redacted]"; // 取得したキーに置き換える
    /** アプリケーションID */
    private static final int APP_ID = [redacted]; // 開発者向けは現在100固定

    /** Web APIのリクエストURLのベース */
    private static final String SERVICE_URL = "https://developer.hvc.omron.com/c2w";
    /** Web APIアクセストークン */
    private String accessToken = "";
    /** Web APIアクセストークンの有効期限 */
    private int expiresIn;
    /** 登録されているカメラ情報のリスト */
    private List<CameraInfo> cameraList = new ArrayList<~>();
    /** カメラに接続済みかどうかのフラグ */
    private boolean isConnected = false;

    /** HVC SDK ハンドル */
    private static HvcwApi api;

    // パスワードマスク切り替え用
    private EditText et1;
    private EditText et2;
    private CheckBox cb1;
    private CheckBox cb2;
    private int defaultInputType1;
    private int defaultInputType2;

    /** Wifi APスキャン用 */
    private BroadcastReceiver receiver;

    /** UIスレッド操作用 */
    private Handler handler = new Handler();

    // ライブラリのロード
```

```
Executing tasks: [:app:assembleRelease] (2 minutes ago)
Gradle Build Running
```



5.6 Generate APK File

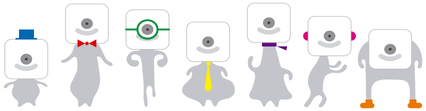
- The APK file will be generated once the build completes.
- Copy the generated APK file to the Android device.



Generate signed APK

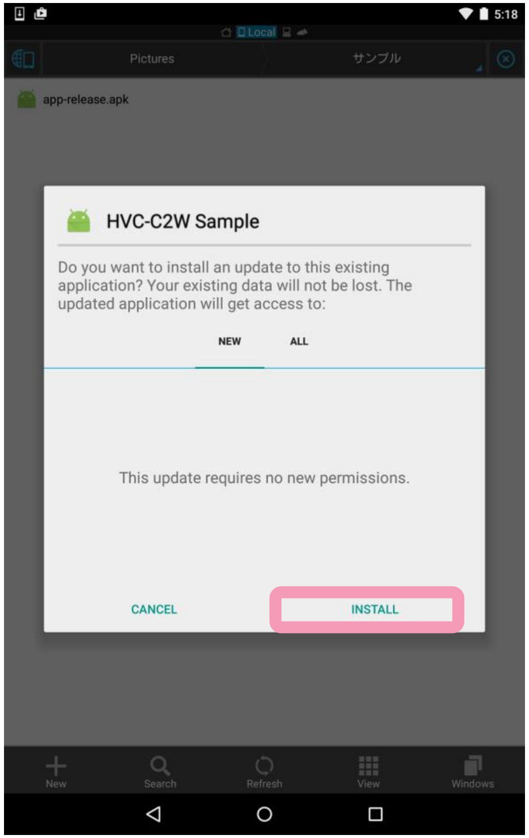
Signed APKs generated successfully.

Close
Reveal in Finder



6. Installation

- Install the generated APK file.



5:18
Local
Pictures
サンプル
app-release.apk

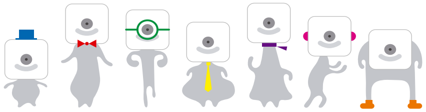
HVC-C2W Sample

Do you want to install an update to this existing application? Your existing data will not be lost. The updated application will get access to:

NEW
ALL

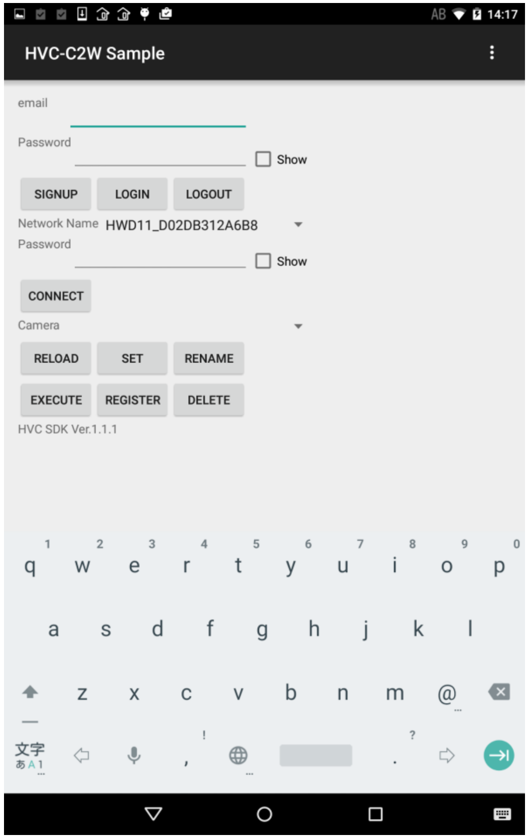
This update requires no new permissions.

CANCEL
INSTALL
New
Search
Refresh
View
Windows



7. Run Application

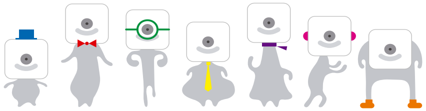
- Run the installed application.



14:17
HVC-C2W Sample
email
Password
☐ Show
SIGNUP
LOGIN
LOGOUT
Network Name
Password
☐ Show
CONNECT
Camera
RELOAD
SET
RENAME
EXECUTE
REGISTER
DELETE
1 2 3 4 5 6 7 8 9 0
q w e r t y u i o p
a s d f g h j k l
z x c v b n m @
文字
あA1

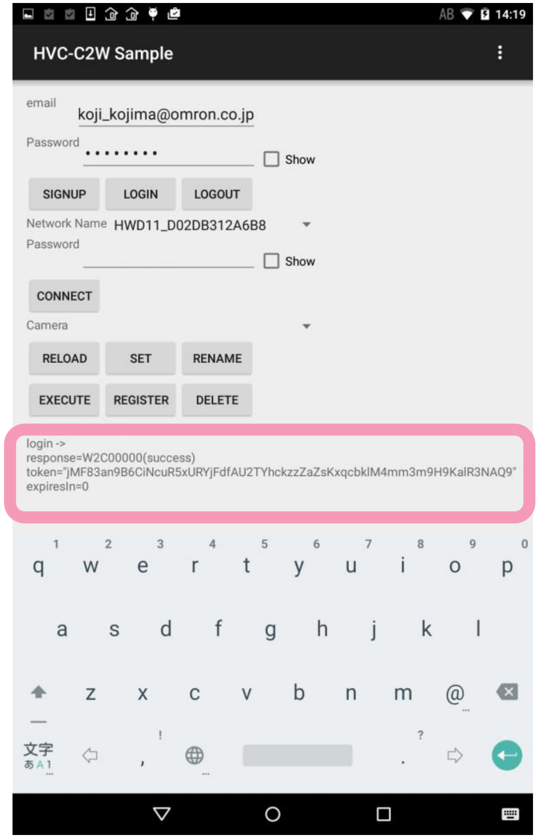
Network Name HWD11_D02DB312A6B8

HVC SDK Ver.1.1.1



8. SIGNUP/LOGIN

- Input an email address and press SIGNUP to create an account if not already registered.
- Input the email address and password registered for an account and press LOGIN to log into that account.


14:19
HVC-C2W Sample
SIGNUP
LOGIN
LOGOUT
Show
CONNECT
Camera
RELOAD
SET
RENAME
EXECUTE
REGISTER
DELETE

email koji_kojima@omron.co.jp

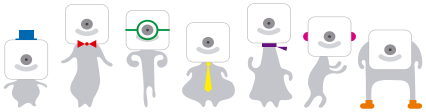
Password •••••••••

Network Name HWD11_D02DB312A6B8

Password

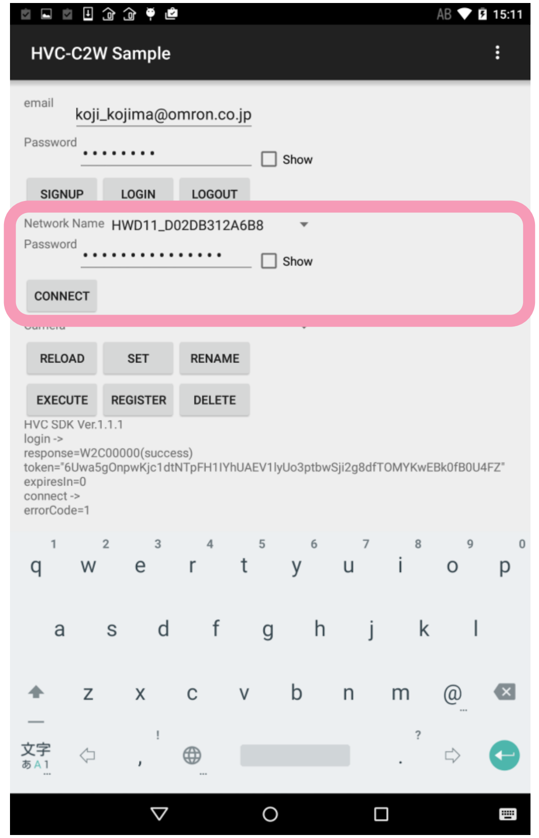
```
login ->
response=W2C00000(success)
token="jMF83an9B6CiNcuR5xURYjFdfAU2TYhckzzZaZsKxqcbklM4mm3m9H9KalR3NAQ9"
expiresIn=0
```

- A login token can be obtained when login is successful.



9. CONNECT

- Select a network and type in the password.
- Press the function switch on the side of the camera and the CONNECT button to pair the camera with the device.

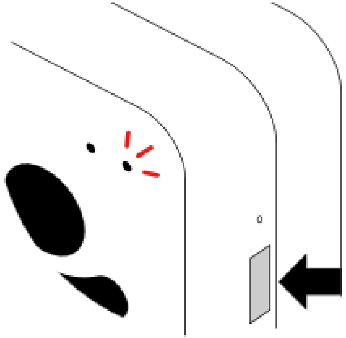

15:11
HVC-C2W Sample
SIGNUP
LOGIN
LOGOUT
CONNECT
RELOAD
SET
RENAME
EXECUTE
REGISTER
DELETE

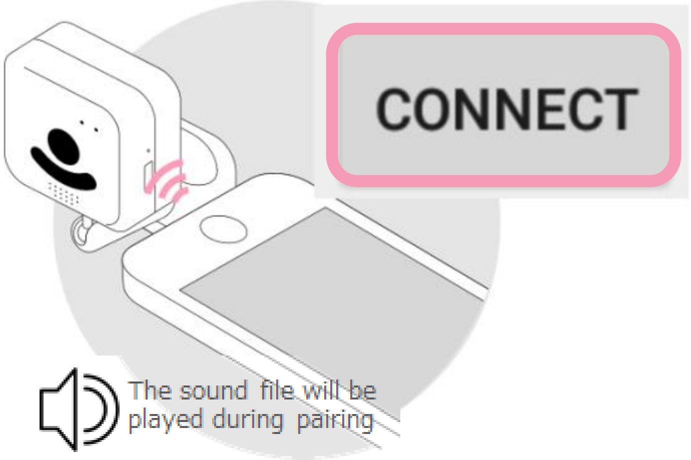
email koji_kojima@omron.co.jp
Password •••••••• ☐ Show
Network Name HWD11_D02DB312A6B8
Password ••••••••••••••• ☐ Show

```
HVC SDK Ver.1.1.1
login ->
response=W2C00000(success)
token="6Uwa5gOnpwKjc1dtNTpFH1IYhUAEV1lyUo3ptbwSji2g8dfTOMYKwEBk0fB0U4FZ"
expiresIn=0
connect ->
errorCode=1
```

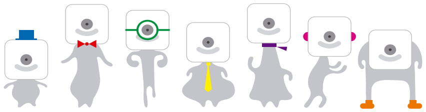
Hold the function switch for more than 3 seconds.

The LED will flash red.
※Please proceed after waiting for at least 30 seconds and hearing the initialization completion sound after powering up the device.



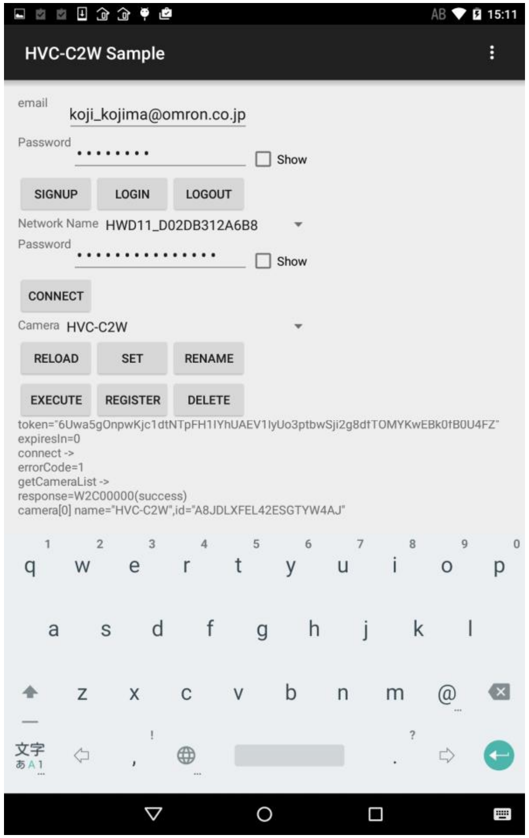


The sound file will be played during pairing



10. RELOAD

- Press RELOAD to obtain the camera list.


HVC-C2W Sample
SIGNUP
LOGIN
LOGOUT
CONNECT
RELOAD
SET
RENAME
EXECUTE
REGISTER
DELETE

email koji_kojima@omron.co.jp

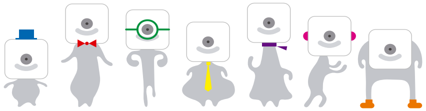
Password ••••••••• ☐ Show

Network Name HWD11_D02DB312A6B8

Password ••••••••••••••• ☐ Show

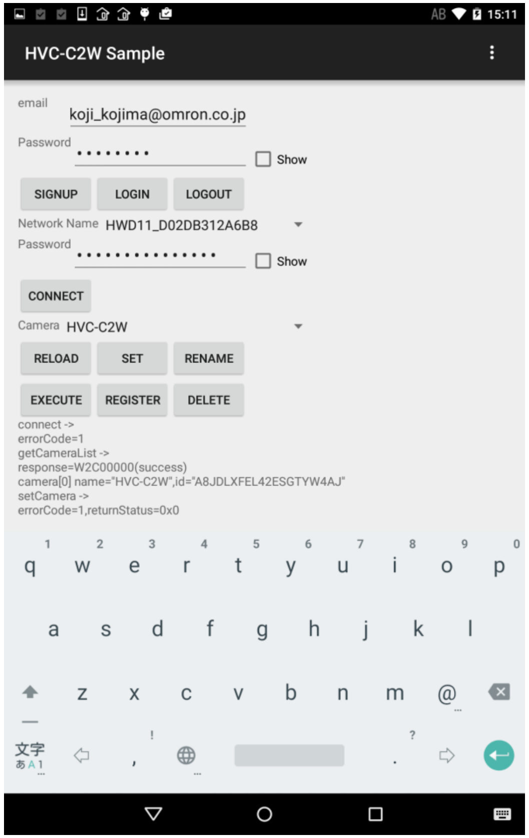
Camera HVC-C2W

```
token="6Uwa5gOnpwKjc1dtNTpFH1IYhUAEV1lyUo3ptbwSji2g8dtTOMYKwEBk0tB0U4FZ"
expiresIn=0
connect ->
errorCode=1
getCameraList ->
response=W2C00000(success)
camera[0] name="HVC-C2W",id="A8JDLXFEL42ESGTYW4AJ"
```



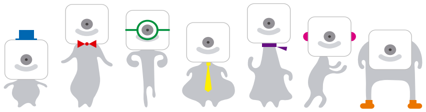
11. SET

- Press SET to connect to a camera from the list.


15:11
HVC-C2W Sample
☐ Show
SIGNUP
LOGIN
LOGOUT
☐ Show
CONNECT
RELOAD
SET
RENAME
EXECUTE
REGISTER
DELETE
q w e r t y u i o p
a s d f g h j k l
z x c v b n m @
文字

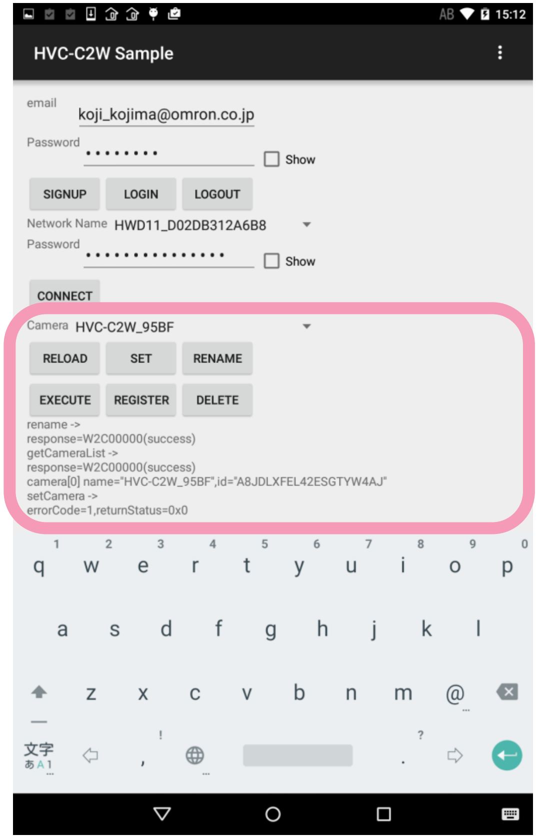
email koji_kojima@omron.co.jp
Password •••••••••
Network Name HWD11_D02DB312A6B8
Password •••••••••••••••
Camera HVC-C2W

```
connect ->
errorCode=1
getCameraList ->
response=W2C00000(success)
camera[0] name="HVC-C2W",id="A8JDLXFEL42ESGTYW4AJ"
setCamera ->
errorCode=1,returnStatus=0x0
```



12. RENAME

- Press RENAME to change the name of a listed camera.
  ※This time the 4 last digits of the MAC address will be added to the camera's name.
- Press RELOAD and SET again.


AB 15:12
HVC-C2W Sample
☐ Show
SIGNUP
LOGIN
LOGOUT
☐ Show
CONNECT
RELOAD
SET
RENAME
EXECUTE
REGISTER
DELETE

email koji_kojima@omron.co.jp

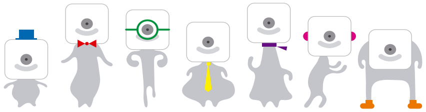
Password •••••••••

Network Name HWD11_D02DB312A6B8

Password •••••••••••••••

Camera HVC-C2W_95BF

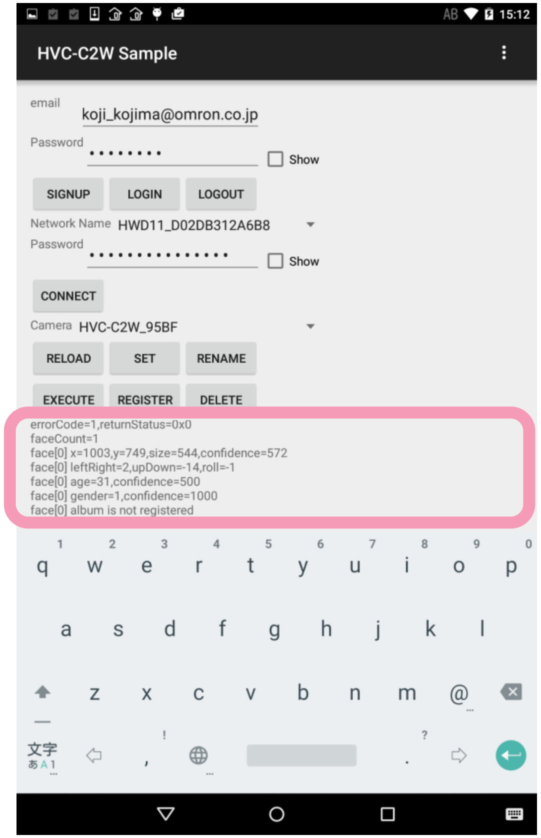
```
rename ->
response=W2C00000(success)
getCameraList ->
response=W2C00000(success)
camera[0] name="HVC-C2W_95BF",id="A8JDLXFEL42ESGTYW4AJ"
setCamera ->
errorCode=1,returnStatus=0x0
```



13. EXECUTE (before Face Recognition registration)

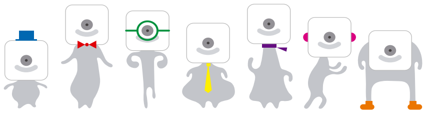
- Press EXECUTE to execute Face Detection, Face Direction Estimation, Age Estimation, Gender Estimation or Face Recognition.

  “album is not registered” will be displayed if there is no registered data in the Album.


15:12
HVC-C2W Sample
Show
SIGNUP
LOGIN
LOGOUT
Show
CONNECT
RELOAD
SET
RENAME
EXECUTE
REGISTER
DELETE

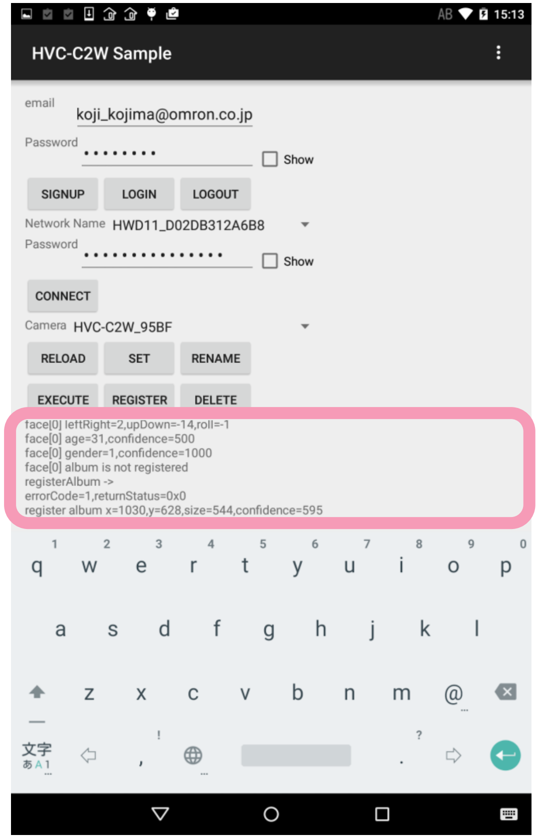
email koji_kojima@omron.co.jp
Password ••••••••
Network Name HWD11_D02DB312A6B8
Password •••••••••••••••
Camera HVC-C2W_95BF

```
errorCode=1,returnStatus=0x0
faceCount=1
face[0] x=1003,y=749,size=544,confidence=572
face[0] leftRight=2,upDown=-14,roll=-1
face[0] age=31,confidence=500
face[0] gender=1,confidence=1000
face[0] album is not registered
```



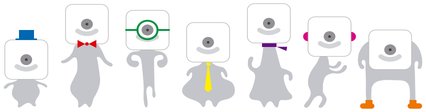
14. REGISTER

- Press REGISTER to register data in the Album.
  Registration is possible if only 1 person is displayed in the camera.
  Registration will fail if 0 or 2 or mode people are displayed.


AB 15:13
HVC-C2W Sample
Show
SIGNUP
LOGIN
LOGOUT
Show
CONNECT
RELOAD
SET
RENAME
EXECUTE
REGISTER
DELETE
1 2 3 4 5 6 7 8 9 0
q w e r t y u i o p
a s d f g h j k l
z x c v b n m @
文字 あA1 , ! ? .

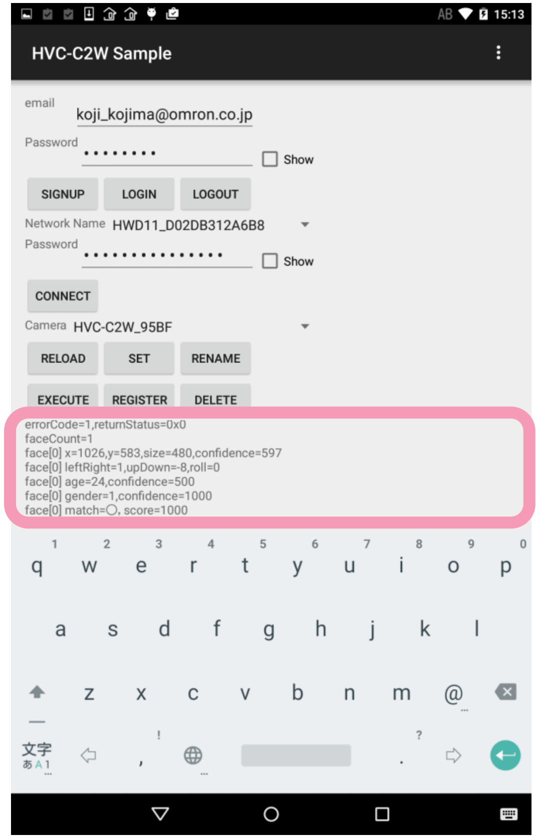
email koji_kojima@omron.co.jp
Password ••••••••
Network Name HWD11_D02DB312A6B8
Password ••••••••••••••••
Camera HVC-C2W_95BF

```
face[0] leftRight=2,upDown=-14,roll=-1
face[0] age=31,confidence=500
face[0] gender=1,confidence=1000
face[0] album is not registered
registerAlbum ->
errorCode=1,returnStatus=0x0
register album x=1030,y=628,size=544,confidence=595
```



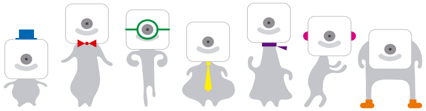
15. EXECUTE (after Face Recognition registration)

- Once REGISTER is completed, press EXECUTE to output the face recognition result.


15:13
HVC-C2W Sample
SIGNUP
LOGIN
LOGOUT
CONNECT
RELOAD
SET
RENAME
EXECUTE
REGISTER
DELETE

email koji_kojima@omron.co.jp
Password •••••••• ☐ Show
Network Name HWD11_D02DB312A6B8
Password ••••••••••••••• ☐ Show
Camera HVC-C2W_95BF

```
errorCode=1,returnStatus=0x0
faceCount=1
face[0] x=1026,y=583,size=480,confidence=597
face[0] leftRight=1,upDown=-8,roll=0
face[0] age=24,confidence=500
face[0] gender=1,confidence=1000
face[0] match=○, score=1000
```



Revision History

Date	Rev.	Contents	Created by	Reviewed by	Approved by
2015/12/29	A	First release	K. Tanaka	S. Manabe	O. Matsutake
2016/02/18	B	Added copy SDK procedure	K. Tanaka	S. Manabe	O. Matsutake