1. ATOS IT Challenge 2016

Idea Name: I'm

Idea Description:

The submitted demonstrator for "I'm" contains a server component designed as a merchant plug-ins and an app designed to run on a client's Android to be used in combination to demonstrate the I'm vision, which is a lot bigger than what could be implemented for the IT challenge.

I'm will help merchants implement personal data management fully in line with the new EU General Data Protection Regulation (GDPR) by shifting master data management completely to the client's smart device. The merchant gains access to all relevant personal client data via a plug-in on his web presence, which ensures that all legal and personal constraints on the data are fully observed while he will receive the freshest and most complete data the client is willing to release. All data contains transactional references to certify the purpose and self expires when no longer needed (demonstrated by data expiration timers).

The I'm app will allow the client to maintain personal data relating to distinct aspects such as food, music, clothing preferences, dislikes or allergies, loyalty programs or clubs but with the ability to manage carefully which merchant or service provider gets to see which aspect, for which activity and for how long (demonstrator only has a fixed set of attributes and merchant/client rule sets and matching logic are not included).

Team Name: Raon

Team Members: Na Young An, JiSoo Yoon, MinJeong Yoo, EunBin Lee

Technical material:

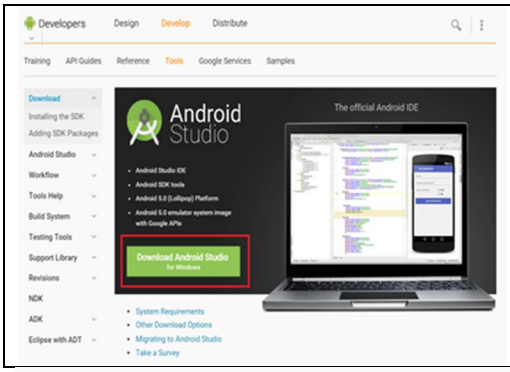
1. Source code ready to be compiled: If the code does not compile, the app won't be evaluated.

2. How to build app: script and documentation to build the app (e.g. ant, maven…)

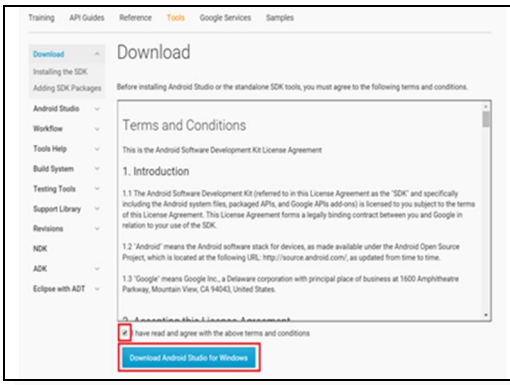
2.1Windows

- Microsoft® Windows® 8/7/Vista/2003 (32 or 64-bit)
- 2 GB RAM minimum, 4 GB RAM recommended
- 400 MB hard disk space
- At least 1 GB for Android SDK, emulator system images, and caches
- 1280 x 800 minimum screen resolution
- Java Development Kit (JDK) 7
- Optional for accelerated emulator: Intel® processor with support for Intel® VT-x, Intel® EM64T (Intel® 64), and Execute Disable (XD) Bit functionality

2.2 Installation Progress of Android Studio to build mobile application.

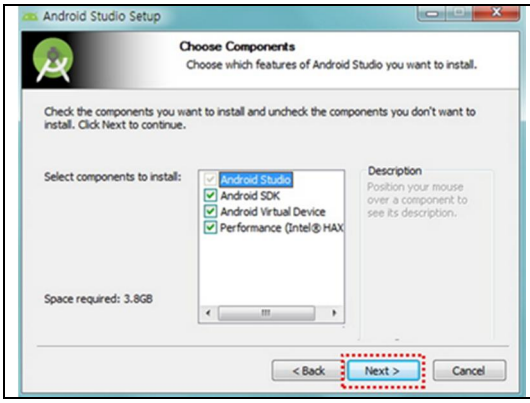


Go to http://developer.android.com/sdk/index..htmlURL and download Android Studio.

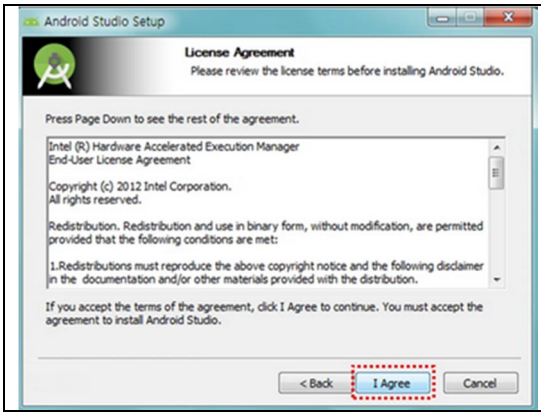


Agree on Terms and Conditions and start downloading Android Studio.

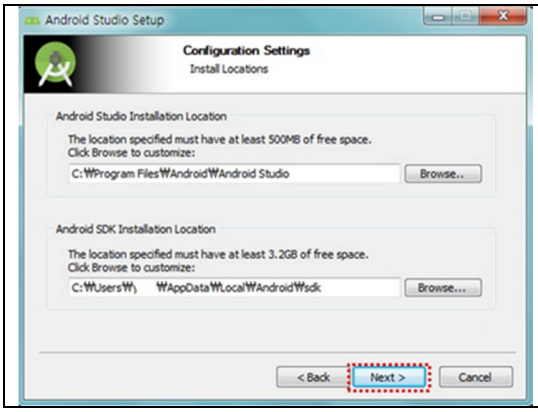
Click "Next".



Check every component and click "Next".



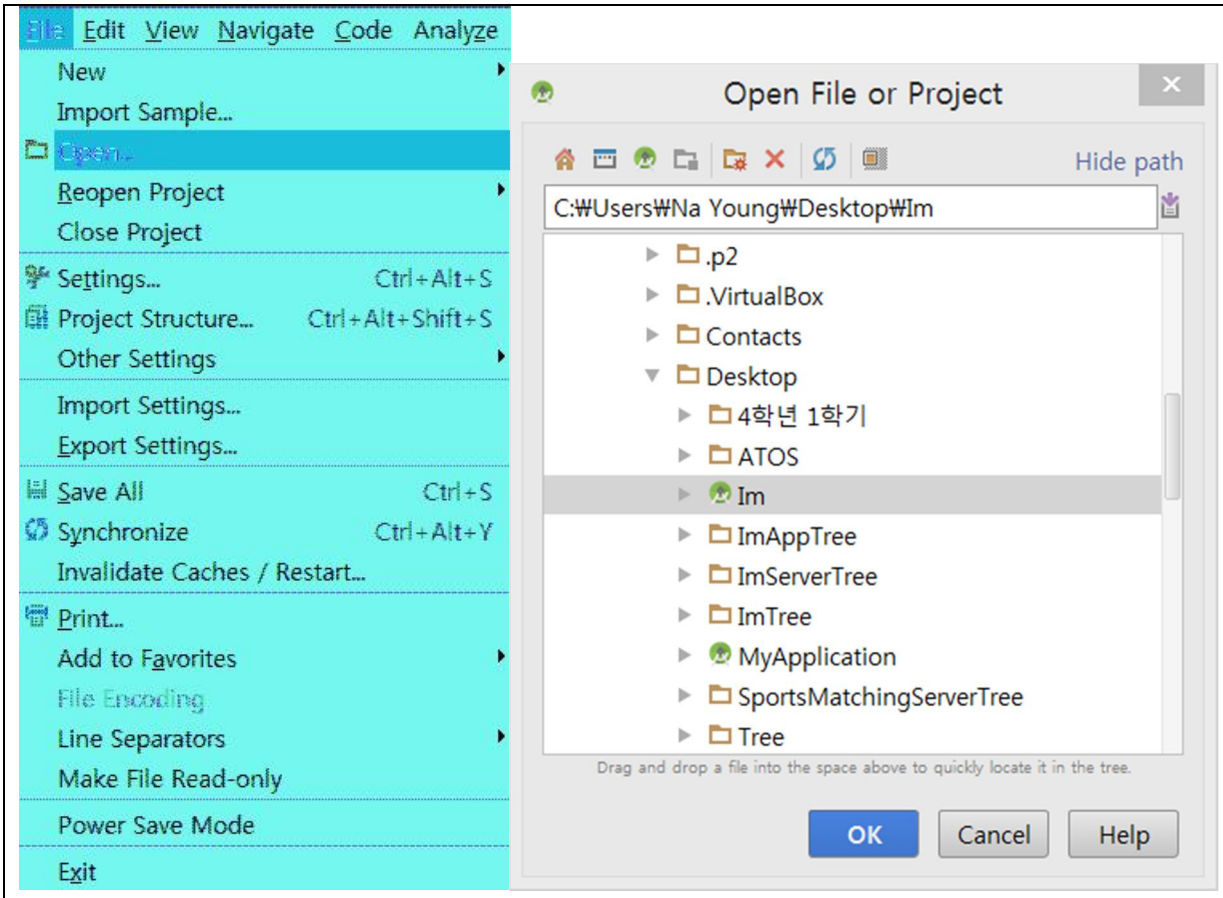
Click "I Agree" to proceed.



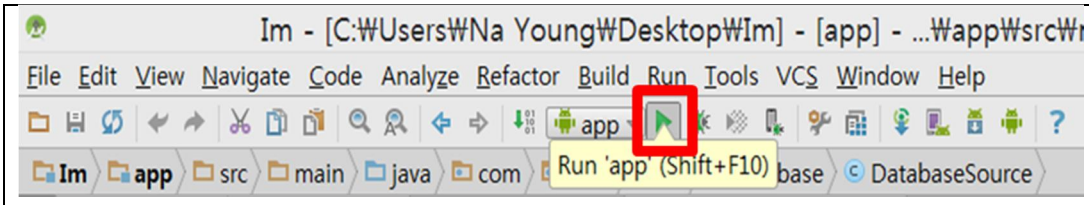
Set the Android Studio installation location and click "Next".

Click "Install" to finish installation of Android Studio.

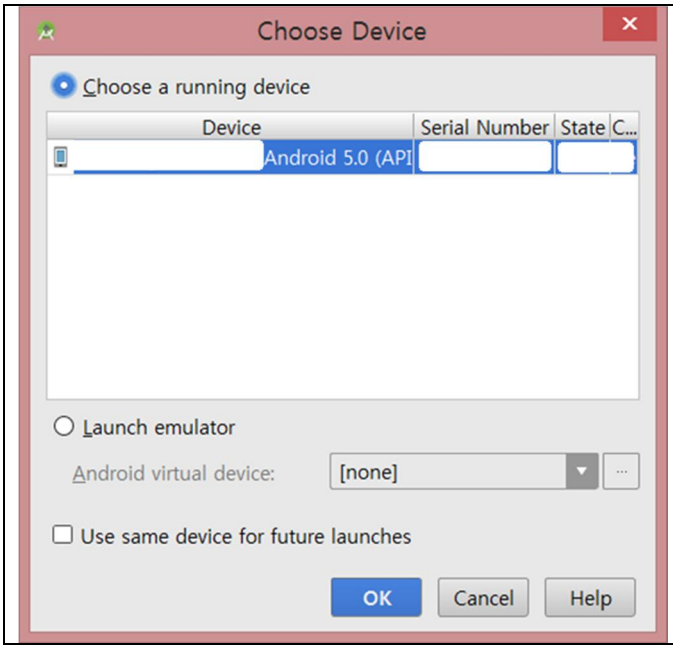
Start Android Studio and load project "Im".



Select “File” on the top right part of the window, and then click “Open” to find Project name “Im”.



Click Run button to start building application.



"Choose Device" dialog pops up. Choose the device you want to run the application and click "OK". If you want to run the application on emulator, check "Launch emulator" radio button and click "OK" to finish Application.

2.3 Installing Tomcat on Ubuntu Server

```
~ sudo groupadd tomcat
```
Create Tomcat group.

```
~ sudo useradd -s /bin/false -g tomcat -d /opt/tomcat tomcat
```
Create Tomcat user.

```
~ wget http://mirror.navercorp.com/apache/tomcat/tomcat-8/v8.0.33/bin/apache-tomcat-8.0.33.tar.gz
```
Get Tomcat archive.

```
~ sudo mkdir /opt/tomcat
```
Create a folder/directory to install Tomcat.

```
~ sudo tar xvf apache-tomcat-8*tar.gz -C /opt/tomcat --strip-components=1
```
Unzip the archive to the directory created above.

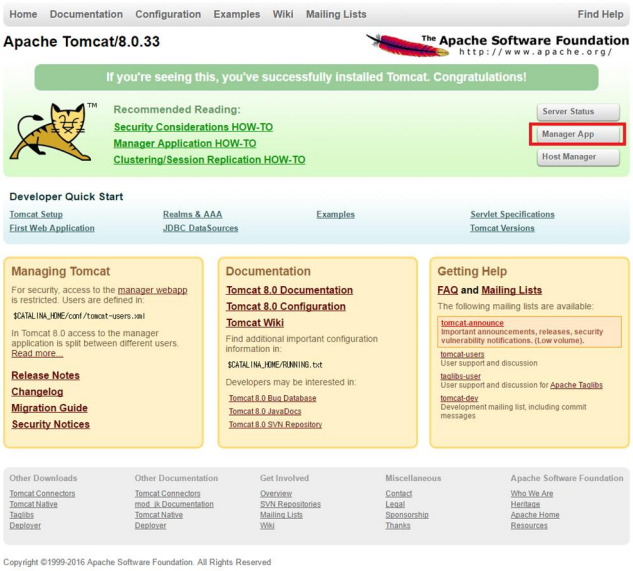
```
sudo vi /etc/init/tomcat.conf
```
Write Tomcat upstart script.

```
sudo initctl reload-configuration
```
Reload the upstart script.

```
sudo initctl start tomcat
```

Start Tomcat.

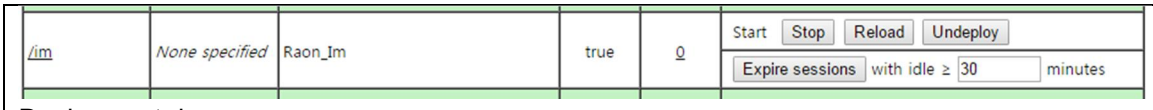
2.4 Deployment



Go to Tomcat management page and select Manager App.

Select the WAR file to deploy

Click “Deploy”



Deployment done.

3. Application ready to test: .apk or .ipa via App Garden

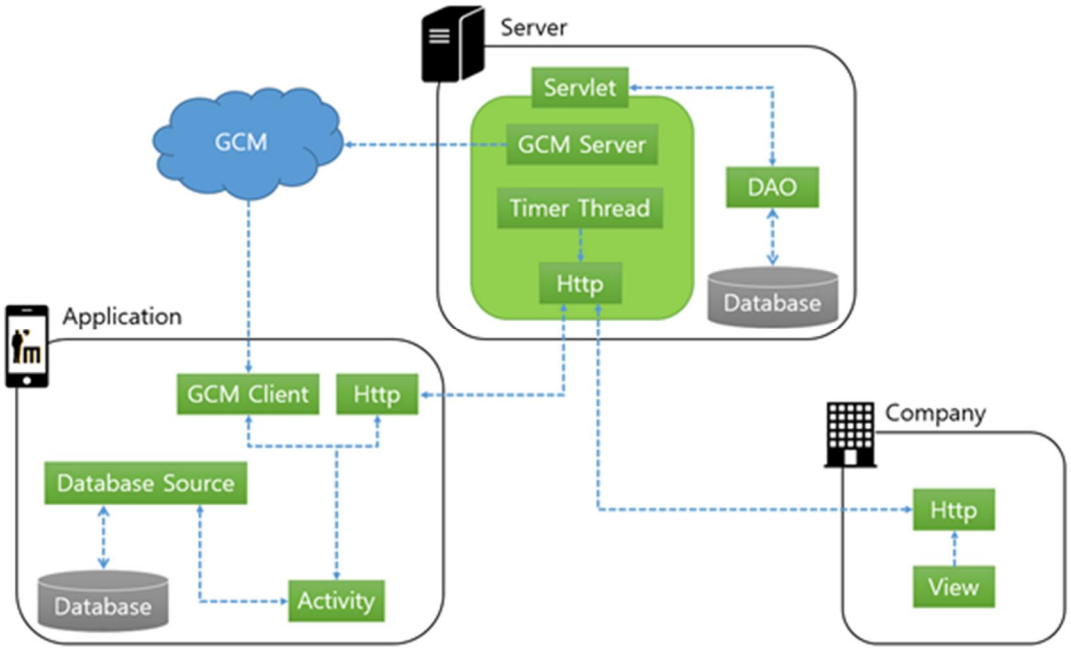
4. Platforms: What platforms the app is addressed to

I'm can be operated on any Android Phone whose version is Android 5.0(API 21) and above. The target is API 23)

5. Devices supported: Which are the model of devices supported . They can be exact models or families (e.g: Samsung Galaxy Tab 2, OS 6.1 or superior)

Samsung Galaxy Note 3, Samsung Galaxy Note 4, Samsung Galaxy Note 5, Android 5.0 version and above.

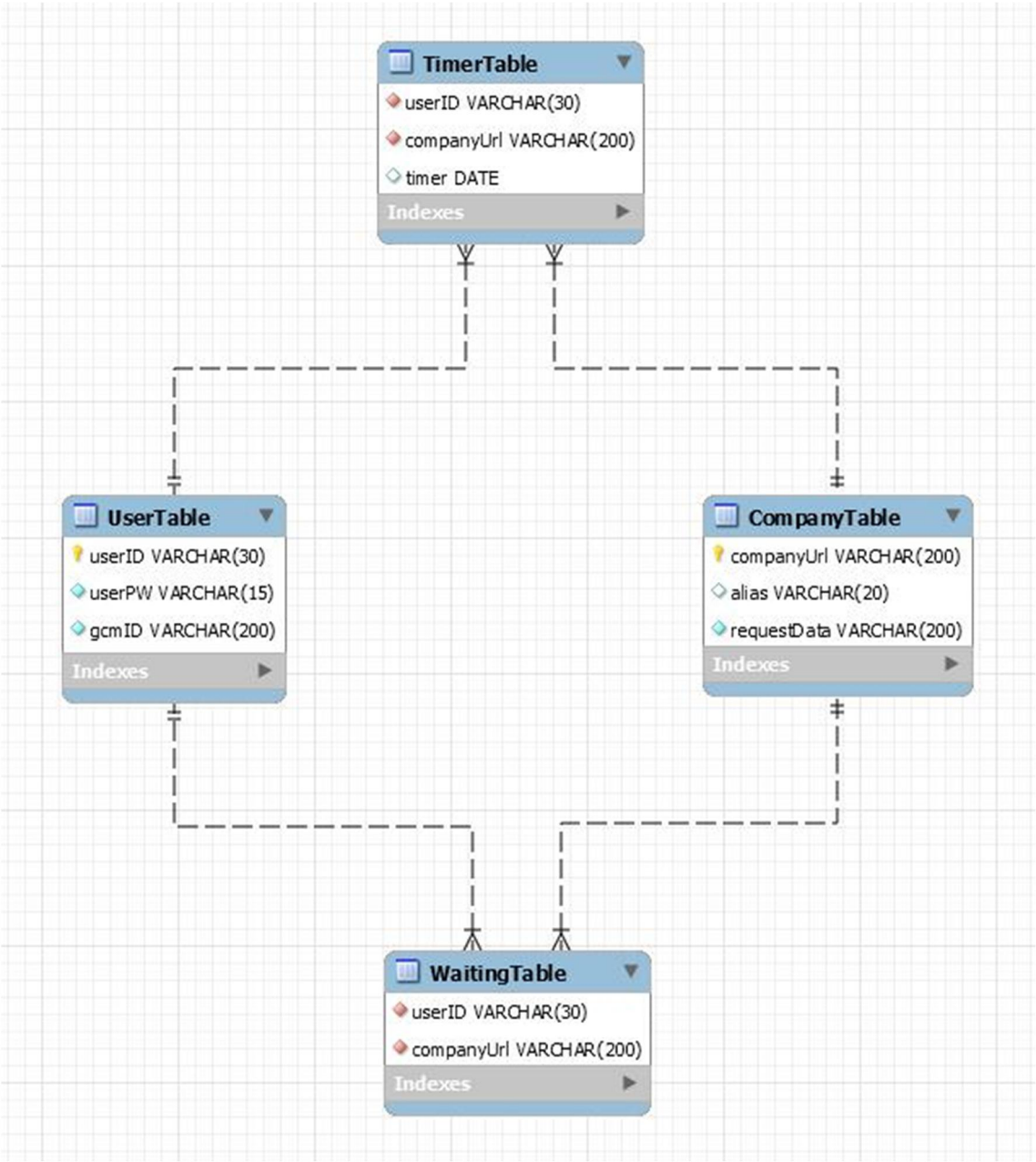
6. Architecture vision: Short description of the application architecture describing all the elements involved



6.1 Three components of I'm

The structure of I'm is composed of Application, Server, and Company. The Application is the part which directly reacts with the user's demand. The user is provided with the service which can store and manage one's own personal data. The Server acts as a bridge between the Application and the Company. The Server stores not only user's I'm ID, GCM ID at database, but the URL of the company and required data field from the company also. Moreover, the companies which the user accepted on offering his personal data use Timer to offer the user the service to manage and track the personal data through the Application.

6.2 Server Database



- UserTable : Stores Application user's I'm ID and GCM ID. Server uses these data to send Push alarms.

- CompanyTable : When a company requires personal data to user, this table stores the URL, name, and the required data fields of the company. Through CompanyTable and TimerTable, user can find out the company list and the list of personal data which he provides.

- WaitingTable : When a company requires personal information, the URL of the company and the ID of the user are stored. Through CompanyTable and WaitingTable, user can notice what company wants his information, and what kinds of data fields the company requires. These data are decided to be registered on TimerTable or deleted through the decision the user makes – accept or denial.

- TimerTable : User's ID, company's URL, and Timer are stored only if the user agrees on offering personal information. The Timer is set 30 days as default, but could be changed from the Application. While the Timer maintains, the company can use the information of the user, but if time outs, the offering personal data period expires.

7. Uses cases: Description of the principal use cases

7.1 Company

7.1.1 Register with I'm

- User register through I'm.

- I'm ID, URL of the company(return URL), and the required data fields are sent to I'm Server.

7.2 I'm Server

7.2.1 Get the user's information from th Application.

- Store I'm ID and GCM ID.

7.2.2 Request of personal data from Company

- Send accept/deny request to Application

- Notify the company through sending the result to return URL

7.2.3 Modification of personal information

- If a user modifies the personal data, the updated data is sent to every company which the user accepted on offering his data.

7.2.4 Timer

- Send the alarm to Application a week before the expiration.

- If the user extends the timer, the server stores extended time.

- If the user does not extend until the expiration date, timer expires.

- If the timer is expired, notify the company through URL

7.2.5 Request for list of provision of information decision making

- Send the list of the companies which requested the accept/denial of personal data to Application

7.2.6 Request of list of the company of information provision

- Send the list of the companies which the user accepted on providing personal data to Application.

7.3 Android Application

7.3.1 Register for I'm Server

- Enter email to send authentication code.

- Complete sign-up form.

- Sign up stage done.

7.3.2 Complete Personal Data Form

- Click "MODIFY" button to update personal data.

- Complete personal data form.

- Click "CONFIRM" button to store data.

7.3.3 Register for Company Service

- Click "Sign up through I'm" at Sign-up window

- Data offer agreement dialog pops up at user's mobile phone

- Click "Yes" to start "I'm" application.(If "No", dialog closes without any other operation.)

- After verifying the company and the data required on "Permission" tab, check the radio button to agree/disagree on sending those data to the company

- During particular period(basically 30 days, but user can reset the period up to 1 year)

7.3.4 Time Out

- If only 7days left, dialog pops up with GCM alarm.

- Click "Yes" to start "I'm" application.(If "No", dialog closes without any other operation.

- Verify the company on "Company" tab and reset the timer.(if not reset, the company can no longer use personal data)

7.3.5 Personal Data Management

-There are four tabs in the application for data management

- You can update your personal data on “Personal Data” tab

- You can check out the company list you agreed to provide your data, and the fields the companies required, such as name, birthday, phone number, address

- There are the list of expired dates of timers on “Company List” tab with the companies’ names. You can reset the timer if you click the date.

- On “Permission” tab, there is the list of companies which are not accepted yet.

- You can check the radio button to accept/reject personal data offer after checking the company and the data field required on “Permission Tab”.

- On “Option” Tab, There are other functions you can use while executing I’m application.

- You can change application lock password by clicking the menu named “Change Password”.

- You can log out by simply clicking the menu named “Logout”.

7.3.6 Auto Login

- If you check the checkbox named “Auto Login” on Login Activity, you don’t need to log in every time you start the application.

8. Does the app use any external API?. If yes, which one?

8.1 Android Application

- jxl.jar is used to read country list in Excel spreadsheet form.

- mail.jar is Java Mail API is used to send authentication mail from I’m to user when user's in process of signing up

- activation.jar is used to provide text data consistency in forms.

- additionnal.jar is open source library used for mail.jar for dependency.8.2 Server

8.2 Server

- gcm-server.jar is API for using Google GCM Server.

9. Does the app use any open source library? If yes, which one?

9.1 Server

- MySQL Connector/J is used to control database through Java in I'm Server.

- Apache HttpComponents is used for Http Communication between I'm Server and virtual company.

- JSON.simple is used for JSON formatting between I'm Server and virtual company.

- Bootstrap is used to make front-end(web page) of virtual company.

10. Data for testing: e.g. user/password necessary to use the app or any other relevant data

10.1 Android Application

- List of 193 country names arranged from A to Z.

10.2 Server

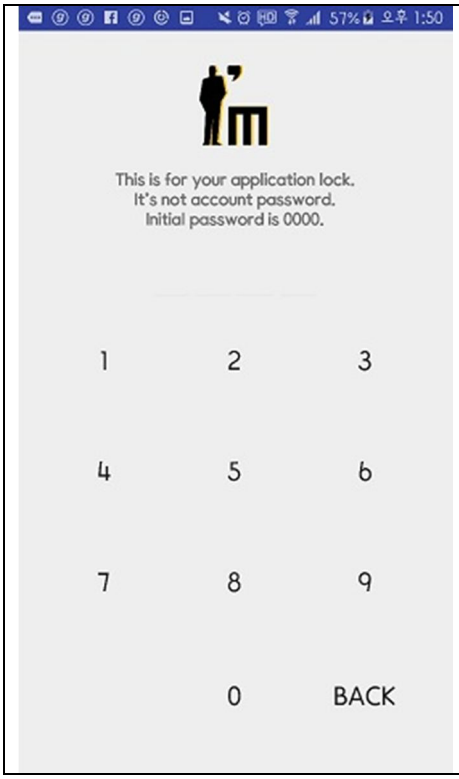
- Query to create I'm Server database table

- Server/Tomcat v8.0 Server at localhost-config/context.xml to set resource for using connection pool.

11. Media material

11.1 Screenshots

11.1.1 Android application

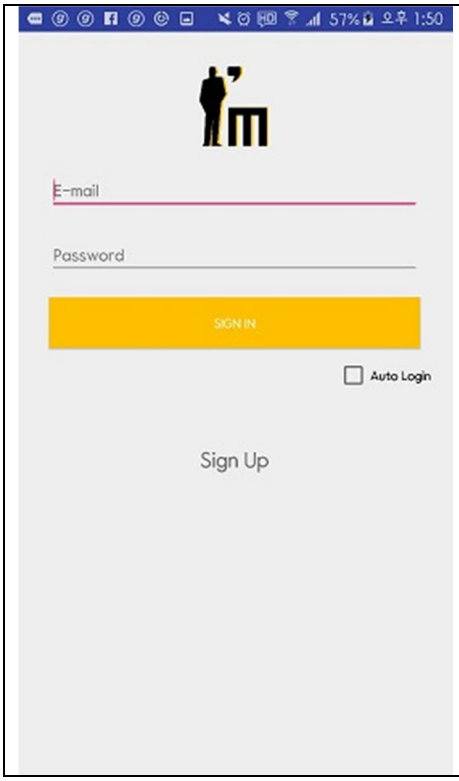


As the Application starts, the user needs to unlock the Application lock, which is not I'm account password.

This lock is just for the application.

The initial password is '0000'.

If you change the password, the changed password is set.

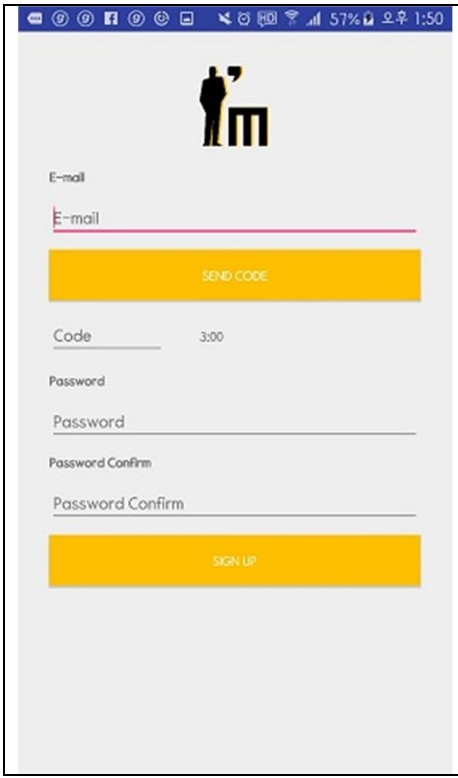


This is the “Login” page.

The user can sign in by writing I’m account e-mail and I’m account Password and clicking “Sign In” button.

Also, If the user checks the “Auto Login” checkbox, the user does not need to write the e-mail and password every time he starts the Application

If the user is newcomer, he could click the “Sign Up” text to go to “Sign Up” page



This is the “Sign Up” page.

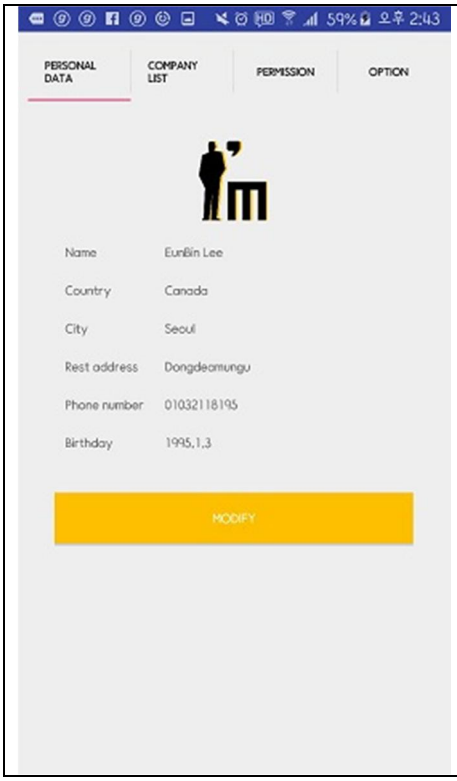
The user writes down his e-mail which he will use as the I’m account e-mail.

If the user clicks “Send Code” button, the authentication code is sent to the e-mail he wrote above.

The user needs to fill the code before 3 minutes or the application alerts the user to send another code.

After authentication, he can write his password and he needs to confirm the password.

※ Sign Up can be done for one time only.
If done once more, the database is deleted, so the user cannot use it any more.

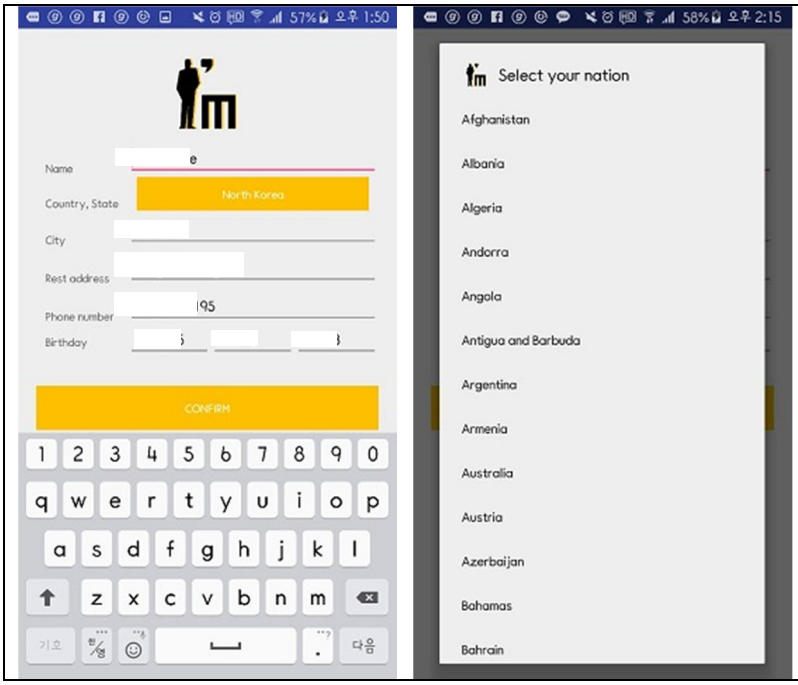


This is the main page of the Application, where the user can check his data stored in the Application.

This page is the first page of the four tab pages, which are “Personal Data” tab, “Company List” tab, “Permission” tab, “Option” tab.

The data fields are name, country, city, address, phone number, and birthday.

The user can go to data modification page by clicking “Modify” button.



This is the data modification page where the user can update his personal information.

For the country, the user does not need to write down. He only need to click the country form the list.

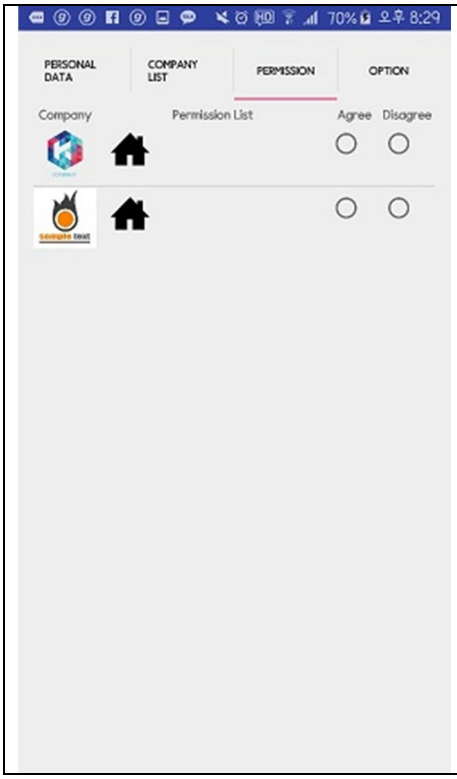
This page is the second page of the tab, the "Company List" page.

This page shows the list of the companies the user is having interaction with, the list of the information fields which each company requires, and the timer.

For example the first company on the left requires the user's name, address, and phone number.

The last column shows the expiration dates, which let him know the expiration date of the personal information to stay at the companies' database.

If the user clicks the date, his can change the expiration date.

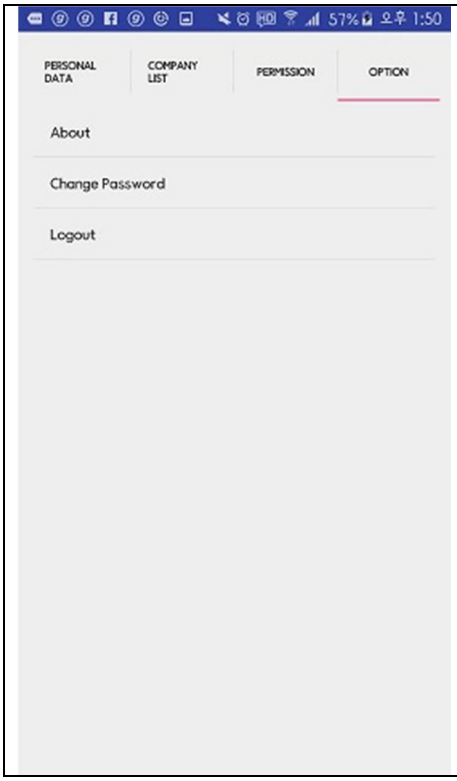


This is the third tab, the "Permission" tab.

The user can see the list of the companies which are not yet accepted on using the user's personal data.

He could check whether to agree or disagree on providing them his information.

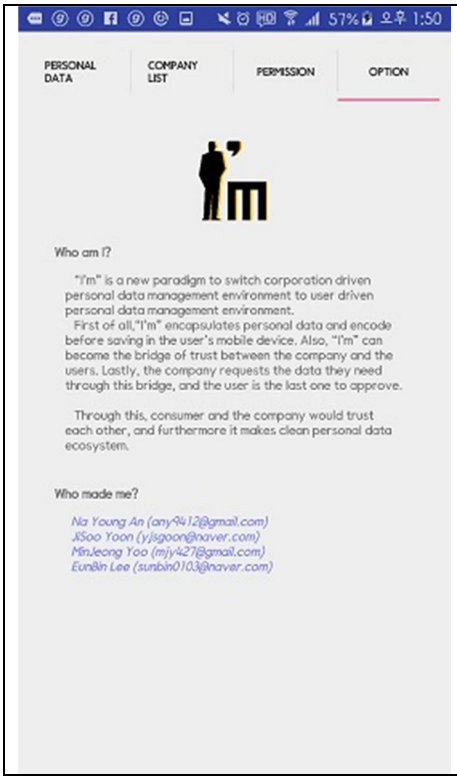
The information he needs to offer them are shown at the second column, named "Permission List".



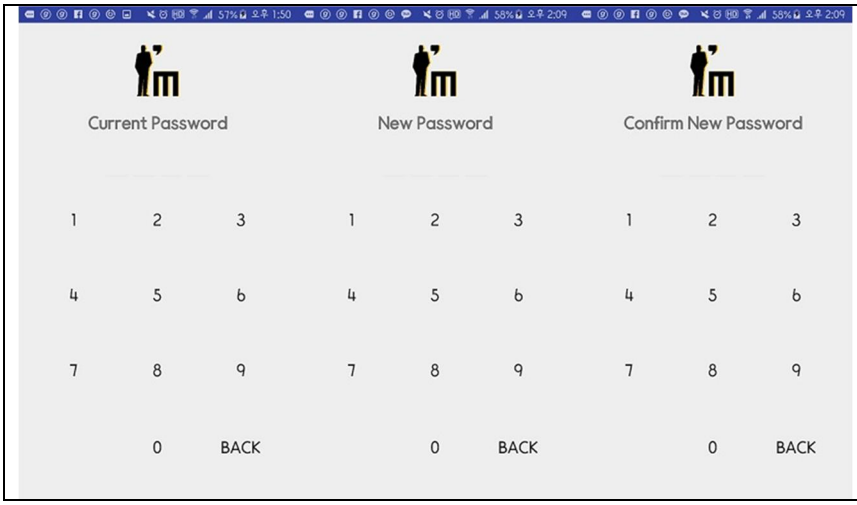
This is the last page of the tab, the "Option" tab.

This is the page where the user can set the extra functions of the Application.

There are three functions – About, Change Password, Logout



This is the About page where the user can find about the Application and the developer information.

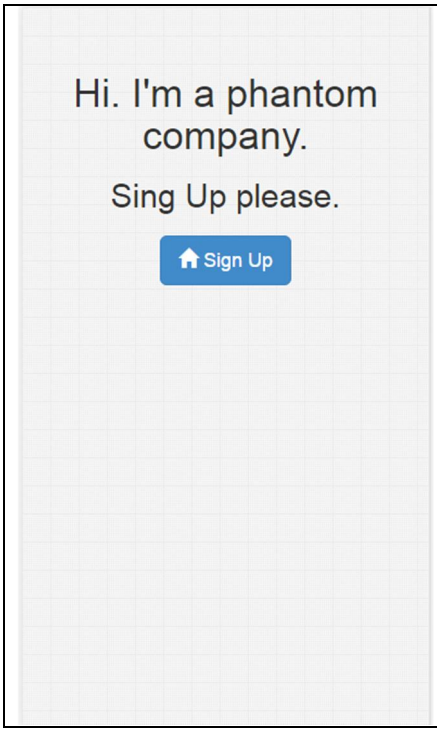


This is the pages for change password function.

First the user needs to write down his current password, and then the password which he wants to change, and for the last, confirming the new password.

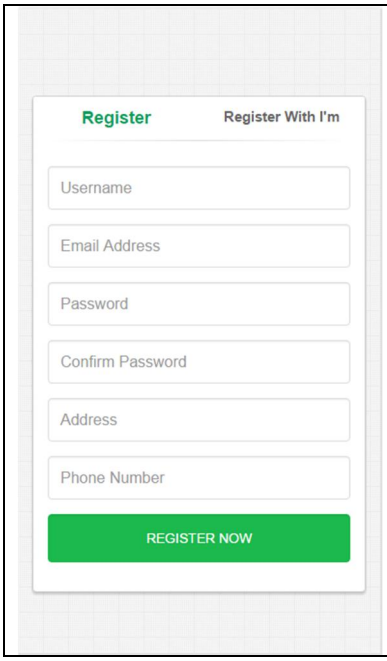
11.1.2 Virtual Company

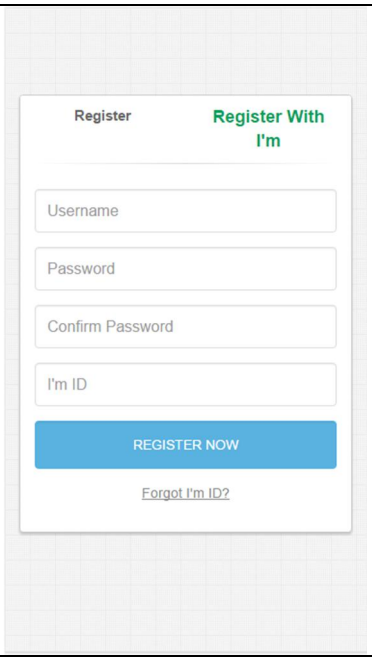
Company domain name : http://220.149.236.22:8080/mock/index.html



Main page of virtual company.

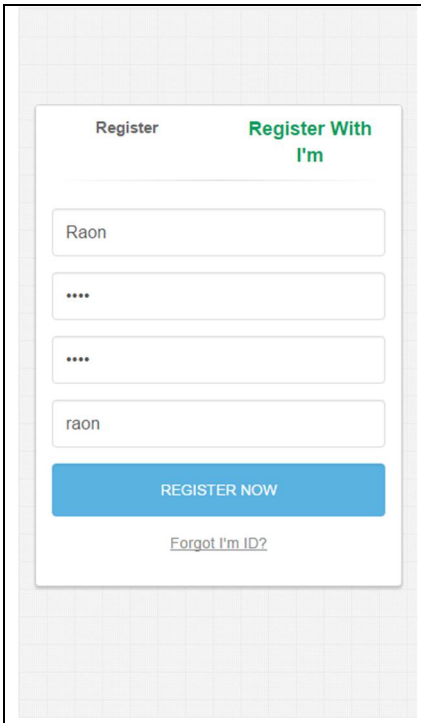
We only implemented "Sin Up" button. If you click "Sign Up" button, the page goes to http://220.149.236.22:8080/mock/SignUp.html.





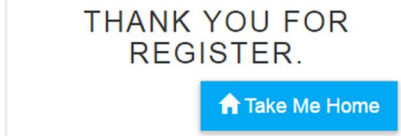
There are two tabs, "Register" for original register process, and "Register With I'm".

Select “Register With I’m”.



The user needs only three components - name, password, and I'm ID to finish register process.

If you click "REGISTER NOW", the page goes to http://220.149.236.22:8080/mock/register_complete.html.



Sign up with I’m finishes.