ANDROID
ADVANCE TOPIC PRESENTATION

GOOGLE SOCIAL NETWORK

BY: Vedant Parikh
N12058928
NYU Polytechnic School of Engineering

Why do you need Google Plus integration in your application?

It's generally tedious and boring to create a new account in an application that requires login information. The first thought that comes to mind of people is "Oh no! One more Username and Password to remember!" Sometimes, User might prefer to search for an alternate application with same functionality rather than going through the pain of creating a new account for that particular application.

AVOID ANOTHER REGISTRATION

Login with Google Plus makes the life of people easier as you can simply login using your Google Plus account. It helps user to skip the registration forms and avoid having to remember the username and password.

USE EXISTING ACCOUNT

A major advantage of using the Google Plus login is that most of android users have their Google Plus account. So it's easier for them to use their current account rather than creating the new account.

SECURE AUTHENTICATION PROCESS

Also, it can be tricky and difficult for naïve android developers to create their personal authentication process. With Google Plus login, It gets simple as it offer its own two step verification process and keeps your account more secure.

COLLABORATION

It also offers the collaboration i.e. even if your existing account is linked with other social network, you will still be able to login using your Google plus account and collaborate it with your existing account.

GET TO KNOW YOUR APPLICATION USERS

The basic Sign in gives you the access to the basic profile information of the user and the list of their circles. This helps the developer or admin to get the basic information of their application users.

IDENTITY CHOICE

Some users might have more than one Google Plus account, for example a personal account and a professional account. So Signing in with Google Plus gives you an advantage to select your identity i.e. which account you want to select for your application.

CROSS PLATFORM USAGE

Google Plus provides login feature to the same application in different platforms, i.e. Android, Windows, Web or iOS. As long as both the application in different platform is registered in same Google Developer Console project, it works perfectly.

INCREMENTAL AUTHORIZATION

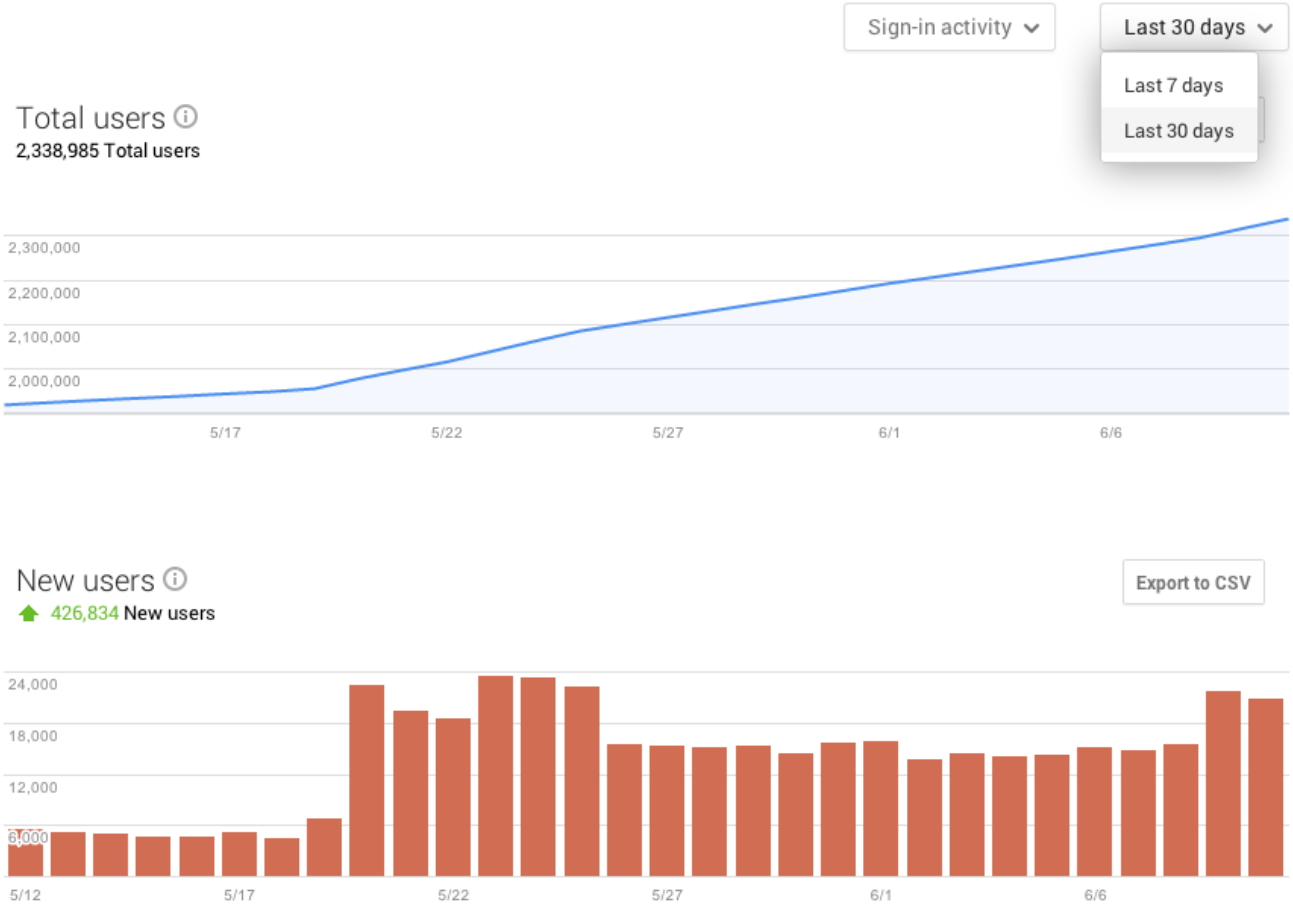
One important feature of Google Plus login is the incremental authorization. It only ask for the permissions when needed. For example, your application has feature of storing a generated pdf file or an image to Google drive. So when you first sign into your application, it will ask you for permissions regarding the basic profile information and later on, as soon as you are generate an output, it will ask you permission for Google Drive.

PLATFORM INSIGHTS

Google Plus provides you with the details about the usage of Google+ integration using *Google+ platform insights*. It provides you with the information such as how many people have logged into your application by day, week and month. It also provides you the number of active users. It helps you understand the Google+ integration in your application.
To enable *Google+ platform insights*, follow the steps mentioned in the below url:

https://support.google.com/business/answer/6001247?rd=1

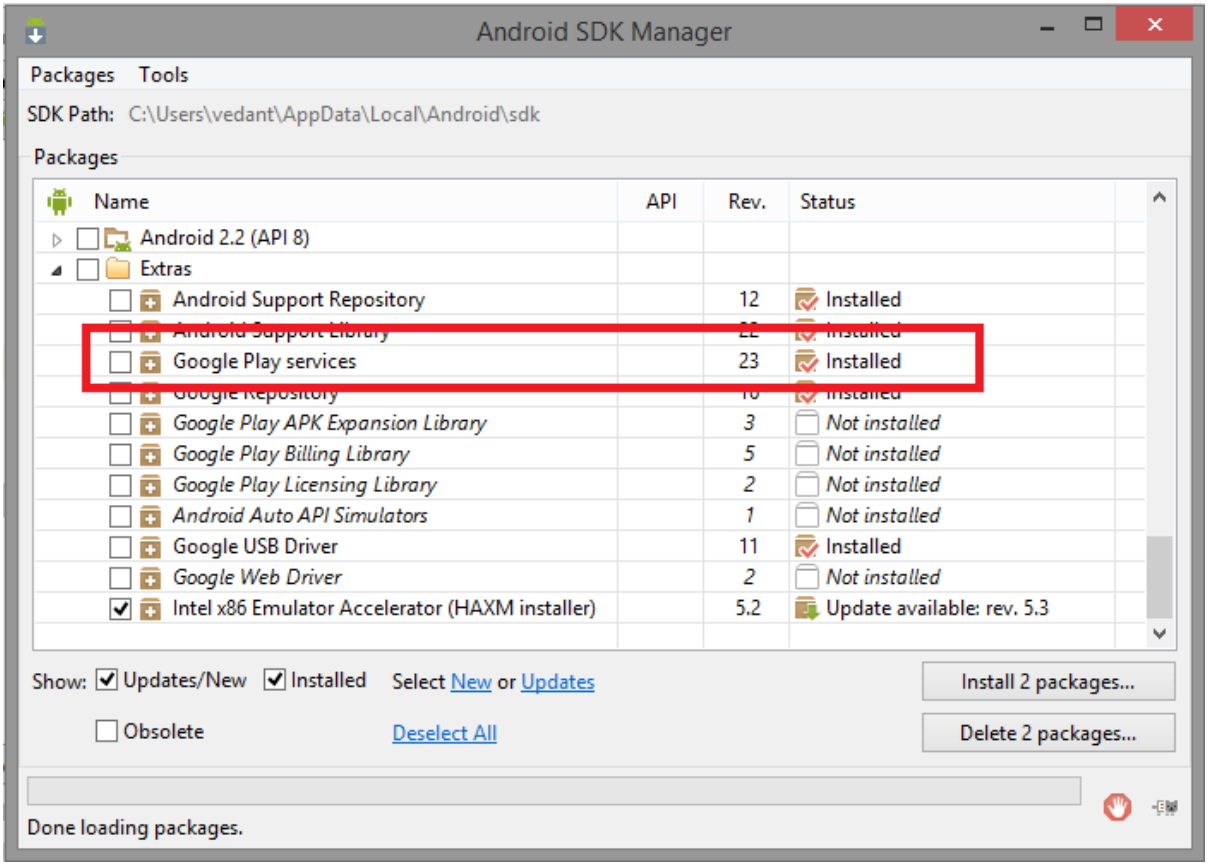
A view of the Platform Insight:



HOW TO GET STARTED

Some of the Requirements before Getting started is as follows:-

- You will need a compatible android device that runs android 2.3 and higher for developing and testing or You need to have an emulator with AVD that runs Google API based on Android 4.2.2 or higher
- Your project should be Compiled against android 2.3 or Higher.
- You need the latest update of Android SDK
- Install Google Play Service SDK. Here is an Image Attached to show you how to install Google Play service SDK.

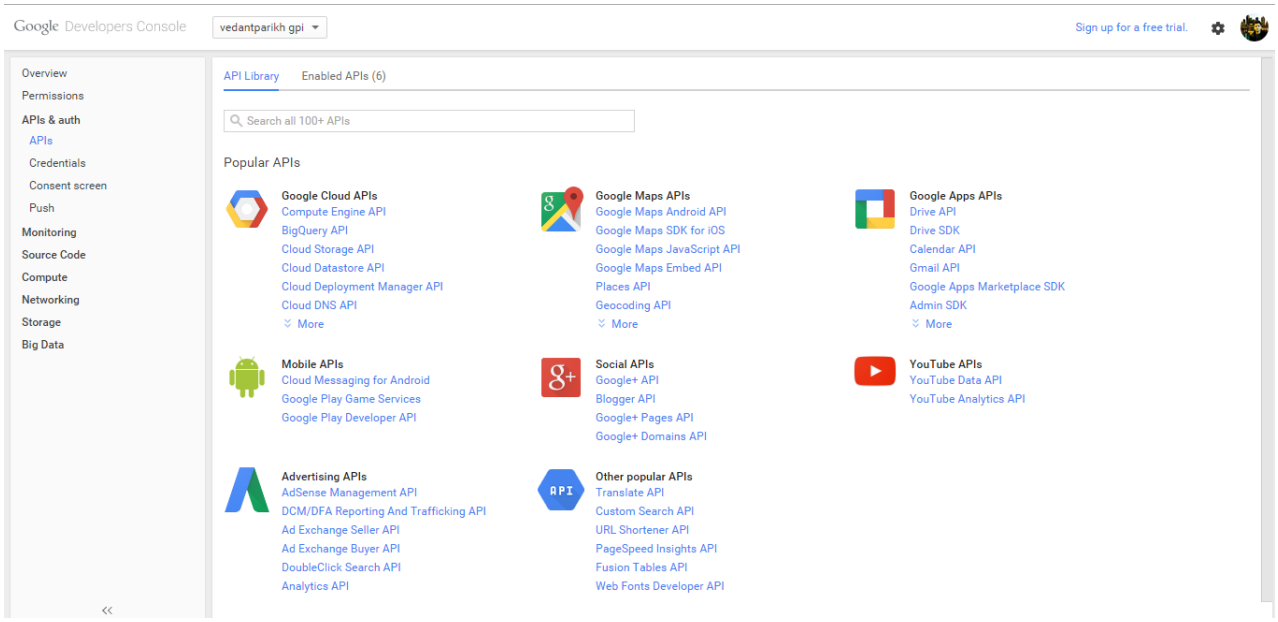


To Begin:

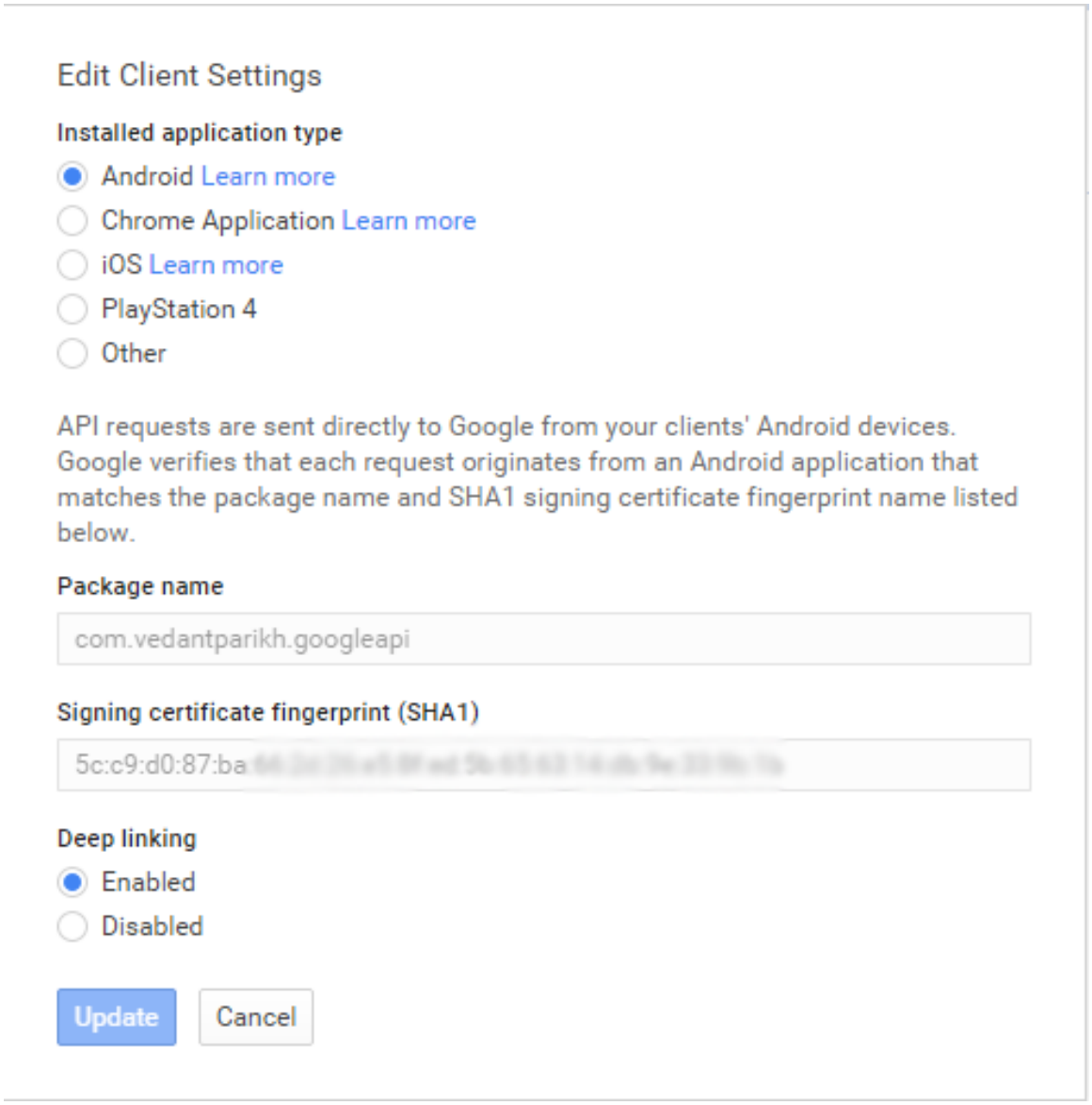
Before you start coding Google+ integration in your Application, You need to enable the Google+ API.

Steps to enable Google+ API is shown below:

- Go to the *Google Developers Console*.
  URL: https://console.developers.google.com/project
- Create a new Project and Give a project ID to the Project. Project ID should be unique worldwide so I would recommend to go with the project ID created by the console.
- After creating the Project, go to the APIs & auth in the left sidebar, Search for the ***Google+ API*** and set its status to ON. As you can see in the below image, U can find API of many different services provided by Google. Just enable the API and you can use it in your application.



- After Enabling the Google+ API, Go to the Credentials in the left Side Bar.
- You will have to create a Client ID. Select *Installed Application* and then select *Android* as the installed application.
- Write down your application's package name into the package name field to enable your package.
- You will also need signing certificate fingerprint i.e. SHA1. You can get this by running keytool utility. Running keytool utility is bit tricky so I will elaborate it in detail further in this chapter.
- Once, the Client ID is created, you can start coding your application by using the registered package name. Below is the image of Creating Client ID tab.



Deep linking: It is basically used for interactive posts. Instead of simply launching the application, it consist of a URI which links to a specific location within the mobile application.

Keytool Utility:

Using keytool utility is a bit tricky. It has to be run in the terminal of your respective operating system and its format is different for different operating system.

For Mac or Linux, its format is:-

```
$ keytool -exportcert -alias androiddebugkey -keystore ~/.android/debug.keystore -
list -v
```

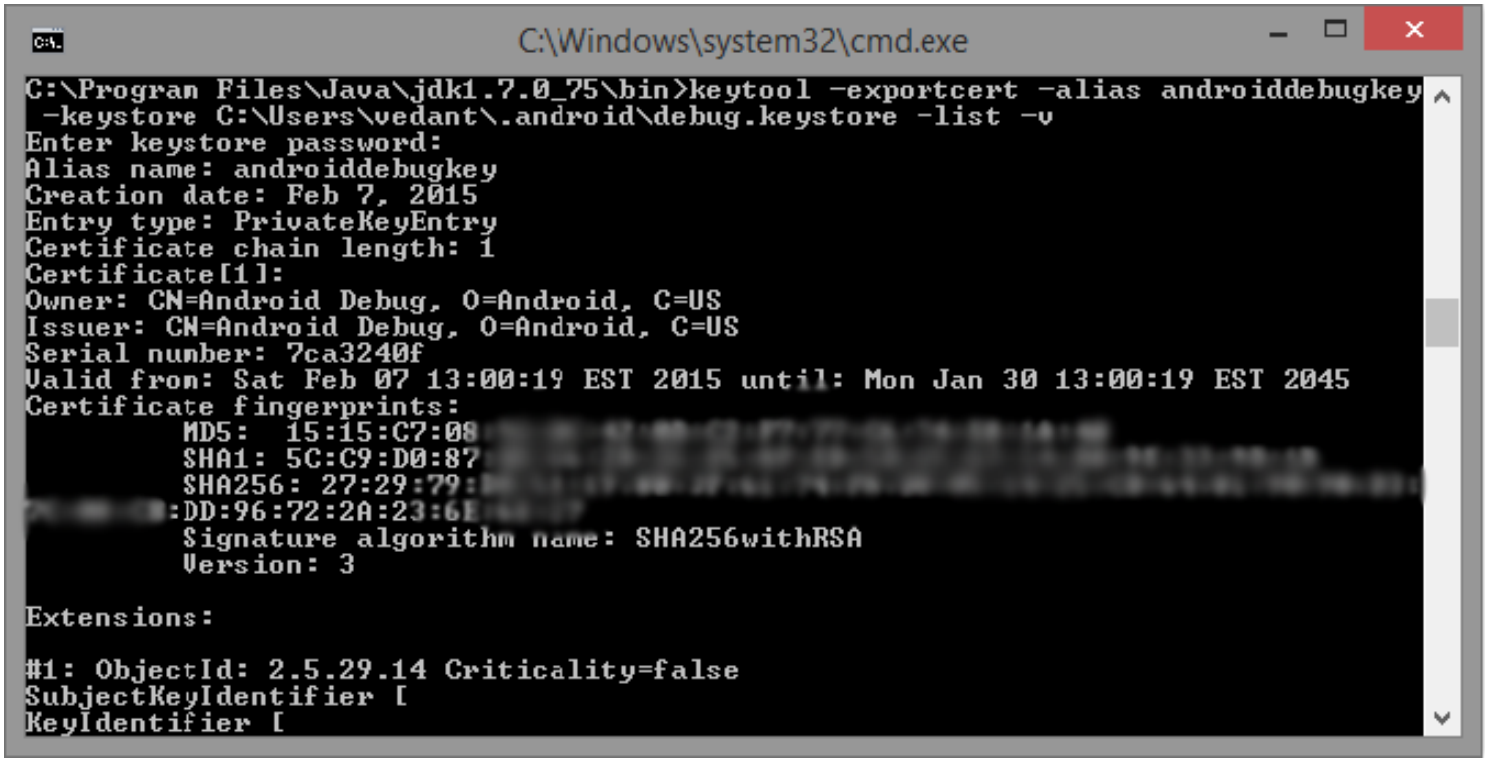
And for Windows, its format is:-

Before you begin, set the path of cmd to your environment variable.

```
keytool -exportcert -alias androiddebugkey -keystore
%USERPROFILE%\.android\debug.keystore -list -v
```

Where %USERPROFILE% = C:\<user name>\.android\debug.keystore. The default password for keytool is “android”

Below is the attached image of keytool utility in windows:



After running the Keytool utility, fetch the SHA1 fingerprint and use it to create the client ID.

Apart from Google+ Sign in, It also offers other services such as:

Share: User can share the content from their application including photos, Prefilled Post, status, URL attachments and location. This also includes sharing Interactive Posts and Deep linking.

Interactive Posts: They helps your friends take specific actions in the post. For example, somebody might share an event with you and you can click yes, no or maybe button to rsvp the event.

Prefilled post: Sometimes when you use an application, it might ask you to share something to your social network, it's called a prefilled post. For example, a game application might ask you to share your scores to your social network.

+1 Button: Use of +1 button can improve the Google ranking of your application. Everytime somebody hits +1 button, its ranking goes up and that will improve the search of your application.

Over the Air Installs: If you have an application and a website, by adding Google+ sign in button to your website can alert user to download their application to android device over the air. For your application to be eligible for over the air install, it should be published in google play store and it must be free and also, it must meet certain quality standards.

Profile Information: Upon Sign in, your application can retrieve the basic profile information of the user which includes profile picture, age, language, circles of the user and list of people in user's circle.

REFERENCES:

- **http://developers.google.com**
- **http://stackoverflow.com**
- **http://Wikipedia.org**
- **http://developer.android.com**