LOCALIZAÇÃO NO ANDROID

“Se você acha que educação é cara, experimente a ignorância.” (Derek Bok)

CONTEÚDO

- CONCEITOS BÁSICOS
- API KEY – GOOGLE MAPS
- PRIMEIRO MAPA
- CRIANDO UM PONTO GEOGRÁFICO
- USO DE LOCALIZAÇÃO

GOOGLE MAPS

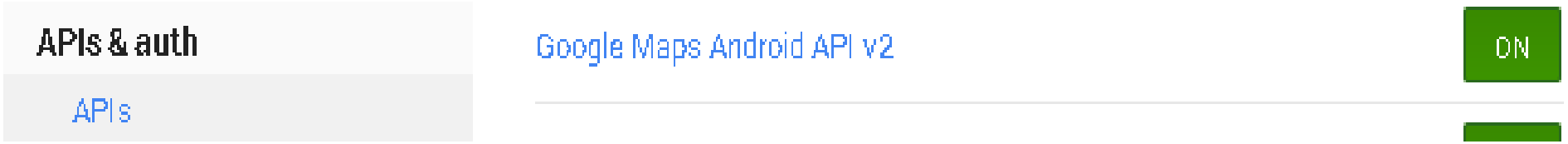
- Integração com Google Maps e uso do GPS
- Classe com.google.android.gms.maps.SupportMapFragment
- Não é padrão da plataforma
  - Adicionamos ao AndroidManifest.xml

Nome do pacote(encontrado no AndroidManifest.xml, tag package.

```
<permission
    android:name="br.edu.android.agendacontatos.permission.MAPS_RECEIVE"
    android:protectionLevel="signature" />
<uses-permission android:name="com.google.android.providers.gsf.permission.READ_GSERVICES" />
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
<uses-permission android:name="android.permission.INTERNET" />
<!-- External storage for caching. -->
<uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE" />
<!-- My Location -->
<uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
<!-- Maps API needs OpenGL ES 2.0. -->
<uses-feature
    android:glEsVersion="0x00020000"
    android:required="true" />
```

API KEY – GOOGLE MAPS

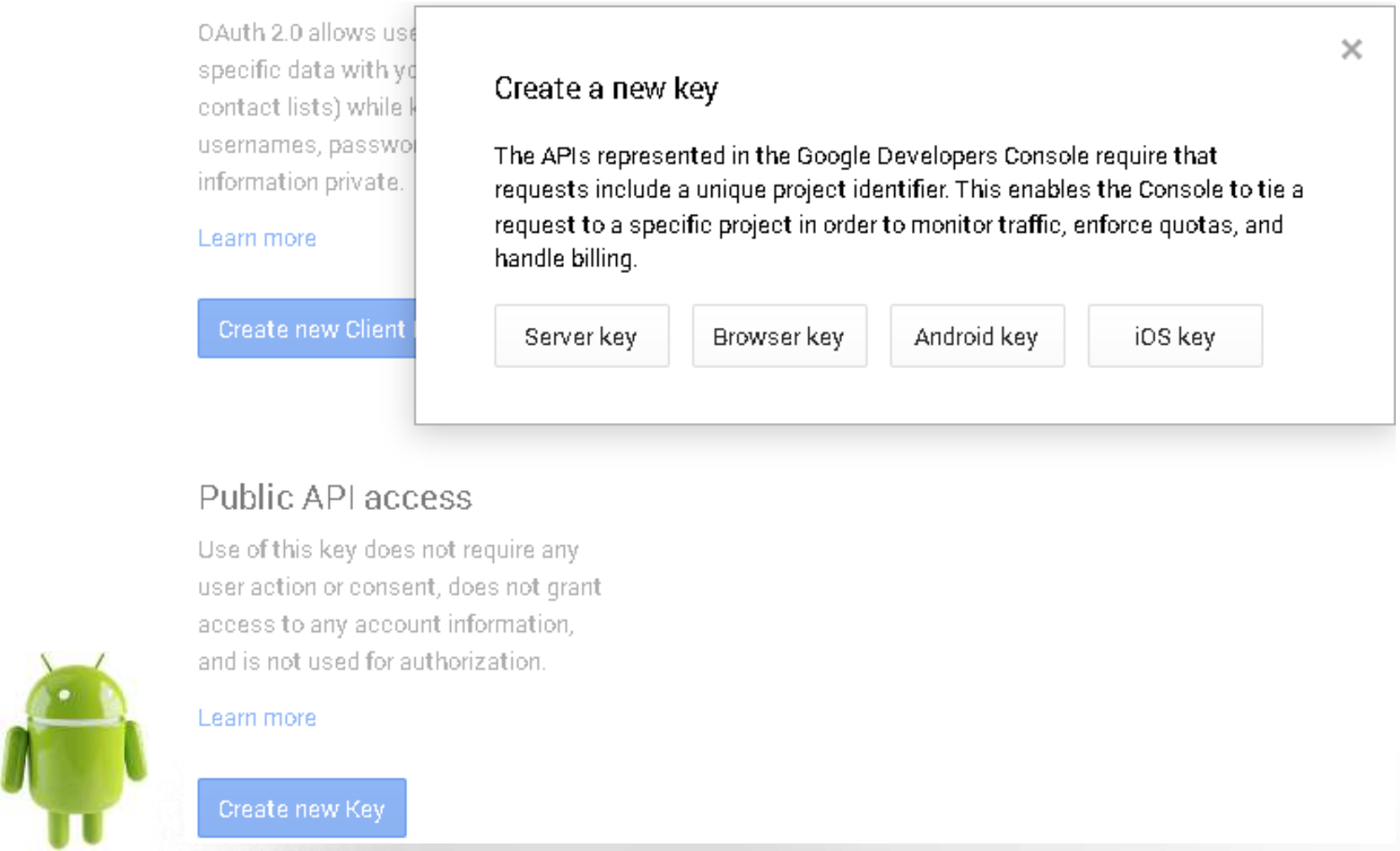
- **Necessita-se de uma chave para acesso ao serviço**
- **Acessar Console API e ativar(https://code.google.com/apis/console/)**



- **Usá-la é fácil, obtê-la nem tanto**

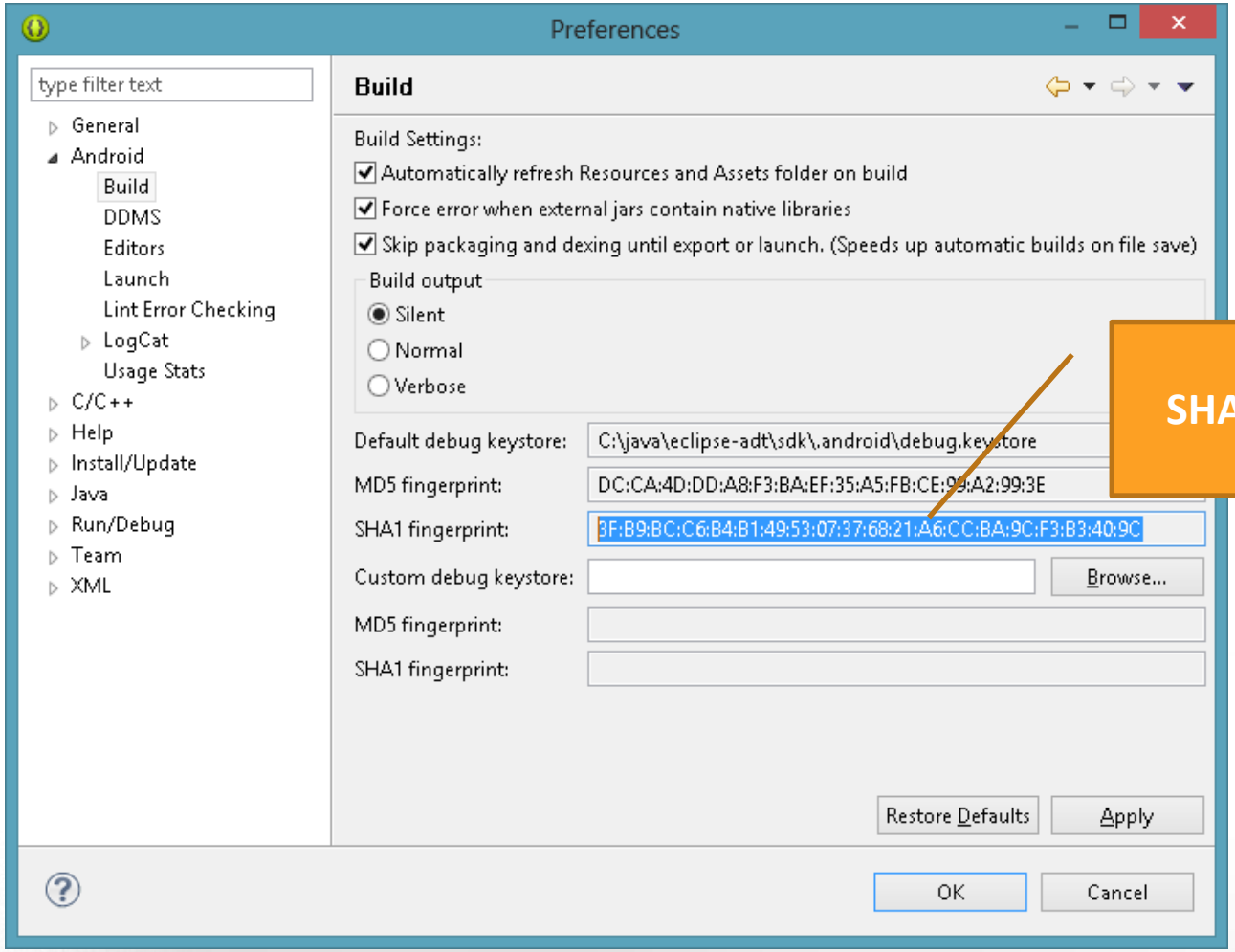
API KEY – GOOGLE MAPS

- **Public API access: Create new Key**



API KEY – GOOGLE MAPS

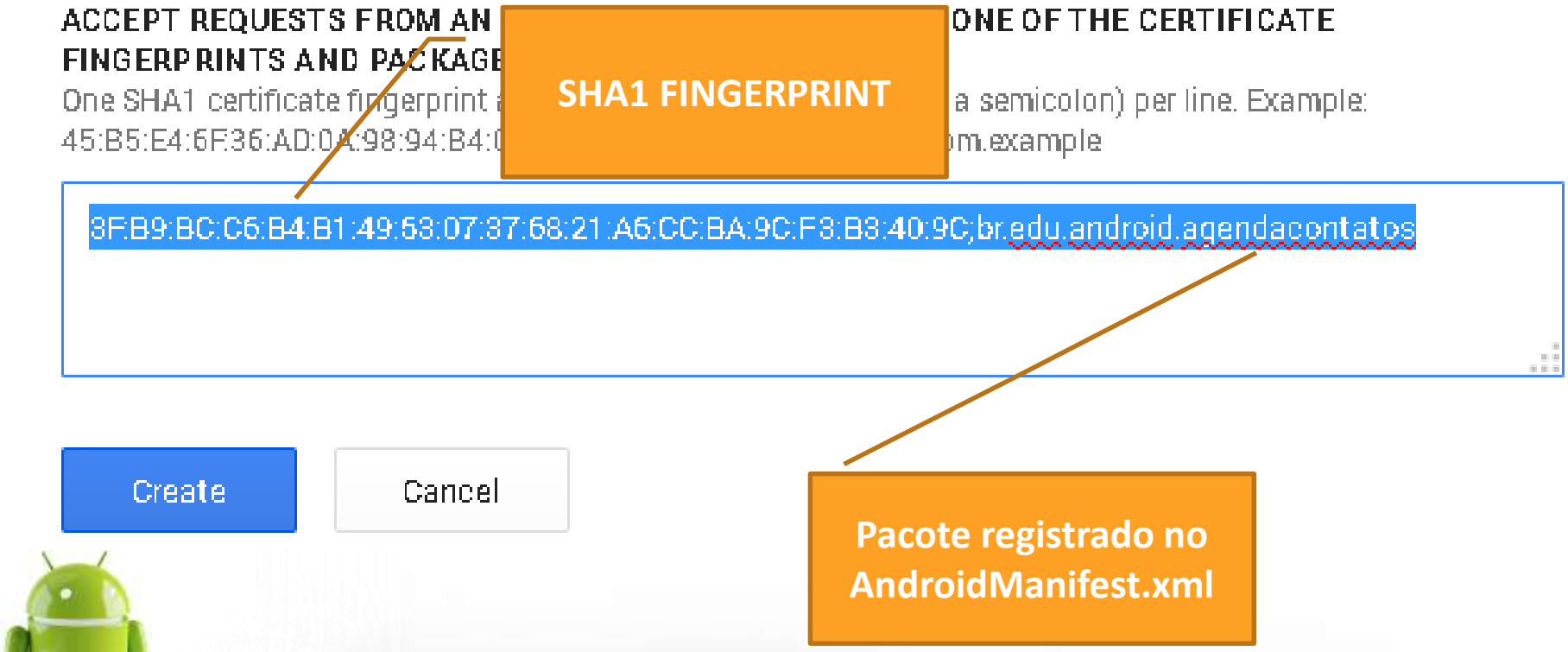
- **Window -> Preferences -> Android -> Build**



https://www.sqlite.org/lang.html

API KEY – GOOGLE MAPS

- **Public API Access**



API KEY – GOOGLE MAPS

- **Public API Access**

Key for Android applications

API KEY	AIzaSyCJ-O18BFIt9FMyUoXQOUVoBxi6b-0fx58
ANDROID APPLICATIONS	3F:B9:BC:C6:B4:B1:49:53:07:37:68:21:A6:CC:BA:9C:F3:B3:40:9C;br.edu.android.agendacontatos
ACTIVATION DATE	Oct 23, 2014, 9:36:00 AM
ACTIVATED BY	robersonjfa@gmail.com (you)

Edit allowed Android applications | Regenerate key | Delete

CRIANDO O PRIMEIRO MAPA

- **Crie uma nova activity;**
- **A activity deve ser filha de *FragmentActivity* para gerenciar mapas;**

```
public class MapaActivity extends FragmentActivity {
```

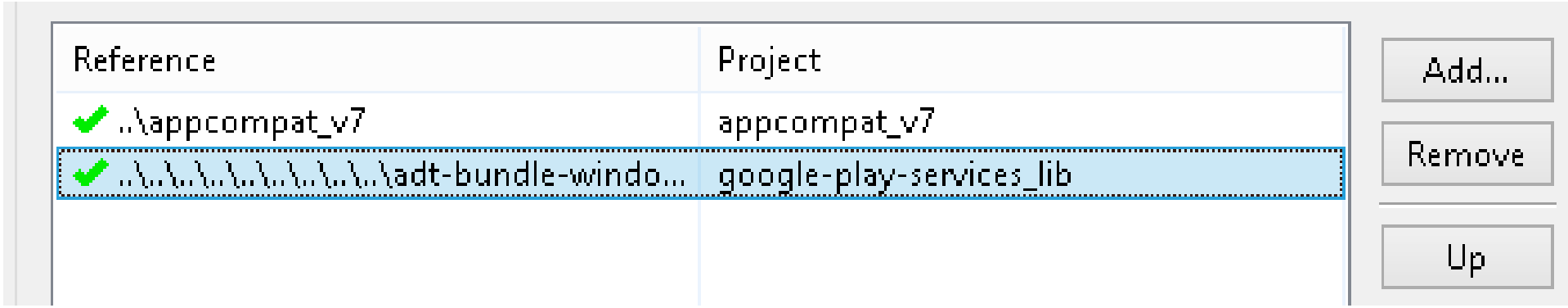
- **Coloque as configurações no AndroidManifest.xml;**

ANDROIDMANIFEST.XML

```
<permission
    android:name="br.edu.android.mapas.permission.MAPS_RECEIVE" android:protectionLevel="signature" />
<uses-permission android:name="com.google.android.providers.gsf.permission.READ_GSERVICES" />
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE" />
<uses-permission android:name="android.permission.INTERNET" />
<!-- External storage for caching. -->
<uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE" />
<!-- My Location -->
<uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
<!-- Maps API needs OpenGL ES 2.0. -->
<uses-feature
    android:glEsVersion="0x00020000"
    android:required="true" />
<application
    android:allowBackup="true"
    android:icon="@drawable/ic_launcher"
    android:label="@string/app_name"
    android:theme="@style/AppTheme" >
    <meta-data
        android:name="com.google.android.maps.v2.API_KEY"
        android:value="AIzaSyBaEbWfIZmVjRqg7zjdreZnqmNu6oYxKJ8" />
    <meta-data
        android:name="com.google.android.gms.version"
        android:value="@integer/google_play_services_version" >
    </meta-data>
```

CRIANDO O PRIMEIRO MAPA

- **Adicione ao projeto a biblioteca: google-play-services-lib**



CRIANDO O PRIMEIRO MAPA

- **Configure o layout do mapa com um Fragment:**

activity_mapa.xml

```
1  <fragment xmlns:android="http://schemas.android.com/apk/res/android"
2      android:id="@+id/map"
3      android:layout_width="match_parent"
4      android:layout_height="match_parent"
5      class="com.google.android.gms.maps.SupportMapFragment" />
```

UTILIZANDO O MAPA NA ACTIVITY

- **O mapa é um objeto do tipo GoogleMap;**
- **Objeto do tipo GoogleMap permite diversas manipulações no mapa;**

```
private GoogleMap map;

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_mapa);

    map = ((SupportMapFragment) getSupportFragmentManager()
            .findFragmentById(R.id.map)).getMap();
```

TIPOS DE MAPA

- **GoogleMap.setMapType(int type);**
  - ***MAP_TYPE_SATELLITE;***
  - ***MAP_TYPE_NORMAL;***
  - ***MAP_TYPE_TRAFFIC;***
  - ***MAP_TYPE_TERRAIN;***

```
map.setMapType(GoogleMap.MAP_TYPE_SATELLITE);
```

MARCANDO UM PONTO

- **GoogleMap.addMarker;**
- **Criar objeto do tipo MarkerOptions**

```
private static final LatLng PINHALZINHO =
        new LatLng(-26.849500, -52.987243);
```

```
Marker pzo = map.addMarker(new MarkerOptions().position(PINHALZINHO)
        .title("PINHALZINHO"));
```

POSICIONANDO COM ZOOM

- **Utilizando a câmera do mapa;**
- **GoogleMap.moveCamera;**

```
// Move the camera instantly to PINHALZINHO with a zoom of 15.
map.moveCamera(CameraUpdateFactory.newLatLngZoom(PINHALZINHO, 15));
```

CAPTURANDO A LAT E LNG – TOQUE CURTO

- **GoogleMap.setOnMapClickListener**

```
map.setOnMapClickListener(new OnMapClickListener() {
    @Override
    public void onMapClick(LatLng point) {
        Log.i("MAPA", point.latitude + " - " + point.longitude);
    }
});
```

CAPTURANDO A LAT E LNG – TOQUE LONGO

- **GoogleMap.setOnMapLongClickListener**

```
map.setOnMapLongClickListener(new OnMapLongClickListener() {
    @Override
    public void onMapLongClick(LatLng point) {
        Log.i("MAPA", point.latitude + " - " + point.longitude);
    }
});
```

REFERÊNCIAS

- Android Developers. **Location and Maps**. 2012. Disponível: <http://developer.android.com/guide/topics/location/index.html>. Acesso em: 17 mai. 2012.
- LECHETA, Ricardo R. **Google android:** aprenda a criar aplicações para dispositivos móveis com o android SDK. 2. ed., rev. e ampl. São Paulo: Novatec, 2010. 608 p. ISBN 9788575222447.