

# 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

```
<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" />
```

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



# API KEY – GOOGLE MAPS

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

APIs & auth

[APIs](#)

Google Maps Android API v2

ON

- Usá-la é fácil, obtê-la nem tanto



# API KEY – GOOGLE MAPS

- Public API access: Create new Key

OAuth 2.0 allows use of specific data with your contact lists) while keeping usernames, passwords and information private.

[Learn more](#)

Create new Client

## Create a new key

The APIs represented in the Google Developers Console require that requests include a unique project identifier. This enables the Console to tie a request to a specific project in order to monitor traffic, enforce quotas, and handle billing.

Server key

Browser key

Android key

iOS key

## Public API access

Use of this key does not require any user action or consent, does not grant access to any account information, and is not used for authorization.

[Learn more](#)

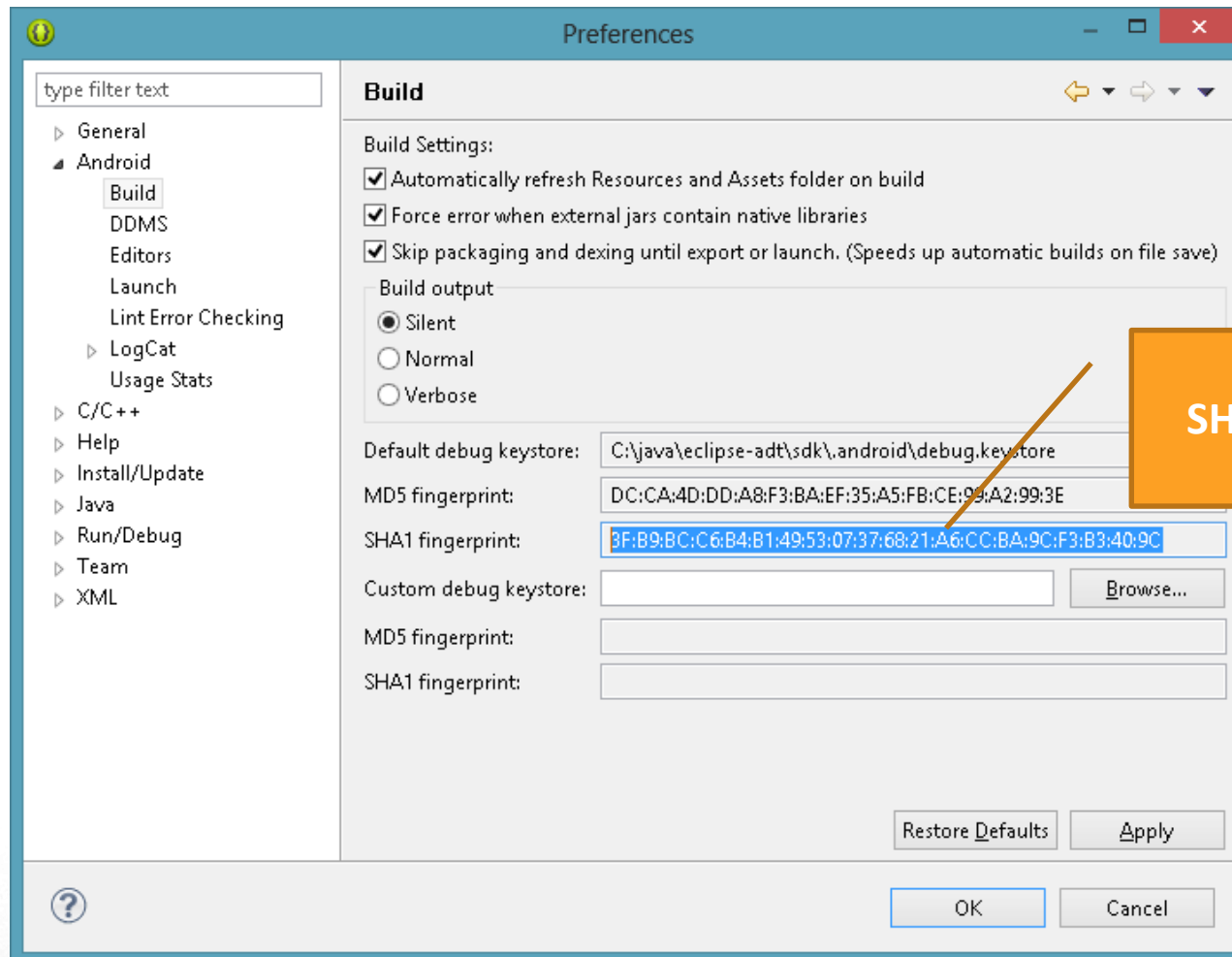
Create new Key





# API KEY – GOOGLE MAPS

- Window -> Preferences -> Android -> Build



# API KEY – GOOGLE MAPS

- Public API Access

ACCEPT REQUESTS FROM AN  
FINGERPRINTS AND PACKAGE

One SHA1 certificate fingerprint  
45:B5:E4:6F:36:AD:0A:98:94:B4:0

SHA1 FINGERPRINT

ONE OF THE CERTIFICATE

(a semicolon) per line. Example:  
com.example

3FB9:BC:C6:B4:B1:49:53:07:37:68:21:A6:CC:BA:9C:F3:B3:40:9C;br.edu.android.agendacontatos

Create

Cancel

Pacote registrado no  
AndroidManifest.xml



# API KEY – GOOGLE MAPS

- Public API Access

Key for Android applications

API KEY	AlzaSyCJ-O18BFIt9FMMyUoXQOUVoBxi6b-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="AIzaSyBaEbWfIZmVjRqg7zjdreZnqmaNu6oYxKJ8" />
    <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**

Reference	Project	
✓ ..\appcompat_v7	appcompat_v7	Add...
✓ ..\..\..\..\..\..\..\..\..\adt-bundle-windo...	google-play-services_lib	Remove
		Up



# 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" />  
6
```



# 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.

