FUNDAÇÃO INSTITUTO DE EDUCAÇÃO DE BARUERI

Instituto Técnico de Barueri "Brasílio Flores de Azevedo"

Tecnologias Emergentes

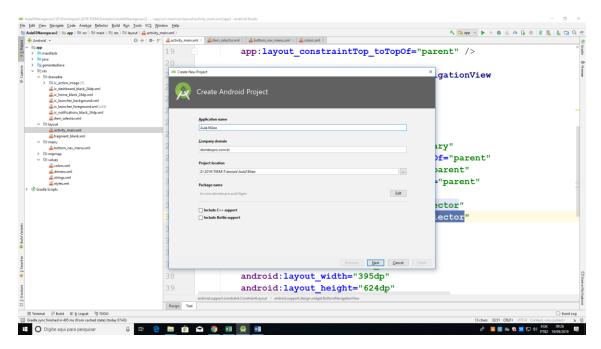
Tutorial Geolocalização versão 1.0

Prof. Adriano Domingues

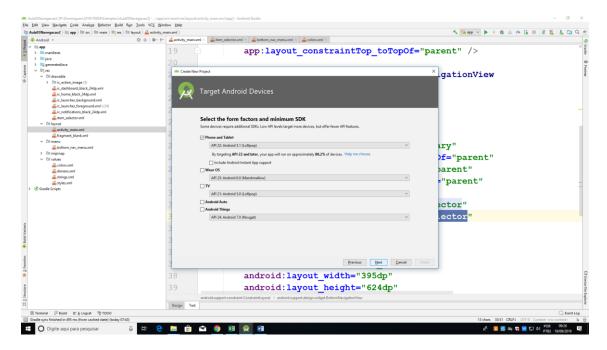
2019

AULA 16 - Geolocalização

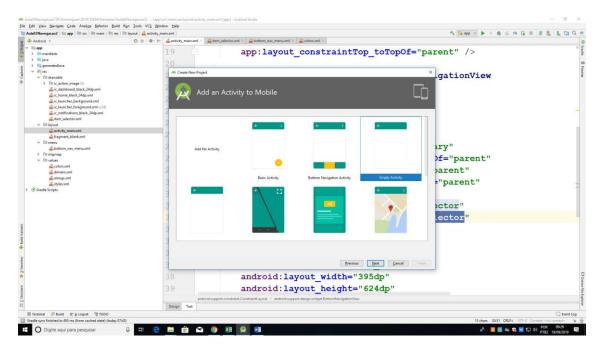
Crie o projeto chamando-o de Aula16Geo:



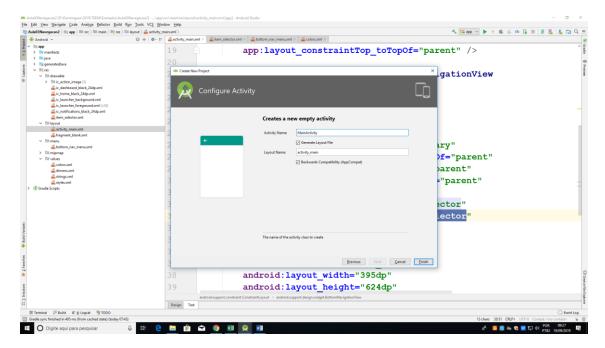
API 22:



Empty Activity:



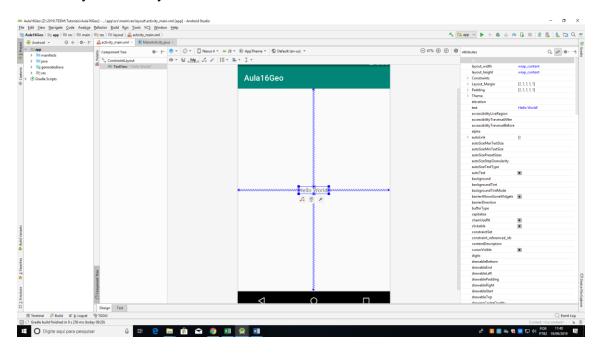
Clique em FINISH na última tela:



Tela inicial após carregamento:

```
| Second | Column | C
```

Abra o layout activity_main.xml



Altere as propriedades do objeto TextView:

id: textView

background: #010014 textColor: #FFFFF textAlignment: center

layout_width: match_constraint

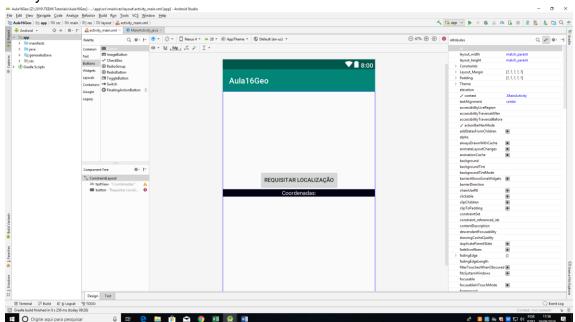
text: Cordenadas:

E insira um botão (Button) com as propriedades:

id: button

text: Requisitar Localização

O layout ficará assim:



E o XML da janela ficará assim após o clique no ícone *Infer Constraints*:

```
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout</pre>
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout width="match parent"
    android:layout height="match parent"
    android:textAlignment="center"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textView"
        android:layout width="0dp"
        android:layout height="wrap content"
        android:background="#010014"
        android: text="Coordenadas: "
        android: textAlignment="center"
        android:textColor="#FFFFFF"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
    <Button
        android:id="@+id/button"
        android:layout width="wrap content"
        android:layout height="wrap content"
        android:text="Requisitar Localização"
        app:layout constraintBottom toTopOf="@+id/textView"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout constraintStart toStartOf="parent" />
</android.support.constraint.ConstraintLayout>
```

Abra agora o AndroidManifest.xml e adicione as permissões de acesso à Internet e Localização:

Entre no MainActivity e digite o código abaixo:

```
an Aulat 16600 [2]/2019/TEBAT (tutorias): Aulat 16600] --- Implicar (minis) para libra (comindometropro-basida 16500-(Main Activity) para (ap

File Edit View Bervigate Code Analyge Belactor Build Ryn Tools VCS Window Help

Main Aulat 166000 | Na pap | Na scr | Min main | Na jora | Na br | Na com | Na dometerpro | Na aulat 16500 | Chain Activity |
public class MainActivity extends AppCompatActivity {
13
                private Button button;
                private TextView textView;
14
                private LocationManager locationManager;
                private LocationListener locationListener;
 18
                @Override
 1901
                protected void onCreate(Bundle savedInstanceState) {
                     super.onCreate(savedInstanceState);
                     setContentView(R.layout.activity main);
                    button = findViewById(R.id.button);
                      textView = findViewById(R.id.textView);
24
25
                      locationManager = (LocationManager) getSystemService(LOCATION_SE
 26
                      locationListener = new LocationListener() {
                             @Override

    ⊕ Digite aqui para pesqu

                       D 바 🤚 📻 🟦 🕿 🧑 🗷 🙊 👳
```

Quando terminar de digitar a linha 26, os métodos de sobrecarga do construtor Location Listener serão carregados automaticamente:

```
### Authoritical Transcription (Control Prince Control Prince Cont
```

Não esqueça de incluir o ponto e vírgula (;) no final da linha 46, na chave (})

Na linha 47 digite:

```
locationManager.requestLocationUpdates("gps", 5000, 0,
locationListener);
```

Quando a linha vermelha abaixo dessa linha aparecer, clique na lâmpada vermelha e escolha: *Add permission check*

O código ficará como abaixo:

```
| ActivityCompat.checkSelfPermission (context this, Manifest.permission.ACCESS_FINE_LOCATION) | Package | ActivityCompat.checkSelfPermissions, and then overriding | ActivityCompat@requestPermissions, and then overriding | ActivityCompat@requestPermissions | ActivityCompat@requestPe
```

Na linha 59 vamos adicionar o else:

```
Bulls (Sicolog (2)/2009 TEEM Tractions Assist (Sicolog) — Appylor or Investigate According Contractively year (app File (5th View Heinighte Sode Analyze Befactor Build Rym Jools VCS Window Help

Maket (Sicology Dispo) — Internity — Investigate (App To Som ) — Indenterprey — India (Signo) — Mein Activity

Maket (Sicology Dispo) — Internity — Investigate (App To Som ) — India (Signo) — Mein Activity

Maket (Sicology Dispo) — Internity — Internity
                                                                                                                                                                                                                                                                                                               public void onProviderEnabled(String provider) {
                                                                 public void onProviderDisabled(String provider) {
                                                  if (ActivityCompat.checkSelfPermission(context this, Manifest.permission.ACCESS_FINE_LOCATION) != Package
                                                               // TODO: Consider calling
                                                                                   ActivityCompat#requestPermissions
                                                               // here to request the missing permissions, and then overriding
                                                                              public void onRequestPermissionsResult(int requestCode, String[] permissions,
                                                                                                                                                                                                                    int[] grantResults)
                                                                // to handle the case where the user grants the permission. See the documentation
                                                                          for ActivityCompat#requestPermissions for more details.
                                                    else
                                                                configureButton();
                                                    locationManager.requestLocationUpdates(provider: "gps", minTime: 5000, minDistance: 0, locationListener);
                                                                          Q III 🦰 🔚 🟦 🕿 🌖 🗷 🙊 💌
```

Clique no método que esta em vermelho, clique na lâmpada vermelha à esquerda e clique em Create method...

Passando o código da linha 62 para dentro do método configureButton():

```
| Package | Pack
```

Na linha 35 vamos inserir a linha:

```
textView.append("\n " + location.getLatitude() + " " +
location.getLatitude());
```

Ficando o código como abaixo:

```
🛋 Aula16Geo [C:\DOMTEC\ITB\2019\TEEM\Tutoriais\Aula16Geo] - ...\app\src\main\java\br\com\domtecpro\aula16geo\MainActivity.java [app] - Android Studio
                                                                                                                                                                                            п
\underline{\text{File}} \quad \underline{\text{Edit}} \quad \underline{\text{V}} \underline{\text{iew}} \quad \underline{\text{N}} \underline{\text{avigate}} \quad \underline{\text{C}} \underline{\text{ode}} \quad \text{Analyze} \quad \underline{\text{R}} \underline{\text{efactor}} \quad \underline{\text{B}} \underline{\text{uild}} \quad \underline{\text{R}} \underline{\text{un}} \quad \underline{\text{T}} \underline{\text{ools}} \quad \text{VC}\underline{\underline{\text{S}}} \quad \underline{\text{W}} \underline{\text{indow}} \quad \underline{\text{H}} \underline{\text{elp}}
                                                                                                                           □ > ■ APP ∨ ▶ 4 前 ⊙ Ø □ □ № □ Ø □ Ø □ □
iig Aula16Geo > iii app > iii src > iii main > iii java > iii br > iii com > iii domtecpro > iii aula16geo > iii MainActivity >

♠ MainActivity.java × 

☐ activity_main.xml ×

                      protected void onCreate(Bundle savedInstanceState) {
                             super.onCreate(savedInstanceState);
                             setContentView(R.layout.activity main);
                            button = findViewById(R.id.button);
                             textView = findViewBvId(R.id.textView);
                             locationManager = (LocationManager) getSystemService(LOCATION SERVICE);
                              locationListener = new LocationListener() {
                                     @Override
                                     public void onLocationChanged(Location location) {
    34
                                            textView.append("\n " + location.getLatitude() + " " + location.getLatitude());
                      }
                                      @Override
                                     public void onStatusChanged(String provider, int status, Bundle extras) {
    40
    41
    43
                                      @Override

■ TODO ■ Build ■ 6: Logcat

☐ Terminal

                                                                                                                                                                                          C Event Log
 Gradle sync started (5 minutes ago)
                                                                                                                                                   Atom One Light 36:14 CRLF 0 UTF-8 0 4 spaces 0 1 GB
                                                                                                                                                요<sup>8</sup> 🖑 🖫 🗓 🖶 👄 📼 🖟 여)) POR 21:26 🖵
              📑 😪 🔚 🔟 💿 🙊 ₩
```

Na linha 51 dentro do método onProviderDisabled() vamos inserir o código:

```
Intent intent = new Intent(Settings.ACTION_LOCATION_SOURCE_SETTINGS);
startActivity(intent);
```

```
- 6 ×
👅 Aula16Geo [C:\DOMTEC\ITB\2019\TEEM\Tutoriais\Aula16Geo] - ...\app\src\main\java\br\com\domtecpro\aula16geo\MainActivity.java [app] - Android Studio
<u>File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help</u>
🚣 Aula16Geo > 🖿 app > 🖿 gg > 🖿 main > 🗎 java > 🗀 gr > 🗀 com > 🗀 domtespro > 🗀 aula16geq > 😭 MainActivity >
  @Override
  45 ₺
                      public void onProviderEnabled(String provider) {
  46
  47
  48
  49
  50 ∱
                      public void onProviderDisabled(String provider) {
                           Intent intent = new Intent(Settings.ACTION_LOCATION_SOURCE_SETTINGS);
                           startActivity(intent);
  54
                    ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_FINE_LOCATION) != Packag
                  if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
                      // TODO: Consider calling
                           ActivityCompat#requestPermissions
                       // here to request the missing permissions, and then overriding
         MainActivity > onCreate() > new LocationListener > onProviderDisabled()
                                                                                          오 닭 숙 🔚 🖸 👩 🙊 🞹
                                                                                        x<sup>Q</sup> 🐙 🗒 😍 👝 🗀 🦟 Ф) POR
```

O if da linha 59 foi alterado como abaixo:

```
if (Build.VERSION. SDK INT >= Build.VERSION CODES.M) {
    // TODO: Consider calling
    // ActivityCompat#requestPermissions
    // here to request the missing permissions, and then overriding
    // public void onRequestPermissionsResult(int requestCode,
String[] permissions,
                                                  int[] grantResults)
    // to handle the case where the user grants the permission. See
the documentation
    // for ActivityCompat#requestPermissions for more details.
    if (checkSelfPermission(Manifest.permission.ACCESS FINE LOCATION)
! =
            PackageManager. PERMISSION GRANTED &&
checkSelfPermission (Manifest.permission. ACCESS COARSE LOCATION) !=
                    PackageManager. PERMISSION GRANTED) {
        requestPermissions(new String[]{
                Manifest.permission. ACCESS FINE LOCATION,
                Manifest.permission. ACCESS COARSE LOCATION,
                {\tt Manifest.permission.} \textbf{\textit{INTERNET}}
        }, 10);
        return;
    }
} else {
    configureButton();
```

@Override

Fora do método onCreate() vamos inserir os método onRequestPermissionsResult abaixo:

```
public void onRequestPermissionsResult(int requestCode, String[]
permissions, int[] grantResults) {
    switch (requestCode) {
        case 10:
            if (grantResults.length > 0 && grantResults[0] ==
PackageManager. PERMISSION GRANTED)
                configureButton();
            return:
E na linha 93 vamos alterar o método configureButton() como abaixo:
private void configureButton() {
    button.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            trv
                locationManager.requestLocationUpdates("gps", 5000, 0,
locationListener);
            } catch (SecurityException e) {
                e.printStackTrace();
        }
    });
```

Este é o código completo do MainActivity.class, teste e verifique que as coordenadas são adicionadas no TextView:

```
package br.com.domtecpro.aula16geo;
import android.Manifest;
import android.content.pm.PackageManager;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Build;
import android.provider.Settings;
import android.support.v4.app.ActivityCompat;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.content.Context;
import android.content.Intent;
public class MainActivity extends AppCompatActivity {
   private Button button;
   private TextView textView;
   private LocationManager locationManager;
   private LocationListener locationListener;
   @Override
   protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
```

Tecnologias Emergentes

```
button = findViewById(R.id.button);
textView = findViewById(R.id.textView);
locationManager = (LocationManager)
getSystemService(LOCATION SERVICE);
locationListener = new LocationListener() {
    @Override
    public void onLocationChanged(Location location) {
        textView.append("\n " + location.getLatitude() + " " +
location.getLatitude());
    }
    @Override
    public void on Status Changed (String provider, int status, Bundle
extras) {
    }
    @Override
    public void onProviderEnabled(String provider) {
    @Override
    public void onProviderDisabled(String provider) {
        Intent intent = new
Intent(Settings.ACTION LOCATION SOURCE SETTINGS);
        startActivity(intent);
    }
};
    if (Build.VERSION.SDK INT >= Build.VERSION CODES.M) {
        // TODO: Consider calling
        // ActivityCompat#requestPermissions
        // here to request the missing permissions, and then
overriding
           public void onRequestPermissionsResult(int requestCode,
String[] permissions,
                                                     int[]
grantResults)
        // to handle the case where the user grants the permission.
See the documentation
        // for ActivityCompat#requestPermissions for more details.
        if
(checkSelfPermission(Manifest.permission. ACCESS FINE LOCATION) !=
                PackageManager. PERMISSION GRANTED &&
checkSelfPermission (Manifest.permission. ACCESS COARSE LOCATION) !=
                        PackageManager.PERMISSION GRANTED) {
            requestPermissions(new String[]{
                    Manifest.permission. ACCESS FINE LOCATION,
                    Manifest.permission. ACCESS COARSE LOCATION,
                    Manifest.permission. INTERNET
            }, 10);
            return;
        }
    } else {
        configureButton();
    }
```

```
@Override
   public void onRequestPermissionsResult(int requestCode, String[]
permissions, int[] grantResults) {
        switch (requestCode) {
            case 10:
                if (grantResults.length > 0 && grantResults[0] ==
PackageManager.PERMISSION GRANTED)
                    configureButton();
                return;
        }
   private void configureButton() {
        button.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                try {
                    locationManager.requestLocationUpdates("gps",
5000, 0, locationListener);
                } catch (SecurityException e) {
                    e.printStackTrace();
                }
        });
    }
}
```

Referência Bibliográfica

- [1] http://developer.android.com. Acessado em 28/04/2019.
- [2] https://www.youtube.com/watch?v=QNb_3QKSmMk. Acessado em 19/09/2019.
- [3] https://imasters.com.br/android/requisitando-localizacao-usuario-da-forma-correta-no-android. Acessado em 20/09/2019.