# FUNDAÇÃO INSTITUTO DE EDUCAÇÃO DE BARUERI

Instituto Técnico de Barueri "Brasílio Flores de Azevedo"

**Tecnologias Emergentes** 

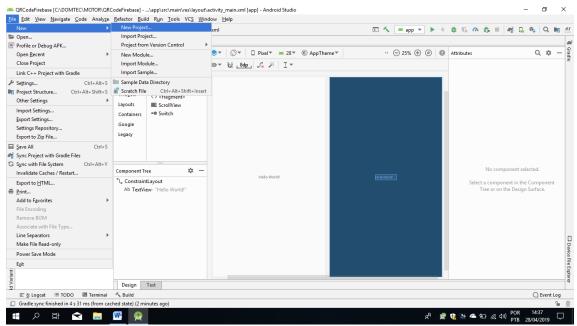
Tutorial Android Leitor de QRCode versão 1.0

Prof. Adriano Domingues

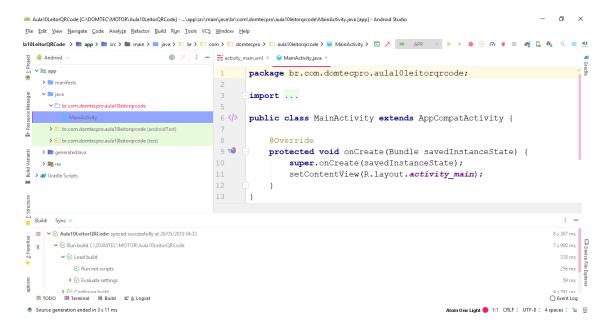
2019

### AULA 10 - Leitor de QRCode

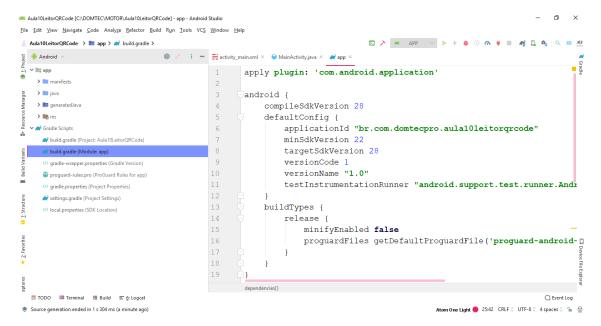
- 1. CRIAR PROJETO:
  - a. FILE > NEW > NEW PROJECT...



- a. Altere as opções da primeira janela e clique no Finish:
  - i. Aplication Name: Aula10LeitorQRCode
  - ii. Company Domain: aula10leitorgrcode.itb.com.br
  - iii. Location: Z:\... (sua pasta na Z:)
- b. API 22
- c. ESCOLHA A ATIVIDADE DE EXEMPLO: Empty Activity
  - iv. Não altere nada na última janela e clique em Finish
- d. Aguarde o carregamento do projeto:



- e. Vamos adicionar uma dependência, isto é, uma biblioteca externa ou também chamada de API, traz classes prontas e desenvolvidas para um determinado fim, neste caso para gerar QRCodes.
  - a. Clique em Android > Gradle Scripts > build.gradle (Module: app)



b. Role o arquivo até chegar em dependencies:

```
Aula10LeitorQRCode [C:\DOMTEC\MOTOR\Aula10LeitorQRCode] - app - Android Studio
<u>File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help</u>

≜ Aula10LeitorQRCode > ■ app > 

→ build.gradle > ■ app > → app → a

    activity main.xml ×  
    MainActivity.java ×  
    app ×
        Gradle files have changed since last project sync. A project sync may be necessary for the IDE to work properly.
19
20
                                                     implementation fileTree(dir: 'libs', include: ['*.jar'])
                                                     implementation 'com.android.support:appcompat-v7:28.0.0'
                                                    implementation 'com.android.support.constraint:constraint-layout:1.1.3'
                                                    testImplementation 'junit:junit:4.12'
 26
                                                    androidTestImplementation 'com.android.support.test:runner:1.0.2'
                                                     androidTestImplementation 'com.android.support.test.espresso:espresso-core:3.0.2'
28 29 30 30

■ TODO ■ Terminal ■ Build ■ 6: Logcat

                                                                                                                                                                                                                                                                                                                                                                                                                                                         ○ Event Log

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                                                                                                                                                                                                                                                                                                                                                                           n One Light 🌑 1:1 CRLF 🌣 UTF-8 🗘 4 spaces 🗘 🧣 🧟
```

### Digite abaixo da linha 27:

```
implementation 'com.google.zxing:core:3.2.1'
```

O código deve ficar como abaixo, clique em Sync Now, no canto direito superior:

```
<u>File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help</u>
                                                                                                                                                                                                                                                                                                        □ > ■ APP ∨ ▶ 4 # ⊙ Ø # ■ Ø Q # AF

≜ Aula10LeitorQRCode > ■ app > 

→ build.gradle > ■ app > → build.gradle > ■ app > → app > → build.gradle > ■ app > → app
 Gradle files have changed since last project sync. A project sync may be necessary for the IDE to work properly.
 b 19
20 21
                               dependencies {
                                                    implementation fileTree(dir: 'libs', include: ['*.jar'])
  22
23
                                                    {\tt implementation 'com.android.support:appcompat-v7:28.0.0'}
 24
25
                                                  implementation 'com.android.support.constraint:constraint-layout:1.1.3'
                                                   testImplementation 'junit:junit:4.12'
                                                 androidTestImplementation 'com.android.support.test:runner:1.0.2'
androidTestImplementation 'com.android.support.test.espresso:espresso-core:3.0.2'
 B 26
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                                    implementation 'com.google.zxing:core:3.2.1'

■ TODO ■ Terminal ■ Build ■ 6: Logcat

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                                                                                                                                                                                                                                                                                                                                                                 Atom One Light 28:49 CRLF 0 UTF-8 0 4 spaces 0 1 @
```

# Aguarde a sincronização e adicione mais uma linha

```
implementation 'com.journeyapps:zxing-android-embedded:3.3.0@aar'
```

Novamente após adicionar a linha clique em Sync Now:

```
Aula10LeitorQRCode [C:\DOMTEC\MOTOR\Aula10LeitorQRCode] - app - Android Studio
                                                                                                                                                                                                                                                                                                                                                                                               o ×
<u>File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help</u>

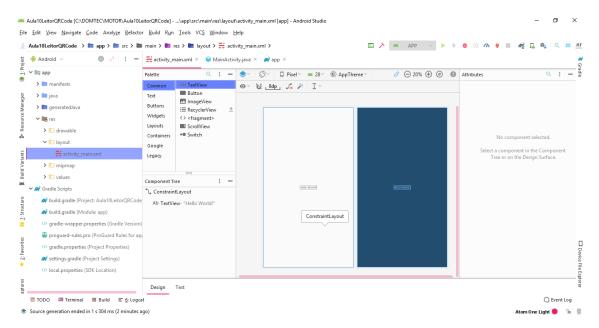
≜ Aula10LeitorQRCode > ■ app > 

→ build.gradle > ■ app > → build.gradle > ■ app > → → build.gradle > → build.gradle > → build.gradle > ■ app > → build.gradle > → build.gradle
                                                                                                                                                                                                                                                             18
19
20
21
                           dependencies {
                                             implementation fileTree(dir: 'libs', include: ['*.jar'])
                                             implementation 'com.android.support:appcompat-v7:28.0.0'
       24
                                            implementation 'com.android.support.constraint:constraint-layout:1.1.3'
Variants
                                           testImplementation 'junit:junit:4.12'
                                            androidTestImplementation 'com.android.support.test:runner:1.0.2'
                                             androidTestImplementation 'com.android.support.test.espresso:espresso-core:3.0.2'
  ¥ 27
 28
                                              implementation 'com.google.zxing:core:3.2.1'
                                           implementation 'com.journeyapps:zxing-android-embedded:3.3.0@aar'
 30
31
31

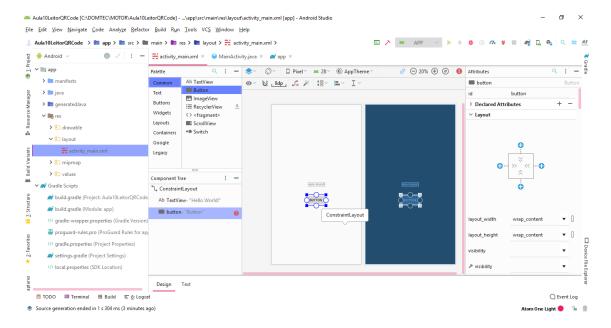
■ TODO ■ Terminal ■ Build 
■ 6: Logcat

                                                                                                                                                                                                                                                                                                              Atom One Light 
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  Source generation ended in 1 s 304 ms (a minute ago)
```

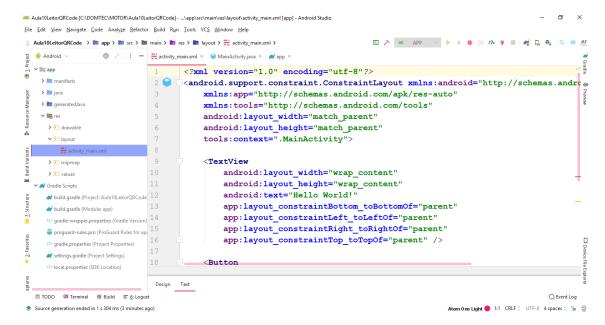
f. Abra a tela principal do projeto em Android > app > res > layout > activity\_main.xml



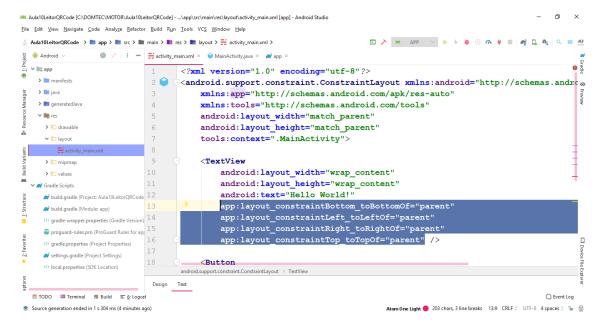
a. Vamos inserir um objeto Button



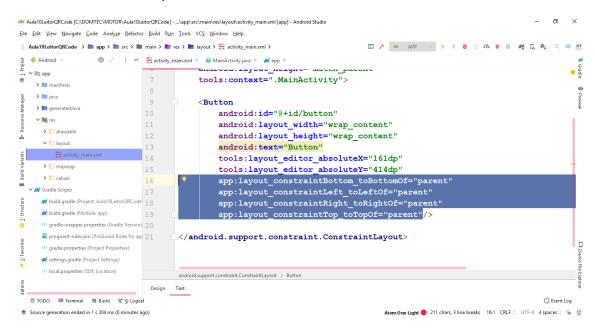
# b. Abra o código XML da janela activity\_main.xml



# c. Vamos copiar as linhas da ancoragem do objeto TextView:



d. E colar no Button, apagando o objeto TextView posteriormente:



Altere os valores do atributos id e text do objeto Button:

id: btnScantext: Scan

```
- 6 ×
Aula10LeitorORCode [C:\DOMTEC\MOTOR\Aula10LeitorORCode] - ...\app\src\main\res\layout\activity main.xml [app] - Android Studio
<u>F</u>ile <u>E</u>dit <u>V</u>iew <u>N</u>avigate <u>C</u>ode Analyze <u>R</u>efactor <u>B</u>uild <u>Run  T</u>ools <u>VCS <u>W</u>indow <u>H</u>elp</u>
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  ∨ 📭 app
                                       tools:context=".MainActivity">
   > manifests
                                            android:id="@+id/btnScan"
                                            android:layout_width="wrap_content"
                                             android:layout_height="wrap_content"
                                            android:text="Scan"
                                            tools:layout_editor_absoluteX="161dp"
   ∨ lie res
                                            tools:layout_editor_absoluteY="414dp"
    > 🗀 drawable
                                             app:layout_constraintBottom_toBottomOf="parent"

✓ □ layout

                                             app:layout_constraintLeft_toLeftOf="parent"
      activity main.xml
                           18
                                             app:layout_constraintRight_toRightOf="parent"
    > in mipmap
                                            app:layout_constraintTop_toTopOf="parent"/>
    > 🛅 values
                                    </android.support.constraint.ConstraintLayout>
     gradle-wrapper.properties (Gradle Version)
                                   android.support.constraint.ConstraintLayout
    proguard-rules.pro (ProGuard Rules for ap
                                                                                              Atom One Light 
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Source generation ended in 1 s 304 ms (19 minutes ago)
<Button
      android:id="@+id/btnScan"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:text="Scan"
      tools:layout editor absoluteX="161dp"
      tools:layout editor absoluteY="414dp"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintLeft_toLeftOf="parent"
      app:layout_constraintRight_toRightOf="parent"
      app:layout_constraintTop_toTopOf="parent"/>
```

Agora vamos abrir o código Java em Android > app > java > br.com.itb.aula10leitorgrcode > MainActivity.java

Na linha 7 dê um ENTER e inicie a declaração do objeto Button:

```
Aula 10 Leitor ORCode [C:\DOMTEC\MOTOR\Aula 10 Leitor ORCode] - ...\app\src\main\iava\br\com\domtecpro\aula 10 leitor ORCode\MainActivity.iava [app] - Android Studio
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                                               ∨ 📭 app
                                                                                                                            package br.com.domtecpro.aula10leitorqrcode;
            > manifests

✓ Iava

                                                                                                             ©androidwidgetButton?Alt-Enter MainActivity extends AppCompatActivity {
                                                                                                                                                    Button btnScan;

✓ Illia res

                 11 🕶 😑
                                                                                                                                                    protected void onCreate(Bundle savedInstanceState) {
                                                                                                                                                        super.onCreate(savedInstanceState);
                                                                                                                                                                       setContentView(R.layout.activity main);
                  > 🗈 mipmap
                   > in values
                proguard-rules.pro (ProGuard Rules for app
```

Obs.: Quando a classe ficar vermelha, solte o mouse e tecle ALT+ENTER para importar a classe Button, por exemplo, como mostrado acima.

#### Button btnScan;

```
🛋 Aula 10 LeitorQRCode [C:\DOMTEC\MOTOR\Aula 10 LeitorQRCode] - ...\app\src\main\java\br\com\domtecpro\aula 10 leitorqrcode\MainActivity.java [app] - Android Studio
<u>File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help</u>
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package br.com.domtecpro.aula10leitorqrcode;
                                   import ...
         MainActivity extends AppCompatActivity {
     > br.com.domtecpro.aula10leitorgrcode ( 8
    > _ br.com.domtecpro.aula10leitorgrcode ( 9
                                        Button btnScan;
    > m generatedJava
                                        @Override
    ∨ lie res
    protected void onCreate(Bundle savedInstanceState) {
                                             super.onCreate(savedInstanceState);
                            14
15
                                             setContentView(R.layout.activity main);
     > inipmap
     > 🗀 values
  proguard-rules.pro (ProGuard Rules for app
   C Event Log

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```

Dentro do método onCreate vamos estabelecer o vínculo do objeto Button com o java:

```
btnScan = findViewById(R.id.btnScan);
```

Um objeto Activity será criado para fazer a demonstração do conteúdo do QRCode que será lido:

```
final Activity activity = this;
```

Ainda dentro do método onCreate faremos o acionamento do clique do botão:

```
btnScan.setOnClickListener(new View.OnClickListener() {
       @Override
      public void onClick(View v) {
});
                                                                                                               - a ×
👅 Aula10LeitorQRCode [C:\DOMTEC\MOTOR\Aula10LeitorQRCode] - ...\app\src\main\java\br\com\domtecpro\aula10leitorqrcode\MainActivity.java [app] - Android Studio
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 10
  ∨ 📭 app
   > manifests
                                  protected void onCreate(Bundle savedInstanceState) {

▼ □ br.com.domtecpro.aula10leitorqrcode 13 🕶
                                          super.onCreate(savedInstanceState);
                                         setContentView(R.layout.activity_main);
                                          btnScan.setOnClickListener(new View.OnClickListener() {
   > 🔯 generatedJava
    ∨ 🌇 res
                                               public void onClick(View v) {
                           19 ₺
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      > 🗀 mipmap
     > 🗀 values
                                  }
    (1) gradle-wrapper.properties (Gradle Version)
    proguard-rules.pro (ProGuard Rules for app
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                                                                                          Atom One Light 
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```

### Digite dentro do método onClick()

```
IntentIntegrator integrator = new IntentIntegrator(activity);
integrator.setDesiredBarcodeFormats(IntentIntegrator.QR_CODE_TYPES);
integrator.setPrompt("Camera Scan");
integrator.setCameraId(0);
integrator.initiateScan();
```

```
0 X
Aula10LeitorQRCode [C:\DOMTEC\MOTOR\Aula10LeitorQRCode] - ...\app\src\main\java\br\com\domtecpro\aula10leitorqrcode\MainActivity,java [app] - Android Studio
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  19 📬 🕒
              protected void onCreate(Bundle savedInstanceState) {
                  super.onCreate(savedInstanceState);
21 22 Manager
                  setContentView(R.layout.activity_main);
                   //Vinculo do botão da tela com o java
                 btnScan = findViewById(R.id.btnScan);
  24
                   //Objeto Activity para abrir janela com a leitura do QRCode
                  final Activity activity = this;
26
27
                  btnScan.setOnClickListener(new View.OnClickListener() {
28
                       @Override
≥ 29 f$
                       public void onClick(View v) {
30
31
32
32
                           IntentIntegrator integrator = new IntentIntegrator(activity);
                           integrator.setDesiredBarcodeFormats(IntentIntegrator.QR_CODE_TYPES);
                           integrator.setPrompt("Camera Scan");
                           integrator.setCameraId(0);
34
                           integrator.initiateScan();
± 36
                   });
             }
         MainActivity > onActivityResult()
```

# Fora do método onCreate, crie o método onActivityResult:

```
🚈 Aula10LeitorQRCode [C:\DOMTEC\MOTOR\Aula10LeitorQRCode] - ...\app\src\main\java\br\com\domtecpro\aula10leitorqrcode\MainActivity.java [app] - Android Studio
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<del>=</del>
          @Override
  40 🕶 🕒
              protected void onActivityResult(int requestCode, int resultCode, @Nullable Intent data) {
Resource
                 IntentResult result = IntentIntegrator.parseActivityResult(requestCode,
  42
                            resultCode, data);
   43
Variants
                   if(result != null) {
   45
                     if(result.getContents() != null) {
 P 46
                            alert(result.getContents());
47
48
¥ 47
                           alert (contents: "Scan cancelado");
                   }else {
                       super.onActivityResult(requestCode, resultCode, data);
 52
53
53
              private void alert(String contents) {
          MainActivity > onActivityResult()

■ TODO ■ Terminal ■ Build ■ 6: Logcat

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@Override
protected void onActivityResult(int requestCode, int resultCode,
@Nullable Intent data) {
       IntentResult result =
IntentIntegrator.parseActivityResult(requestCode,
                     resultCode, data);
       if(result != null) {
               if(result.getContents() != null) {
                      alert(result.getContents());
               }else{
                      alert("Scan cancelado");
               }
       }else {
               super.onActivityResult(requestCode, resultCode, data);
```

```
}
```

### O método alert deve ser criado como abaixo:

```
private void alert(String alerta) {
      AlertDialog alert = new
AlertDialog.Builder(getBaseContext()).create();
      alert.setTitle("Leitor QRCode");
      alert.setMessage(alerta);
     alert.show();
}
                                                                                              - 🗗 X
Aula10LeitorQRCode [C:\DOMTEC\MOTOR\Aula10LeitorQRCode] - ...\app\src\main\java\br\com\domtecpro\aula10leitorgrcode\MainActivity.java [app] - Android Studio
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
super.onActivityResult(requestCode, resultCode, data);
54
          }
      private void alert(String alerta) {
          AlertDialog alert = new AlertDialog.Builder(getBaseContext()).create();
               alert.setTitle("Leitor QRCode");
ariants
               alert.setMessage(alerta);
  60
               alert.show();
  61
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■ TODO ■ Terminal ■ Build ■ 6: Logcar

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```

### O código completo ficou assim:

```
package br.com.domtecpro.aula10leitorqrcode;
import android.app.Activity;
import android.app.AlertDialog;
import android.content.Intent;
import android.support.annotation.Nullable;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import com.google.zxing.integration.android.IntentIntegrator;
import com.google.zxing.integration.android.IntentResult;
public class MainActivity extends AppCompatActivity {
    Button btnScan;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity main);
Tecnologias Emergentes
                                                      Prof. Adriano Domingues
```

```
//Vínculo do botão da tela com o java
        btnScan = findViewById(R.id.btnScan);
        //Objeto Activity para abrir janela com a leitura do QRCode
        final Activity activity = this;
        btnScan.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                IntentIntegrator integrator = new
IntentIntegrator(activity);
integrator.setDesiredBarcodeFormats(IntentIntegrator.QR CODE TYPES);
                integrator.setPrompt("Camera Scan");
                integrator.setCameraId(0);
                integrator.initiateScan();
        });
    }
    @Override
    protected void onActivityResult(int requestCode, int resultCode,
@Nullable Intent data) {
        IntentResult result =
IntentIntegrator.parseActivityResult(requestCode,
                resultCode, data);
        if(result != null) {
            if(result.getContents() != null) {
                alert(result.getContents());
            }else{
                alert("Scan cancelado");
            }
        }else {
            super.onActivityResult(requestCode, resultCode, data);
    }
   private void alert(String alerta) {
        AlertDialog.Builder alert = new
AlertDialog.Builder (MainActivity.this,
android.R.style.Theme_Material_Dialog_Alert);
alert.setMessage(alerta);
alert.show();
}
```

Realizei com um aparelho físico, realizando a leitura do QRCode gerado no emulador, com o aplicativo criado na aula 09:



# Referência Bibliográfica

- [1] http://developer.android.com. Acessado em 28/04/2019.
- [2] <a href="https://www.youtube.com/watch?v=KdQ9vKmvSEg">https://www.youtube.com/watch?v=KdQ9vKmvSEg</a>. Acessado em 26/05/2019.
- [3] <a href="https://mvnrepository.com/artifact/com.journeyapps/zxing-android-embedded/3.3.0">https://mvnrepository.com/artifact/com.journeyapps/zxing-android-embedded/3.3.0</a>. Acessado em 26/05/2019.
- [4] <a href="https://stackoverflow.com/questions/18543668/integrate-zxing-in-android-studio">https://stackoverflow.com/questions/18543668/integrate-zxing-in-android-studio</a>. Acessado em 26/05/2019.
- [5] <a href="https://www.youtube.com/watch?v=125WPZHxU7E">https://www.youtube.com/watch?v=125WPZHxU7E</a>. Acessado em 26/05/2019.
- [6] <a href="https://developer.android.com/reference/android/app/AlertDialog.Builder">https://developer.android.com/reference/android/app/AlertDialog.Builder</a>. Acessado em 26/05/2019.