



STWOY JAMS



STUDYJAMS



AGENDA



IN THE LAST EPISODE

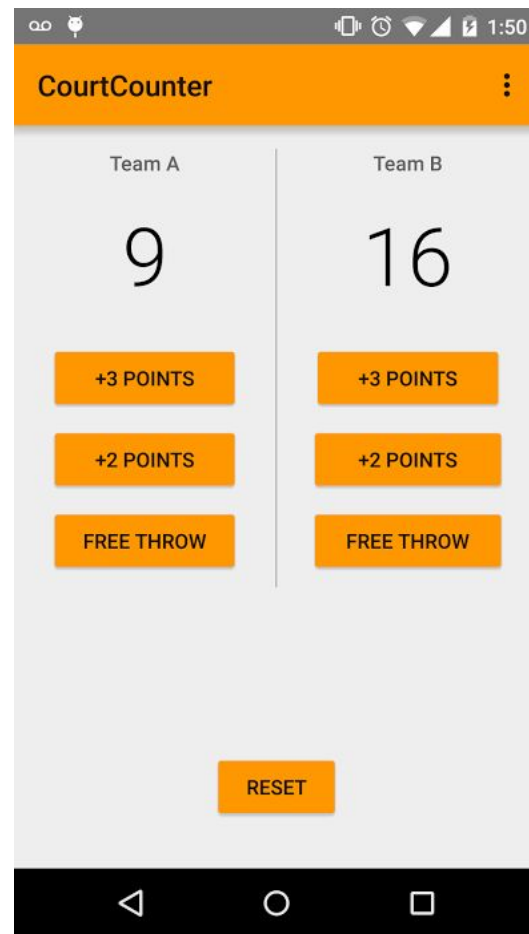
LESSON 1 - REMEMBER

Lesson 1 - Building Layouts

- Views
- XML Syntax
- Attributes (Id, Text, Width, Height...)
- Type of ViewGroups
- + Attributes (Padding, Margin, Weight...)
- Position the Views
- Style the Views (textColor, textSize, fontFamily...)

Quem fez?

Practice Set 2



MAKING AN APP INTERACTIVE

LESSON 2A

Lesson 2A

Building this Layout

Identificando as views antes de começar.

Resposta

- 2 TextViews, 1 Button
- LinearLayout (vertical)
- View de Quantidade (Preto)
- Título Quantidade (Maiúsculo)
- Espaço entre as views

PLAN! HOW TO BUILD
THIS LAYOUT

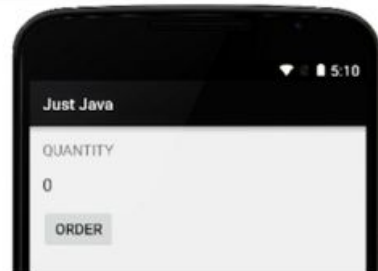
STEP 1: *Select Views* (which views?)



STEP 2: *Position Views* (Which ViewGroup will be root view?)



STEP 3: *Style Views* (Anything we need to do here?)



Lesson 2A

Building this Layout

Identificando as views antes de começar.

Resposta

- Nada :)

BUILD THIS LAYOUT

1. Modify `activity-main.xml` to build this layout.
2. Assign the second `TextView` (that shows 0) a view ID name of `@+id/quantity-text-view`
3. Run the app on your device.

? What happens when you click on the `Button`?



Lesson 2A

Button Click!

Introduz o comportamento de click do botão, e o seu código.

Resposta

- O valor muda para 1.

BUTTON CLICK

1. Modify `activity-main.xml` to add this `Button` XML attribute.

`android:onClick = "submitOrder"`

2. Replace entire `MainActivity.java` file with the file provided in the link in instructor notes.

3. Run app on device.



What happens when you click on the `Button`?

Lesson 2A

What is a Method?!

Introduz o conceito de método, e o comportamento dele.

Vocabulário

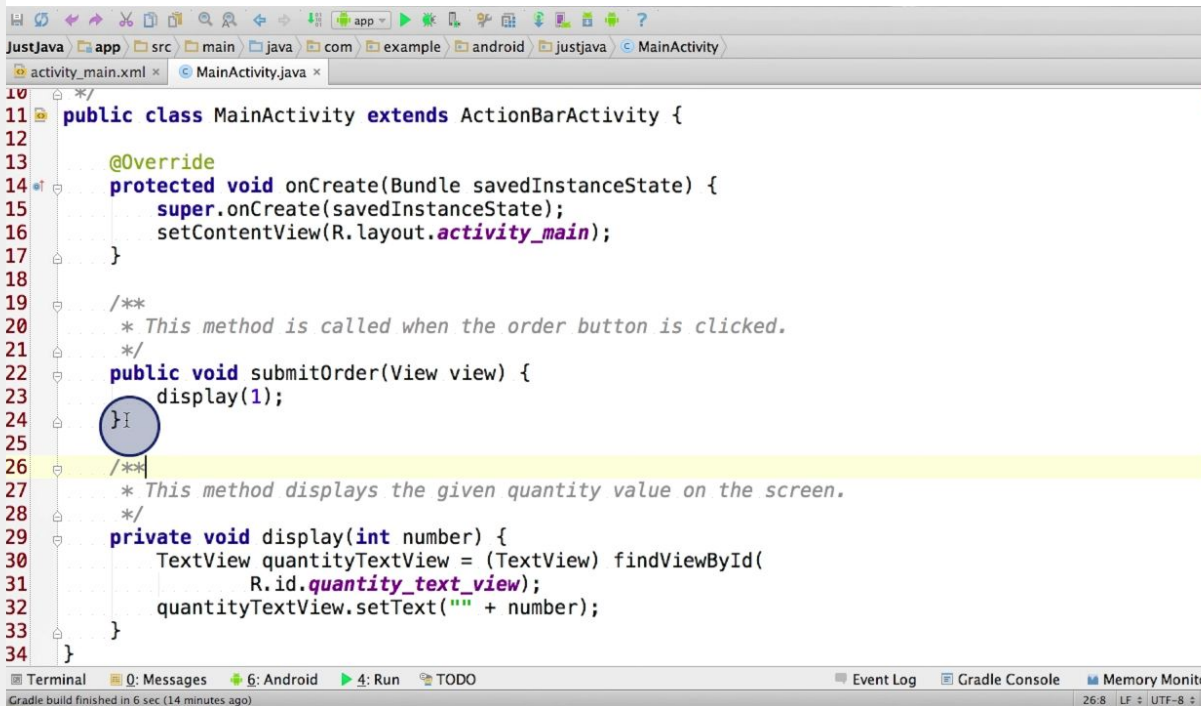
onClick

Execute

Method

Calling

Expressions



```
10  */
11  public class MainActivity extends ActionBarActivity {
12
13      @Override
14      protected void onCreate(Bundle savedInstanceState) {
15          super.onCreate(savedInstanceState);
16          setContentView(R.layout.activity_main);
17      }
18
19      /**
20       * This method is called when the order button is clicked.
21       */
22      public void submitOrder(View view) {
23          display(1);
24      }
25
26      /**
27       * This method displays the given quantity value on the screen.
28       */
29      private void display(int number) {
30          TextView quantityTextView = (TextView) findViewById(
31              R.id.quantity_text_view);
32          quantityTextView.setText("" + number);
33      }
34  }
```

Lesson 2A

Math Problems

Explica expressões matemáticas e a sua utilização no Java.

Resposta

```
display(77 * 2 + 1);
```

ANDROID WILL DO THE MATH
FOR YOU

ARITHMETIC OPERATORS

Addition + Subtraction -
Multiplication * Division /

Experiment with different
math expressions.

```
display(18 * 3 + 4 / (2 + 2) - 1);
```



Display # of coffees heeded if...

There are 77 Android developers who drink 2 cups
each and 1 person walks in late and needs a cup too.

Lesson 2A

Price your Coffee!

Descreve a utilização de um novo método.

Vocabulário

Gist
Snipped

ADD TEXT VIEW FOR PRICE \$

- 1. Add 2 TextViews to layout
assign view ID

`@+id/price_text_view`

to view displaying price →



- 2. Modify **MainActivity** to include the new `displayPrice(View view)` method (see link in notes)
*Make sure Auto Import is on in Android studio
- 3. Add another line of code in `submitOrder(View view)`

example →

```
display(2);  
displayPrice(2*5);
```

Lesson 2A

Variables

Descreve o conceito de variáveis e valores literais.

Vocabulário

Variables

Robust

USING LITERAL

Quantity is:

3

Price is:

3 * 5

Paper cup charge is:

3 * 2

USING VARIABLE

➡ set number of Coffees to be 3

Quantity is:

numberOfCoffees

Price is:

numberOfCoffees * 5

Paper cup charge is:

numberOfCoffees * 2

Lesson 2A Variables

Descreve o conceito de variáveis e valores literais.

Vocabulário

Variables

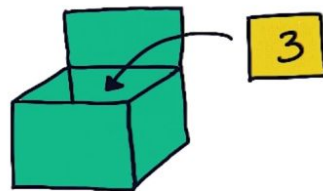
Robust

USING VARIABLE

```
int numberOfCoffees = 3;
```

```
display(numberOfCoffees);
```

```
displayPrice(numberOfCoffees * 5);
```



numberOfCoffees



Lesson 2A

Variables

Descreve o conceito de variáveis e valores literais.

Vocabulário

Data type

int

Variable name

Assignment operator

Initializing

DECLARE A VARIABLE

```
int numberOfCoffees = 2;
```

Data
type

Variable
name

=

Initial
value



Lesson 2A

Debugging a Crash

O que é um bug, e como encontrar o problema?

Vocabulário

Debug

Crashes

Compile time error

Runtime error

System log

Stacktrace



1. Create a crash in your app by changing `submitOrder`
2. Check the logs for the error stack trace
⚡ read the error message
3. Fix the error so your app works again

Lesson 2A

Hook Up Two Buttons

Incrementando o layout. Como pedir mais café?

Quantity
Picker



- ☑ 1. Modify `activity-main`
 - change layout
 - when `+` call `increment`
 - when `-` call `decrement`
- ☑ 2. For `increment` method
 - create `quantity` variable and initialize to `3`
 - display `quantity`
- ☑ 3. For `decrement` method
 - create `quantity` variable and initialize to `1`
 - display `quantity`

Lesson 2A

Debug Mode

Debuggando!


Verificando o comportamento do seu código.

Vocabulário



Debugger



DEBUGGING IN ANDROID

- ☒ Add **red** breakpoint in first line of `increment & decrement` methods 

29
30
31
32

```
public void  
int qua  
display
```
- ☒ Run in Debug Mode 
- ☒ Step through each line of code.
Click  to resume execution of app.

Lesson 2A

Updating a Variable

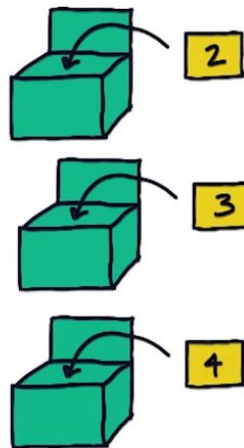
Mantendo e atualizando valores das variáveis.

UPDATING A VARIABLE

`int quantity = 2;`

`quantity = quantity + 1;`
 $2 + 1 = 3$

`quantity = quantity + 1;`
 $3 + 1 = 4$



Lesson 2A

Making this Work

Definindo o escopo da variável.
O que são variáveis locais e globais?

Vocabulário

Variable scope

Local variables

Global variable

Variable declaration

LOCAL VARIABLE SCOPE

```
public class MainActivity {  
    public void increment(View view) {  
        int quantity = 2;  
        quantity = quantity + 1;  
        display(quantity);  
    }  
  
    public void decrement(View view) {  
        int quantity = 2;  
        quantity = quantity - 1;  
        display(quantity);  
    }  
    :  
}
```

GLOBAL VARIABLE SCOPE

```
public class MainActivity {  
    int quantity = 2;  
    public void increment(View view) {  
        quantity = quantity + 1;  
        display(quantity);  
    }  
  
    public void decrement(View view) {  
        quantity = quantity - 1;  
        display(quantity);  
    }  
    :  
}
```

Lesson 2A

Making this Work

Definindo o escopo da variável.
O que são variáveis locais e globais?

Vocabulário

Variable scope

Local variables

Global variable

Variable declaration

LOCAL VARIABLE SCOPE

```
public class MainActivity {  
    int quantity=2;  
    public void increment(View view){  
        quantity = quantity+1;  
        display(quantity);  
    }  
    public void decrement(View view){  
        quantity = quantity-1;  
        display(quantity);  
    }  
    public void submitOrder(View view){  
        int quantity=5;  
        display(quantity);  
        displayPrice(quantity * 5);  
    }  
    :  
}
```

GLOBAL VARIABLE SCOPE

```
public class MainActivity {  
    int quantity=2;  
    public void increment(View view){  
        quantity = quantity+1;  
        display(quantity);  
    }  
    public void decrement(View view){  
        quantity = quantity-1;  
        display(quantity);  
    }  
    public void submitOrder(View view){  
        displayPrice(quantity * 5);  
    }  
    :  
}
```

MAKING AN APP INTERACTIVE

LESSON 2B

Lesson 2B

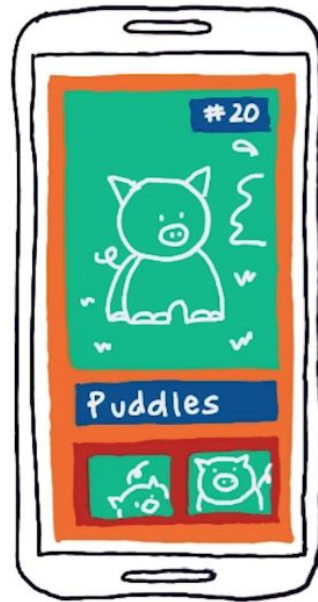
Nested ViewGroups

Introduz o conceito de ViewGroups em ViewGroups.

Vocabulário

Nested ViewGroups

NESTED VIEWGROUPS



Lesson 2B

String Data Type

Descreve o conceito de variáveis e a String, o tipo de armazenamento para texto.

— — —

STRING DATA TYPE

Free

1. Modify this method.

```
public void submitOrder(View view) {  
    String priceMessage = "Free";  
    displayMessage(priceMessage);  
}
```

2. Add new `displayMessage` method to `MainActivity`.
See instructor notes.



a. What happens when the `ORDER` button is clicked?

b. We created a String variable.

Variable name?

Variable value?

Lesson 2B

String Concatenation

Descreve o conceito de variáveis e a String, o tipo de armazenamento para texto.

— — —

STRING CONCATENATION

"I need " + 2 + "cups of coffee " + "on Monday"

I need 2 cups of coffee on Monday

Lesson 2B

String Concatenation

Descreve o conceito de variáveis e a String, o tipo de armazenamento para texto.

— — —

STRING CONCATENATION

"I need " + quantity + "cups of coffee " + "on Monday"

I need 2 cups of coffee on Monday

Lesson 2B

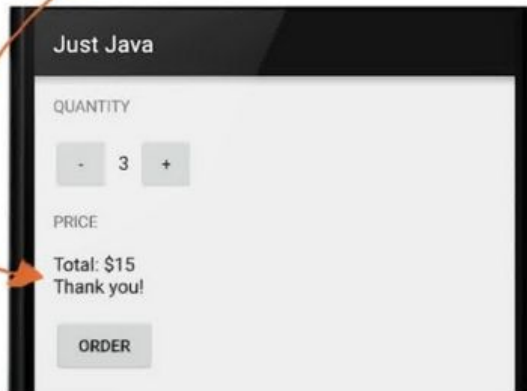
String Concatenation

Descreve o conceito de variáveis e a String, o tipo de armazenamento para texto.

— — —

UPDATING STRING VARIABLE

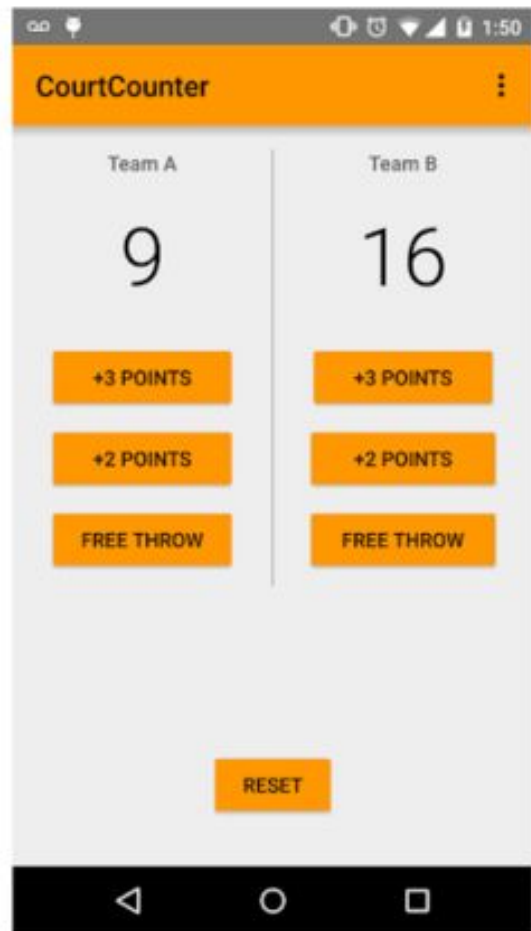
- ☑ Experiment with updating the String variable.
- ☑ Then implement this behavior in the app.



PRACTICE SET 2

LESSON 2A and 2B

MAKE
IT
PRETTY
DONE → 



PRACTICE

LESSON 2A and 2B

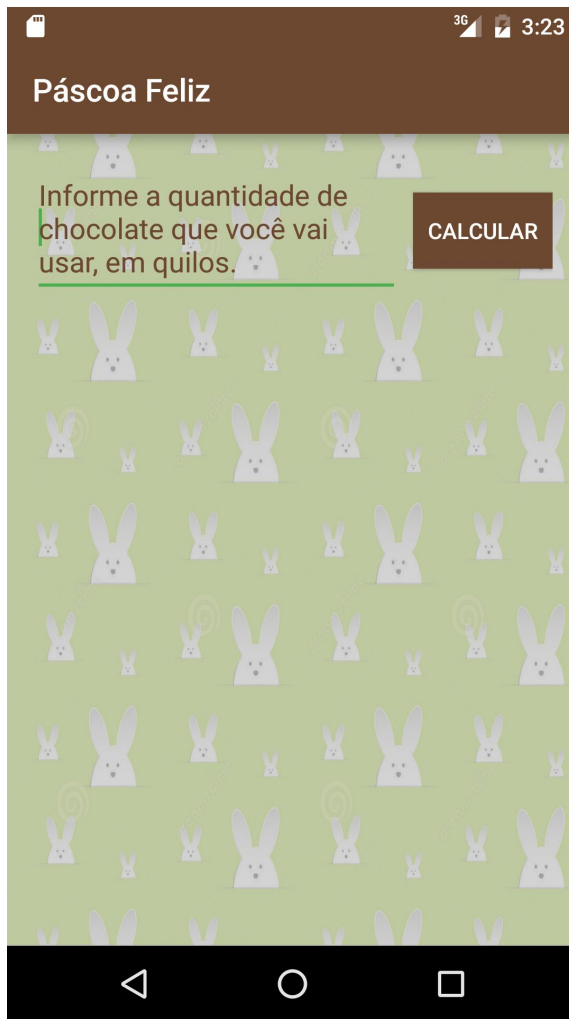
Practice

Páscoa Feliz

Vamos construir esse novo layout, o que precisamos?

<http://goo.gl/sZ9xjX>

<http://goo.gl/j9F423>



Practice

Páscoa Feliz

Vamos construir esse novo layout, o que precisamos?

Resposta

1 **RelativeLayout**

1 **LinearLayout**

2 **ImageView**

1 **Button**

1 **EditText**

1 **TextView**



Practice

Páscoa Feliz

findViewById() é o método responsável por retorna a instância do elemento que está no layout.

```
private EditText editTextQuantidade;  
private ImageView imageViewOvos;  
private TextView textViewTotal;
```

```
private void initViews() {  
    editTextQuantidade = (EditText) findViewById(R.id.edittext_quantidade);  
    imageViewOvos = (ImageView) findViewById(R.id.imageview_ovos);  
    textViewTotal = (TextView) findViewById(R.id.textview_total);  
}
```

```
imageViewOvos.setVisibility(View.INVISIBLE);  
imageViewOvos.setVisibility(View.VISIBLE);|
```

Referências

- <https://goo.gl/mHIRyZ> ← **essa apresentação**
- <http://www.gdgbh.org>
- gdgbh.slack.com (Private Channel: **#android-study-jam**)
- <https://goo.gl/dhwwY5> (Android Development for Beginners)
- <https://developers.google.com>

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