

CODAPPS

Filling the layout with content

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you must have worked and understood the content of Module 5 about **coding** before you can follow this lesson.

1. Where we left

- we have created a Form,
- added variables to it,
- and create a special method in it: a constructor which will be executed when the Form gets created (**instantiated**).
- we have put the Form in a GridLayout with three rows and one column.
- the first and last rows are in a BorderLayout
- the 2nd row is in a GridLayout.

2. Working on the top row

In the top of the screen we want to see the big cookie where the player can click, and 2 scores:

- the cookies produced
- the rate of cookie production ("cookies per second")

Let's add these things, by typing the following lines of code just where we left:

Creating the clickable picture of the cookie

```
// these lines of code should go inside public Form1() { }  
this.addComponent(northRegion);  
this.addComponent(centerRegion);  
this.addComponent(southRegion); ①  
  
// creating the cookie central button  
ScaleImageButton cookieCentral = new ScaleImageButton(); ②  
cookieCentral.setIcon(cookieCentraPic); ③  
cookieCentral.setBackgroundType(Style.BACKGROUND_IMAGE_SCALED_FIT); ④  
cookieCentral.getPressedStyle().setBgImage(cookiePressedPic); ⑤
```

① this is the last line we had written in the previous lesson, for reference

- ② we declare and instantiate a variable of type `ScaleImageButton`: a picture that can be clicked.
- ③ we give it a picture... that we had defined as a variable above! (`cookieCentralPic`)
- ④ the picture should stretch to fit the available space (you should remember this setting from the GUI Builder)
- ⑤ When pressed, the button changes its picture.

Creating the Label showing the score

```
// these lines of code should go inside public Form1() { }  
Label scoreLabel = new Label();  
scoreLabel.setText("0 cookies");  
scoreLabel.getStyle().setAlignment(Component.CENTER); //centering the text
```

Creating the Label showing the cookies produced per second

```
// these lines of code should go inside public Form1() { }  
Label cookiesPerSecondLabel = new Label();  
cookiesPerSecondLabel.setText("0 per second");  
cookiesPerSecondLabel.getStyle().setAlignment(Component.CENTER); //centering the text
```

Adding what we just created to the Container in the top row

```
// these lines of code should go inside public Form1() { }  
northRegion.add(BorderLayout.NORTH, scoreLabel);①  
northRegion.add(BorderLayout.CENTER, cookieCentral);①  
northRegion.add(BorderLayout.SOUTH, cookiesPerSecondLabel);①
```

- ① We have seen this logic in the GUI Builder: when the Container is in a BorderLayout, the components you add to it need to be set in North, West, South, East or Center positions.

Good! We have finished the top row. If you launch the preview, your app should look like this:

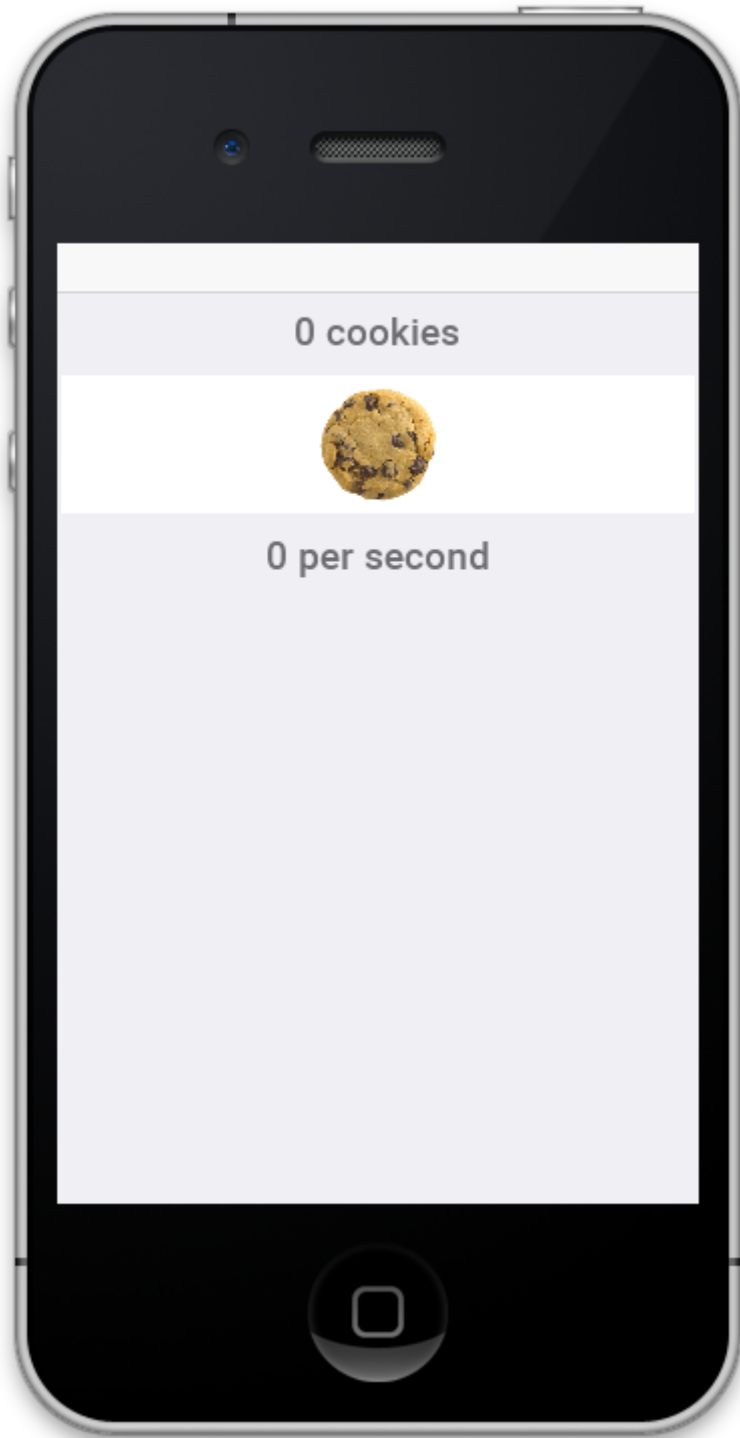


Figure 1. The app with the top row designed

3. Working on the middle row

The middle row of the app will receive the tools that the player can buy to speed up the cookie production.

This is where plenty of creativity can take place. Here we will create just tools:

- the autoclicker: when you buy it, it clicks automatically once every 10 seconds
- the grandma: she bakes cookies (one per second)

- the farm: you cultivate cookies at the rate of three per second.

Each of these items can be purchased multiple times: their productivity grows, but their price as well!

Let's create them in the app, right after the last lines of code we have written:

Creating the autoclick tool

```
// these lines of code should go inside public Form1() { }
MultiButton autoclickButton = new MultiButton("Auto click"); ①
autoclickButton.setIcon(clickPic);②
autoclickButton.setTextLine2("\Get your fingers some rest\"); ③
autoclickButton.setTextLine3("clicks 1 times every 10 seconds");
autoclickButton.setTextLine4("price: 15 cookies. Owned: 0");
```

- ① The MultiButton is a Component not available in the GUIBuilder, so we discover it here. Very useful for us here.
- ② We had imported the picture in theme.res and created a variable `clickPic` from it
- ③ Why this strange `\` sign on this line? Since the `"` character is used in code to enclose text, what if you need this character in the text itself? You need to add a `\` just before.

Creating grandmas

```
// these lines of code should go inside public Form1() { }
MultiButton grandmaButton = new MultiButton("Grandma");
grandmaButton.setIcon(grandmaPic); ②
grandmaButton.setTextLine2("\Bake cookies with love\");
grandmaButton.setTextLine3("each grandma produces 1 cookie per second");
grandmaButton.setTextLine4("price: 100 cookies. Owned: 0");
```

- ① We had imported the picture in theme.res and created a variable `grandmaPic` from it

Creating farms

```
// these lines of code should go inside public Form1() { }
//The farm
MultiButton farmButton = new MultiButton("Farm");
farmButton.setIcon(farmPic);
farmButton.setTextLine2("\Harvest cookies every summer!\");
farmButton.setTextLine3("each farm produces 3 cookies per second");
farmButton.setTextLine4("price: 500 cookies. Owned: 0");
```

Finally, **we need to add these three items** to the Container `centerRegion` which is in the 2nd row of the screen:

Adding these 3 items to the middle row

```
// these lines of code should go inside public Form1() { }  
centerRegion.add(autoClickButton);  
centerRegion.add(grandmaButton);  
centerRegion.add(farmButton);
```

Launch the preview: your app should now look about like this (except for the color and a few details).

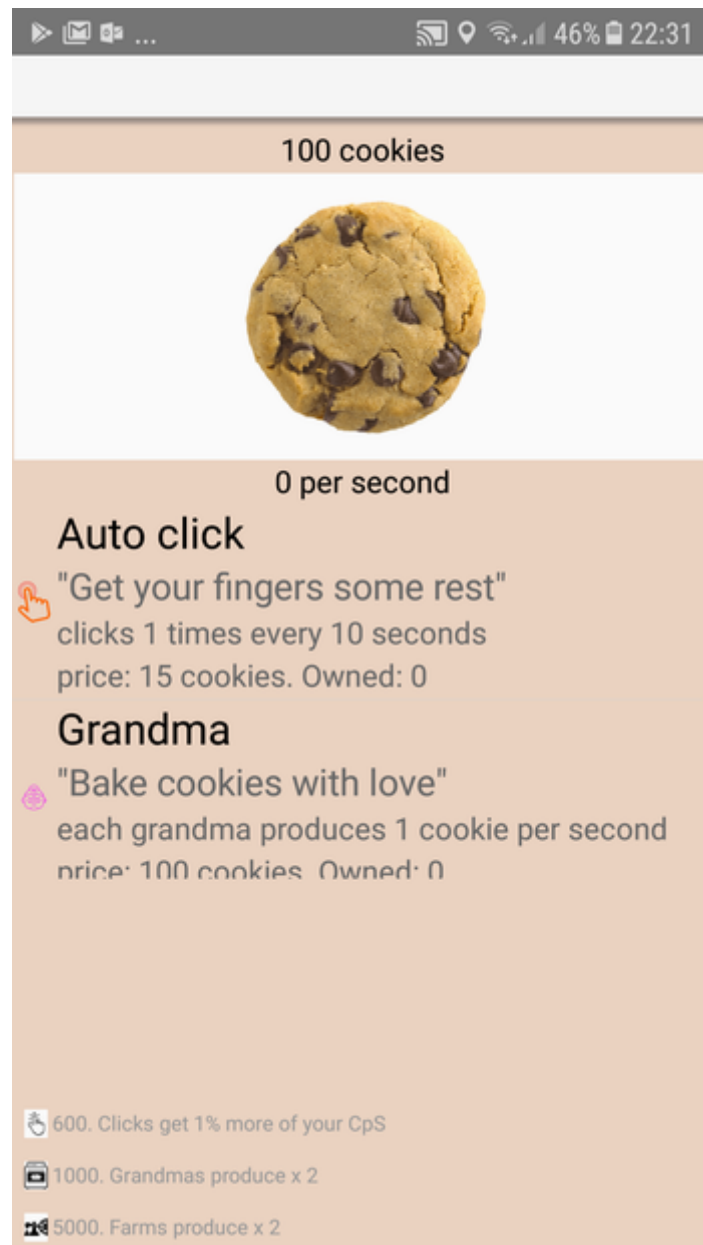


Figure 2. The Cookie Clicker design

Notice that the cookie can be clicked, and the panel for tools is scrollable vertically.

Your app is now correctly designed, congrats! Yet, the "logic" of the app is still missing! This will be for our last module.

If you need the entire code we have written in `Form1.java` so far, you can download it [here](#).

The end

Questions? Want to open a discussion on this lesson? Visit the forum [here](#) (need a free Github account).

Find references for this lesson, and other lessons, [here](#).

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This course is designed by Clement Levallois.

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