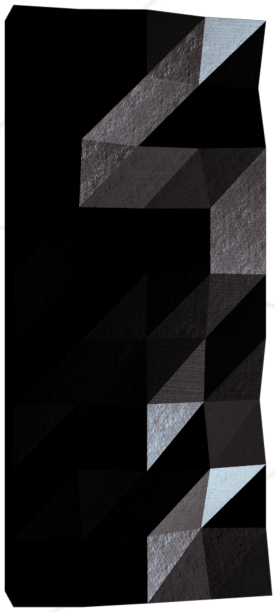


Piscine Mobile - 0

The basic of the mobile development

Summary: This document contain the subject for the Module00 of the Piscine Mobile

Version: 2

Contents

Chapter I

Instructions

- Only this page will serve as reference. Do not trust rumors.
- Read attentively the whole document before beginning.
- Your exercises will be corrected by your piscine colleagues.
- The document can be relied upon, do not blindly trust the demos or pictures example which can contain not required additions.
- Got a question? Ask your peer on the right. Otherwise, try your peer on the left.
- By Odin, by Thor ! Use your brain !!!

Intra indicates the date and the hour of closing for your repositories. This date and hour also corresponds to the beginning of the peer-evaluation period for the corresponding piscine day. This peer-evaluation period lasts exactly 24h. After 24h passed, your missing peer grades will be completed with a 0.

Chapter II

Introduction

II.1 What is a mobile application ?

A mobile application is a software application designed to run on mobile devices, such as personal digital assistants, enterprise digital assistants or mobile phones.
These applications can be pre-installed on phones during manufacturing platforms, or delivered as web applications using server-side or client-side processing.
Mobile applications often stand in contrast to desktop applications which run on desktop computers, and with web applications which run in mobile web browsers rather than directly on the mobile device.

II.2 What is Flutter ?

Flutter is Google's mobile UI framework for crafting high-quality native interfaces on iOS and Android in record time. Flutter works with existing code, is used by developers and organizations around the world, and is free and open source.

Chapter III

Exercise 00: A basic display

	Exercise :
A basic display	
Turn-in directory : `mobileModule00`	
Files to turn in : *my_first_proj* `and all neccessary files`	
Forbidden functions : `None`	

`As explained in the main project we are using Flutter for the realisation of these projects, so we will sometimes use terms inherent to this framework. So it is up to you to adapt and find the correctness in the framework you have chosen to use.`

For your first exercise, you will have to create a new *first_proj* project using the tools provided by the framework of your choice.

If you use flutter, is important to understand the structure of a flutter project and, for this exercise, what is a `widgets` and their different `states`.

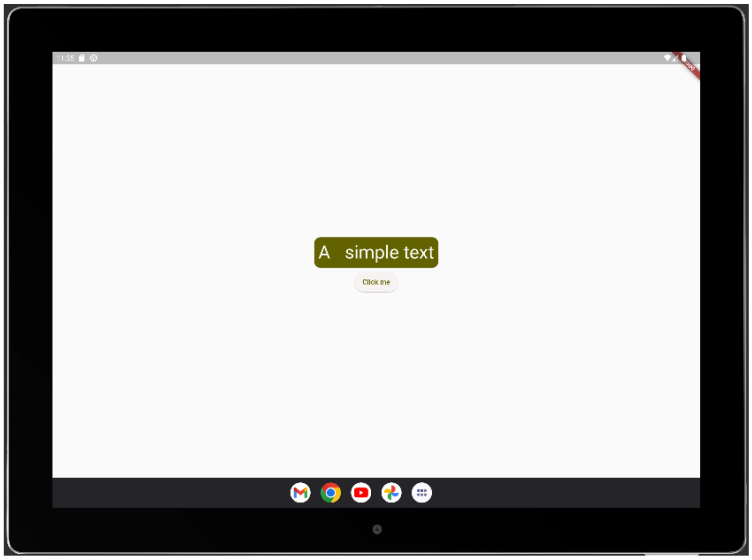
For now, your project must contain a single page with some widgets:

- A text with a button underneath, they will be centred horizontally and vertically.
- When the button is clicked, you must display “Button pressed” in the debug console.
- Of course your application must be responsive

It should look something like this :

On Phone :

On Tablet :



On the debug console:

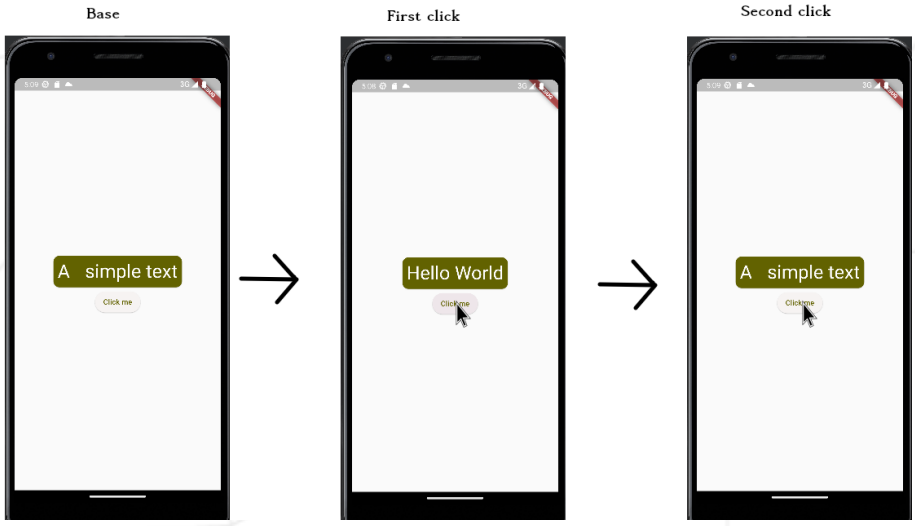
```
I/flutter ( 5024): Button pressed
```

Chapter IV

Exercise 01: Say Hello to the World

	Exercise :
Say Hello to the World	
Turn-in directory : `mobileModule00`	
Files to turn in : *my_first_proj* `and all neccessary files`	
Forbidden functions : `None`	

Now you will have to make sure that the text you display in the application changes when you click on the button.
It should display “Hello World!” instead of your initial text.
Each time you click on the button the text should switch between your initial text and “hello world!”.



Chapter V

Exercise 02: Moar buttons

	Exercise :
Moar buttons	
Turn-in directory : `mobileMmodule00`	
Files to turn in : *calculator_proj* `and all neccessary files`	
Forbidden functions : `None`	

Now you have understood the basics of displaying text and buttons, you can create a new project called *calculator_proj*.

In this new project, you need to display an `AppBar` at the top of your screen with the title “Calculator”.

Like this:

You also need 2 Text fields (one for display the expression and one for display result) and several buttons. For the moment just display “0” inside the 2 Text fields, you will deal

with it in the next exercise.

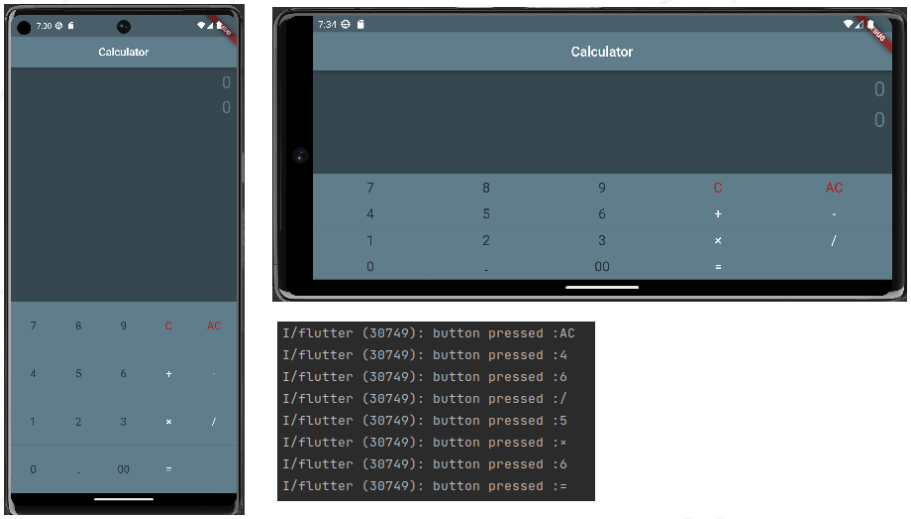
Buttons :

- Numbers from 0 to 9.
- “ . ” the decimal numbers.
- “AC” will reinitialize the expression and result.
- “C” will delete the last character of the expression.
- “=” will display the result of the expression.
- Operators : “ + ”, “ - ”, “ * ”, “ / ”.

You must add an debug. For each button you press, you can display the text of the button in the debug console.

Once all the button have been properly set, make sure the display is suitable for all devices (phone, tablet, other devices).

You should have something like this :



Chapter VI

Exercise 03: It's alive!

	Exercise :
It's alive!	
Turn-in directory : `mobileModule00`	
Files to turn in : *calculator_proj* `and all neccessary files`	
Forbidden functions : `None`	

`for this exercice you can use the math_operation library.`

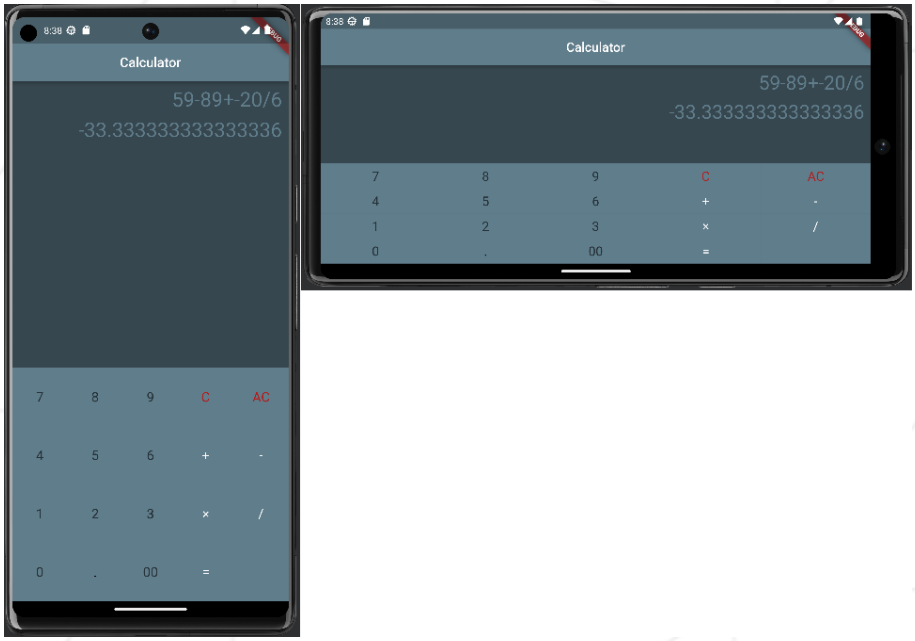
Now you have to make your calculator work!
So you have to add the logic to it.

The Text fields you have created in the previous exercise must display the expression and the result of the expression.

- You must be able to do the following operations :
  - Addition
  - Subtraction
  - Multiplication
  - Division
- you can perform several operations in one expression (ex : 1 + 2 * 3 - 5 / 2).
- Must be able to enter a negative number (by pressing the " - " button before the number).
- Must be able to enter a decimal number.

- Must be able to delete the last character of the expression.
- Must be able to delete the whole expression and result.

You can have something like this :



Be careful, if you don't test properly your code, you can have some problems. For example, if you enter an incorrect expression, a division by 0, a very big number etc.

`Your apllication must NEVER crash!`

Chapter VII

Submission and peer-evaluation

Turn in your assignment in your `Git` repository as usual. Only the work inside your repository will be evaluated during the defense. Don't hesitate to double check the names of your folders and files to ensure they are correct.

`The evaluation process will happen on the computer of the evaluated group.`