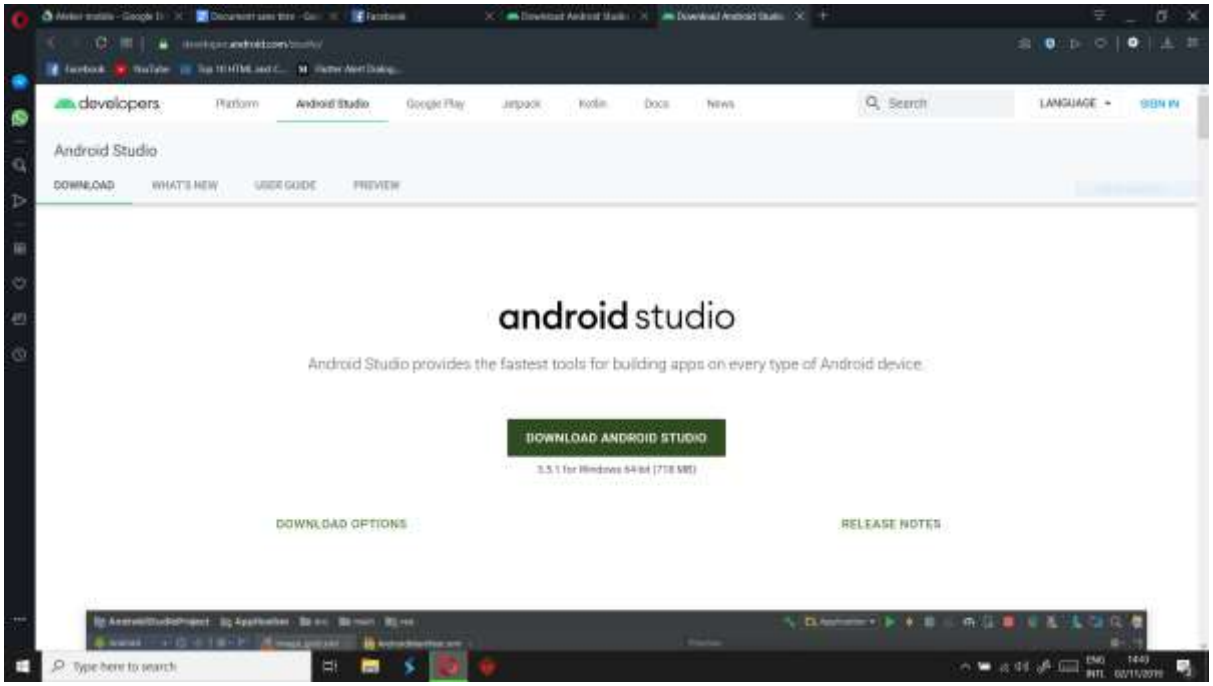
Atelier développement mobile

Préparation de l’environnement de développement

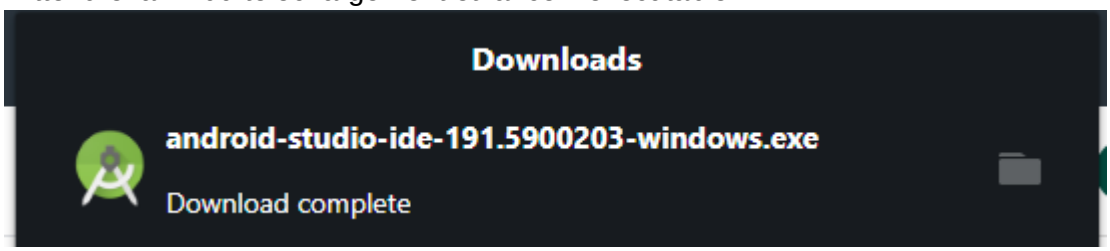
➔ Installation d’android studio:

- Veuillez cliquez sur ce lien qui va vous diriger vers la page pour le téléchargement d’Android Studio.

https://developer.android.com/studio



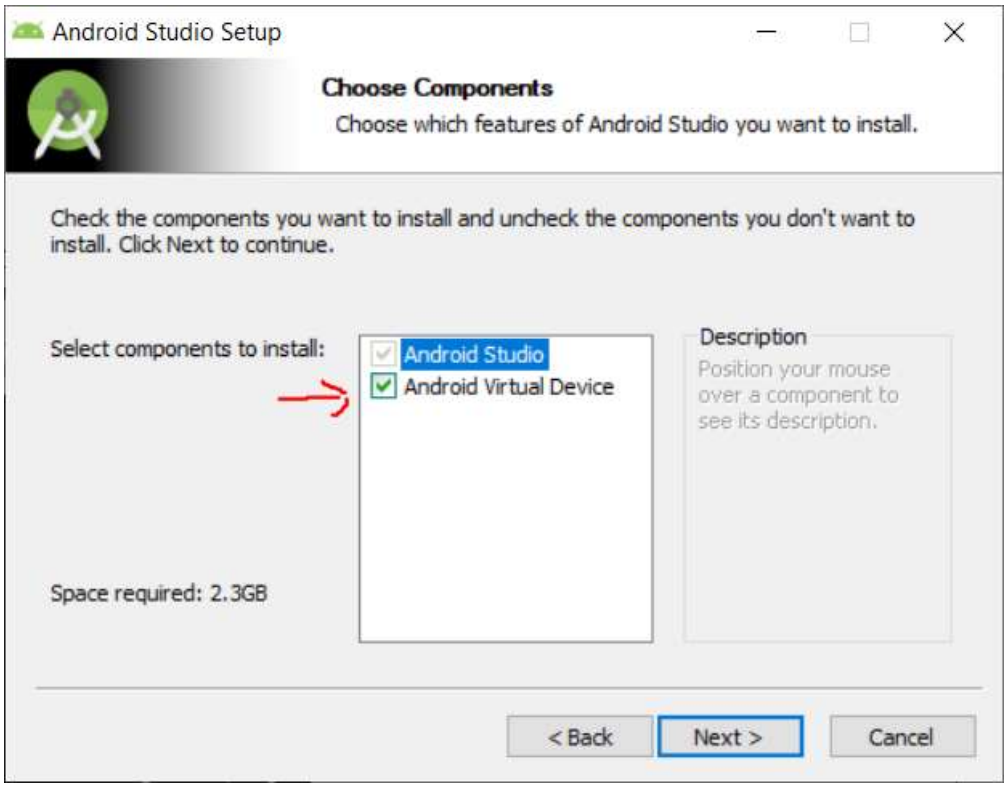
-Cliquez sur “DOWNLOAD ANDROID STUDIO” pour commencer le téléchargement.
La taille du fichier est de 700 mb. Sous wifi, cela va prendre environ 10-15 minutes.
-Attendre la fin du téléchargement et lancer l'exécutable.



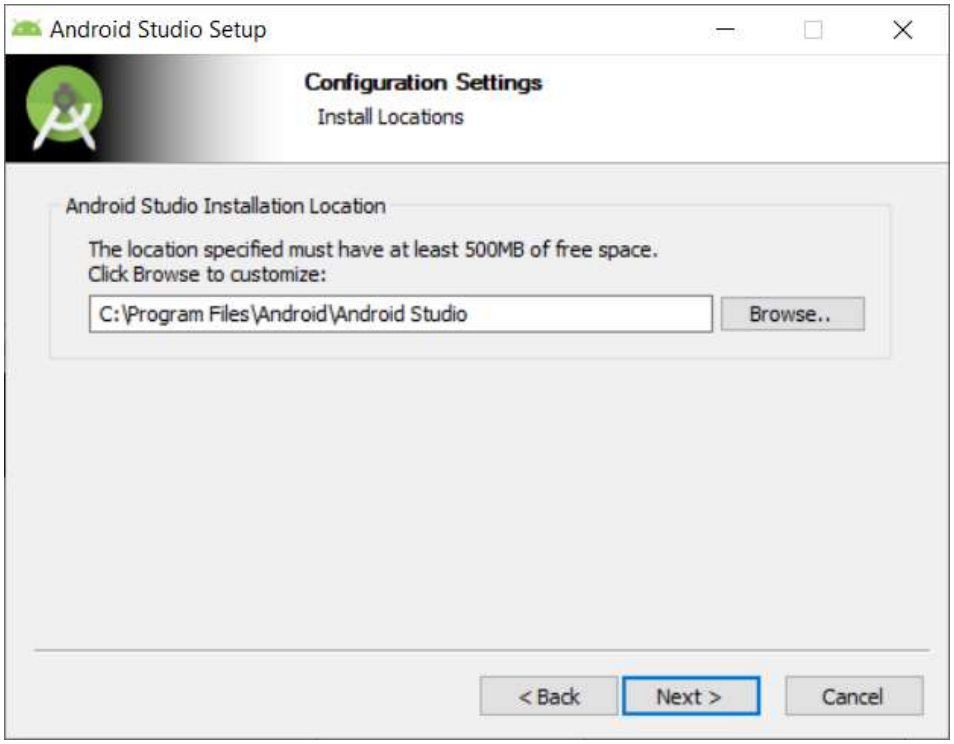
-Durant l’installation vous allez garder la plupart des options en défaut, je mentionnerai les options à modifier.

-Appuyez sur Next.

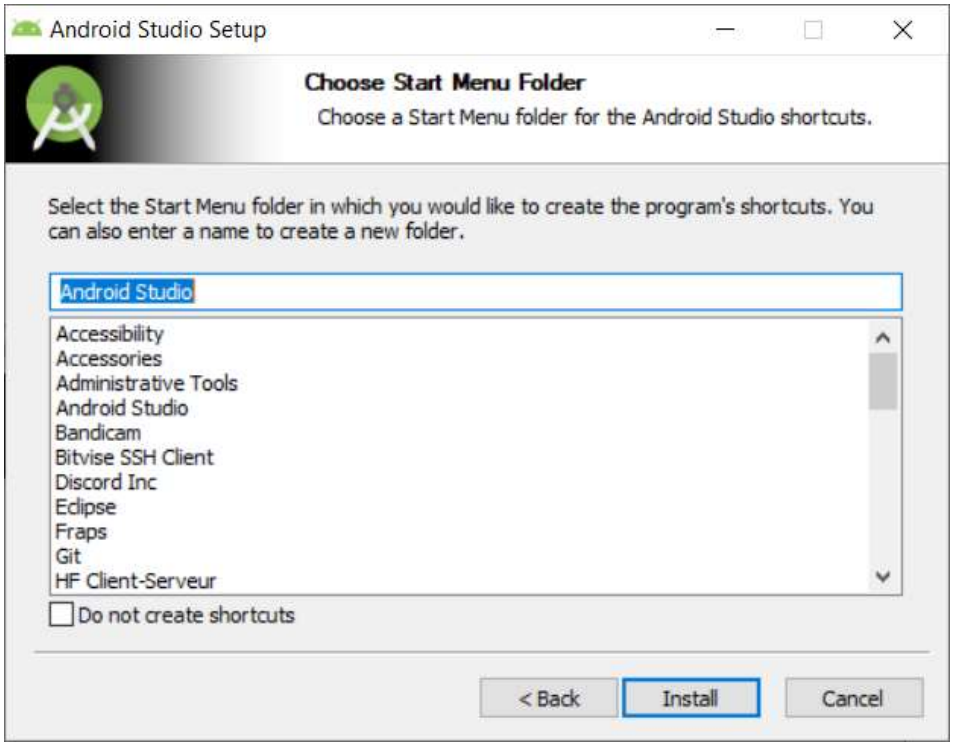
-Si vous avez un bon ordinateur vous pouvez cochez : Android Virtual Device. Cela nous permettra de manipuler des émulateurs. (Une simulation d'un téléphone mobile dans votre ordinateur qui va vous permettre de tester vos applications)



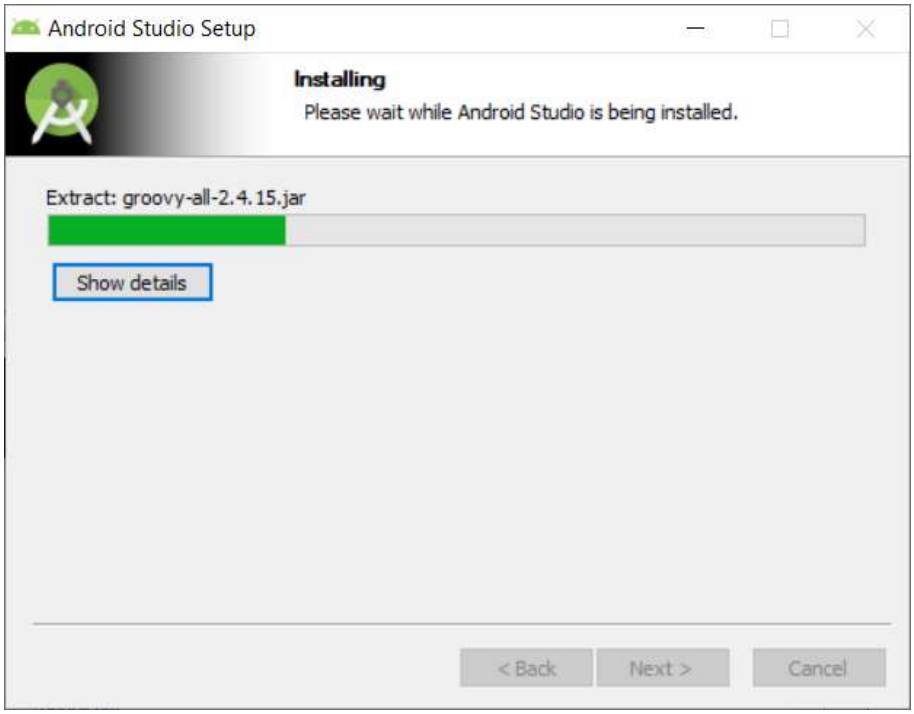
-Le chemin de l'installation, je vous invite à garder le chemin par défaut.



-Cliquez sur Installer.

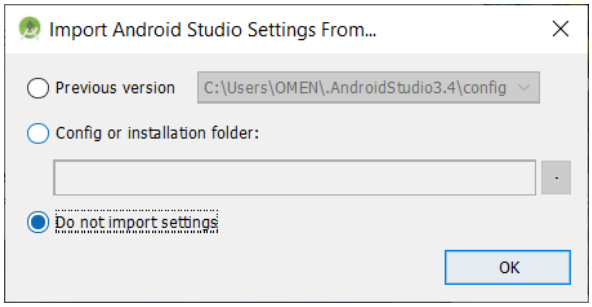


- Attendre la fin de l'installation et puis cliquer sur Next.



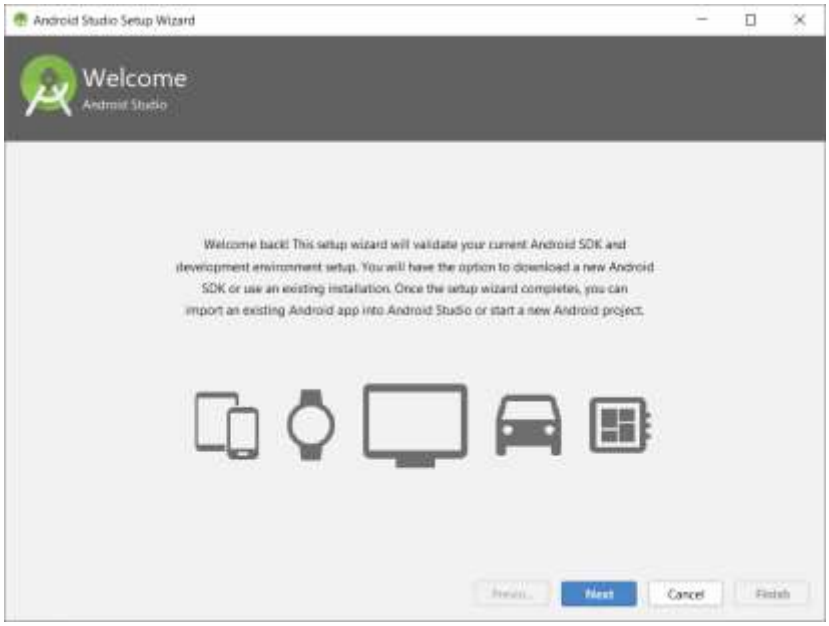
-Moment tant attendu, appuyer sur finish pour lancer Android studio.

-Dans la première utilisation il vous affichera cette fenêtre..

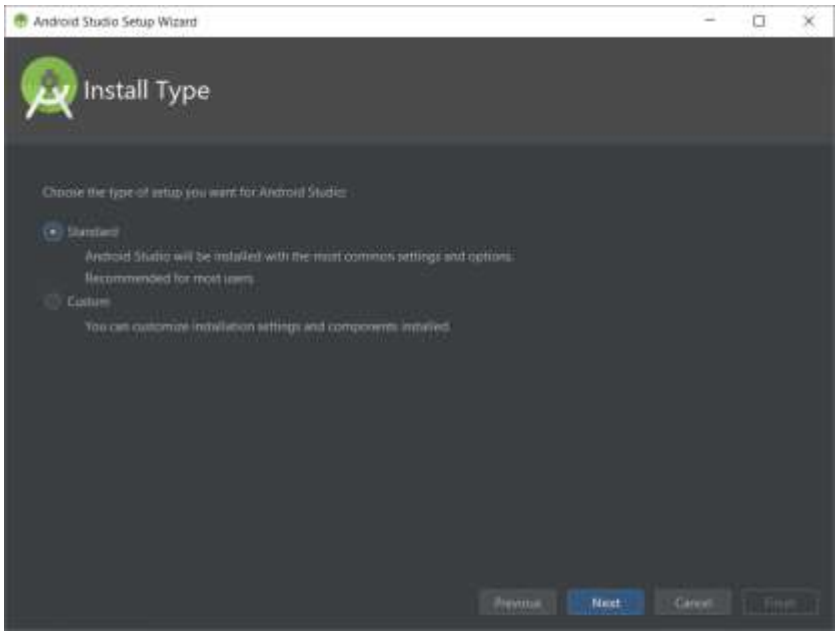


Vous devez toujours resté connecté à internet car des téléchargements peuvent avoir lieu.

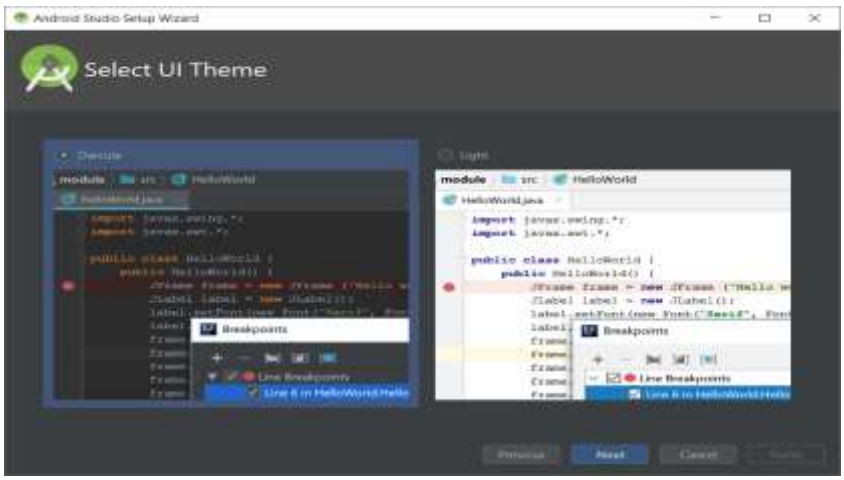
- Appuyer sur Next. (Ne vous inquiétez c'est bientôt finis :p)



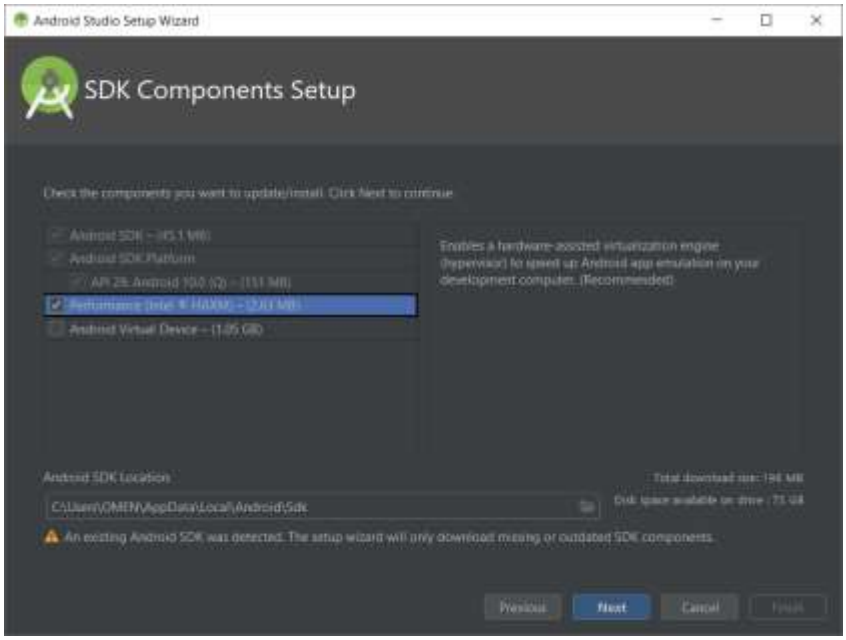
-Choisir “Standard” et continuer.



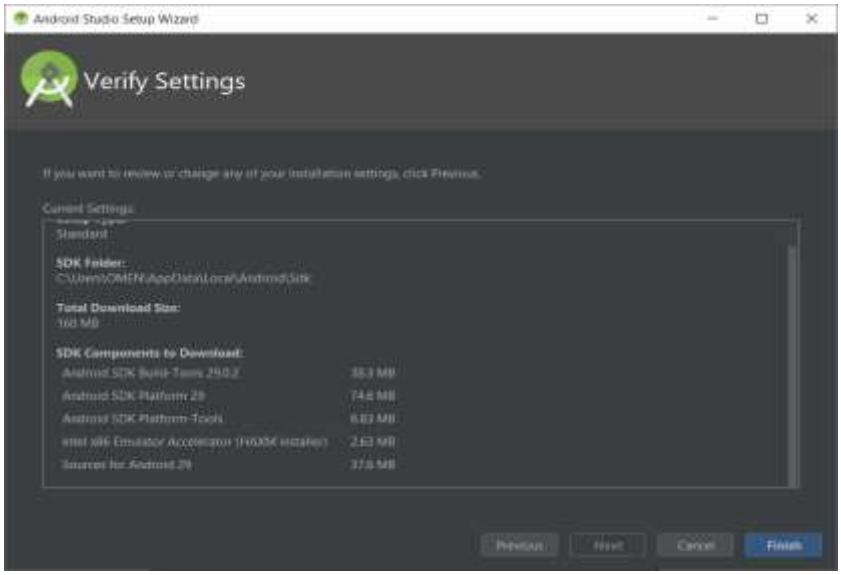
- Choisissez le thème qui vous convient :p (Je préfère le noir c’est plus adapter à mes yeux)



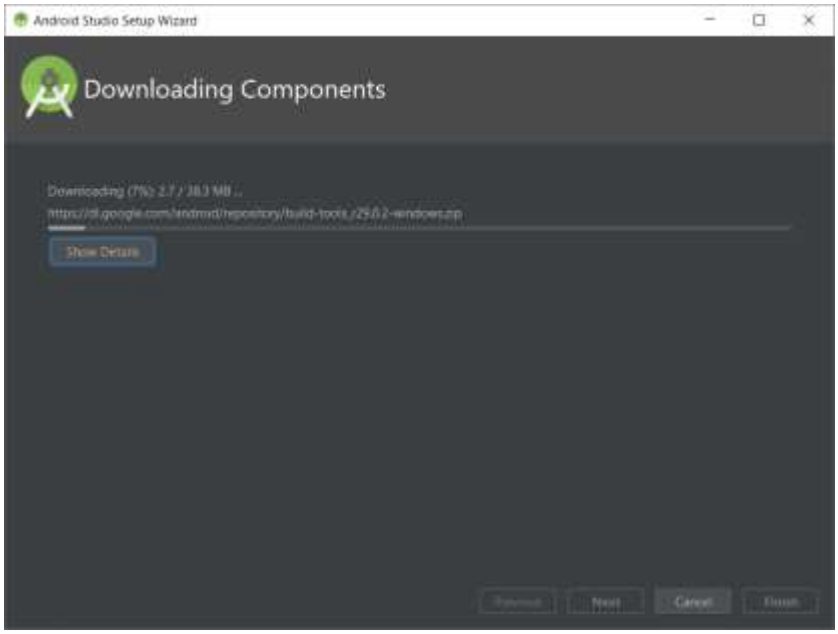
- Assurez vous des cases cochées et appuyer sur next.



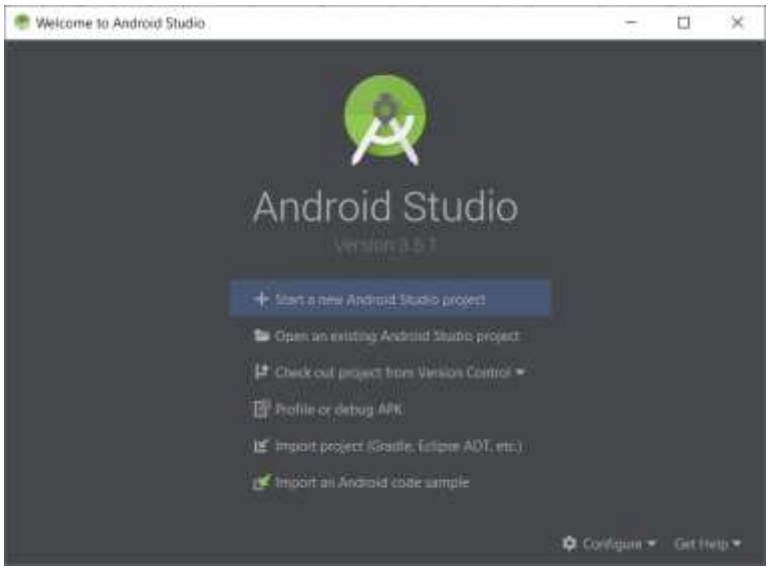
- Appuyez sur finish , allez on y est presque.



-On attend gentillement la fin du téléchargement, cela ne va pas prendre bcp de temps.

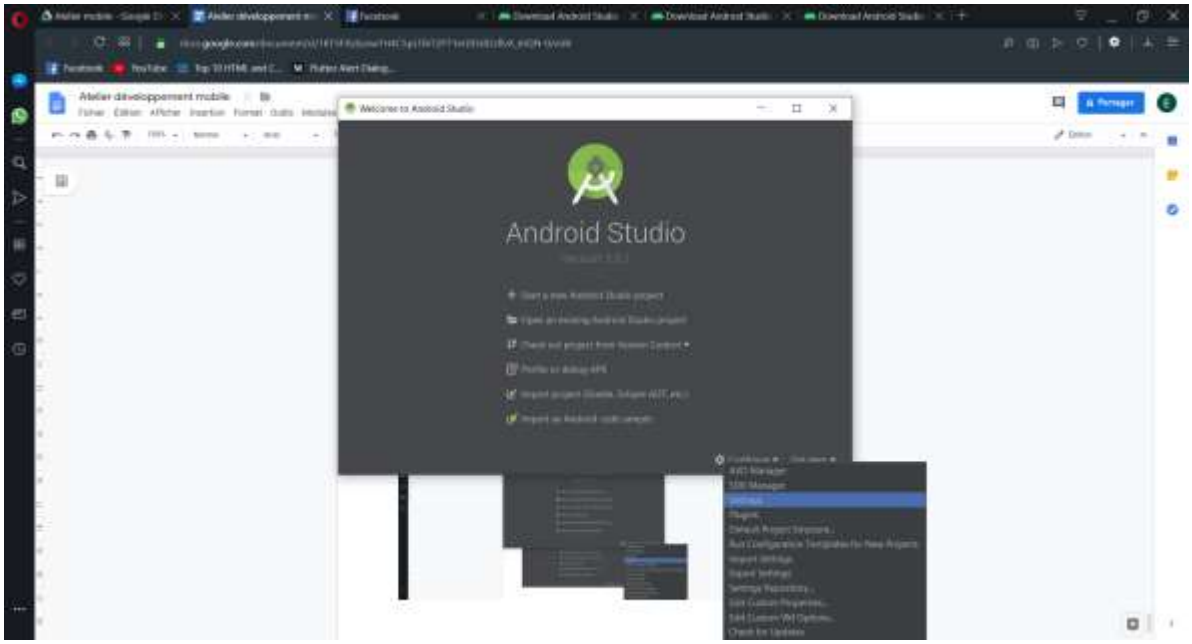


-Et bim, enfin voilà le menu principale d'Android studio. L'installation d'android studio a été effectué avec succès.

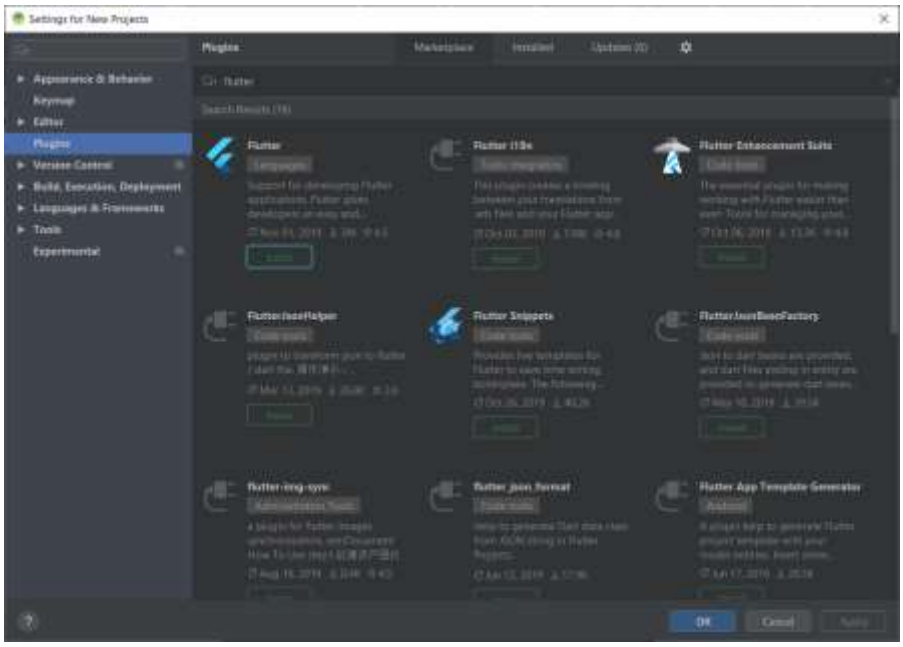


➔ Intégration des plugins Flutter et Dart dans Android studio :

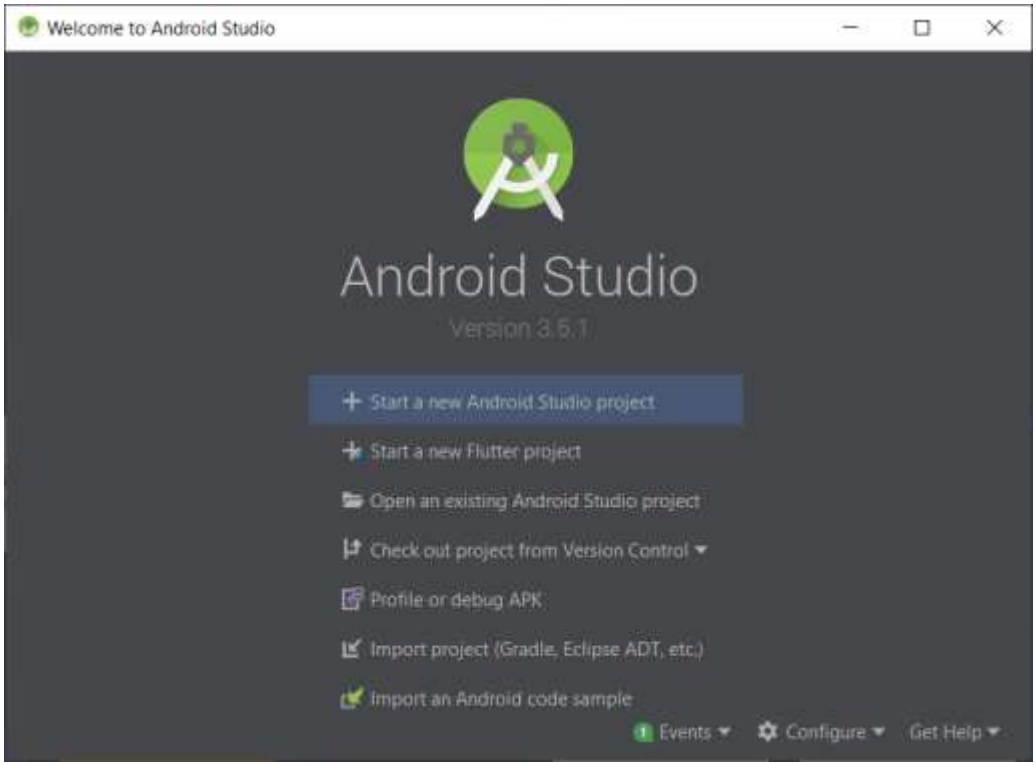
-En bas, veuillez cliquer sur **"Configure"** après cliquer sur "**settings"** dans le petit menu qui va s'afficher.



-Dans la liste tout à gauche, cliquer sur l'onglet Plugins puis dans la barre de recherche, écrire Flutter et bien sûr cliquer sur **install**.



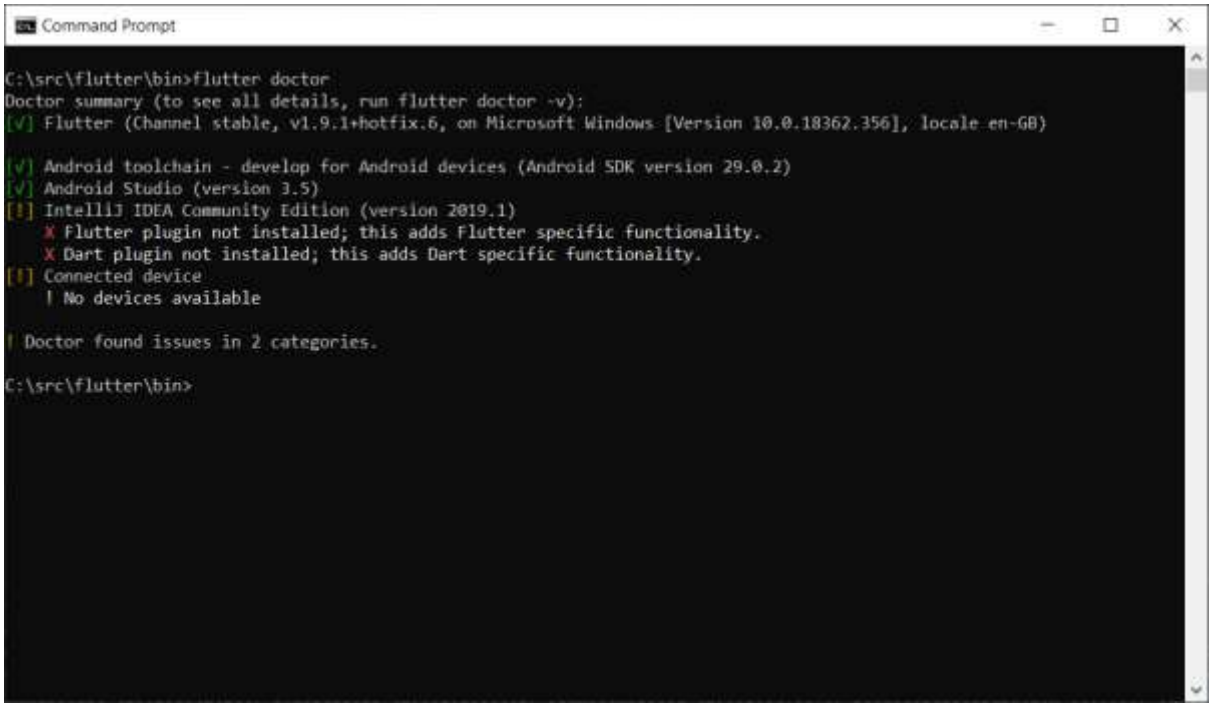
Normalement en installant flutter , le langage dart est installé automatiquement.
Sinon vous devrez faire encore une fois le même manipulation vous rechercher dart et vous l'installer.
il faudra relancer l'IDE pour que les changements prennent effet.
-Quand vous lancerez android studio vous verrez qu'il y a une nouvelle fonction qui est ajouté : **Start a new flutter projec**t. On est dans la bonne route. 👏



➔ Installation du SDK flutter :

Veuillez cliquer sur ce lien, pour pouvoir télécharger le SDK. Il s'agit d'un fichier rar.
https://storage.googleapis.com/flutter_infra/releases/stable/windows/flutter_windows_v1.9.1+hotfix.6-stable.zip

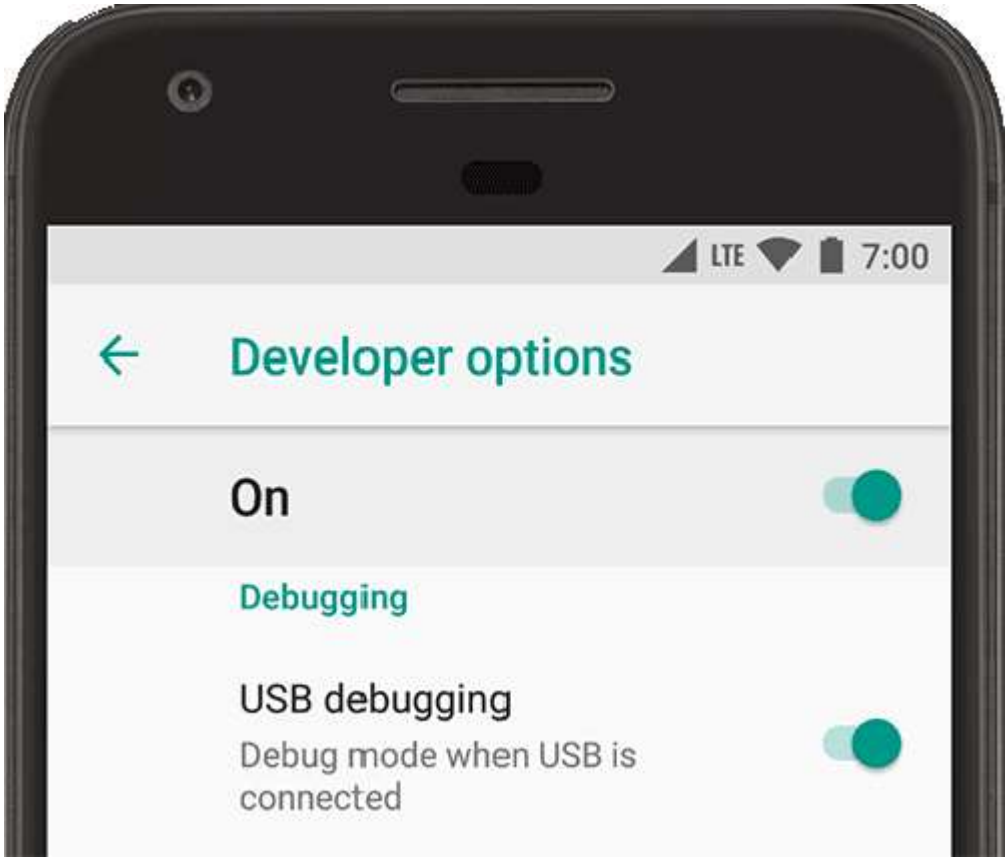
-Je vous invite à créer un dossier src dans le disque C et d'extraire le rar dessus. Après vous lancer le cmd, vous vous déplacer dans C:\src\flutter\bin. Pour faire cela tapez la commande:
cd C:\src\flutter\bin.
Une fois dans ce répertoire veuillez taper la commande suivante : flutter doctor



Si il ya une case qui contient croix « X » : il faut tapper la commande :
Flutter flutter doctor --android-licenses

➔ Activation du mode de développeur dans le téléphone:

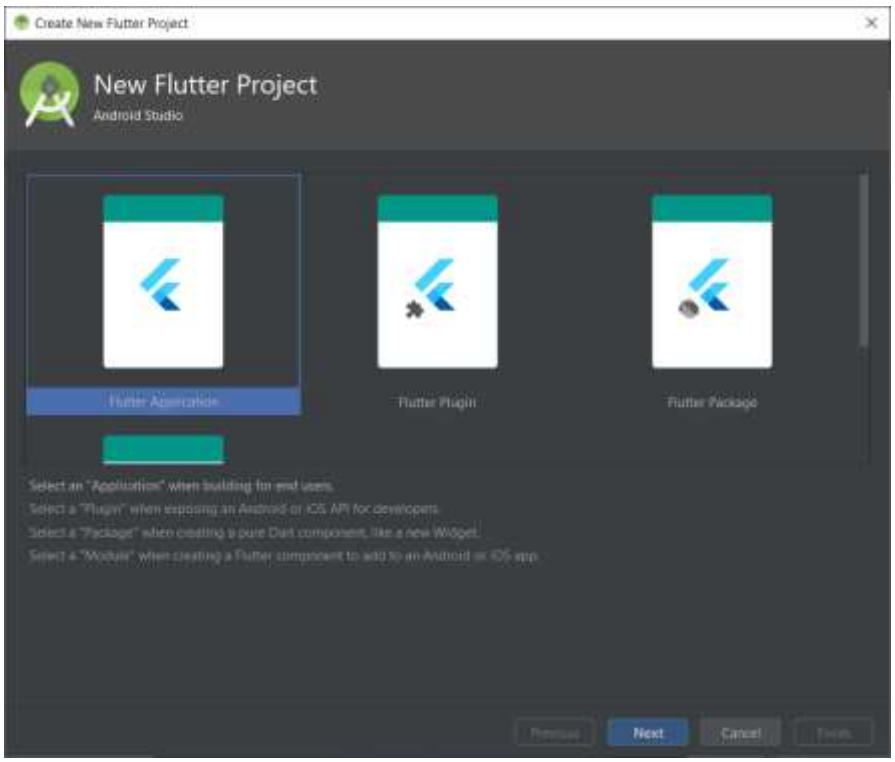
Pour pouvoir tester nos applications dans nos téléphones, il faudrait activer cette option et aussi le **debug mode**. Puisque cela dépend des téléphones je vous invite à taper le nom de votre téléphone suivi par Activation du mode de développeur dans google. Dans mon cas j'ai fais la recherche : huwawei P10 activer mode développeur.
Et suivez les instructions. C'est une manipulation de 1 minutes croyez moi. bisou



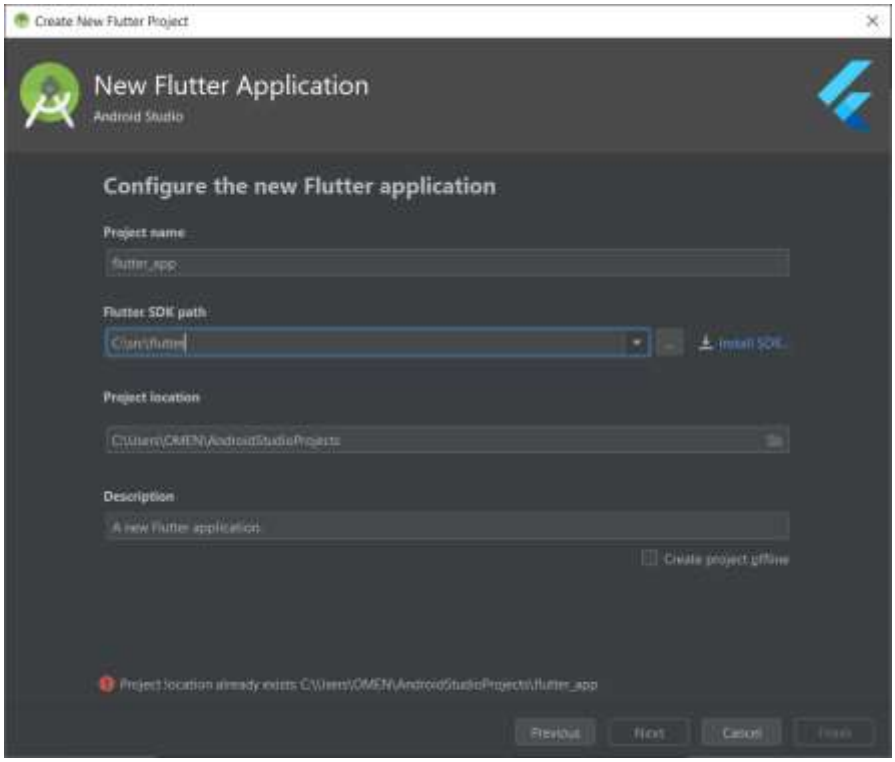
➔ Teste de l’environnement :

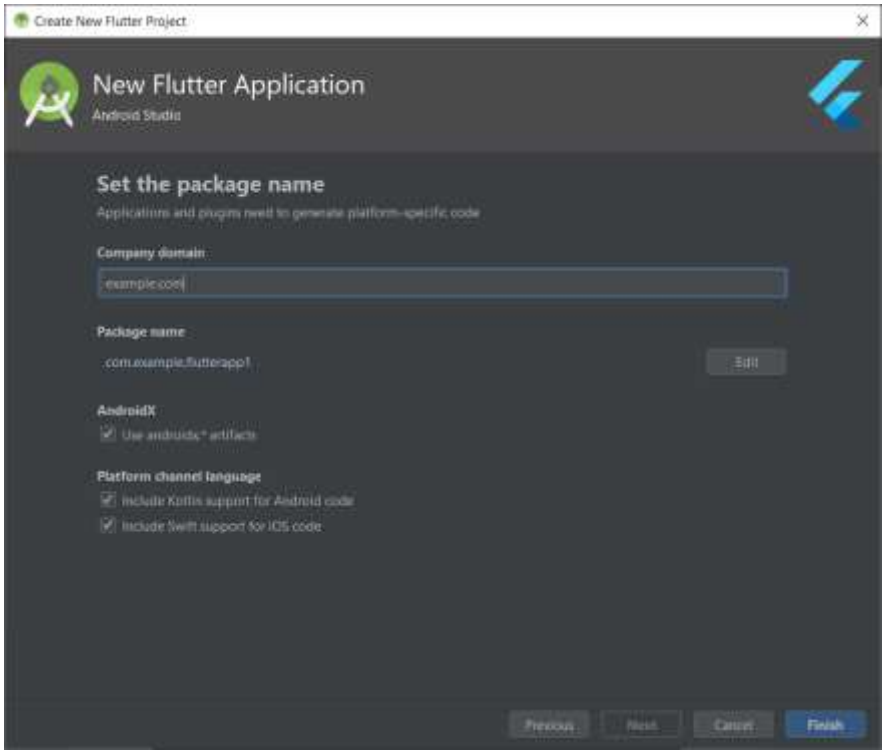
-Cliquez sur start a **new flutter project (non pas start a new android studio project pls)**

-Choisissez **“Flutter application”**



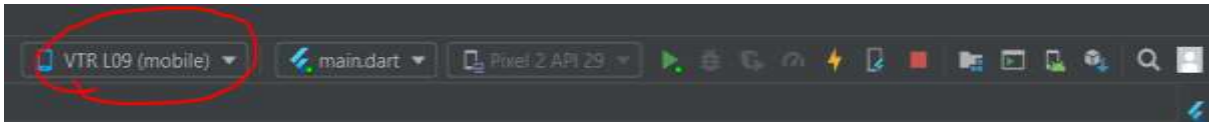
-Remplissez ce formulaire selon vos préférences mais le plus important ici est de préciser le chemin du flutter SDK. Vous vous rappelez ou on a mis flutter SDK? Oui bien vu :-) , on l’a mis dans **C:\src\flutter**

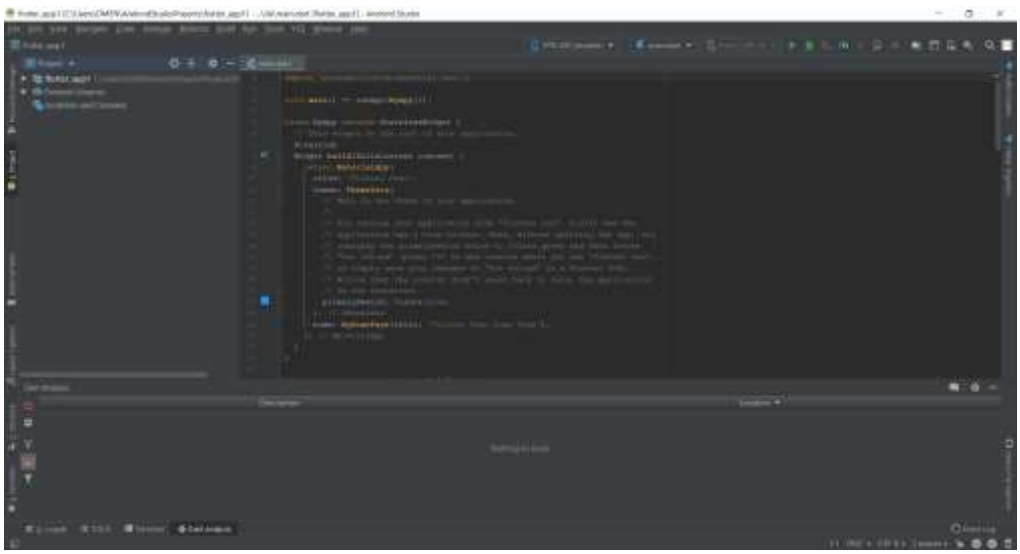




- Android studio va générer une application Flutter basique.

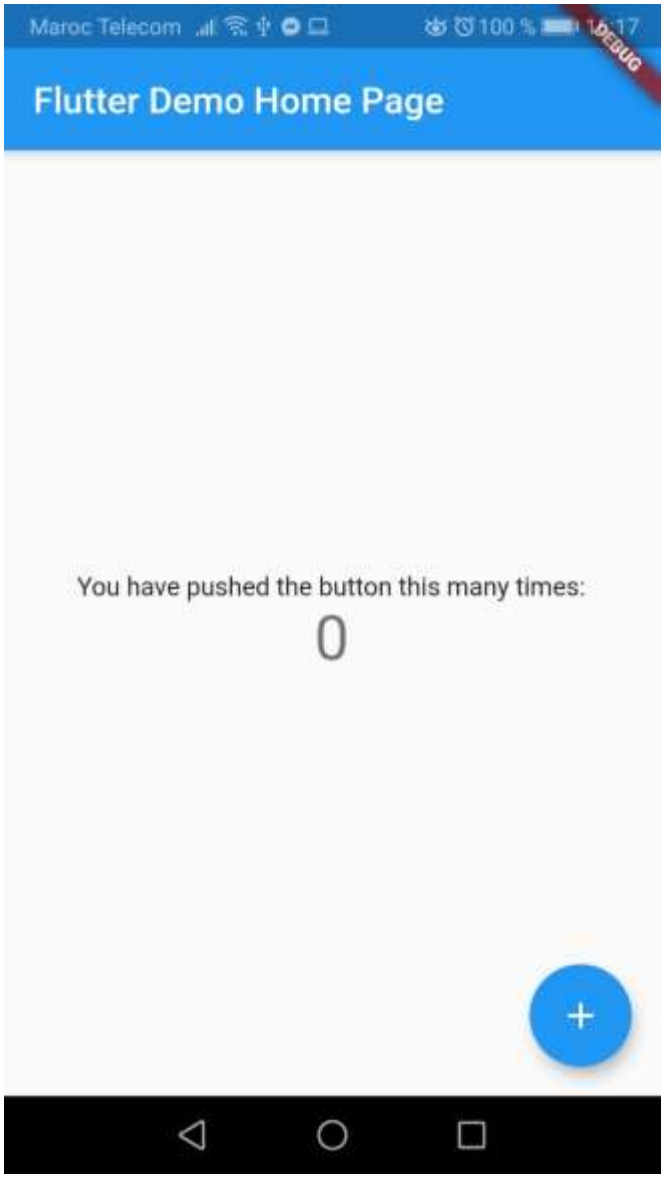
- ça sera le moment de brancher votre téléphone avec votre ordinateur.(type de liaison : **transfert de fichiers** et non pas **chargement uniquement**)
normalement si vous avez bien activé le mode développeur , l'IDE devrait détecter votre téléphone.





LADIES AND GENTLEMEN THE MOMENT OF TRUTH HAS COME :
-Appuyer sur le bouton **RUN.**

Vous devrez avoir ce résultat dans votre téléphone.



Félicitation d’avoir suivi le tutoriel jusqu’à la fin, si vous avez des problèmes n’hésitez pas à me contacter par mail elmouradi.amine98@gmail.com ou par whatsapp.

My Notes :

Flutter Trics :
--comment/Uncomment all : clt+/
--Icone generators :https://appicon.co
Or setting the icone without the website freely ! : src/main/res[le fichier des icones] => new > image assets => choose your toof > set it looking > ✅✅
--don't forget to read the scaffold class guide
free websites :
    icons8[free icones/images]
    vecteezy[free icones/images]
    canva.com[design your own !!!]
--hot reload from statless or statfull [dynamique] , you just need to type stless+enter
--container with no children try to be as big as possible .
--container with children size thier size to thier child size .[can have only 1 child]
--SafeArea => garanti the visibility to user , has one child .
--margin is for the outside of the container , and padding is for the inside of the container
-- what works for collumns , also aplly to rows !
--for space => SizedBox
--nice website for all colors[although a new arrangements ..] and also Icons liste : materialpalette.com
--Icons class is more flexible from Images , because it is pixilated , and we can shane the color icon ,,
--colors.blue[900] is the same as colors.blue.shade900
--always think about play with containers [arranged in rows and columns]+ padding & margin Propreity [with their widget EdgeInsets.symetric or .all .. for the horizantal/vertical dimension]
--there is padding widgets just for padding ppte and it has only one child!
--donc forget cross and axis and main lign alignement !
--Expanded widget is created for centering for by a horizontal line [for Row] and a vertical line [for a Column] , and it takes only one child [Expanded=Center/line+safeArea]
--String interpolation : the ability to add a name of variable with a string [image$i []dart and i==1 [i love it with python and i did'nt find it in java]]
--you can do som e online test with dart language on dratpad
--angela yu : bilding a habit based on an other habit !
*********VI Idea********
--to install a flutter pachage :
first serch the one who has more pont , see the discription .. and after copy the name and add it in the yaml / :

```
dependencies:
  flutter:
    sdk: flutter

  # The following adds the Cupertino Icons font to your application.
  # Use with the CupertinoIcons class for iOS style icons.
  cupertino_icons: ^0.1.2
  audioplayers: ^0.10.0
```

audioplayers is the one here , the cupertino_icons is bby default the package of icons ,,
so after this just click get package[android stdio go to site package to import it ,,]
and after that you just need to impor it ;
--for the music folder , we add it to section assets as the images exactly
--don't forget that expanded widget helps a lot at managing the taille of yours containers/widgets, it ditribute all the valable spaces between the widgets . we use expaded for each single container ./we can crossaxisalignement by streach
--fonction dart : * don't forget your type of return+the return of the type
*new for me ** we can also declare a fonction off 2 args : type fct({Type1 p1, ..}) and for the call => fct(p1: v1 , ..)
but I advise you to choose this type because for exaple for the constructor , if you choose the other one with only() , you can't just use the default constructor .
--void main() => runApp(MyApp(),);
this is an arrow fct , that's mean that it's composed by a single line of code , and we can just use an arrow '=>'
[fat arrow Vs slim arrow(->)] anstead of {}
--freesound => freesound.org
--⁉ what apk should i use : release ..
--materialapp/ppte title : //APi,flutter : one line description used by the devise to identify the app for user [wich is the title may katekliki 3la lbt li kaye3tik tt les app ouvertes ..](IMpoortant !)
 --I wanna read more about scafold and material app ..
**********VI trick*******
--to change the name of the application :
go to androidManifest.xml at app/src/main ,and after that change the label :
android:label="ball projectt"
**********VI trick*******
--for adding fonts : i see it in Mi_Card => we add the fonts prom google fonts[install it , it will be a ziped file + extract the .ttf file => and add its to a folder named 'fonts' and after go to pubspec.yaml and add the folder] as exactly we do for images :
flutter:

  uses-material-design: true

  assets:
    - images/
  fonts:
    - family: Pacifico
      fonts:
        - asset: fonts/Pacifico-Regular.ttf
    - family: Modak
      fonts:
        - asset: fonts/Modak-Regular.ttf
and for use in the Textstyle widget : fontFamily: 'Pacifico',
--//TODO : YOU WILL find it at todo/project/main => a list of to do [for managing the project]
--if you want to write an appostroph ' indo a String , you may write 'aaa\'bbb' [we add a back slash]

--shortWays: clt+maj+/ give /* */
clt+/ give //
--les alerts !![yes/no -- dialog] https://pub.dev/packages/rflutter_alert
--il sont apparu dans l'ecran par un structure pile : LIFO
--once you open the gardle at android/app , you have an error , but it doesn;t affect the exceution
--for the visibility of any widget , we use Visibility(
visible: sb.buttonShouldBeVisible(),
child:...),
--for the background color :
in a container , we use the proprieties :
decoration: BoxDecoration(
image: const DecorationImage(
image: AssetImage('images/background.png'),
fit: BoxFit.cover,
),
//border: Border.all(color: Colors.white , width: 8),
),
--dribbble.com site of design[Idea] of UI
--for finding a color with a code #6x , we put instead of Colors.X : Color(0xff1b23c8), and the last 6x are the code of the color.
--theme:themeData(), widg in material app for theme => read the manuel API [ppte ..]
-- colorZilla : extention pipete [PS6] for firefox and chrome .[extarcting color's code]
--we can also use a specefic flutter the and add copywith (to change some ppte that we use in the themeData) [this is in the theme ppte in materialApp]
--for a particular widget theme , we can embaded the widget in a Theme widget and add as an ppte data : ThemeData()..
--Expanded widget must be playced inside a fles Widget [Colom /Row/Flex]
--instance variable=Field=property
--immutabe=unchangebale[like statlesswidget]
--font_awsome_Flutter : des Symboles speciales exple: [mars/venus] for BMI calculator
--const are defined at the compile time ; while the final can be assigned after this time ; like extractine the current time ,,
--GestureDetector(), for dettecting onTab() longPress() ..
--enums : enum EnumName{typeA,typeB,typeC} => call : EnumName.typeA
--comments are usefeul to show your logique in programming , like I initialise this var to 0 .. but not to say to someone , this line ,means that if this var==1 then its is a female gender {conventions ,,} , it's better to use enums; EXPLE:
--enum CarType{
Kar,
Lagrima,
Taxi,}
class Car{
CarType x;
//Constructor
Car({this.carstyle})
}
void main(){

//access to the element
Car y=Car(x: CarType.Lagrime);
}
--dart Ternary Operator : we use
condition ? DoThisIfTrue : DoThisIfFalse ;
//instead of if(condition) DoThisIfTrue ; else DoThisIfFalse ; we can assign a return value of an Ternary condition in a Variable !! because it's one line code
--we can set a fonction as argument of othe Fct in flutter[Or also constructor] ! for preserving repititions ..
for example Calculation(n1,n2,add/multiply ,,){return x or doesn't return anything ,,}
**there is also an other option : creation a variable Function f=(n1,n2,add/multiply ,,){return x or doesn't return anything ,,}
**for the call in an arguemt with class constructor: we shlouldn't add the parenthesis with the function , and for the manilulation :
 className.FunctionName=> Fction name
 className.FunctionName()=> Fction behavior
--Slider Widget [you can choose the value Graphicly [BMI]]
--Convert int=>double :: toDouble(),
--double.round():: round to an integer
--setState((){}); must be in his class
--to change the details of the slider [thumbcolors/shape(//size) ..] , we need to embaded the slider widget by SliderTheme and in his ppte data , while the SliderThemeData need all his component/ppte[like an java Interface] , we just use SliderTheme.of(context).copyWith(ppte the we want change)==> for the .of(context) it means that it extends just all ppte from the latest buildContext wich is in the widget build that return your current UI .
 --themedata is soo rich in custumising our App, you can make your own ppte theme easly
--if you want just to use a Stack datastructure for the Navigation between routes[cad pages] , you should use the two actions [usely in a Button] :
*Navigator.push(context,MaterialPageRoute(builder: (context){
                return DicePageState();
              }));
* Navigator.pop(context);//for Poping
--for more precision : =>*; egale a {return*;}
--& if its a complexe routes =>
we use map datastucture in a routes ppte in materialApp Exple :
routes: {
       'Our':(context)=>InputPage(),
       '/': (context)=> TestResult(),
     },
and we should have in Place Of home ptte => initialRoute: 'Our',//the key Of the Page
=> an for calling the others Pages => Navigator.pushNamed(context, 'Our');
--declaring a map :
Map<keyType,ValueType/*if you want to specify*/> mapName {
Key:Value , **}
**calling it : mapName[Key]
--if we try to acced to an value by a key that doesn't exist > we will find null , so we can anytime chek the existance of any Value
--add an ather element :

mapName[newKey]=newValue
--map inordered dataType, we have some methodes like .length , .keys ,.values ,
--dart gives us the possibility to declar an dataType outside any class
--for passing data over Pages/Routes , we sould passing it by the constructor of pages/classes at the level of the Navigator,
--BMI was soo helpful for me , I learned a lot of things[theme costumizing/pass fct overs argumets ..]
--one of useful args of scaffold : debugShowCheckedModeBanner: false,
instead of flutter inspector>more options>hide debug mode banner
--if you use one materialApp widget at only the main , and other pages are only scaffold => the theme applicated is one in the materialaApp
--Geolocation :
**geolocator: ^3.0.1 in dependencies
**import 'package:geolocator/geolocator.dart';
**call a fct that will assign to a string your coords
**
--asynchronous Programming[doing thing while others thing is also in execution] Vs Synchronous [one task has his own time /sequencial Programming]
--Futures in dart is the same as promises in JS
--dart Futures , Async & await are sooo imporatant in terme of reloading data manipulation : Future is like a recit of : you will have this data once it's ready for you
--we could specify the data Type of a Future by: Future<String>
--Widget Life cycle on stateful type :
**initState() //caled once when the widget was born ;
**build : called anytime the build core is changed !
**deactivate() : at the end of widget's life
--handeling exceptions by try{} catch(e){}
--double.parse(String);
--checking if a parametre p set on null => if it is not null use it ; else use a default value d :: p ?? d //on one line of code by the null aware operator : '??'
--I'am so surprised that we can do in a build method :
try{
return scaffold(**)
}
catch(e){
return scaffold(***)
}
--throw Exception[predefinie] or throw String => is a way to throw an exception in certain personnalised conditions
******PS*******
--canva => tempelate
--couleur harmoniques
--in desing => li kaykhedmou fih les journaux ...

1er projet : TP week end :

```dart
import 'package:flutter/material.dart';

void main()
{

   runApp (
     MaterialApp(
       home:Scaffold(
         backgroundColor:Colors.blue,
         body:
         Column(
           children: [

             //Image( image: AssetImage("images/image.png"),
             //             //),
             CircleAvatar( radius :100,

             backgroundImage: AssetImage("images/reda.JPG"),

             ),
          //CircleAvatar( radius :100,


             Text("REDA EL OUAHABI ",style: TextStyle(fontSize: 39,),),
             Text("mobilie devlopper",style: TextStyle(fontSize: 20,),),
             Card( child :
              ListTile(
               leading: Icon(Icons.phone),
               title:Text("+212618409886")) ,),
             Card( child :
              ListTile(
                 leading: Icon(Icons.email),
                 title:Text("readaelouahabi@gmail.com")) ,
             ),


            ]
           ),

         ),



       ),


  );
}
```

et n'oublie pas d ajouter la toof ds un dossier cree nome : images et ajouter la chemain relative dans un fichier qui s'appelle : pubspec.yaml et exactement dans assets a la ligne 44 :

```yaml
assets:
  - images/reda.JPG
```

projet 2 : Plusiers pages :

ce que j’arrive a faire dans la seance :

```dart
import 'package:flutter/cupertino.dart';
import 'package:flutter/material.dart';

void main(){
  runApp(MyApp());
}







class MyApp extends StatelessWidget {
  @override
  // This widget is the root of your application.

  Widget build(BuildContext context) {
    return MaterialApp(
        home: MyHomePage(),
    );
  }

}

class MyHomePage extends StatelessWidget{
    @override
  Widget build(BuildContext context){
      return Scaffold(
      appBar:AppBar(
       title: Text("my test"),
      ),
      body: Center(
        child: Column(
        mainAxisAlignment: MainAxisAlignment.center,
        children: <Widget>[
          Text(
                "home page",style: TextStyle(fontSize: 30,),
  ),
        SizedBox(
               height: 40,
  ),

  ],
  ),
  )

      );
    }

  }
class MySecondPage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text("my test 2"),
      ),
      body: Center(
        child:  Text("second page",style: TextStyle(fontSize: 80,color:
```

```
Colors.blue,)),
      )

    );
  }
}
```

projet 3 : Iam Rich

```
import"package:flutter/material.dart";
void main()
{
  runApp(
      MaterialApp(
        home:  Scaffold(
          backgroundColor: Colors.lightBlueAccent,
          body:
            ListView(
              children: [
                Image( image: AssetImage("images/image.jpeg"),
                    width: 300,
                    height: 500,
                ),

                Text("electronique de base ",style: TextStyle(fontSize:
20,),),
              ],

          ),
          appBar : AppBar( title:Text("hello world")
          ),
        ),
      ),
  );
}
```

avec l ajout de dossier images + limage a afficher + la modification de assets :

```
assets:
  - images/image.jpeg
```

stless : créer un class

```
MaterialApp
```

Pour le design

Statful : page dynamique/t

```
debugShowCheckedModeBanner: false,
```

enlever debug

il existe : soit rows soit column .

4eme APP :

```
import 'package:flutter/material.dart';
```

```
main() {
  runApp(Myapp());
}

class Myapp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: "basic app",
      debugShowCheckedModeBanner: false,
      home: MyHomepage(),
    );
  }
}

class MyHomepage extends StatefulWidget {
  @override
  _MyHomepageState createState() => _MyHomepageState();
}

class _MyHomepageState extends State<MyHomepage> {
  int counter = 0;
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text("Mooli My Life -👶, My love 💔 & my ALL  ♡" , style:
TextStyle( fontSize: 50),),

      ),
      body: Column(
        children: <Widget>[
          Text(
            counter.toString(),
            style: TextStyle(fontSize: 30, fontWeight: FontWeight.bold),
          ),
          FlatButton(
            child: Icon(Icons.add),
            onPressed: () {
             setState(() {
               counter++;
             });
            },
          ),
          FlatButton(
            child: Icon(Icons.remove),
            onPressed: () {
             setState(() {
               counter--;
             });
            },
          ),
        ],
      ),
      floatingActionButton: FloatingActionButton(
        onPressed: () {
          setState(() {
            counter++;
          });
        },
      ),
```

```
    );
  }
}
```

cadeau moli 18/01/2020

```
import 'package:flutter/material.dart';

main() {
  runApp(Myapp());
}

class Myapp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: "basic app",
      debugShowCheckedModeBanner: false,
      home: MyHomepage(),
    );
  }
}

class MyHomepage extends StatefulWidget {
  @override
  _MyHomepageState createState() => _MyHomepageState();
}

class _MyHomepageState extends State<MyHomepage> {
  int counter = 1;
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text("Mooli My Life -, My love  & my ALL  " , style:
TextStyle( fontSize: 15),),

      ),
      body: Column(
        children: <Widget>[
      Text(" حييت ما معك سأبقى و كثيرا أحبك , لمياء "
          ",, لك والحنان الاهتمام كل .. لغيرك قلبي اعطي ولن غيرك من اقترب لن
"
          ", عني تبتعدي لا الحب كل  الان انا أحبك في الله  "
          ""+ counter.toString()+
          " الزر على تضغطي ان قبل من اكثر مرة"
              " الشوق بنفس جمعنا لحظة وسأنتظر    انا وانت لك لي "
          " قلبي من ذرة كل لك ",
      style: TextStyle(fontSize: 30 , fontWeight: FontWeight.bold),),
          FlatButton(
            child: Icon(Icons.add),
            onPressed: () {
              setState(() {
                counter*=100;


              });
            },
```

```
          ),

        ],
      ),

    );
  }
}
```

last version :

```
import 'package:flutter/material.dart';

main() {
  runApp(Myapp());
}

class Myapp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: "basic app",
      debugShowCheckedModeBanner: false,
      home: MyHomepage(),
    );
  }
}

class MyHomepage extends StatefulWidget {
  @override
  _MyHomepageState createState() => _MyHomepageState();
}

class _MyHomepageState extends State<MyHomepage> {
  int counter = 1;
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.pinkAccent,
        title: Text(
          "Mooli My Life -🙋, My love 💔 & my ALL  ♡",
          style: TextStyle(fontSize: 15),
        ),
      ),
      body: ListView(
        children: [
          Center(
            child: Text(
              " حييت ما معك سأبقى و كثيرا أحبك , لمياء "
                  ",, كل .. لغيرك قلبي اعطي ولن غيرك من اقترب لن
لك والحنان الاهتمام "
                  ", عني تبتعدي لا الحب كل 💔 الان انا أحبك في الله :  "
                  "  " +
                  counter.toString() +
                  "   الزر على تضغطي ان قبل من اكثر مرة  "
                  " الشوق بنفس جمعنا لحظة وسأنتظر 🙋  انا لك وانت لي♡
```

```
"
                    " ♡ قلبي من ذرة كل لك ♡",
              style: TextStyle(fontSize: 30, fontWeight: FontWeight.bold),
            ),
          ),
          /*FlatButton(
            child: Icon(Icons.add),
            onPressed: () {
              setState(() {
                counter*=100;


              });
            },
          ),
          CircleAvatar( radius :50,

          backgroundImage: AssetImage("images/image2my.jpg"),

    ),
          CircleAvatar( radius :50,

            backgroundImage: AssetImage("images/moli.jpeg.png"),

          ),*/
          Image( image: AssetImage("images/image1.png"),
            width: 300,
            height: 500,
          ),




        ],


      ),
      floatingActionButton: FloatingActionButton(
        onPressed: () {
          setState(() {
            counter += 100;
          });
        },
        backgroundColor: Colors.purple,
      ),
    );
  }
}
```

last version 22/01/2020 02 :01

```
import 'package:flutter/material.dart';

main() {
  runApp(Myapp());
}
```

```dart
class Myapp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: "basic app",
      debugShowCheckedModeBanner: false,
      home: MyHomepage(),
    );
  }
}

class MyHomepage extends StatefulWidget {
  @override
  _MyHomepageState createState() => _MyHomepageState();
}

class _MyHomepageState extends State<MyHomepage> {
  int counter = 1;
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.pinkAccent,
        title: Text(
          "Mooli My Life -👊, My love 💔 & my ALL  ♡",
          style: TextStyle(fontSize: 15),
        ),
      ),
      body: ListView(
        children: [
          Center(
            child: Text(
              " حييت ما معك سأبقى و كثيرا أحبك , لمياء "
                  ",, الاهتمام كل .. لغيرك قلبي اعطي ولن غيرك من اقترب لن
لك والحنان "
                  "  الله في أحبك انا الان 💔 عني تبتعدي لا , الحب كل و :  "
                  "  " +
                  counter.toString() +
                  " الزر على تضغطي ان قبل من اكثر مرة "
                      " الشوق بنفس جمعنا لحظة وسأنتظر 👊  لي♡وانت لك انا
"
                      " ♡ قلبي من ذرة كل لك ♡",
              style: TextStyle(fontSize: 30, fontWeight: FontWeight.bold),
            ),
          ),
          Row(
            children: [
              FlatButton(
                child:

                Icon(Icons.favorite , size: 40,),

                onPressed: () {
                  setState(() {
                    counter+=99;


                  } );

                },
```

```
            ),
            Text("👈👈 🤍🤍🤍🤍🤍🤍 👉👉"),
            FlatButton(
              child:

              Icon(Icons.favorite_border , size: 40,),

              onPressed: () {
                setState(() {
                  counter+=99;



                } );

              },

            ),
          ],
        ),
        /*FlatButton(
          child: Icon(Icons.add),
          onPressed: () {
            setState(() {
              counter*=100;


            });
          },
        ),
        CircleAvatar( radius :50,

        backgroundImage: AssetImage("images/image2my.jpg"),

    ),
        CircleAvatar( radius :50,

          backgroundImage: AssetImage("images/moli.jpeg.png"),

        ),*/
        Image( image: AssetImage("images/image1.png"),
          width: 300,
          height: 500,
        ),
        Row(
          children: [
            FlatButton(
              child:

              Icon(Icons.favorite , size: 30,),

              onPressed: () {
                setState(() {
                  counter+=99;


                } );

              },
```

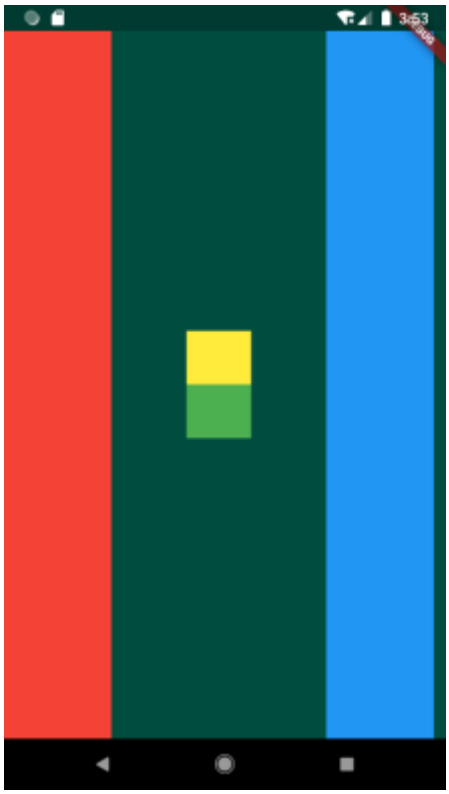
```
              ),
              Text("👈👈 💗💗💗♡💗💗 👉👉"),
              FlatButton(
                child:

                Icon(Icons.favorite_border , size: 30,),

                onPressed: () {
                  setState(() {
                    counter+=99;



                  } );

                },

              ),
            ],
          ),

Row (
  children: <Widget>[
    CircleAvatar( radius :90,

      backgroundImage: AssetImage("images/moli2.png"),

    ),
    CircleAvatar( radius :90,

      backgroundImage: AssetImage("images/image2my.jpg"),

    ),

  ],
),
          Text("👏👶👰 👈👈🌷🌸🌸🌸🌸🌸🌸🌸🌸🌸🌷 👉👉 👰👶👏", style:
TextStyle(fontSize: 30 ,backgroundColor: Colors.white),),
          Text("I hope that my next days and years with you will be better
and more confortable for us "
              ", I really care about that , "
              "and i want to finish my small gift by telling you that :"
              "I wiil love you from that day that I knew you "
              "until the last of my days ♡ ,,"
              " and you can imagine how mush My Love is getting more and
more than any past time ."
              , style: TextStyle(fontSize: 30 ,backgroundColor:
Colors.pinkAccent),),
          Text("Kanebghiik Bezaaf Wlah 3alem ♡♡", style:
TextStyle(fontSize: 30 ,backgroundColor: Colors.white),),
          Text("dont forget that : I AM HERE FOR YOU !🌸♡", style:
TextStyle(fontSize: 30 ,backgroundColor: Colors.red),),
        ],


      ),

      floatingActionButton: FloatingActionButton(
       child: Icon(Icons.favorite),
        onPressed: () {
```

```
          setState(() {
            counter += 99;
          });
        },
        backgroundColor: Colors.purple,
      ),

    );
  }
}
```

Summer Works !

```
import 'package:flutter/material.dart';

void main() {
  runApp(MyApp());
}

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: Scaffold(
        backgroundColor: Colors.teal[900],
        body: SafeArea(
          child: Row(
            //crossAxisAlignment: CrossAxisAlignment.stretch,
//          mainAxisAlignment: MainAxisAlignment.spaceBetween,
            children: <Widget>[
              Container(
                width: 100.0,
                color: Colors.red,
              ),
              Container(
                width: 200,
                child: Column(
                  mainAxisAlignment: MainAxisAlignment.center,
                  children: <Widget>[
                    Container(
                      color: Colors.yellow,
                      width: 60.0,
                      height: 50.0,
                    ),
                    Container(
                      color: Colors.green,
                      width: 60.0,
                      height: 50.0,
                    ),
                  ],
                ),
```

```
              ),
              Container(
                width: 100,
                color: Colors.blue,
              ),
            ],
          ),
        )
      ),
    );
  }
}
```



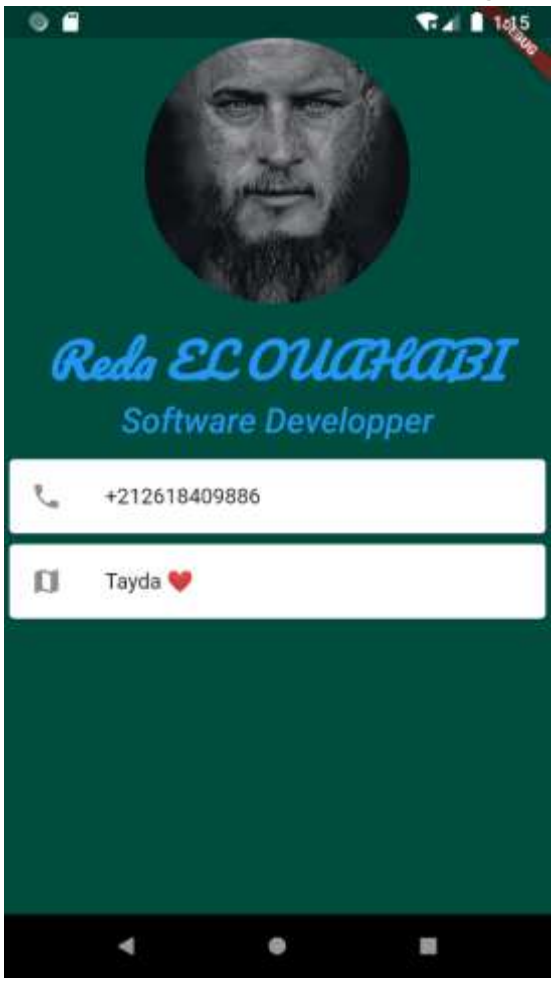
Mi Card App

```
import 'package:flutter/material.dart';

void main() {
  runApp(MyApp());
}

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: Scaffold(
          backgroundColor: Colors.teal[900],
          body: SafeArea(
            child: Column(
              // mainAxisAlignment: MainAxisAlignment.center,
              children: <Widget>[
```

```dart
CircleAvatar(
  ///widgets pour dessiner  une cercle sur l'image .
  radius: 100,
  backgroundImage: AssetImage(
    //on fait  l'ajouter dans le fichier YAML
    "images/image.jpg",
  ),
),
SizedBox(
  height: 10,
),
Text(
  'Reda EL OUAHABI',
  style: TextStyle(
    color: Colors.blue,
    letterSpacing: 2.5,
    fontSize: 36.0,
    fontStyle: FontStyle.italic,
    fontWeight: FontWeight.w900,
    fontFamily: 'Pacifico',
  ),
),
Text(
  'Software Developer',
  style: TextStyle(
    color: Colors.blue[500],
    letterSpacing: 2.5,
    fontSize: 30.0,
    fontStyle: FontStyle.italic,
    //fontWeight: FontWeight.bold,
    fontFamily: 'Modak',
  ),
),
SizedBox(
  height: 10,
  width: 250,
  child: Divider(
    color: Colors.amber,
  ),
),
SizedBox(
  height: 20,
  width: 250,
  child: Divider(
    color: Colors.amber,
  ),
),
Card(
  child: ListTile(
    leading: Icon(Icons.map),
    title: Text('Tayda ♡',
      style: TextStyle(
        color: Colors.red[500],
        fontSize: 30.0,
        fontStyle: FontStyle.italic,
        fontWeight: FontWeight.bold,
        fontFamily: 'Pacifico',
      ),
    ),
  ),
),
```

```
                Card(
                  child: ListTile(
                    leading: Icon(Icons.phone),
                    title: Text(
                      "+212618409886",
                    ),
                  ),
                ),

                Card(
                  child: ListTile(
                    leading: Icon(Icons.mail),
                    title: Text('redaelouahabi98@gmail.com'),
                  ),
                ),
              ],
            ),
          )),
      debugShowCheckedModeBanner: false,
    );
  }
}
```

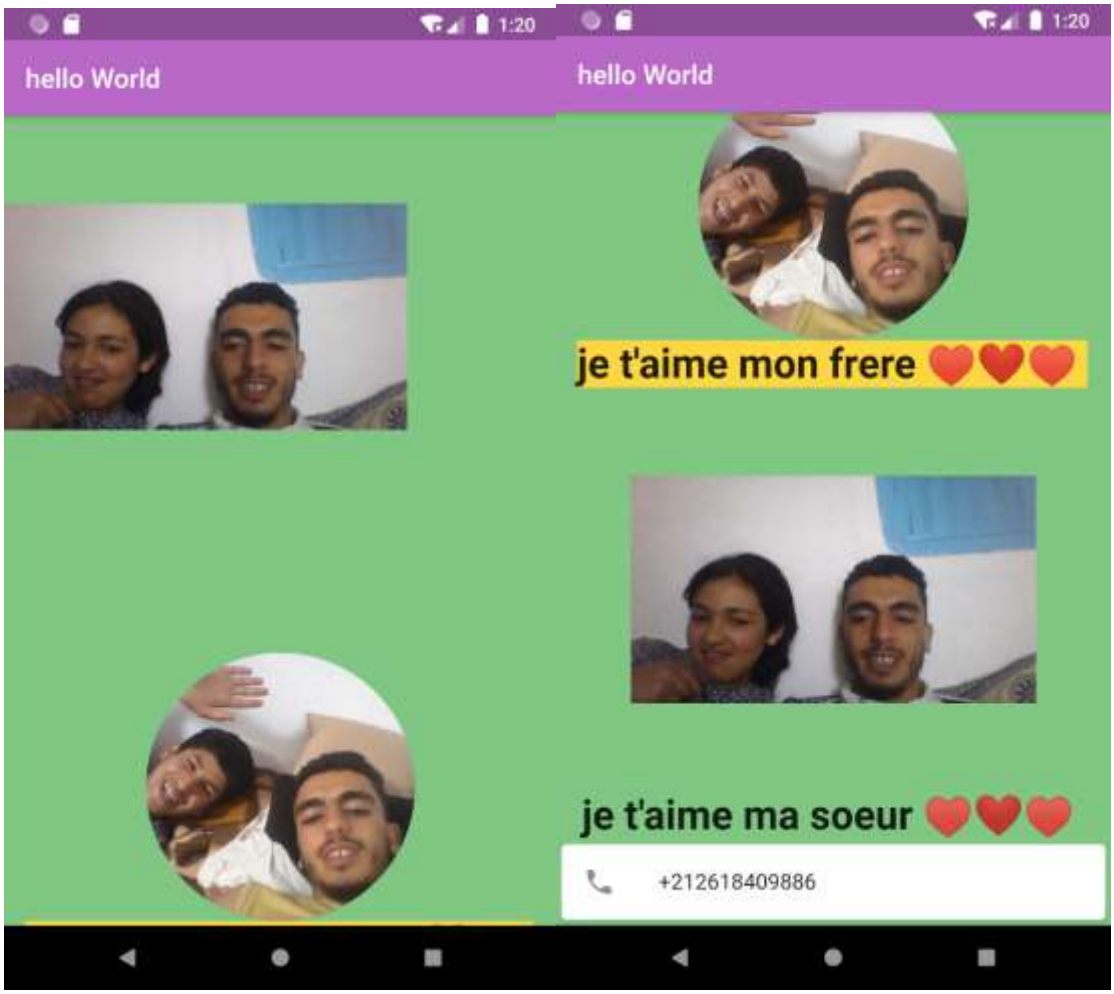
With Icon [voir la note pour agir sur l'Icon]



- **Frère & Sœur App :[too rich at the level at container/rows columns ,,]**

```dart
///je veux organiser plusieurs elts sur le meme ligne/row , comment?!!
///pour les colonnes , on utilise listView
import "package:flutter/material.dart";

void main() {
  runApp(MyApp());
}

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      home: Scaffold(
        //scaffold for the beautiful view
        backgroundColor: Colors.green[300],
        body: ListView(
          //pour permettre ascender dans la page [ != collumn & rows ,, they don't allow its ]
          children: [
            Row(
              children:[
              Image(
                image: AssetImage("images/image.jpeg"),
                width: 300,
                height: 300,
              ),
      ]
            ),
            Column(
              ///cette liste view est composer d'un coulumn avec plusieurs widgets .
//              mainAxisSize: MainAxisSize.min,/// la colonne ne prend en compte que le minimum des widgets , et pas tout la colonne !
//              verticalDirection: VerticalDirection.down,///changer la direction des colonnes [up /down{default}]
//              mainAxisAlignment: MainAxisAlignment.center, ///the point of start of our container [vertical version !] /y
//              ///there is also spacebetween fct
//            crossAxisAlignment: CrossAxisAlignment.center, ///the point of start of our container [horizontal version !] /x
//             ///there is also stretch fct to do a dilation for all your widgets at the column
              children: <Widget>[
                Container(
                  //width: double.infinity,
                  height: 50,
                ),
                //For free Space [50Px Exactly] , you just need to add this widget whenever you like !
                SizedBox(
                  height: 50,
                ),
                CircleAvatar(
                  ///widgets pour dessiner  une cercle sur l'image .
                  radius: 100,
                  backgroundImage: AssetImage(
                    //on fait  l'ajouter dans le fichier YAML
                    "images/imagee.jpg",
                  ),
                ),
```

```
                  Text(
                    "je t'aime mon frere ♥♡♥ ",
                    style: TextStyle(
                      fontSize: 30,
                      fontWeight: FontWeight.bold,
                      backgroundColor: Colors.amberAccent,
                    ),
                  ),
                  Image(
                    image: AssetImage("images/image.jpeg"),
                    width: 300,
                    height: 300,
                  ),
                  Text(
                    "je t'aime ma soeur ♥♡♥ ",
                    style: TextStyle(
                      fontSize: 30,
                      fontWeight: FontWeight.bold,
                    ),
                  ),
                  Card(
                    ///dessiner une card avec l'icone de telephone
                    child: ListTile(
                      leading: Icon(
                        Icons.phone,
                      ),
                      title: Text(
                        "+212618409886",
                      ),
                    ),
                  ),
                ],
              ),
            ],
          ),
          appBar: AppBar(
            title: Text(
              "hello World",
            ),
            backgroundColor: Colors.purple[300],
          ),
        ),
        debugShowCheckedModeBanner: false,
      );
    }
  }
```

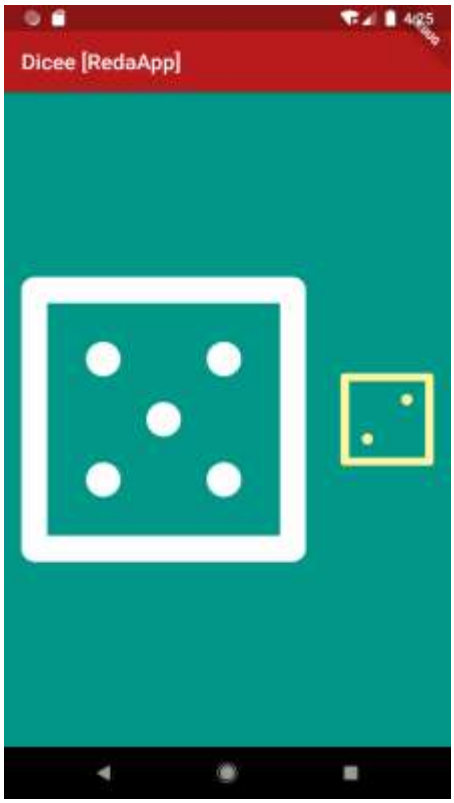


DICEE

```
import 'dart:math';
import 'package:flutter/material.dart';

void main() {
  return runApp(
    MaterialApp(
      home: Scaffold(
        backgroundColor: Colors.red,
        //cette ligne est ecrase par la classe DicePage
        appBar: AppBar(
          title: Text('Dicee [RedaApp]'),
          backgroundColor: Colors.red.shade900,
        ),
        body: DicePage(),
      ),
    ),
  );
}
class DicePage extends StatefulWidget {
  @override
  _DicePageState createState() => _DicePageState();
}
```

```
class _DicePageState extends State<DicePage> {
  int rand1=5;
  int rand2=6;

  void fct(){

    setState(() {
      rand1=Random().nextInt(6)+1;
    rand2=Random().nextInt(6)+1;

      // print('Second one is clicked !$a et $b');
    });
  }

  @override

  Widget build(BuildContext context) {

    return Container(

      color: Colors.teal.shade500,
      child: Center(
        child: Row(
          crossAxisAlignment: CrossAxisAlignment.stretch,
          mainAxisAlignment: MainAxisAlignment.center,
          children: <Widget>[

            Expanded(
              child: FlatButton(
                onPressed: (){
                    fct();
                },
                child: Image.asset('images/dice$rand1.png'),
                //this flat button come automaticly by 16 of padding , so
you don't need to add more paddnig by padding widget                child:
Image(
              ),
              flex: rand1,
            ),

            //by default the flex is one
            //this ppte for says that this expanded is bigger twice than
the first expanded

            //SizedBox(width: 10,),
            Expanded(
              child: FlatButton(
                onPressed: (){
                  setState(() {
                  fct();
                    // print('Second one is clicked !$a et $b');
                  });
                },
                child: Image.asset(
                  'images/dice$rand2.png',
                  color: Colors.yellow[200],
                ),
              ),
              //a shorter way to construct an image asset
              flex: rand2,
```

```
              ),
            ],
          ),
        ),

    );
  }

}
```



8 BALL

```
import 'package:flutter/material.dart';
import 'dart:math';
void main() => runApp(MaterialApp(
      home: Scaffold(
        backgroundColor: Colors.amber.shade300,
        appBar: AppBar(
          backgroundColor: Colors.teal.shade300,
          title: Text('Ask me Anything'),
        ),
        body: MyApp(),
      ),
  debugShowCheckedModeBanner: false,
    ));

class MyApp extends StatefulWidget {
  @override
  _MyAppState createState() => _MyAppState();
}

class _MyAppState extends State<MyApp> {
  @override
```

```
  int i=1;
  void fct(){

    setState(() {
      i=Random().nextInt(4)+1;

      // print('Second one is clicked !$a et $b');
    });
  }


  Widget build(BuildContext context) {

  return Container(
    //ces propriete de container permettre de realiser une background en
gradient de couleurs
    decoration: new BoxDecoration(
      gradient: LinearGradient(
        colors:[ Colors.indigoAccent,
        Colors.blue[900],
          Colors.white70,
        ],
        stops:[
        0.1,
        0.3,
        0.5,]
          ,
        begin: FractionalOffset.topCenter,
        end: FractionalOffset.bottomCenter,
      ),
    ),
    child:
    Center(
      child: FlatButton(
        onPressed: () {
          setState(() {
            fct();
            print('aa');
          });
        },
        child: Image.asset(
          'images/ball$i.png',
        ),
      ),
    ),
  );
  }
}
```

PIANO [FLUTTER PACKAGES .. SO USEFUL]

```
import 'package:flutter/material.dart';
import 'package:audioplayers/audio_cache.dart';

void main() => runApp(
      MyApp(),
    );

class MyApp extends StatefulWidget {
  @override
  _MyAppState createState() => _MyAppState();
}

class _MyAppState extends State<MyApp> {
  @override
  //static AudioCache p=new AudioCache();
  // //the twoo constructors are right
```

```
  void Playit(int a) {
    final p = AudioCache();
    p.play('note$a.wav');
  }

  Container myWidget(int b, Color x) {
    return Container(
      color: x,
      height: 86,
      child: FlatButton(
        onPressed: () {
          setState(() {
            Playit(b);
            // print('Second one is clicked !$a et $b');
          });
        },
      ),
    );
  }

  Widget build(BuildContext context) {
    return MaterialApp(
      home: Scaffold(
        backgroundColor: Colors.black,
        appBar: AppBar(
          backgroundColor: Colors.indigoAccent.shade100,
          title: Text('composer Votre Musique 🎼🎶🎵🎹'),
        ),
        body: SafeArea(
          child: Column(
            //mainAxisAlignment: MainAxisAlignment.center,
            crossAxisAlignment: CrossAxisAlignment.stretch,
            children: <Widget>[
              myWidget(1, Colors.orange),
              myWidget(2, Colors.blueAccent),
              myWidget(3, Colors.green),
              myWidget(4, Colors.orangeAccent[100]),
              myWidget(5, Colors.purple),
             myWidget(6, Colors.purple.shade400),
              myWidget(7, Colors.purple.shade100),
            ],
          ),
        ),
      ),
      debugShowCheckedModeBanner: false,
    );
  }
}
```

QUIZ

DESTINI+GRADLE EXAMPLE AT ANDROID/APP/BUILD.GARDLE

GARDLE:

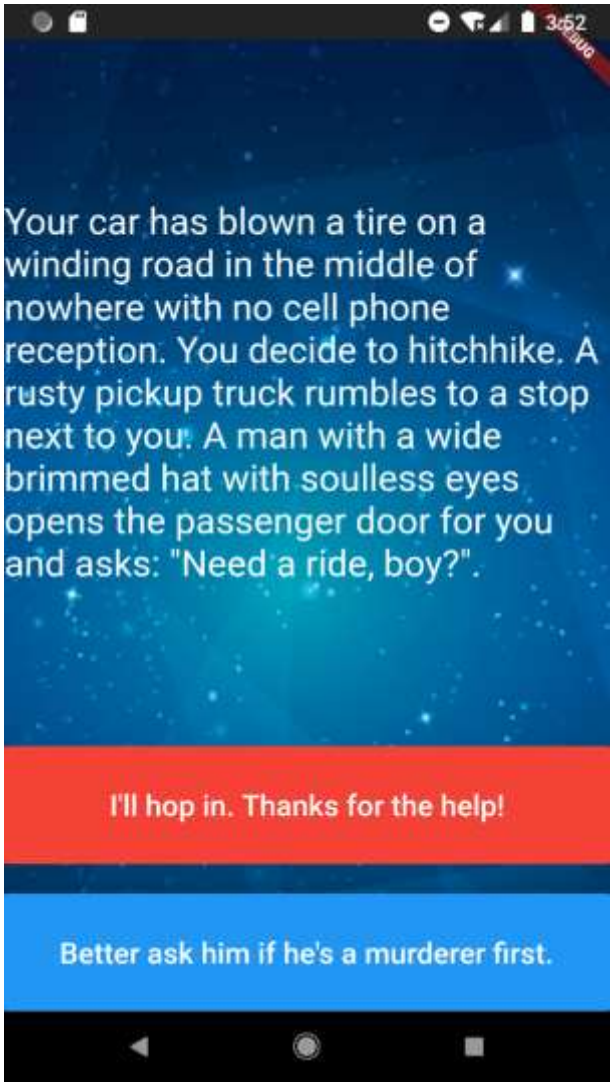
```
def localProperties = new Properties()
def localPropertiesFile = rootProject.file('local.properties')
if (localPropertiesFile.exists()) {
```

```
    localPropertiesFile.withReader('UTF-8') { reader ->
        localProperties.load(reader)
    }
}

def flutterRoot = localProperties.getProperty('flutter.sdk')
if (flutterRoot == null) {
    throw new GradleException("Flutter SDK not found. Define location with
flutter.sdk in the local.properties file.")
}

def flutterVersionCode = localProperties.getProperty('flutter.versionCode')
if (flutterVersionCode == null) {
    flutterVersionCode = '1'
}

def flutterVersionName = localProperties.getProperty('flutter.versionName')
if (flutterVersionName == null) {
    flutterVersionName = '1.0'
}

apply plugin: 'com.android.application'
apply from: "$flutterRoot/packages/flutter_tools/gradle/flutter.gradle"

android {
    compileSdkVersion 28

    lintOptions {
        disable 'InvalidPackage'
    }

    defaultConfig {
        // TODO: Specify your own unique Application ID
(https://developer.android.com/studio/build/application-id.html).
        applicationId "redaelouahabi.destini"
        minSdkVersion 16
        targetSdkVersion 28
        versionCode flutterVersionCode.toInteger()
        versionName flutterVersionName
        testInstrumentationRunner
"android.support.test.runner.AndroidJUnitRunner"
    }

    buildTypes {
        release {
            // TODO: Add your own signing config for the release build.
            // Signing with the debug keys for now, so `flutter run --
release` works.
            signingConfig signingConfigs.debug
        }
    }
}

flutter {
    source '../..'
}

dependencies {
    testImplementation 'junit:junit:4.12'
    androidTestImplementation 'com.android.support.test:runner:1.0.2'
    androidTestImplementation 'com.android.support.test.espresso:espresso-
```

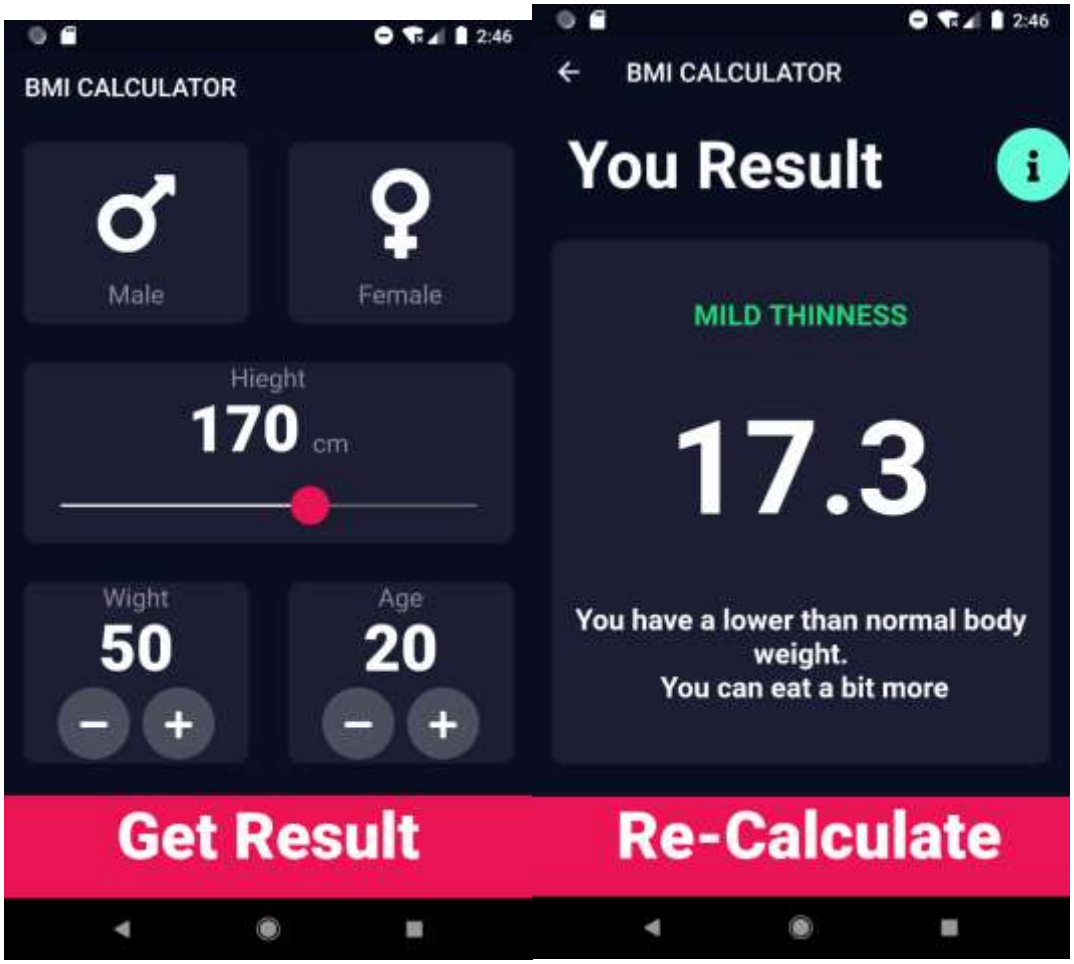
```
core:3.0.2'
}
```

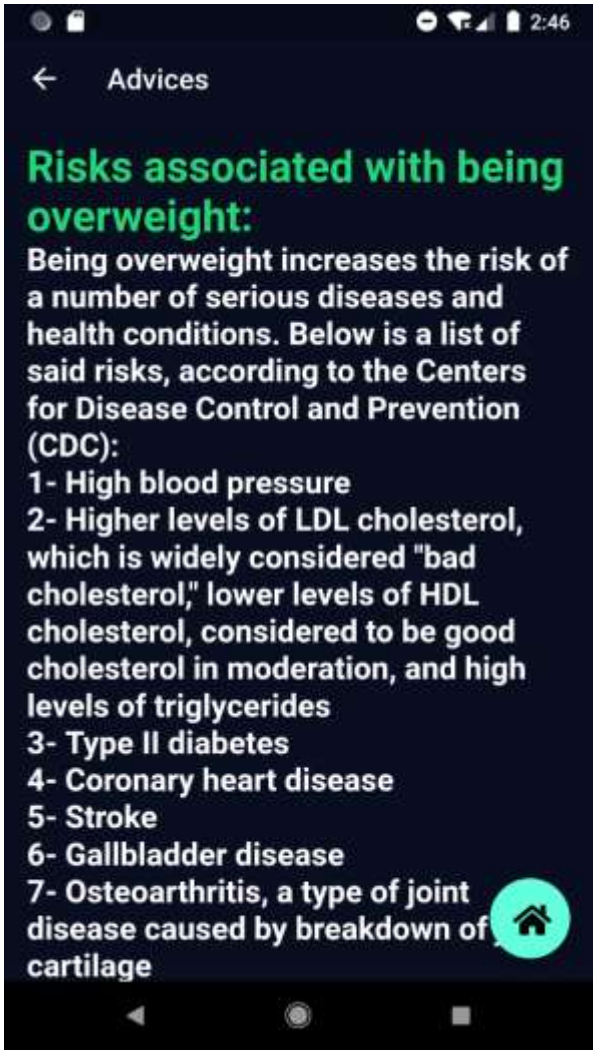
++++++++++++++++++

FOR THE CODE : SEE THE FOLDER AF PROJECTS ,,



ONE OF THE BEST TUTO OF ANGELA : BMI CALCULATOR :


2:46
BMI CALCULATOR
Male
Female
Hieght
170 cm
Wight
50
Age
20
Get Result
2:46
BMI CALCULATOR
You Result
MILD THINNESS
17.3
You have a lower than normal body weight.
You can eat a bit more
Re-Calculate



ALL MY NOTES :

Flutter Trics :

--comment/Uncomment all : clt+/

--Icone generators :https://appicon.co

Or setting the icone without the website freely ! : src/main/res[le fichier des icones] => new > image assets => choose your toof > set it looking > ✅ ✅
--don't forget to read the scaffold class guide
free websites :
icons8[free icones/images]
vecteezy[free icones/images]
canva.com[design your own !!!]
--hot reload from statless or statfull [dynamique] , you just need to type stless+enter
--container with no children try to be as big as possible .
--container with children size thier size to thier child size .[can have only 1 child]
--SafeArea => garanti the visibility to user , has one child .
--margin is for the outside of the container , and padding is for the inside of the container
-- what works for collumns , also aplly to rows !
--for space => SizedBox
--nice website for all colors[although a new arrangements ..] and also Icons liste : materialpalette.com
--Icons class is more flexible from Images , because it is pixilated , and we can shane the color icon ,,
--colors.blue[900] is the same as colors.blue.shade900
--always think about play with containers [arranged in rows and columns]+ padding & margin Propreity [with their widget EdgeInsets.symetric or .all .. for the horizantal/vertical dimension]
--there is padding widgets just for padding ppte and it has only one child!
--donc forget cross and axis and main lign alignement !
--Expanded widget is created for centering for by a horizontal line [for Row] and a vertical line [for a Column] , and it takes only one child [Expanded=Center/line+safeArea]
--String interpolation : the ability to add a name of variable with a string [image$i []dart and i==1 [i love it with python and i did'nt find it in java]]
--you can do som e online test with dart language on dratpad
--angela yu : bilding a habit based on an other habit !
*********VI Idea********

--to install a flutter pachage :
first serch the one who has more pont , see the discription .. and after copy the name and add it in the yaml / :
dependencies:
  flutter:
    sdk: flutter

  # The following adds the Cupertino Icons font to your application.
  # Use with the CupertinoIcons class for iOS style icons.
  cupertino_icons: ^0.1.2
  audioplayers: ^0.10.0
audioplayers is the one here , the cupertino_icons is bby default the package of icons ,,
so after this just click get package[android stdio go to site package to import it ,,]
and after that you just need to impor it ;
--for the music folder , we add it to section assets as the images exactly
--don't forget that expanded widget helps a lot at managing the taille of yours containers/widgets, it ditribute all the valable spaces between the widgets . we use expaded for each single container ./we can crossaxisalignement by streach
--fonction dart : * don't forget your type of return+the return of the type
*new for me ** we can also declare a fonction off 2 args : type fct({Type1 p1, ..}) and for the call => fct(p1: v1 , ..)
but I advise you to choose this type because for exaple for the constructor , if you choose the other one with only() , you can't just use the default constructor .
--void main() => runApp(MyApp(),);
this is an arrow fct , that's mean that it's composed by a single line of code , and we can just use an arrow '=>'
[fat arrow Vs slim arrow(->)] anstead of {}
--freesound => freesound.org
--❓ what apk should i use : release ..
--materialapp/ppte title : //APi,flutter : one line description used by the devise to identify the app for user [wich is the title may katekliki 3la lbt li kaye3tik tt les app ouvertes ..](IMpoortant !)

--I wanna read more about scafold and material app ..
**********VI trick*******
--to change the name of the application :
go to androidManifest.xml at app/src/main ,and after that change the label :
android:label="ball projectt"
**********VI trick*******
--for adding fonts : i see it in Mi_Card => we add the fonts prom google fonts[install it , it will be a ziped file + extract the .ttf file => and add its to a folder named 'fonts' and after go to pubspec.yaml and add the folder] as exactly we do for images :

```
flutter:

  uses-material-design: true

  assets:
    - images/
  fonts:
    - family: Pacifico
      fonts:
        - asset: fonts/Pacifico-Regular.ttf
    - family: Modak
      fonts:
        - asset: fonts/Modak-Regular.ttf
```

and for use in the Textstyle widget : fontFamily: 'Pacifico',
--//TODO : YOU WILL find it at todo/project/main => a list of to do [for managing the project]
--if you want to write an appostroph ' indo a String , you may write 'aaa\'bbb' [we add a back slash]
--shortWays: clt+maj+/ give /* */
clt+/ give //
--les alerts !![yes/no -- dialog] https://pub.dev/packages/rflutter_alert
--il sont apparu dans l'ecran par un structure pile : LIFO
--once you open the gardle at android/app , you have an error , but it doesn;t affect the exceution
--for the visibility of any widget , we use Visibility(

```
            visible: sb.buttonShouldBeVisible(),
            child:...),
```
--for the background color :
in a container , we use the proprieties :
```
decoration: BoxDecoration(
          image: const DecorationImage(
            image: AssetImage('images/background.png'),
            fit: BoxFit.cover,
          ),
          //border: Border.all(color: Colors.white , width: 8),
        ),
```
--dribbble.com site of design[Idea] of UI
--for finding a color with a code #6x , we put instead of Colors.X :
Color(0xff1b23c8), and the last 6x are the code of the color.
--theme:themeData(), widg in material app for theme => read the manuel API [ppte ..]
-- colorZilla : extention pipete [PS6] for firefox and chrome .[extarcting color's code]
--we can also use a specefic flutter the and add copywith (to change some ppte that we use in the themeData) [this is in the theme ppte in materialApp]
--for a particular widget theme , we can embaded the widget in a Theme widget and add as an ppte data : ThemeData()..
--Expanded widget must be playced inside a fles Widget [Colom /Row/Flex]
--instance variable=Field=property
--immutabe=unchangebale[like statlesswidget]
--font_awsome_Flutter : des Symboles speciales exple: [mars/venus] for BMI calculator
--const are defined at the compile time ; while the final can be assigned after this time ; like extractine the current time ,,
--GestureDetector(), for dettecting onTab() longPress() ..
--enums : enum EnumName{typeA,typeB,typeC} => call : EnumName.typeA
--comments are usefeul to show your logique in programming , like I initialise this var to 0 .. but not to say to someone , this line ,means that if this var==1 then its is a female gender {conventions ,,} , it's better to use enums; EXPLE:
--enum CarType{

Kar,
Lagrima,
Taxi,}
class Car{
CarType x;
//Constructor
Car({this.carstyle})
}
void main(){
//access to the element
Car y=Car(x: CarType.Lagrime);
}
--dart Ternary Operator : we use
condition ? DoThisIfTrue : DoThisIfFalse ;
//instead of if(condition) DoThisIfTrue ; else DoThisIfFalse ; we can assign a return value of an Ternary condition in a Variable !! because it's one line code
--we can set a fonction as argument of othe Fct in flutter[Or also constructor] ! for preserving repititions ..
for example Calculation(n1,n2,add/multiply ,,){return x or doesn't return anything ,,}
**there is also an other option : creation a variable Function
f=(n1,n2,add/multiply ,,){return x or doesn't return anything ,,}
**for the call in an arguemt with class constructor: we shlouldn't add the parenthesis with the function , and for the manilulation :
 className.FunctionName=> Fction name
 className.FunctionName()=> Fction behavior
--Slider Widget [you can choose the value Graphicly [BMI]]
--Convert int=>double :: toDouble(),
--double.round():: round to an integer
--setState((){}); must be in his class
--to change the details of the slider [thumbcolors/shape(//size) ..] , we need to embaded the slider widget by SliderTheme and in his ppte data , while the SliderThemeData need all his component/ppte[like an java Interface] , we just use SliderTheme.of(context).copyWith(ppte the we want change)==> for the

.of(context) it means that it extends just all ppte from the latest buildContext wich is in the widget build that return your current UI .
 --themedata is soo rich in custumising our App, you can make your own ppte theme easly
--if you want just to use a Stack datastructure for the Navigation between routes[cad pages] , you should use the two actions [usely in a Button] :
*Navigator.push(context,MaterialPageRoute(builder: (context){
                return DicePageState();
              }));
* Navigator.pop(context);//for Poping
--for more precision : =>*; egale a {return*;}
--& if its a complexe routes =>
we use map datastucture in a routes ppte in materialApp Exple :
routes: {
       'Our':(context)=>InputPage(),
       '/': (context)=> TestResult(),
     },
and we should have in Place Of home ptte => initialRoute: 'Our',//the key Of the Page
=> an for calling the others Pages => Navigator.pushNamed(context, 'Our');
--declaring a map :
Map<keyType,ValueType/*if you want to specify*/> mapName {
Key:Value , **}
**calling it : mapName[Key]
--if we try to acced to an value by a key that doesn't exist > we will find null , so we can anytime chek the existance of any Value
--add an ather element :
mapName[newKey]=newValue
--map inordered dataType, we have some methodes like .length , .keys ,.values ,
--dart gives us the possibility to declar an dataType outside any class
--for passing data over Pages/Routes , we sould passing it by the constructor of pages/classes at the level of the Navigator,
--BMI was soo helpful for me , I learned a lot of things[theme costumizing/pass fct overs argumets ..]

--one of useful args of scaffold : debugShowCheckedModeBanner: false, instead of flutter inspector>more options>hide debug mode banner
--if you use one materialApp widget at only the main , and other pages are only scaffold => the theme applicated is one in the materialaApp
--Geolocation :
**geolocator: ^3.0.1 in dependencies
**import 'package:geolocator/geolocator.dart';
**call a fct that will assign to a string your coords
**
--asynchronous Programming[doing thing while others thing is also in execution] Vs Synchronous [one task has his own time /sequencial Programming]
--Futures in dart is the same as promises in JS
--dart Futures , Async & await are sooo imporatant in terme of reloading data manipulation : Future is like a recit of : you will have this data once it's ready for you
--we could specify the data Type of a Future by: Future<String>
--Widget Life cycle on stateful type :
**initState() //caled once when the widget was born ;
**build : called anytime the build core is changed !
**deactivate() : at the end of widget's life
--handeling exceptions by try{} catch(e){}
--double.parse(String);
--checking if a parametre p set on null => if it is not null use it ; else use a default value d ::
p ?? d //on one line of code by the null aware operator : '??'
--I'am so surprised that we can do in a build method :
try{
return scaffold(**)
}
catch(e){
return scaffold(***)
}
--throw Exception[predefinie] or throw String => is a way to throw an exception in certain personnalised conditions

******PS*******

--canva => tempelate

--couleur harmoniques

--in desing => li kaykhedmou fih les journaux [aussi pour latex]...