Week 4: Flutter Layout

In the labs, you can run your with web browser or phone emulator.

Lab 1 Comparing: Material vs Non-Material App

Start with Material App:

1.1 Clone Flutter source from Flutter website

$ git clone https://github.com/flutter/website.git

After git clone, folder “website” is created.

```
PS H:\Teaching\424-Wireless\2564-2\week-4> ls


    Directory: H:\Teaching\424-Wireless\2564-2\week-4


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----         1/23/2022   5:25 PM                hello
d-----         1/27/2022   9:37 PM                website
-a----         1/23/2022   5:36 PM          48876 Basic Widgets.docx
-a----         1/27/2022   9:44 PM          12608 Week 4-layout-Lab-She
```

1.2 Create Project with out overwrite

$ flutter create --no-overwrite .\website\examples\layout\base\

1.3 Go to project folder then analyze and test code.

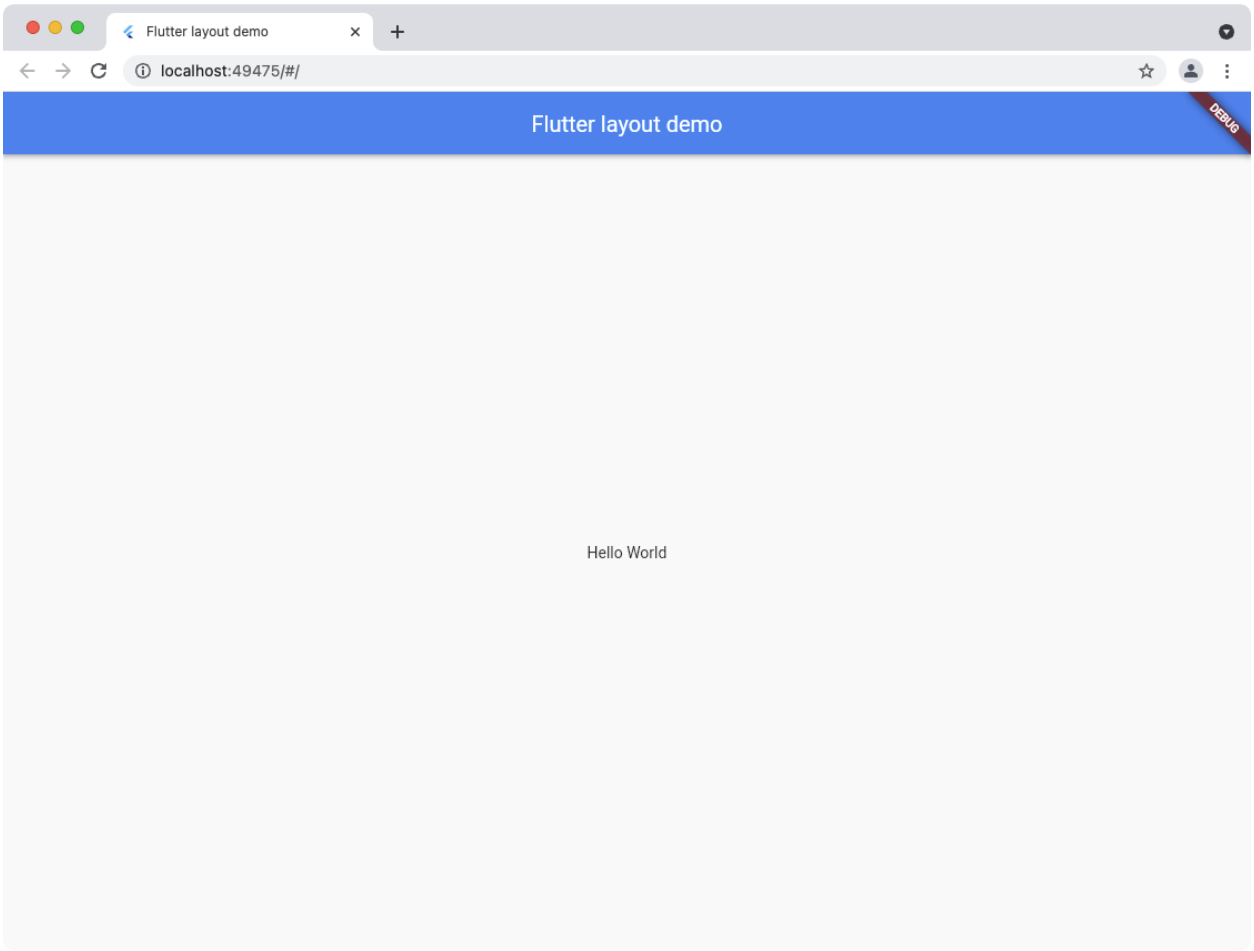
$ cd .\website\examples\layout\base\

$ dart analyze

$ flutter test

$ flutter run

1.4 Capture the output


Flutter layout demo
localhost:49475/#/
Flutter layout demo
DEBUG
Hello World

2. Compare with Non-material

Assume we outside website folder

```
PS H:\Teaching\424-Wireless\2564-2\week-4\website> pwd

Path
----
H:\Teaching\424-Wireless\2564-2\week-4\website
```

2.1 Create Project based on git clone one, non-material, without overwrite

$ flutter create –-no-overwrite .\examples\layout\non_material\

2.2 Go to Project directory, analyze, test and run

$ cd .\examples\layout\non_material\

$ dart analyze

$ flutter test

$ flutter run

2.3 Capture the result

Hello World

3. What is the difference between Material APP vs Non-Material App?

The layout between material and non-material. Such as App bar.

Lab 2 Row and Column Widget

Assume, you have done with Lab 1, so that we have source of Lab 2 already.

2.1 Assume we outside website folder

```
PS H:\Teaching\424-Wireless\2564-2\week-4\website> pwd

Path
----
H:\Teaching\424-Wireless\2564-2\week-4\website
```

2.2 Create Project based on git clone one, non-material, without overwrite

$ flutter create --no-overwrite .\examples\layout\row_column\

2.3 Go to Project directory, analyze, test and run

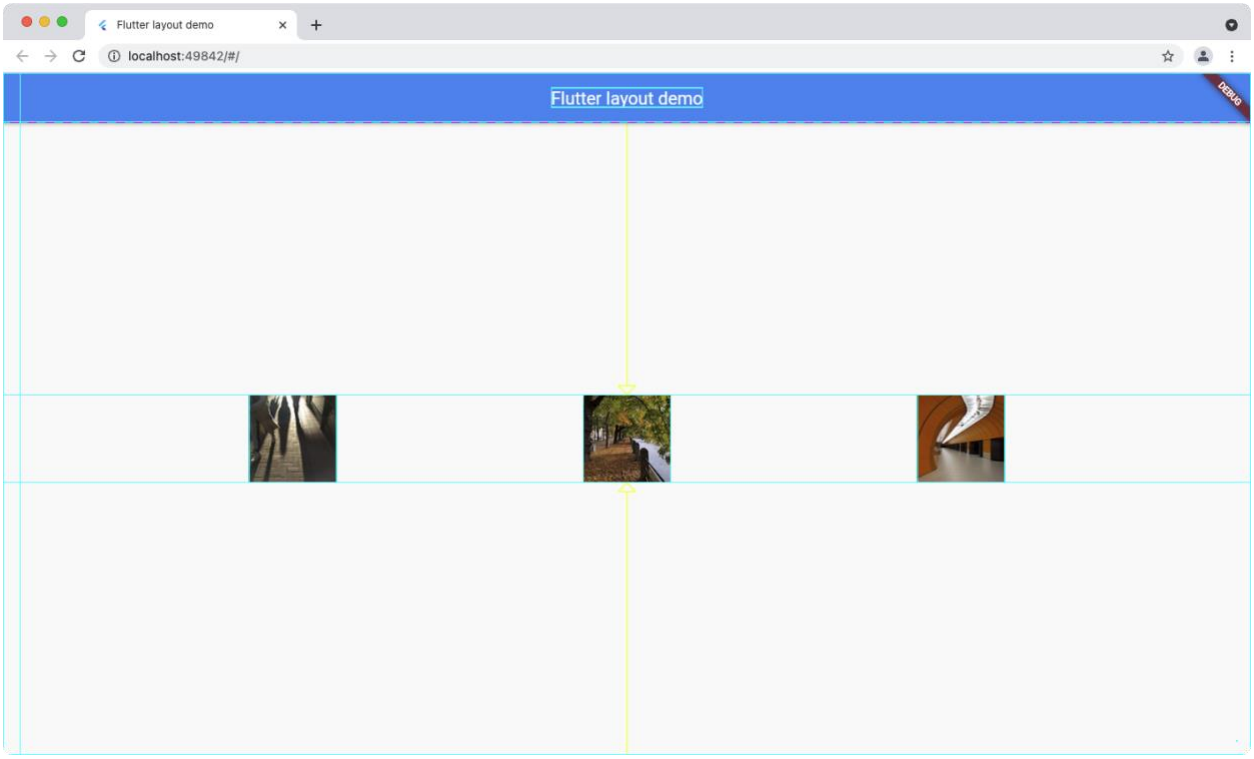
$ cd .\examples\layout\non_material\

$ dart analyze

$ flutter test

$ flutter run

2.4 Capture the result



2.5 Question?

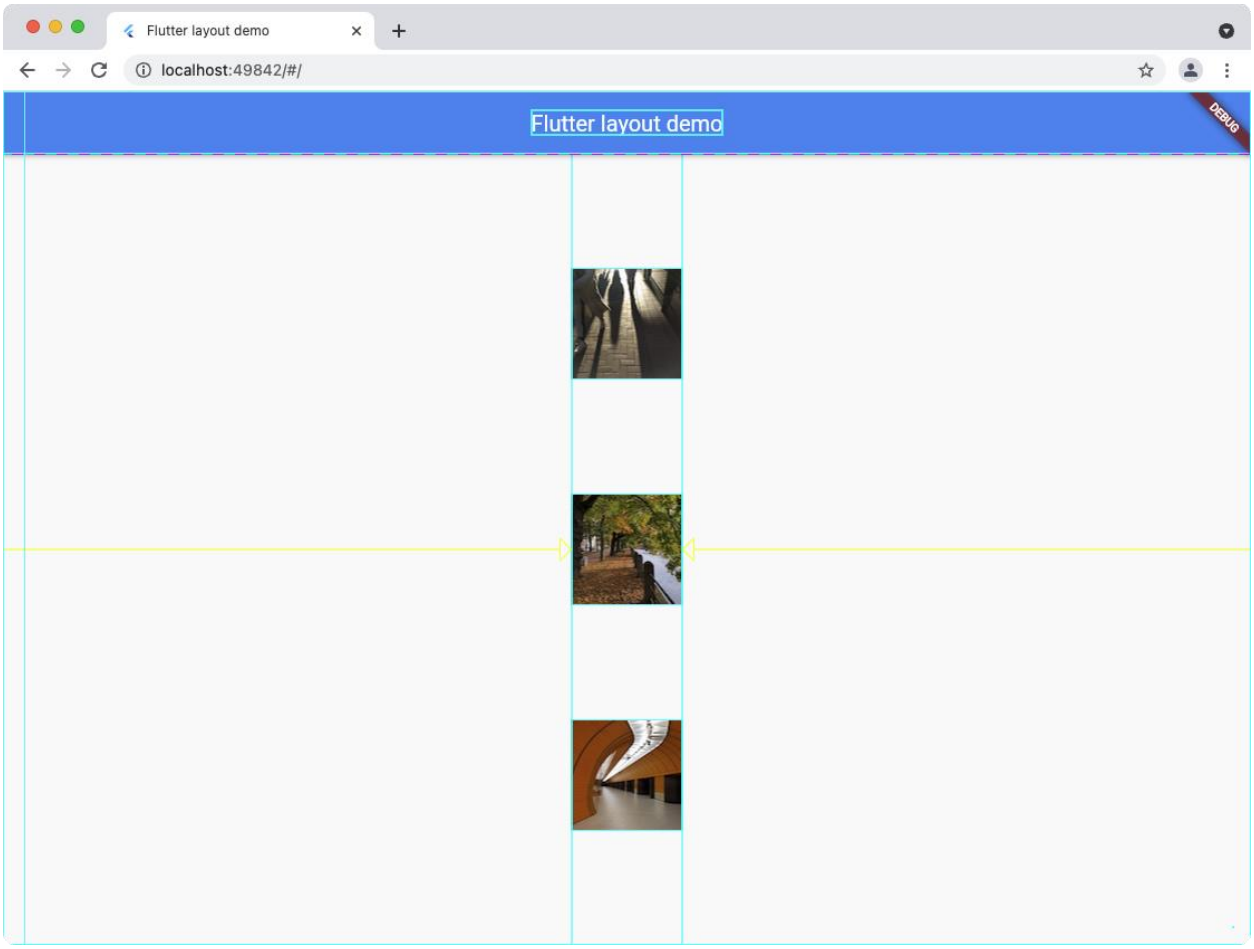
On the result, what have to do in main.dart, to let see unseen structure in App.

Switch `debugPaintSizeEnabled` to true to see the structure

Exercise 1:

Given lab 2 that show images in Row, change the code (one line), to show image in column.

Change buildRow to buildColumn



3. Lab Sizing Widgets

Assume, you have done with Lab 1, so that we have source of Lab 3 already.

3.1 Assume you can change folder/director to appropriate place,

in side website folder as before.

3.2 Create Project based on git clone one, non-material, without overwrite

```
$ flutter create --no-overwrite .\examples\layout\sizing\
```

3.3 Go to Project directory, analyze, test and run

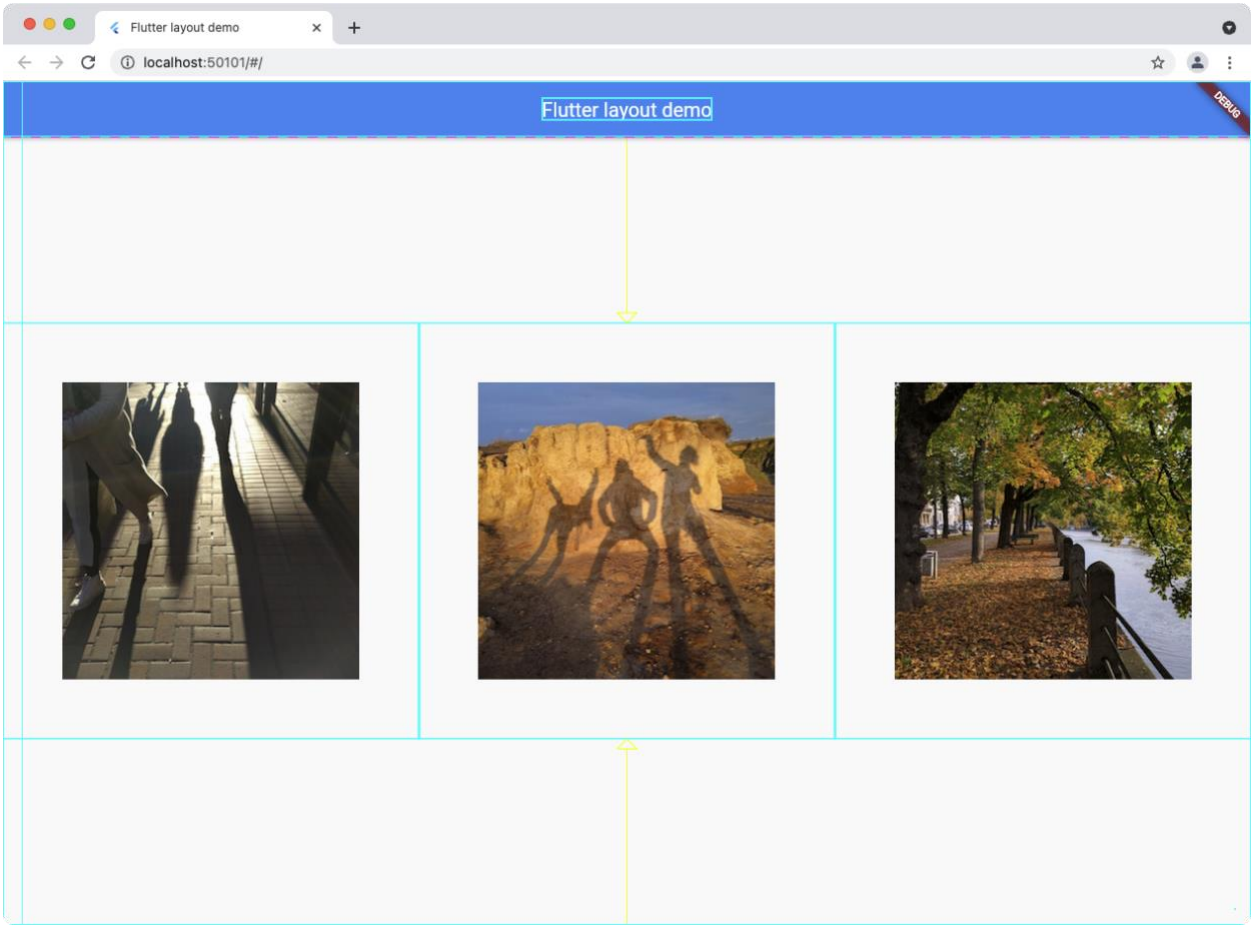
```
$ cd .\examples\layout\sizing\

$ dart analyze

$ flutter test

$ flutter run
```

3.4 Capture the result



Exercise 2:

Given project in Lab 3, to see Overflow in App change

Line 21 in lib\main.dart, `body: Center(child: buildExpandedImages()),`

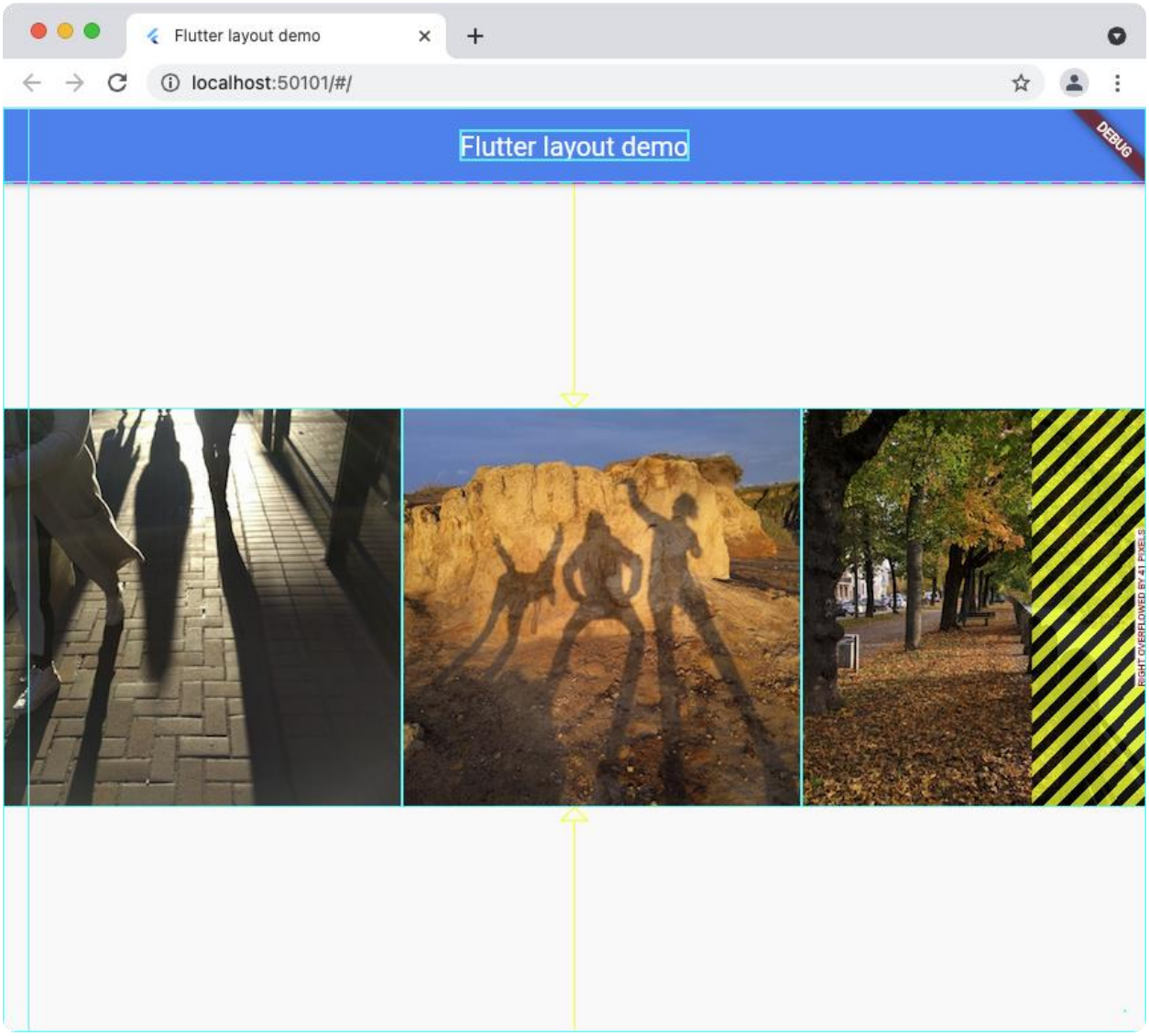
Replace with

body: Center(child: buildOverflowRow()),

Process necessary steps to show Overflow output on App.

If you run App on Brower, resize screen manually to see that is Overflow mea

Capture the Error.



```
══╡ EXCEPTION CAUGHT BY RENDERING LIBRARY ╞═══════════════════════════════════
The following assertion was thrown during layout:
A RenderFlex overflowed by 20 pixels on the right.

The relevant error-causing widget was:
  Row
  Row:file:///Users/iamprompt/Code/mahidol/itcs424-wireless-and-mobile-computing-lab/week-4/website/examples/layout/sizing/
  lib/main.dart:28:7

To inspect this widget in Flutter DevTools, visit:
http://127.0.0.1:9101/#/inspector?uri=http%3A%2F%2F127.0.0.1%3A50142%2FXcFR0tELd3c%3D&inspectorRef=inspector-0

The overflowing RenderFlex has an orientation of Axis.horizontal.
The edge of the RenderFlex that is overflowing has been marked in the rendering with a yellow and
black striped pattern. This is usually caused by the contents being too big for the RenderFlex.
Consider applying a flex factor (e.g. using an Expanded widget) to force the children of the
RenderFlex to fit within the available space instead of being sized to their natural size.
This is considered an error condition because it indicates that there is content that cannot be
seen. If the content is legitimately bigger than the available space, consider clipping it with a
ClipRect widget before putting it in the flex, or using a scrollable container rather than a Flex,
like a ListView.
The specific RenderFlex in question is: RenderFlex#f5e80 relayoutBoundary=up2 OVERFLOWING:
  creator: Row ← Center ← _BodyBuilder ← MediaQuery ← LayoutId-[<_ScaffoldSlot.body>] ←
    CustomMultiChildLayout ← AnimatedBuilder ← DefaultTextStyle ← AnimatedDefaultTextStyle ←
    _InkFeatures-[GlobalKey#ce0cd ink renderer] ← NotificationListener<LayoutChangedNotification> ←
    PhysicalModel ← …
  parentData: offset=Offset(0.0, 200.0) (can use size)
  constraints: BoxConstraints(0.0<=w<=880.0, 0.0<=h<=700.0)
  size: Size(880.0, 300.0)
  direction: horizontal
  mainAxisAlignment: spaceEvenly
  mainAxisSize: max
  crossAxisAlignment: center
  textDirection: ltr
  verticalDirection: down
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```

Lab 4: Full Layout Example App

This lab is not elaborate so much, but let student overall result from lecture

Assume, you have done with Lab 1, so that we have source of Lab4 already.

4.1 Assume you can change folder/director to appropriate place, in side website folder as before.

4.2 Create Project based on git clone one, non-material, without overwrite

```
$ flutter create --no-overwrite .\examples\layout\pavlova\
```

4.3 Go to Project directory, analyze, test and run

```
$ cd .\examples\layout\pavlova\

$ dart analyze

$ flutter test

$ flutter run
```

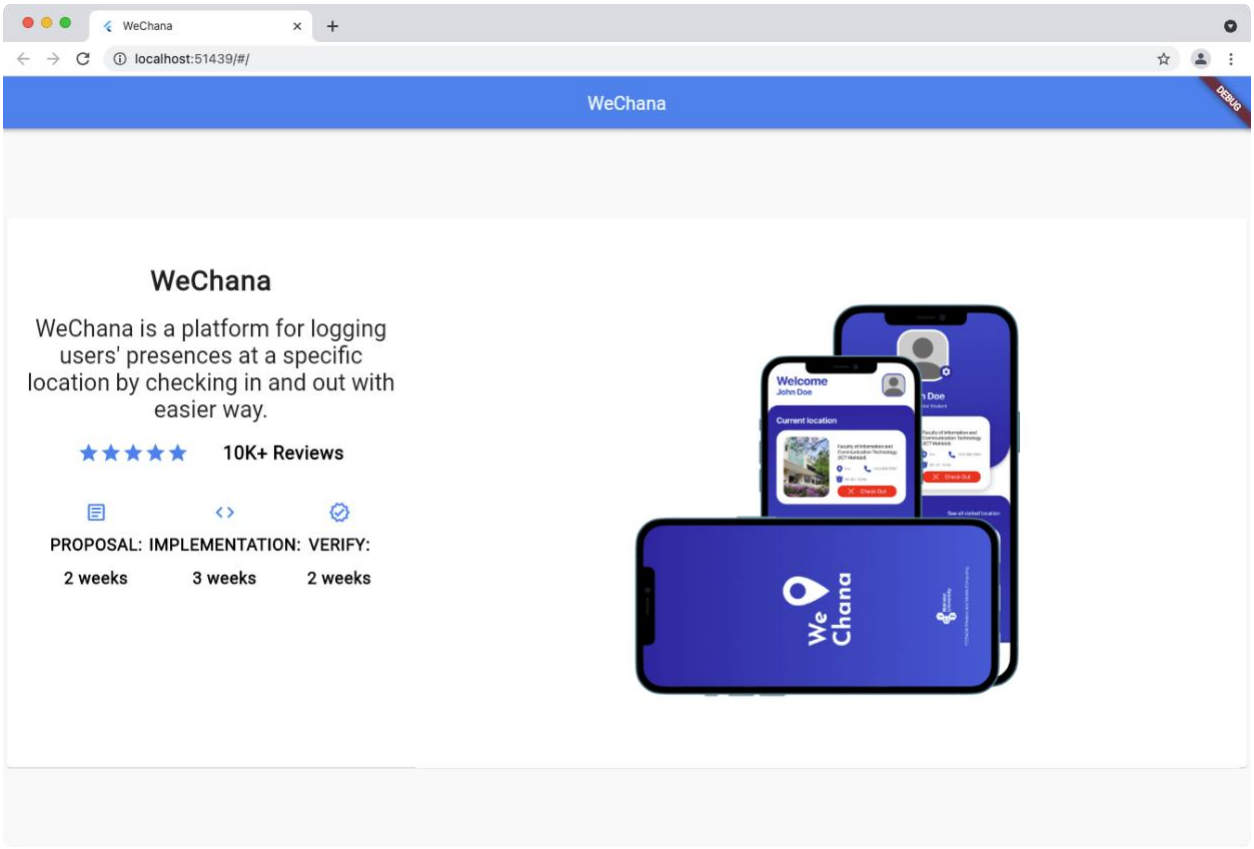
Zoom in or Zoom out in your browser to get ride of Overflow if it show here.

4.4 Prepare information related to your project: your image, Text descript your project, assume this app has been review by some number of user so choose your random one for Reviewer number.

Change three icon relate to your project:

1. Proposal icon: weeks
2. Implementation icon : weeks
3. Verify icon: weeks

45 Capture the result



Submit your result as w4_flutter_studentID.pdf