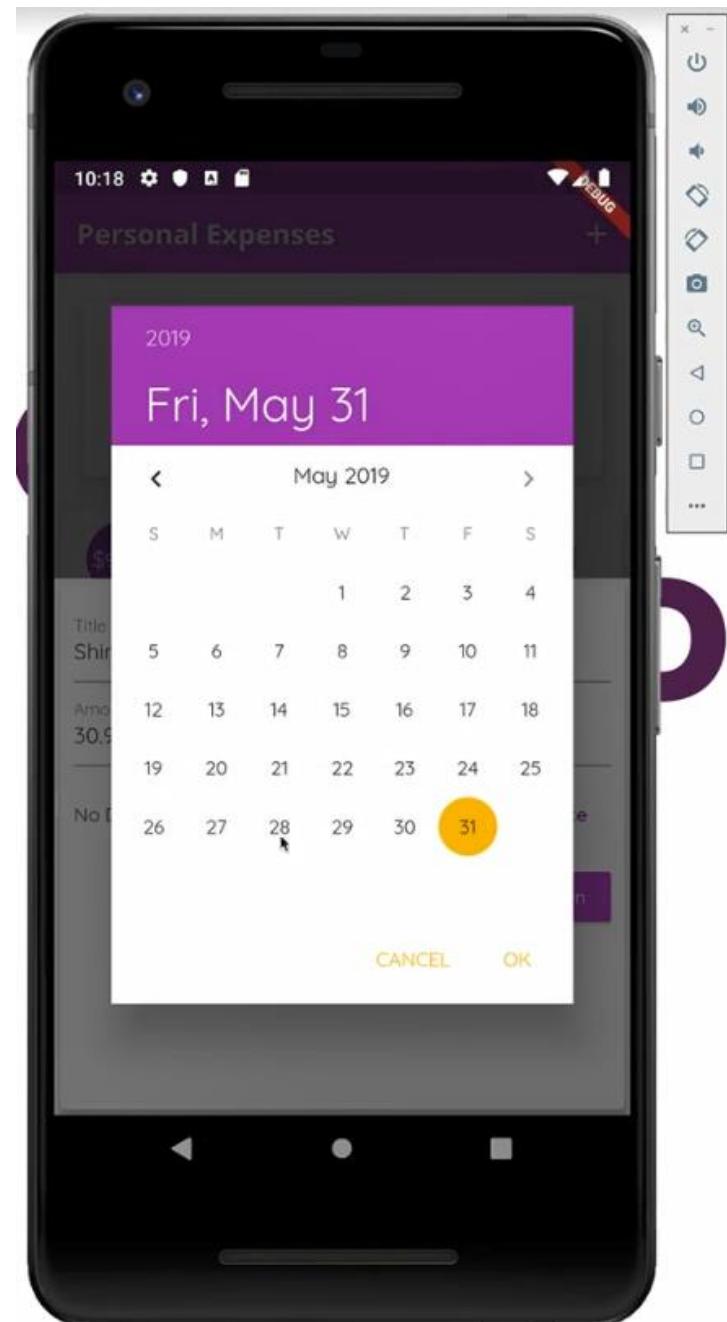
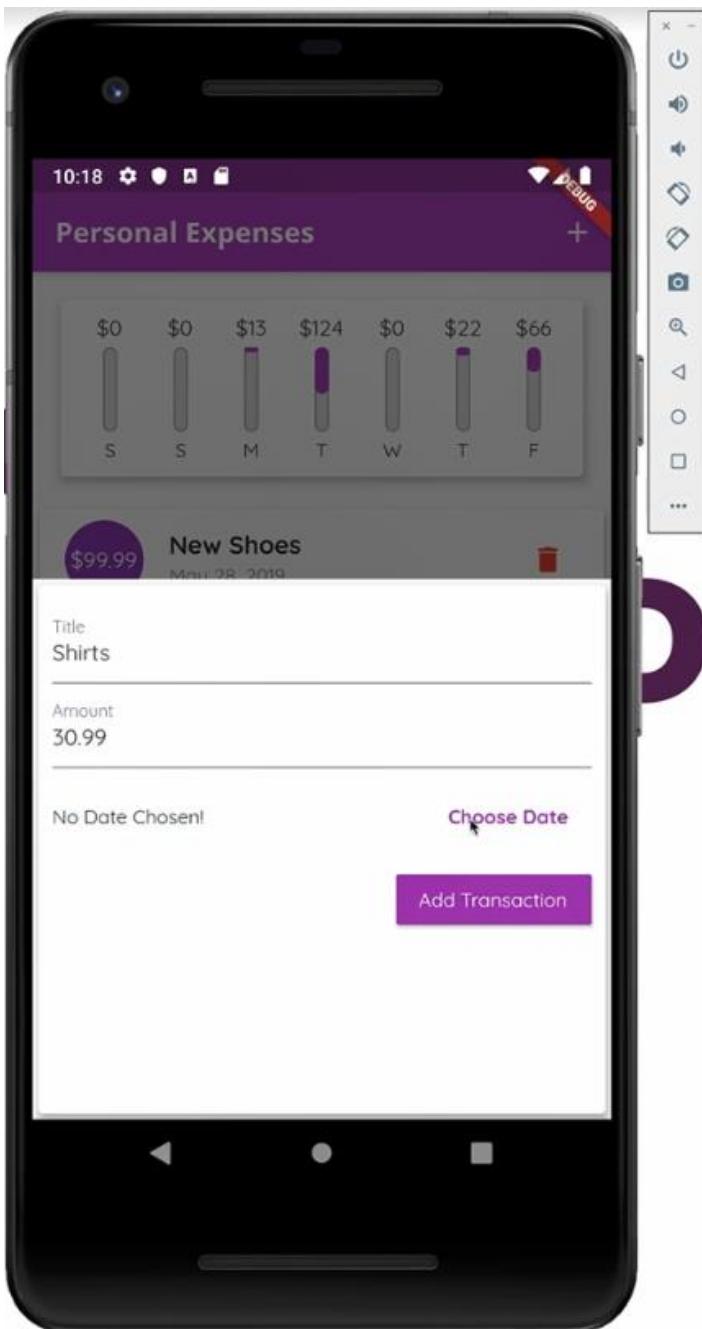
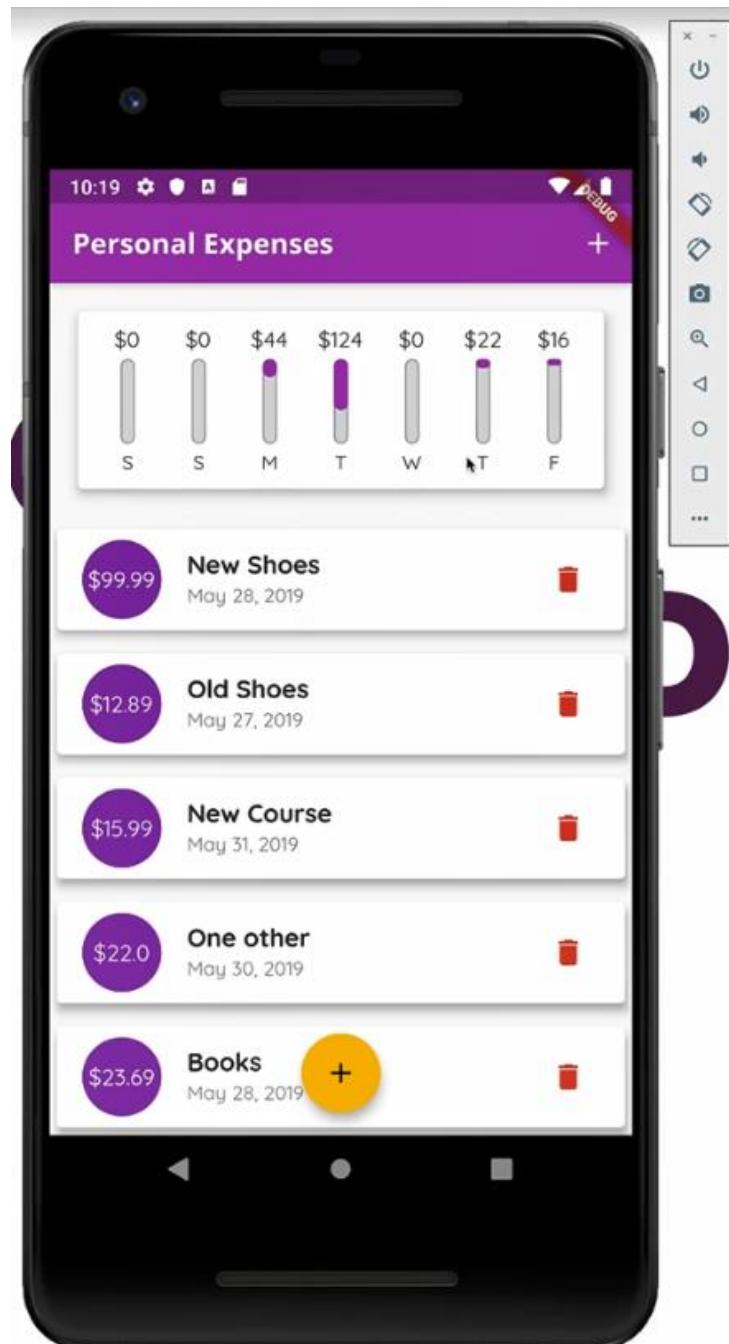


# Building Real Apps

Widgets, Styling, Theming, Logic



# What's In This Section?

Widgets, Widgets, Widgets

Theming & Material Design

Working with Images & Fonts

Adding Business Logic to an App

# **AN OVERVIEW OF THE CORE FLUTTER WIDGETS**

25.000 Results Date ▾

## [Flutter Widgets Catalog | Syncfusion](https://help.syncfusion.com/flutter/introduction/widgets-catalog)

<https://help.syncfusion.com/flutter/introduction/widgets-catalog> ▾

24 rows · 05/05/2021 · **Flutter Widgets Catalog.** The Syncfusion Flutter cross platform UI widgets and libraries are an ideal choice for developing rich cross platform iOS, Android, and Web applications from a single shared code base. You can build responsive, interactive, and creative application that run on multiple platforms and devices with various form factors.

## [Widget catalog - Flutter](#)

<https://flutter.dev/docs/development/ui/widgets> ▾

**Widget catalog.** 文档. Development. UI. Widgets. Create beautiful apps faster with **Flutter's** collection of visual, structural, platform, and interactive **widgets**. In addition to browsing **widgets** by category, you can also see all the **widgets** in the **widget index**. Accessibility.

## [Videos of Flutter Widget Catalog](#)

[bing.com/videos](https://bing.com/videos)



Tutorial #29 - Official Docs &  
The Widget Catalog(Flutter  
App Devel...)

34 views · Jun 21, 2020

YouTube › Flutter App Develop...



Flutter - C1:P1 -  
Understanding flutter  
framework, widget catalog...

374 views · Jan 21, 2019

YouTube › iMeshAcademy



What is a  
Widget? - Flutter  
Fundamentals

35 views · Jul 6, 2020

YouTube › Flutter Routes

## Flutter



Flutter is an open-source UI software development kit created by Google. It is used to develop cross platform applications for Android, iOS, Linux, Mac, Windows, Google Fuchsia, and the web from a single codebase.



Wikipedia



Official site



Twitter



YouTube

Original author(s): Google

Developer(s): Google and community

Initial release: Alpha (v0.0.6) / May 2017

Stable release: 2.5 · / 8 September 2021

Repository: [github.com/flutter/flutter](https://github.com/flutter/flutter)

Written in: Dart

### Developer

### Plugins

### Updates

04\_02\_An Overview of the Core Flutter Widgets Learn  
Flutter and Da.mp4



Multi-Platform

Development

Ecosystem

Showcase

Docs



Get started

Free access to best-selling book **Flutter Apprentice**, for a limited time only! [Learn more...](#)

Get started

Samples &amp; tutorials

Development

## User interface

Introduction to widgets

▶ Building layouts

Adding interactivity

Assets and images

▶ Navigation &amp; routing

▶ Animations

▶ Advanced UI

[Widget catalog](#)

Data &amp; backend

▶ Accessibility &amp; internationalization

▶ Platform integration

▶ Packages &amp; plugins

# Widget catalog

[Development](#) > [UI](#) > [Widgets](#)

Create beautiful apps faster with Flutter's collection of visual, structural, platform, and interactive widgets. In addition to browsing widgets by category, you can also see all the widgets in the [widget index](#).

## Accessibility

Make your app accessible.

[Visit](#)

## Animation and Motion

Bring animations to your app.

[Visit](#)

## Assets, Images, and Icons

Manage assets, display images, and show icons.

[Visit](#)

## Async

Async patterns to your Flutter application.

## Basics

Widgets you absolutely need to know before building your first

## Cupertino (iOS-style widgets)

Beautiful and high-fidelity widgets

## LIBRARIES

[animation](#)[cupertino](#)[foundation](#)[gestures](#)[material](#)[painting](#)[physics](#)[rendering](#)[scheduler](#)[semantics](#)[services](#)

## Welcome to the Flutter API reference documentation!

Flutter is Google's SDK for crafting beautiful, fast user experiences for mobile, web, and desktop from a single codebase. Flutter works with existing code, is used by developers and organizations around the world, and is free and open source.

This API reference covers all libraries that are exported by the Flutter SDK.

## More Documentation

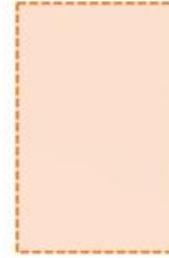
This site hosts Flutter's API documentation. Other documentation can be found at the following locations:

- [flutter.dev](#) (main site)
- [Installation](#)
- [Codelabs](#)

# Most Important Widgets

App / Page Setup

MaterialApp /  
CupertinoApp



Scaffold /  
CupertinoPageScaffold



# Details

## MaterialApp / CupertinoApp

- Typically the root widget in your app
- Does a lot of “behind-the-scenes” setup work for your app
- Allows you to configure a global theme for your app
- Sets up navigation behavior (e.g. animations) for your app

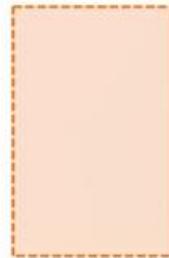
## Scaffold / CupertinoPageScaffold

- Typically used as a frame for a page in your app
- Provides a background, app bar, navigation tabs, etc
- Only use one scaffold per page!

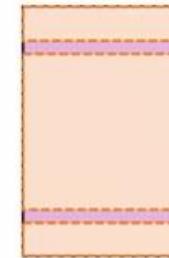
# Most Important Widgets

App / Page Setup

MaterialApp /  
CupertinoApp

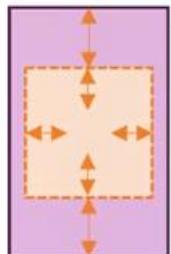


Scaffold /  
CupertinoPageScaffold

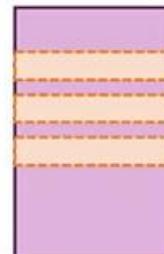


Layout

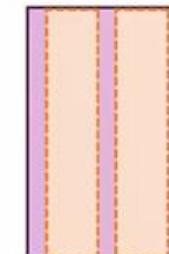
Container



Row



Column



# Details

## Container

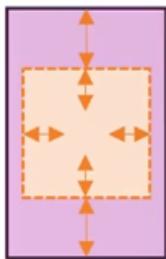
- Extremely versatile widget!
- Can be sized (width, height, maxWidth, maxHeight), styled (border, color, shape, ...) and more
- Can take a child (but doesn't have to) which you also can align in different ways
- You'll use this widget quite often

## Row / Column

- Must-use if you need multiple widgets sit next to each other horizontally or vertically
- Limited styling options => Wrap with a Container (or wrap child widgets) to apply styling
- Children can be aligned along main-axis and cross-axis (see separate cheat sheet)

# Most Important Widgets

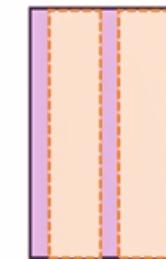
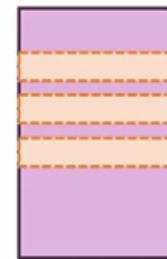
Container



Layout

Row

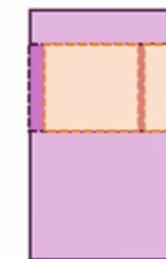
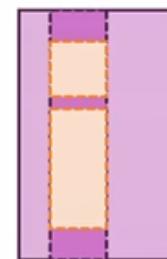
Column



Row / Column Children

Flexible

Expanded



## Details

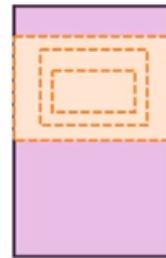
### Flexible / Expanded

- Also see separate cheat sheet attached to lecture about Row / Column / Flexible / Expanded
- Helps you size the child widgets of Row / Column

# Most Important Widgets

Content Containers

Stack



Card



## Details

### Stack

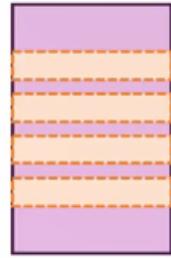
- Used to position items on top of each other (along the Z axis)
- Widgets can overlap
- You can position items in absolute space (i.e. in a coordinate space) via the Positioned() widget

### Card

- A container with some default styling (shadow, background color, rounded corners)
- Can take one child (can be anything)
- Typically used to output a single piece / group of information

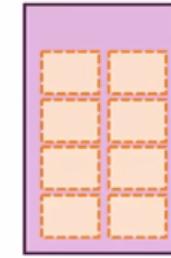
# Most Important Widgets

ListView



Repeat Elements

GridView



ListTile



# Details

## ListView / GridView

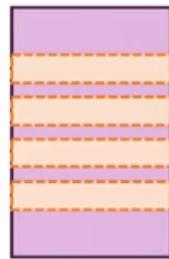
- Used to output lists (or grids) of items
- Like a Column() but scrollable (Column is not)
- Can be laid out vertically (default) and horizontally
- Use ListView.builder() to get optimized item rendering for very long lists

## ListTile

- A pre-styled container / Row() that allows you to achieve a typical “list-item look”
- Offers various slots for widgets (e.g. at the beginning, a title, at the end)
- Not a must-use but can be handy for a default list-item look

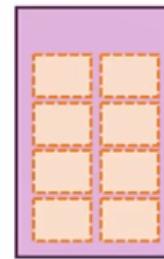
# Most Important Widgets

ListView



Repeat Elements

GridView

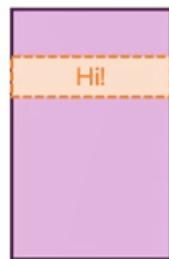


ListTile

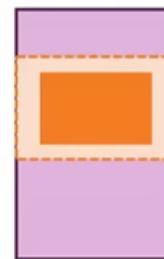


Content Types

Text



Image



Icon



# Details

## Text

- A widget that simply outputs some text on the screen
- Text can be styled (font family, font weight, font size etc)
- Text behavior can be controlled (e.g. clipping if it's too long)

## Image

- Used to render an image on the screen
- Supports different sources (included in app, web image, ...)
- Can be configured to size itself in different ways into a wrapping container

## Icon

- Renders an Icon onto the screen
- Flutter ships with many default Material (Android) and iOS icons which you can use
- There also is an IconButton() widget in case you need a button with an icon

# Most Important Widgets

User Input

TextField

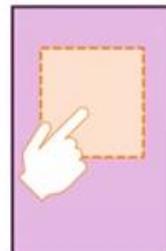


RaisedButton /  
FlatButton



GestureDetector

InkWell



# Details

## TextField

- Renders an editable text field where the user can enter (type) information
- Many, many configuration options (e.g. autocorrection, error messages, labels, styles)
- Supports different kinds of keyboard (email, number, normal text, ...)

## RaisedButton / FlatButton / IconButton

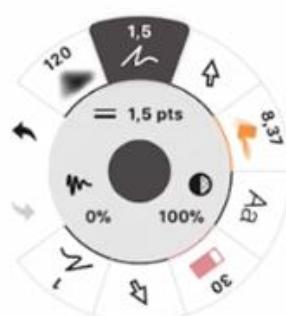
- Differently styled buttons that handle user taps
- A custom function that should execute upon a tap can (and has to be) provided
- Can be styled / customized

## GestureDetector / InkWell

- GestureDetector allows you to wrap ANY widget with touch listeners (e.g. double tap, long tap)
- InkWell does the same but adds a visual ripple effect upon touches (effect can be configured)
- You can build your own buttons / touchable widgets with these widgets

# **PLANNING THE APP**

Precision



Layers

↑ Sorting | Automatic

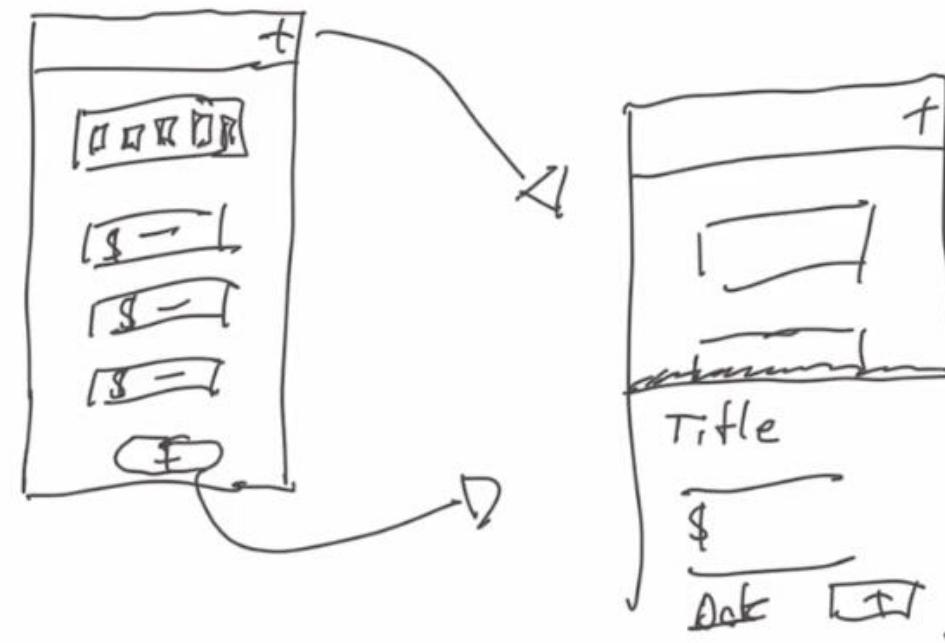
+ New Layer



# Expense Planner

Export ↑

Import ↓



# **COMBINING WIDGETS**

```
Q:\myworkspaces\flutter_ws>flutter create personal_expenses_04
Creating project personal_expenses_04...
personal_expenses_04\lib\main.dart (created)
personal_expenses_04\pubspec.yaml (created)
personal_expenses_04\README.md (created)
personal_expenses_04\test\widget_test.dart (created)
personal_expenses_04\.gitignore (created)
personal_expenses_04\.idea\libraries\Dart_SDK.xml (created)
personal_expenses_04\.idea\libraries\KotlinJavaRuntime.xml (created)
personal_expenses_04\.idea\modules.xml (created)
personal_expenses_04\.idea\runConfigurations\main_dart.xml (created)
personal_expenses_04\.idea\workspace.xml (created)
personal_expenses_04\.metadata (created)
personal_expenses_04\analysis_options.yaml (created)
personal_expenses_04\android\app\build.gradle (created)
personal_expenses_04\android\app\src\main\kotlin\com\example\personal_expenses_04>MainActivity.kt (created)
personal_expenses_04\android\build.gradle (created)
personal_expenses_04\android\personal_expenses_04_android.iml (created)
personal_expenses_04\android\.gitignore (created)
personal_expenses_04\android\app\src\debug\AndroidManifest.xml (created)
personal_expenses_04\android\app\src\main\AndroidManifest.xml (created)
personal_expenses_04\android\app\src\main\res\drawable\launch_background.xml (created)
personal_expenses_04\android\app\src\main\res\drawable-v21\launch_background.xml (created)
personal_expenses_04\android\app\src\main\res\mipmap-hdpi\ic_launcher.png (created)
personal_expenses_04\android\app\src\main\res\mipmap-mdpi\ic_launcher.png (created)
personal_expenses_04\android\app\src\main\res\mipmap-xhdpi\ic_launcher.png (created)
personal_expenses_04\android\app\src\main\res\mipmap-xxhdpi\ic_launcher.png (created)
```

```
Command Prompt — Command Prompt
```

personal\_expenses\_04\ios\Runner.xcworkspace\contents.xcworkspacedata (created)  
personal\_expenses\_04\ios\Runner.xcworkspace\xcshareddata\IDEWorkspaceChecks.plist (created)  
personal\_expenses\_04\ios\Runner.xcworkspace\xcshareddata\WorkspaceSettings.xcsettings (created)  
personal\_expenses\_04\personal\_expenses\_04.iml (created)  
personal\_expenses\_04\web\favicon.png (created)  
personal\_expenses\_04\web\icons\Icon-192.png (created)  
personal\_expenses\_04\web\icons\Icon-512.png (created)  
personal\_expenses\_04\web\icons\Icon-maskable-192.png (created)  
personal\_expenses\_04\web\icons\Icon-maskable-512.png (created)  
personal\_expenses\_04\web\index.html (created)  
personal\_expenses\_04\web\manifest.json (created)  
Running "flutter pub get" in personal\_expenses\_04... 2,703ms  
Wrote 81 files.

All done!  
In order to run your application, type:

```
$ cd personal_expenses_04  
$ flutter run
```

Your application code is in personal\_expenses\_04\lib\main.dart.

```
Q:\myworkspaces\flutter_ws>cd personal_expenses_04  
Q:\myworkspaces\flutter_ws\personal_expenses_04>code .  
Q:\myworkspaces\flutter_ws\personal_expenses_04>
```

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X lib > main.dart > MyApp > build Run | Debug | Profile

OPEN EDITORS main.dart lib PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

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

class MyApp extends StatelessWidget {  
 @override  
 Widget build(BuildContext context) {  
 return MaterialApp(  
 title: 'Flutter App',  
 home: MyHomePage(),  
 ); // MaterialApp  
 }  
}

class MyHomePage extends StatelessWidget {  
 @override  
 Widget build(BuildContext context) {  
 return Scaffold(  
 appBar: AppBar(  
 title: Text('Flutter App'),  
 ), // AppBar  
 body: Center(  
 child: Text('Widget Playground!'),  
 ), // Center  
 ); // Scaffold  
 }  
}

Flutter App 4:49 ⚡ Widget Playground!

main.dart

Go 1.15.6 ⚡ 1 ▲ 0 ⓘ 5 ↻ Debug my code Ln 12, Col 4 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) ⚡ Go Update Available ⚡ Prettier 🔍 🔍

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X lib > main.dart > MyHomePage > build

OPEN EDITORS main.dart lib PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

main.dart

```
16 @override
17 Widget build(BuildContext context) {
18     return Scaffold(
19         appBar: AppBar(
20             title: Text('Flutter App'),
21         ), // AppBar
22         body: Column(
23             children: <Widget>[
24                 Card(
25                     color: Colors.blue,
26                     child: Container(
27                         width: double.infinity,
28                         child: Text('CHART'),
29                     ), // Container
30                     elevation: 5,
31                 ), // Card
32                 Card(
33                     child: Text('LIST OF TX'),
34                 ), // Card
35             ], // <Widget>[]
36         ), // Column
37     ); // Scaffold
38 }
39 }
40 }
```

Flutter App

4:49 CHART LIST OF TX

main.dart

Go 1.15.6 Debug my code Ln 38, Col 4 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Go Update Available Prettier

# **IMPORTANT - ADJUSTING THE STARTING PROJECT**

The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Title Bar:** pubspec.yaml - personal\_expenses\_04 - Visual Studio Code.
- Explorer Bar (Left):**
  - OPEN EDITORS: main.dart, widget\_test.dart, pubspec.yaml (highlighted).
  - PERSONAL\_EXPENSES\_04 folder:
    - .dart\_tool
    - .idea
    - android
    - build
    - ios
    - lib:
      - main.dart
    - test:
      - widget\_test.dart
    - web
    - .gitignore
    - .metadata
    - .packages
    - analysis\_options.yaml
    - personal\_expenses\_04.iml
    - pubspec.lock
    - pubspec.yaml
  - README.md
- Editor Area (Center):** The pubspec.yaml file is open. A yellow box highlights the environment section, specifically the sdk constraint. The file contains the following content:

```
version: 1.0.0+1

environment:
  sdk: ">=2.11.0 <3.0.0"

# Dependencies specify other packages that your package needs in order to work.
# To automatically upgrade your package dependencies to the latest versions
# consider running `flutter pub upgrade --major-versions`. Alternatively,
# dependencies can be manually updated by changing the version numbers below to
# the latest version available on pub.dev. To see which dependencies have newer
# versions available, run `flutter pub outdated`.

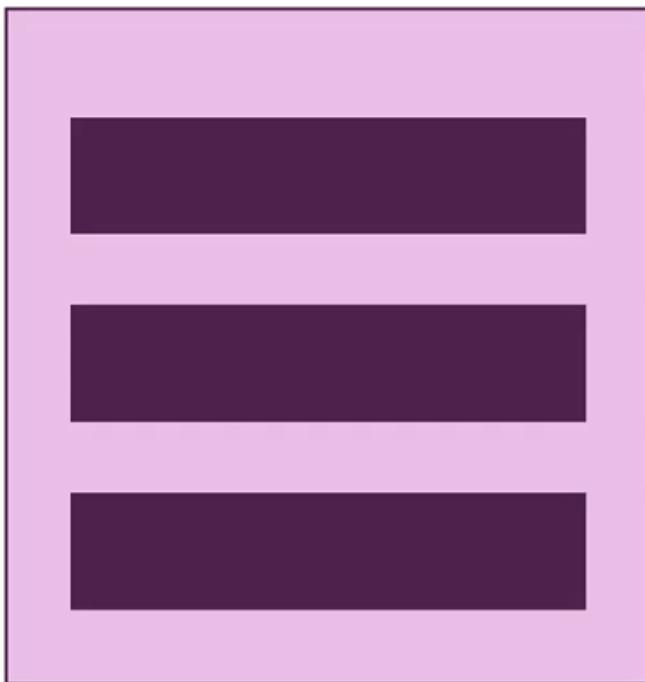
dependencies:
  flutter:
    sdk: flutter

# The following adds the Cupertino Icons font to your application.
# Use with the CupertinoIcons class for iOS style icons.
```
- Bottom Status Bar:** Go 1.15.6, Debug my code, Line 10, Col 29, Spaces: 2, UTF-8, CRLF, YAML, Dart DevTools, Flutter: 2.5.3, Pixel 2 API 29 (android-x86 emulator), Go Update Available, Prettier.

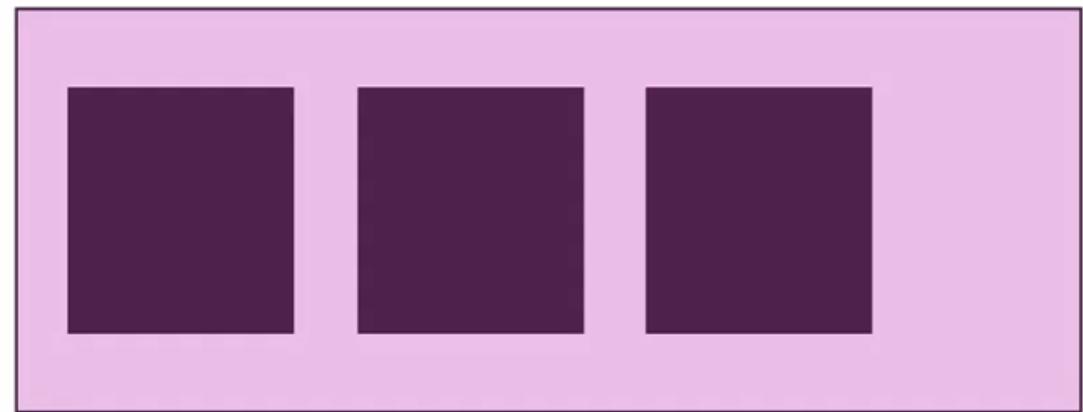
# **UNDERSTANDING COLUMN ALIGNMENT**

# Column & Row

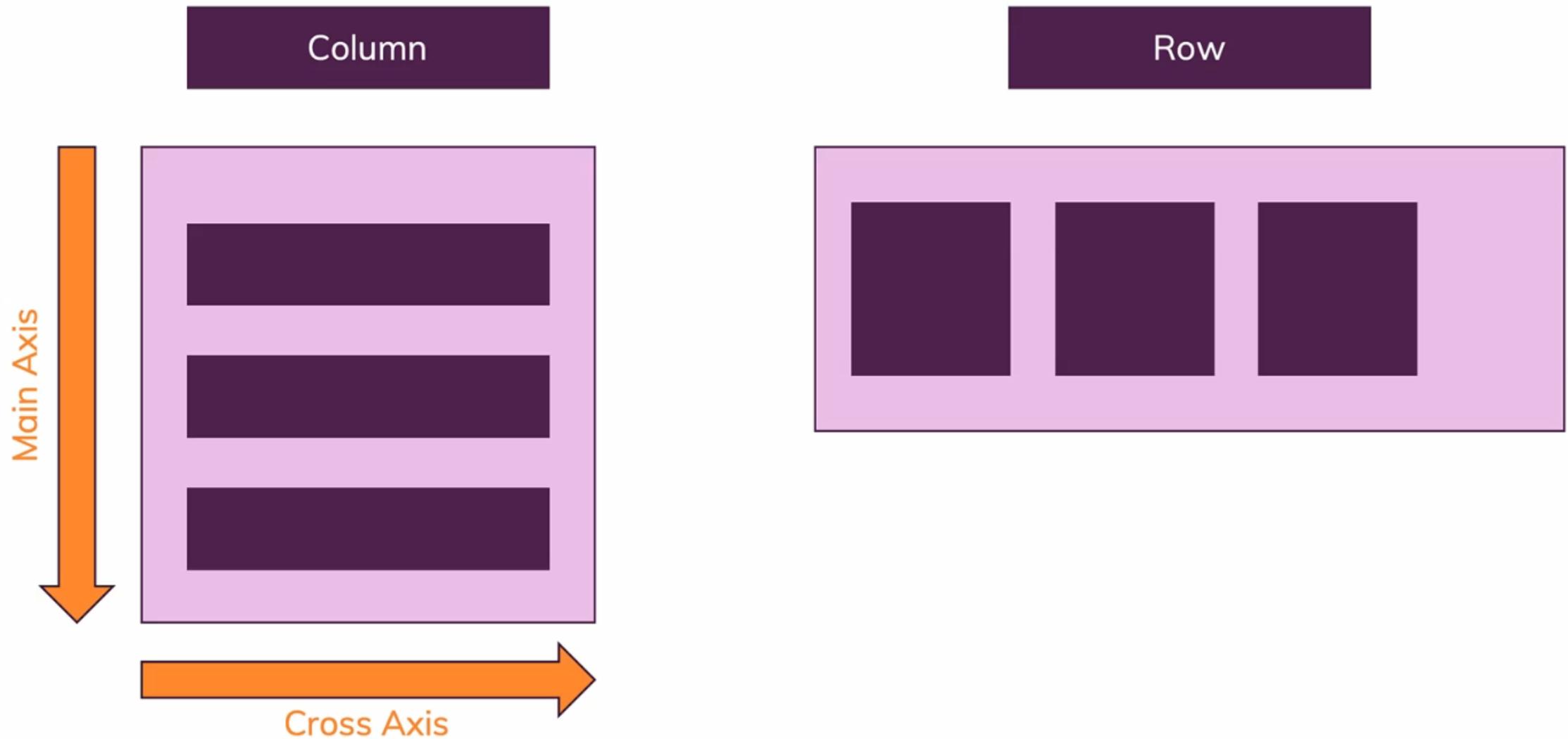
Column



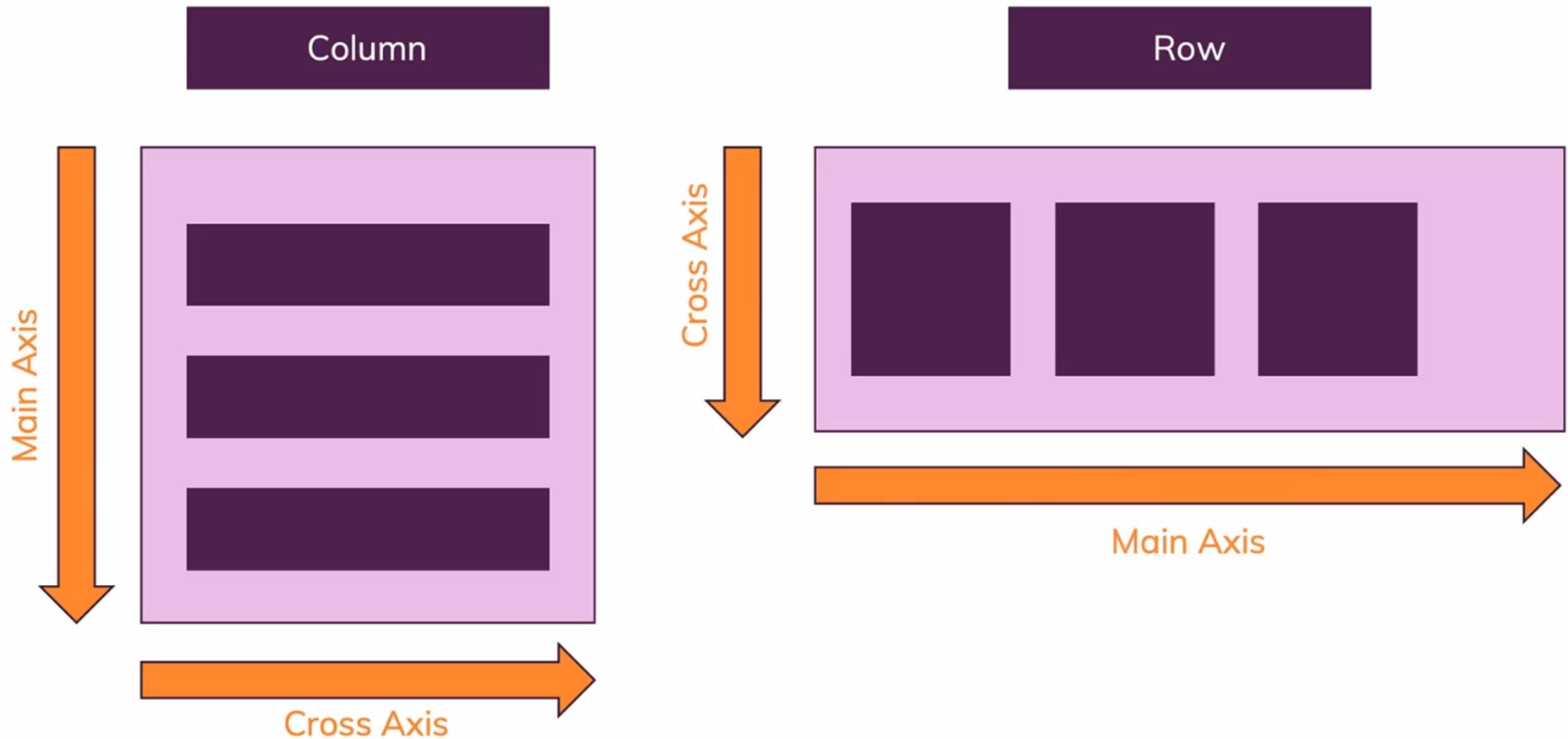
Row



# Column & Row



# Column & Row



EXPLORER

OPEN EDITORS 1 UNSAVED

- main.dart lib 2
- widget\_test.dart test
- pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
- main.dart 2
- test
- widget\_test.dart

web

- .gitignore
- .metadata
- .packages
- analysis\_options.yaml
- personal\_expenses\_04.iml
- pubspec.lock
- pubspec.yaml
- README.md

OUTLINE

DEPENDENCIES

main.dart 2 • widget\_test.dart pubspec.yaml

lib > main.dart > MyHomePage > build

```
14
15 class MyHomePage extends StatelessWidget {
16   @override
17   Widget build(BuildContext context) {
18     return Scaffold(
19       appBar: AppBar(
20         title: Text('Flutter App'),
21       ), // AppBar
22       body: Column(
23         mainAxisSize: MainAxisSize.start, // Placeholder
24         children: MainAxisSize
25           Card(
26             mainAxisAlignment: MainAxisAlignment.start,
27             child: Text("Place the children as close to the start of the main axis as possible."),
28           ),
29           Card(
30             mainAxisAlignment: MainAxisAlignment.end,
31             child: Text("If this value is used in a horizontal direction, a [TextDirection] must be available to determine if the start is the left or the right."),
32           ),
33           Card(
34             mainAxisAlignment: MainAxisAlignment.spaceEvenly,
35             child: Text("If this value is used in a vertical direction, a [VerticalDirection] must be available to determine if the start is the top or the bottom."),
36           ),
37         ), // Column
38       ); // Scaffold
39     }
40 }
```

end

spaceAround

spaceBetween

spaceEvenly

start

Flutter stateful widget

Flutter stateless widget

Flutter widget with AnimationContr...

class

do while

for

for in

main.dart

Running Gradle task 'assembleDebug'...

File Edit Selection View Go Run Terminal Help • main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart 2 ● widget\_test.dart pubspec.yaml

OPEN EDITORS 1 UNSAVED main.dart lib 2

main.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib main.dart 2

test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

main.dart 14

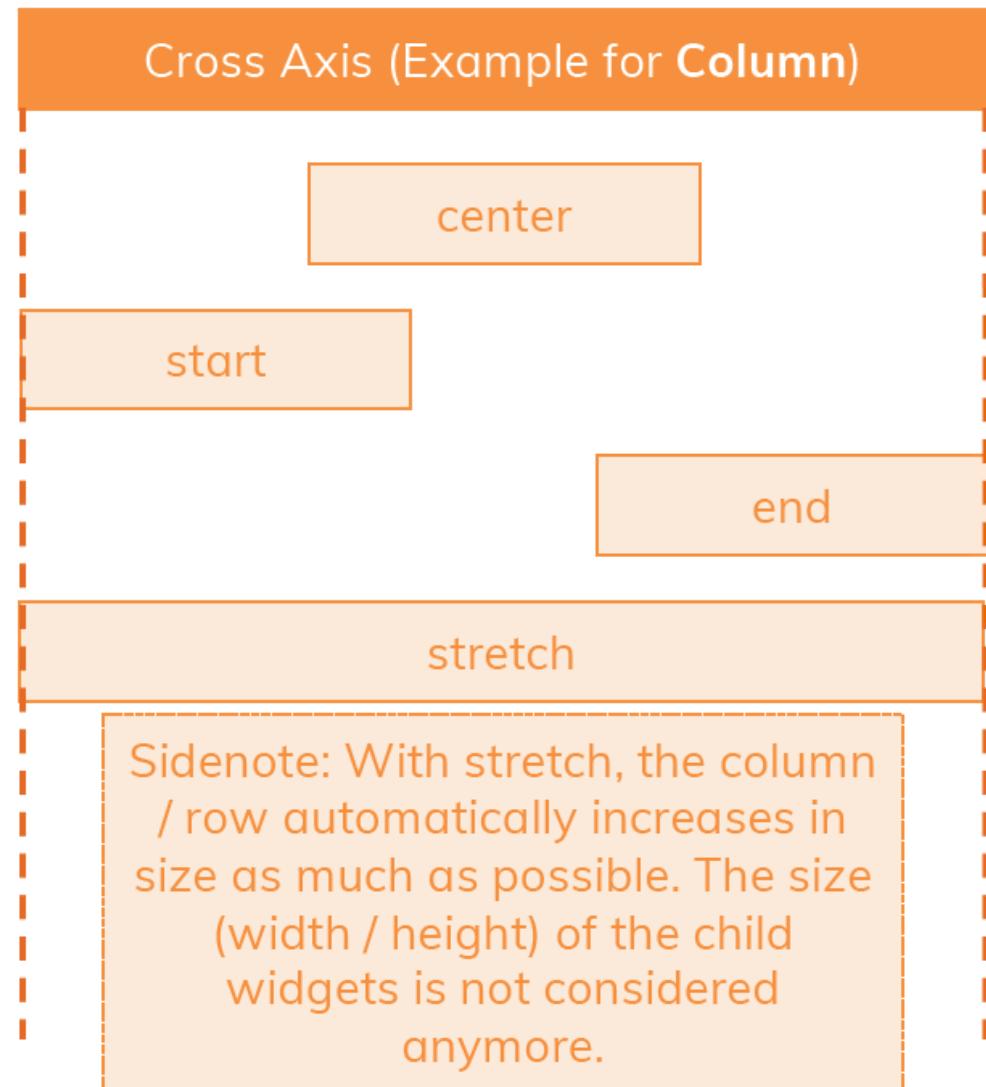
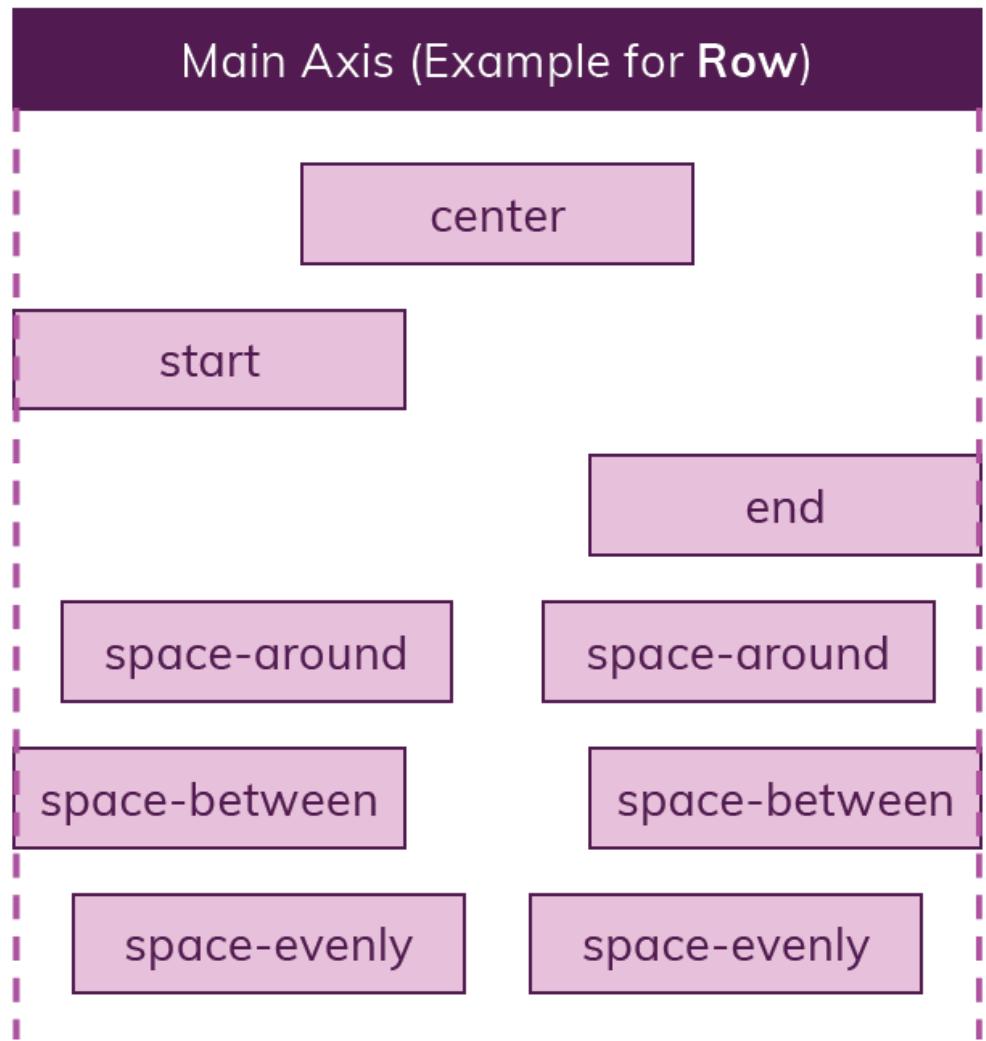
```
15 class MyHomePage extends StatelessWidget {  
16     @override  
17     Widget build(BuildContext context) {  
18         return Scaffold(  
19             appBar: AppBar(  
20                 title: Text('Flutter App'),  
21             ), // AppBar  
22             body: Column(  
23                 mainAxisAlignment: MainAxisAlignment.start,  
24                 crossAxisAlignment: CrossAxisAlignment.,  
25                 children: <Widget>[  
26                     Card(  
27                         color: Colors.blue,  
28                         child: Container(  
29                             width: double.infinity,  
30                             child: Text('CHART'),  
31                         ), // Container  
32                         elevation: 5,  
33                     ), // Card  
34                     Card(  
35                         child: Text('LIST OF TX'),  
36                     ), // Card  
37                 ], // <Widget>[]  
38             ), // Column  
39         ); // Scaffold
```

values baseline center CrossAxisAlignment end start stretch

main.dart

Debug my code Tab Moves Focus Ln 24, Col 48 Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# Alignments



File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X widget\_test.dart pubspec lib > main.dart > MyHomePage > build

OPEN EDITORS main.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib main.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

main.dart 14  
15 class MyHomePage extends StatelessWidget {  
16 @override  
17 Widget build(BuildContext context) {  
18 return Scaffold(  
19 appBar: AppBar(  
20 title: Text('Flutter App'),  
21 ), // AppBar  
22 body: Column(  
23 mainAxisAlignment: MainAxisAlignment.spaceAround,  
24 crossAxisAlignment: CrossAxisAlignment.stretch,  
25 children: <Widget>[  
26 Card(  
27 color: Colors.blue,  
28 child: Container(  
29 width: double.infinity,  
30 child: Text('CHART'),  
31 ), // Container  
32 elevation: 5,  
33 ), // Card  
34 Card(  
35 color: Colors.yellowAccent,  
36 child: Text('LIST OF TX'),  
37 ), // Card  
38 ], // <Widget>[]  
39 ), // Column  
40 ); // Scaffold

Flutter App

CHART

LIST OF TX

main.dart

0 △ 0 ① 7 Debug my code Tab Moves Focus Ln 35, Col 39 Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

**NOT A WIDGET ADDING A TRANSACTION  
MODEL AND TRANSACTION DATA**



EXPLORER

...

main.dart transaction.dart X widget\_t

...



OPEN EDITORS  
main.dart lib  
transaction.dart lib  
widget\_test.dart test  
pubspec.yaml



PERSONAL\_EXPENSES\_04

.dart\_tool  
.idea  
android  
build  
ios  
lib  
main.dart  
transaction.dart  
test  
widget\_test.dart  
web  
.gitignore  
.metadata  
.packages  
analysis\_options.yaml  
personal\_expenses\_04.iml  
pubspec.lock  
pubspec.yaml  
README.md



```
1 import 'package:flutter/foundation.dart';
2
3 class Transaction {
4   final String id;
5   final String title;
6   final double amount;
7   final DateTime date;
8
9 Transaction({
10   @required this.id,
11   @required this.title,
12   @required this.amount,
13   @required this.date,
14 });
15 }
16 }
```



Just to be clear: **Transaction itself is NOT a widget.** It's a normal class/ object. It's not extending StatelessWidget / StatefulWidget.

File Edit Selection View Go Run Terminal Help

main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER

OPEN EDITORS

- main.dart lib
- transaction.dart lib
- widget\_test.dart test
- pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - main.dart
  - transaction.dart
- test
  - widget\_test.dart
- web
  - .gitignore
  - .metadata
  - .packages
  - analysis\_options.yaml
  - personal\_expenses\_04.iml
  - pubspec.lock
  - pubspec.yaml
  - README.md

OUTLINE

DEPENDENCIES

main.dart X transaction.dart widget\_t lib > main.dart > ...

```
1 import 'package:flutter/material.dart';
2
3 import './transaction.dart';
4
5 void main() => runApp(MyApp());
6
7 class MyApp extends StatelessWidget {
8     @override
9     Widget build(BuildContext context) {
10         return MaterialApp(
11             title: 'Flutter App',
12             home: MyHomePage(),
13         ); // MaterialApp
14     }
15 }
16
17 class MyHomePage extends StatelessWidget {
18     final List<Transaction> transactions = [
19         Transaction(
20             id: 't1',
21             title: 'Sepatu Baru',
```

main.dart

Tab Moves Focus Ln 4, Col 1 (30 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help • main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart transaction.dart widget\_t lib > main.dart > MyHomePage

OPEN EDITORS 1 UNSAVED main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib main.dart transaction.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

main.dart

```
14     }
15 }
16
17 class MyHomePage extends StatelessWidget {
18   final List<Transaction> transactions = [
19     Transaction(
20       id: 't1',
21       title: 'Sepatu Baru',
22       amount: 20.99,
23       date: DateTime.now(),
24     ), // Transaction
25     Transaction(
26       id: 't2',
27       title: 'Belanja Harian',
28       amount: 8.53,
29       date: DateTime.now(),
30     ), // Transaction
31   ];
32
33 @override
34 Widget build(BuildContext context) {
35   return Scaffold(
```

OUTLINE DEPENDENCIES

Debug my code Tab Moves Focus Ln 32, Col 1 (298 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# MAPPING DATA INTO WIDGETS

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_t lib > main.dart > MyHomePage > build

OPEN EDITORS main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib main.dart transaction.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

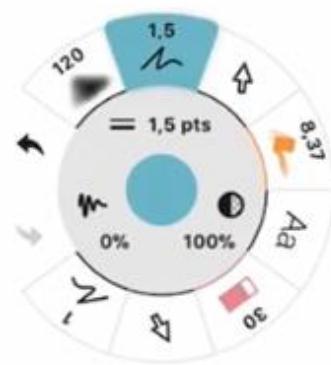
body: Column( mainAxisAlignment: MainAxisAlignment.spaceAround, crossAxisAlignment: CrossAxisAlignment.stretch, children: <Widget>[ Card( color: Colors.blue, child: Container( width: double.infinity, child: Text('CHART'), ), // Container elevation: 5, ), // Card Column( children: transactions.map((tx) { return Card( child: Text(tx.title), ); // Card }).toList(), ), // Column ], // <Widget>[] ), // Column ); // Scaffold }

8:43 Flutter App CHART Sepatu Baru Belanja Harian main.dart

Tab Moves Focus Ln 58, Col 1 (192 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# **BUILDING A CUSTOM LIST ITEM**

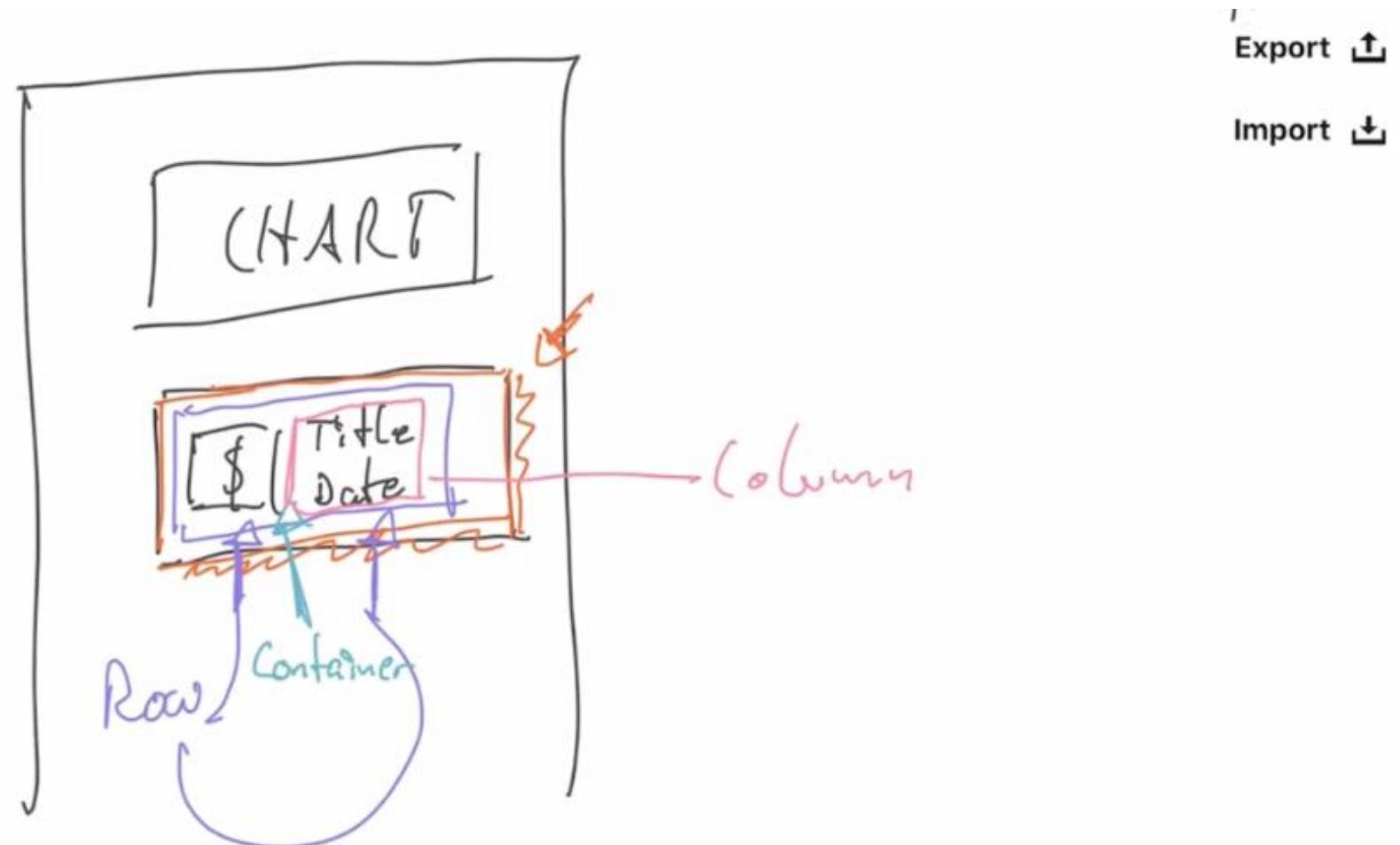
Precision



Layers

Sorting | Automatic

+ New Layer



Export ↑

Import ↓

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_t lib > main.dart > MyHomePage > build

OPEN EDITORS main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib main.dart transaction.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

OUTLINE DEPENDENCIES

main.dart X transaction.dart X widget\_t X

51 Column( 52 children: transactions.map((tx) { 53 return Card( 54 child: Row( 55 children: <Widget>[ 56 Container( 57 child: Text( 58 tx.amount.toString(), 59 ), // Text 60 ), // Container 61 Column( 62 children: <Widget>[ 63 Text(tx.title), 64 Text( 65 tx.date.toString(), 66 ), // Text 67 ], // <Widget>[] 68 ), // Column 69 ], // <Widget>[] 70 ), // Row 71 ); // Card 72 }).toList(), 73

8:58 Flutter App CHART

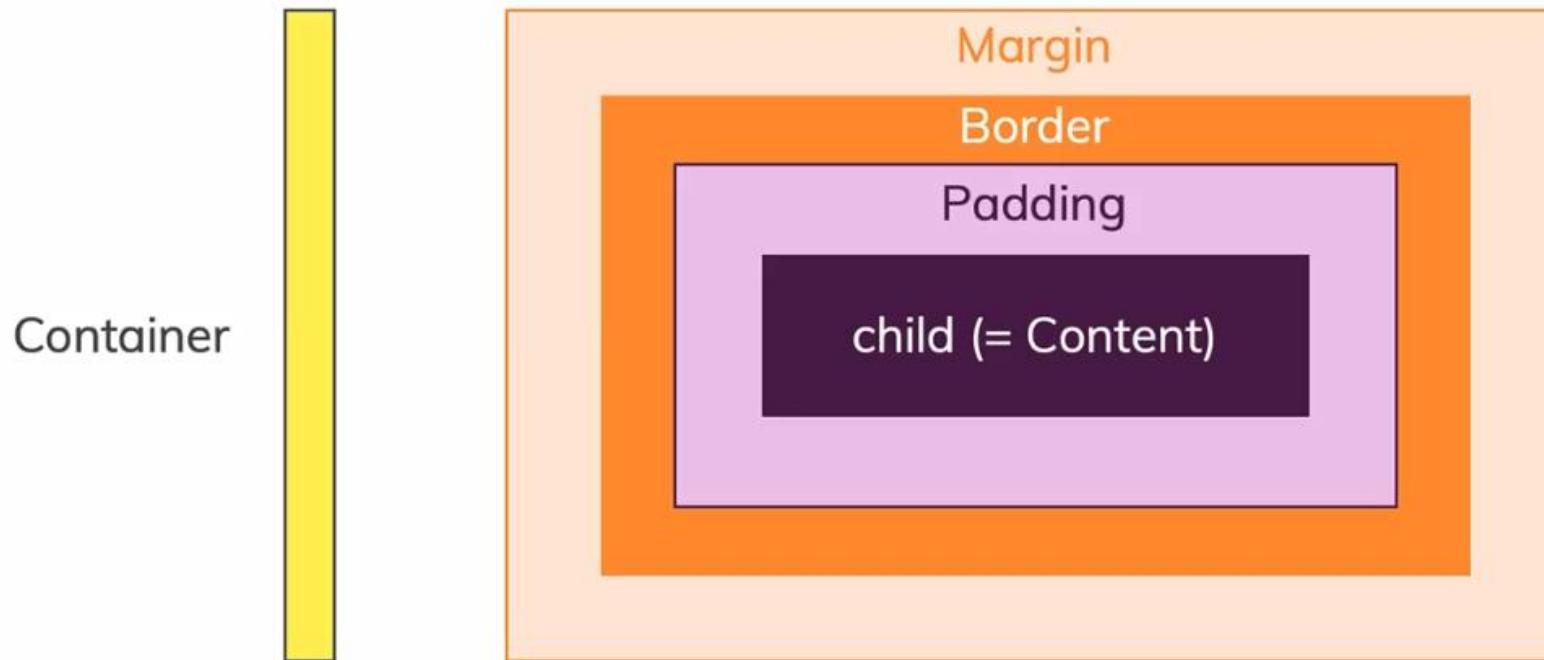
20.99 Sepatu Baru 2021-11-23 08:57:45.173310  
8.53 Belanja Harian 2021-11-23 08:57:45.173325

main.dart

Tab Moves Focus Ln 73, Col 1 (663 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# **STYLING A CONTAINER**

# The Container()



File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_test.dart lib > main.dart > MyHomePage > build

OPEN EDITORS main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib main.dart transaction.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

OUTLINE DEPENDENCIES

main.dart

```
Column(  
  children: transactions.map((tx) {  
    return Card(  
      child: Row(  
        children: <Widget>[  
          Container(  
            margin: EdgeInsets.symmetric(  
              vertical: 10,  
              horizontal: 15,  
            ), // EdgeInsets.symmetric  
            decoration: BoxDecoration(  
              border: Border.all(  
                color: Colors.purple,  
                width: 2,  
              ), // Border.all  
              ), // BoxDecoration  
            padding: EdgeInsets.all(10),  
            child: Text(  
              tx.amount.toString(),  
            ), // Text  
          ), // Container  
          Column(  
            children: <Widget>[
```

Ln 68, Col 1 (446 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

Flutter App

CHART

20.99 Sepatu Baru 2021-11-23 16:47:27.967006

18.53 Belanja Harian 2021-11-23 16:47:27.967024

# STYLING TEXT

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_test.dart lib > main.dart > MyHomePage > build

OPEN EDITORS

main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - main.dart
  - transaction.dart
- test
  - widget\_test.dart
- web
- .gitignore
- .metadata
- .packages
- analysis\_options.yaml
- personal\_expenses\_04.iml
- pubspec.lock
- pubspec.yaml
- README.md

OUTLINE

DEPENDENCIES

0 △ 0 ① 8 Debug my code

decoration: BoxDecoration(  
border: Border.all(  
color: Colors.purple,  
width: 2,  
, // Border.all  
, // BoxDecoration  
padding: EdgeInsets.all(10),  
child: Text(  
tx.amount.toString(),  
style: TextStyle(  
fontWeight: FontWeight.bold,  
fontSize: 20,  
color: Colors.purple,  
, // TextStyle  
, // Text  
, // Container  
Column(  
children: <Widget>[  
Text(  
tx.title,  
, // Text  
Text(  
+ tx.date.toDateString()

Flutter App

4:48 ⚡ DEBUG CHART

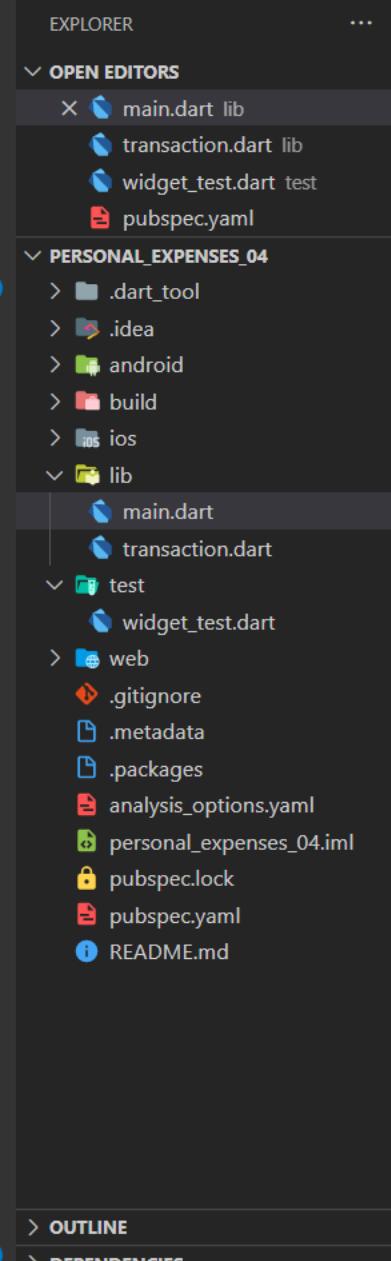
20.99 Sepatu Baru 2021-11-23 16:48:33.232443

18.53 Belanja Harian 2021-11-23 16:48:33.232460

main.dart

Ln 75, Col 1 (217 selected) Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

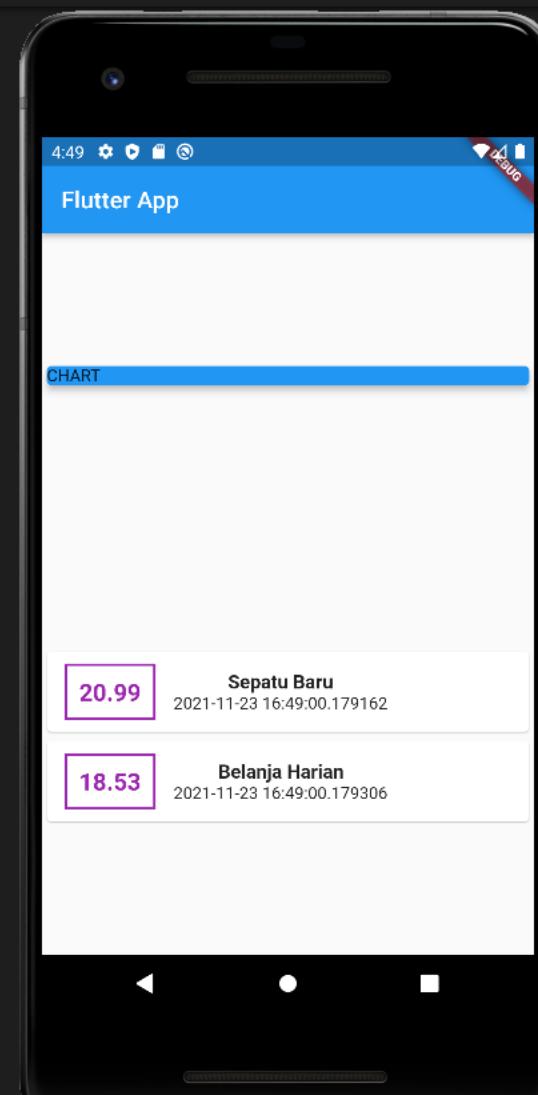
1



main.dart X transaction.dart X widget\_test.dart X

lib > main.dart > MyHomePage > build

```
      style: TextStyle(
        fontWeight: FontWeight.bold,
        fontSize: 20,
        color: Colors.purple,
      ), // Text
    ), // Container
  Column(
    children: <Widget>[
      Text(
        tx.title,
        style: TextStyle(
          fontSize: 16,
          fontWeight: FontWeight.bold,
        ), // TextStyle
      ), // Text
      Text(
        tx.date.toString(),
      ), // Text
    ], // <Widget>[]
  ), // Column
], // <Widget>[]
), // Row
```



main.dart

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_test.dart lib > main.dart > MyHomePage > build

OPEN EDITORS

main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - main.dart
  - transaction.dart
- test
  - widget\_test.dart
- web
  - .gitignore
  - .metadata
  - .packages
  - analysis\_options.yaml
  - personal\_expenses\_04.iml
  - pubspec.lock
  - pubspec.yaml
  - README.md

OUTLINE

DEPENDENCIES

Ln 91, Col 1 (124 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

75 ), // Text  
76 ), // Container  
77 Column(  
78 children: <Widget>[  
79 Text(  
80 tx.title,  
81 style: TextStyle(  
82 fontSize: 16,  
83 fontWeight: FontWeight.bold,  
84 ), // TextStyle  
85 ), // Text  
86 Text(  
87 tx.date.toString(),  
88 style: TextStyle(  
89 color: Colors.grey,  
90 ), // TextStyle  
91 ), // Text  
92 ], // <Widget>[]  
93 ), // Column  
94 ], // <Widget>[]  
95 ), // Row  
96 ); // Card

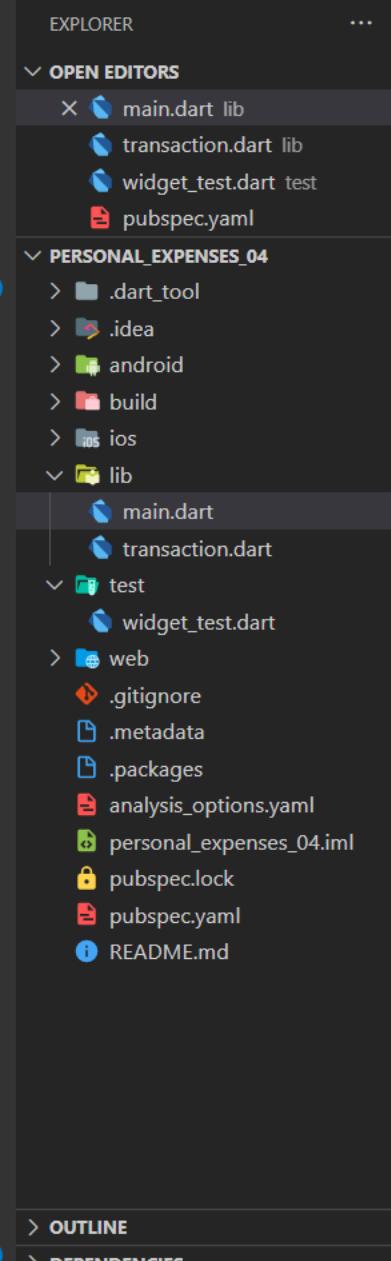
4:49 ⚡ DEBUG Flutter App CHART

20.99 Sepatu Baru 2021-11-23 16:49:27.727621

18.53 Belanja Harian 2021-11-23 16:49:27.727636

main.dart

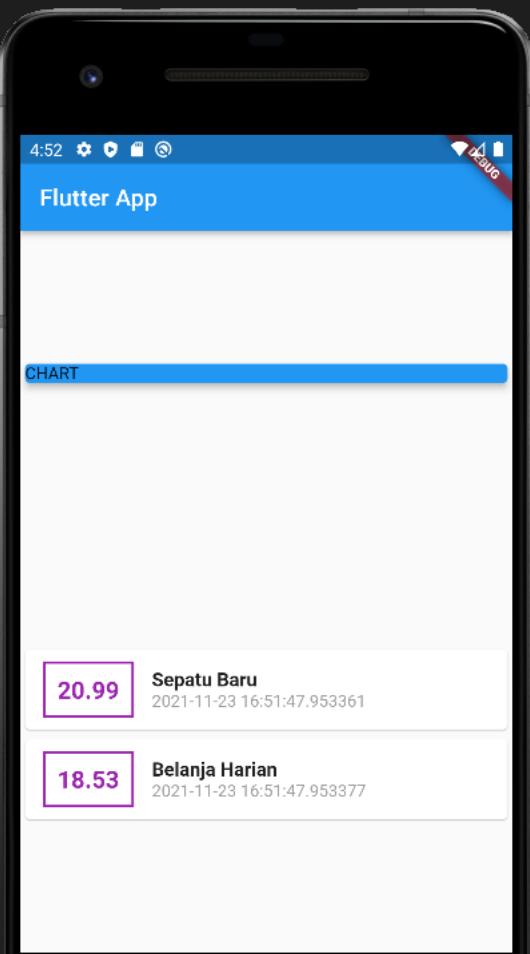
This screenshot shows a developer's workspace for a Flutter application named 'personal\_expenses\_04'. The code editor displays the 'main.dart' file, which contains Dart code for building a UI. A syntax error is highlighted at line 88, column 1, indicated by a yellow lightbulb icon. The file explorer on the left lists project files like 'main.dart', 'transaction.dart', and 'pubspec.yaml'. A preview window on the right shows the app running on an iPhone X simulator, displaying a list of transactions with amounts and dates. The status bar at the bottom indicates the code is 124 lines long, using 2 spaces, and is in CRLF format.



lib > main.dart > MyHomePage > build

```
    ), // Container
    Column(
      mainAxisAlignment: MainAxisAlignment.start,
      children: <Widget>[
        Text(
          tx.title,
          style: TextStyle(
            fontSize: 16,
            fontWeight: FontWeight.bold,
          ), // TextStyle
        ), // Text
        Text(
          tx.date.toString(),
          style: TextStyle(
            color: Colors.grey,
          ), // TextStyle
        ), // Text
      ], // <Widget>[]
    ), // Column
  ], // <Widget>[]
), // Row
); // Card
}).toList().
```

Ln 79, Col 1 (69 selected) Spaces: 2 CRLF Dart Dart DevTools Flut



main.dart



# **CONTAINERS VERSUS COLUMNS VERSUS ROWS**

# Container vs Column / Row

Container

Takes exactly one child widget

Column / Row

Takes multiple (unlimited) child widgets

# Container vs Column / Row

Container

Takes exactly one child widget

Rich alignment & styling options

Column / Row

Takes multiple (unlimited) child widgets

Alignment but no styling options

# Container vs Column / Row

## Container

Takes exactly one child widget

Rich alignment & styling options

Flexible width (e.g. child width,  
available width, ...)

## Column / Row

Takes multiple (unlimited) child  
widgets

Alignment but no styling options

Always takes full available height  
(column) / width (row)

# Container vs Column / Row

## Container

Takes exactly one child widget

Rich alignment & styling options

Flexible width (e.g. child width,  
available width, ...)

Perfect for custom styling & alignment

## Column / Row

Takes multiple (unlimited) child  
widgets

Alignment but no styling options

Always takes full available height  
(column) / width (row)

Must-use if widgets sit next to / above  
each other

# Container vs Column / Row

Container



Column / Row

Takes exactly one child widget

Rich alignment & styling options

Flexible width (e.g. child width,  
available width, ...)

Perfect for custom styling & alignment

Combine them!

Takes multiple (unlimited) child  
widgets

Alignment but no styling options

Always takes full available height  
(column) / width (row)

Must-use if widgets sit next to / above  
each other

# USING STRING INTERPOLATION

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_test.dart lib > main.dart > MyHomePage > build

OPEN EDITORS

main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - main.dart
  - transaction.dart
- test
  - widget\_test.dart
- web
  - .gitignore
  - .metadata
  - .packages
  - analysis\_options.yaml
  - personal\_expenses\_04.iml
  - pubspec.lock
  - pubspec.yaml
  - README.md

OUTLINE

DEPENDENCIES

Ln 70, Col 1 (44 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

```
    ), // BoxDecoration
padding: EdgeInsets.all(10),
child: Text(
  'Rp.${tx.amount}',
  style: TextStyle(
    fontWeight: FontWeight.bold,
    fontSize: 20,
    color: Colors.purple,
  ), // TextStyle
), // Text
), // Container
Column(
  crossAxisAlignment: CrossAxisAlignment
  children: <Widget>[
    Text(
      tx.title,
      style: TextStyle(
        fontSize: 16,
        fontWeight: FontWeight.bold,
      ), // TextStyle
    ), // Text
    Text(

```

Flutter App

CHART

5:09 ⚡ DEBUG

main.dart

Amount	Title	Date
Rp.20.99	Sepatu Baru	2021-11-23 17:09:16.817931
Rp.18.53	Belanja Harian	2021-11-23 17:09:16.818058

# **INSTALLING EXTERNAL PACKAGES AND FORMATTING DATES**

dart dateformat - Google Search

https://www.google.com/search?q=dart+dateformat&sxsrf=AOaemvlnSdnXQ3sbXMJt45W7B\_Jo194uSw%3A1637663085663&source=hp&ei=bcGcYfp-I-XCOP...

Google dart dateformat

All Images Videos Shopping Maps More Tools SafeSearch on

About 6,880,000 results (0.51 seconds)

[https://pub.dev › documentation › intl › latest › DateFormat class - intl library - Dart API - Pub.dev](https://pub.dev/documentation/intl/latest/DateFormat/DateFormat-class.html)

**DateFormat** class - **intl** library - Dart API - Pub.dev

**DateFormat** is for formatting and parsing dates in a locale-sensitive manner. It allows the user to choose from a set of standard date time formats as well ...

[https://pub.dev › packages › intl](https://pub.dev/packages/intl)

**Intl | Dart Package - Pub.dev**

Feb 3, 2021 — ... with the default locale and methods for accessing most of the internationalization mechanisms. This library also defines the **DateFormat**, ...

[https://stackoverflow.com › questions › how-do-i-form...](https://stackoverflow.com/questions/18737536/how-do-i-format-a-date-in-dart)

**How do I format a date with Dart? - Stack Overflow**

Sep 7, 2014 — import 'package:intl/intl.dart'; main() { final DateTime now = DateTime.now(); final **DateFormat** formatter = **DateFormat**('yyyy-MM-dd'); final ...

20 answers · Top answer: You can use the **intl** package (installer) to format dates. For en\_US f...

[Date Time format in Flutter dd/MM/YYYY hh:mm ...](#) 9 answers Jun 8, 2018

[How to load all \*\*dart DateFormat\*\* locale in flutter ...](#) 5 answers Apr 13, 2018

intl | Dart Package

https://pub.dev/packages/intl

Sign in Help



Sign in

Help

# intl 0.17.0

Published Feb 3, 2021 • dart.dev Null safety

DART NATIVE JS FLUTTER ANDROID IOS LINUX MACOS WEB WINDOWS

1 2.22K

[Readme](#) [Changelog](#) [Installing](#) [Versions](#) [Scores](#)

2217 LIKES 120 PUB POINTS 100% POPULARITY

Provides internationalization and localization facilities, including message translation, plurals and genders, date/number formatting and parsing, and bidirectional text.

Publisher

dart.dev

## General #

The most important library is [intl](#). It defines the [Intl](#) class, with the default locale and methods for accessing most of the internationalization mechanisms. This library also defines the [DateFormat](#), [NumberFormat](#), and [BidiFormatter](#) classes.

## Current locale

Metadata

Contains code to deal with internationalized/localized messages, date and number formatting and parsing, bi-directional text, and other internationalization



Flutter  
Favorite

intl | Dart Package x +

https://pub.dev/packages/intl/install

Readme Changelog **Installing** Versions Scores

221 LIKES 120 PUB POINTS 100% POPULARITY

---

## Use this package as a library

Depend on it

Run this command:

With Dart:

```
$ dart pub add intl
```

With Flutter:

```
$ flutter pub add intl
```

This will add a line like this to your package's pubspec.yaml (and run an implicit `dart pub get`):

```
dependencies:  
  intl: ^0.17.0
```

---

Publisher

 [dart.dev](#)

---

Metadata

Contains code to deal with internationalized/localized messages, date and number formatting and parsing, bi-directional text, and other internationalization issues.

[Repository \(GitHub\)](#)

[View/report issues](#)

---

Documentation

[API reference](#)

---

License

[BSD-3-Clause \(LICENSE\)](#)



## LIBRARIES

- [date\\_symbol\\_data\\_custom](#)
- [date\\_symbol\\_data\\_file](#)
- [date\\_symbol\\_data\\_http\\_...](#)
- [date\\_symbol\\_data\\_local](#)
- [date\\_symbols](#)
- [date\\_time\\_patterns](#)
- [intl](#)
- [intl\\_browser](#)
- [intl\\_standalone](#)
- [locale](#)
- [message\\_format](#)
- [message\\_lookup\\_by\\_libr...](#)
- [number\\_symbol\\_data](#)
- [number\\_symbols](#)

## Date Formatting and Parsing

To format a [DateTime](#), create a [DateFormat](#) instance. These can be created using a set of commonly used skeletons taken from ICU/CLDR or using an explicit pattern. For details on the supported skeletons and patterns see [DateFormat](#).

```
DateFormat.yMMMMEEEEd().format(aDateTime);
    ==> 'Wednesday, January 10, 2012'
DateFormat('EEEEEE', 'en_US').format(aDateTime);
    ==> 'Wednesday'
DateFormat('EEEEEE', 'ln').format(aDateTime);
    ==> 'mokšlo mwa misáto'
```

You can also parse dates using the same skeletons or patterns.

```
DateFormat.yMd('en_US').parse('1/10/2012');
DateFormat('Hms', 'en_US').parse('14:23:01');
```

Skeletons can be combined. the main use being to print a full date and time. e.g.



If the package should not get installed automatically, you can run **flutter packages get** in your terminal (in the project folder).

pubspec.yaml

PERSONAL\_EXPENSES\_04

.dart\_tool

.idea

android

build

ios

lib

main.dart

transaction.dart

test

widget\_test.dart

web

.gitignore

.metadata

.packages

analysis\_options.yaml

personal\_expenses\_04.iml

pubspec.lock

pubspec.yaml

README.md

```
20 environment:
21   sdk: ">=2.11.0 <3.0.0"
22
23 # Dependencies specify other packages that your package needs in order to work.
24 # To automatically upgrade your package dependencies to the latest versions
25 # consider running `flutter pub upgrade --major-versions`. Alternatively,
26 # dependencies can be manually updated by changing the version numbers below to
27 # the latest version available on pub.dev. To see which dependencies have newer
28 # versions available, run `flutter pub outdated`.
29 dependencies:
30   flutter:
31     sdk: flutter
32   intl: ^0.17.0
33
34 # The following adds the Cupertino Icons font to your application.
35 # Use with the CupertinoIcons class for iOS style icons.
36/cupertino_icons: ^1.0.2
37
38 dev_dependencies:
39   flutter_test:
40     sdk: flutter
```

flutter pub get: running...

Source: Dart (Extension)

Cancel

A screenshot of the Visual Studio Code interface showing a Flutter application named "personal\_expenses\_04".

The Explorer sidebar on the left shows the project structure:

- OPEN EDITORS:
  - main.dart
  - transaction.dart
  - widget\_test.dart
  - pubspec.yaml
- PERSONAL\_EXPENSES\_04:
  - .dart\_tool
  - .idea
  - android
  - build
  - ios
  - lib
    - main.dart
    - transaction.dart
  - test
    - widget\_test.dart
  - web
    - .gitignore
    - .metadata
    - .packages
    - analysis\_options.yaml
    - personal\_expenses\_04.iml
    - pubspec.lock
    - pubspec.yaml
    - README.md

The main editor tab bar shows "main.dart" is the active file. The code editor displays the following Dart code:

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

import './transaction.dart';

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

class MyApp extends StatelessWidget {
    @override
    Widget build(BuildContext context) {
        return MaterialApp(
            title: 'Flutter App',
            home: MyHomePage(),
        ); // MaterialApp
    }
}

class MyHomePage extends StatelessWidget {
    final List<Transaction> transactions = [
        Transaction(
            id: 't1',
        ),
    ];
}
```

A status bar at the bottom indicates "Syncing files to device Android SDK built for x86..." and "main.dart".

The bottom status bar also shows file counts (0, 0, 0, 11), a "Debug my code" button, and various system status icons.

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_test.dart lib > main.dart > MyHomePage > build

OPEN EDITORS

main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - main.dart
  - transaction.dart
- test
  - widget\_test.dart
- web
  - .gitignore
  - .metadata
  - .packages
  - analysis\_options.yaml
  - personal\_expenses\_04.iml
  - pubspec.lock
  - pubspec.yaml
  - README.md

OUTLINE

DEPENDENCIES

Ln 90, Col 1 (69 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

style: TextStyle(  
    fontWeight: FontWeight.bold,  
    fontSize: 20,  
    color: Colors.purple,  
), // TextStyle  
, // Text  
, // Container  
Column(  
    crossAxisAlignment: CrossAxisAlignment  
    children: <Widget>[  
        Text(  
            tx.title,  
            style: TextStyle(  
                fontSize: 16,  
                fontWeight: FontWeight.bold,  
            ), // TextStyle  
        ), // Text  
        Text(  
            DateFormat('yyyy/MM/dd').format(tx.date),  
            style: TextStyle(  
                color: Colors.grey,  
            ), // TextStyle

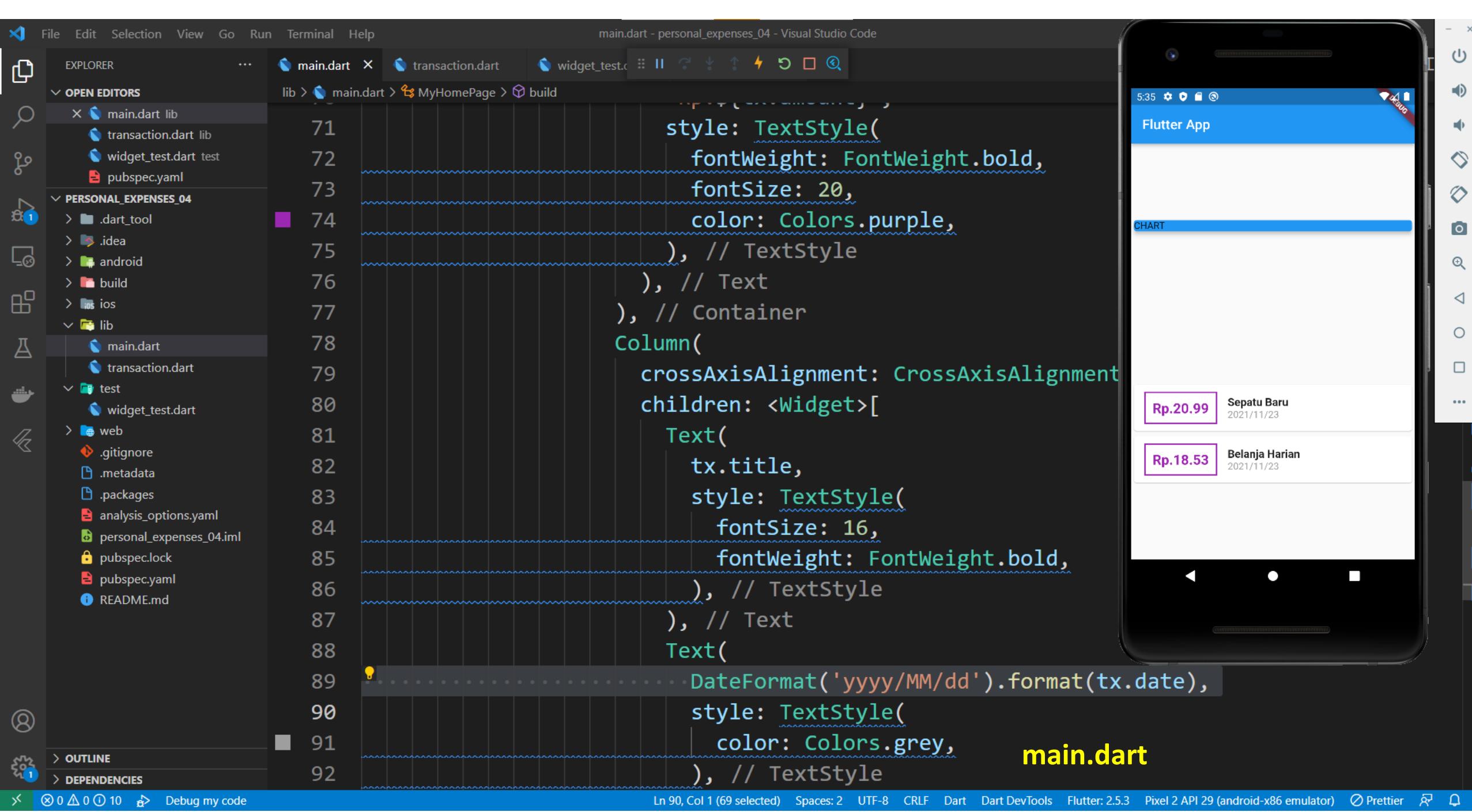
Flutter App

CHART

Rp.20.99 Sepatu Baru 2021/11/23

Rp.18.53 Belanja Harian 2021/11/23

main.dart



File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_test.dart lib > main.dart > MyHomePage > build

OPEN EDITORS

main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - main.dart
  - transaction.dart
- test
  - widget\_test.dart
- web
  - .gitignore
  - .metadata
  - .packages
  - analysis\_options.yaml
  - personal\_expenses\_04.iml
  - pubspec.lock
  - pubspec.yaml
  - README.md

OUTLINE

DEPENDENCIES

Ln 90, Col 1 (63 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

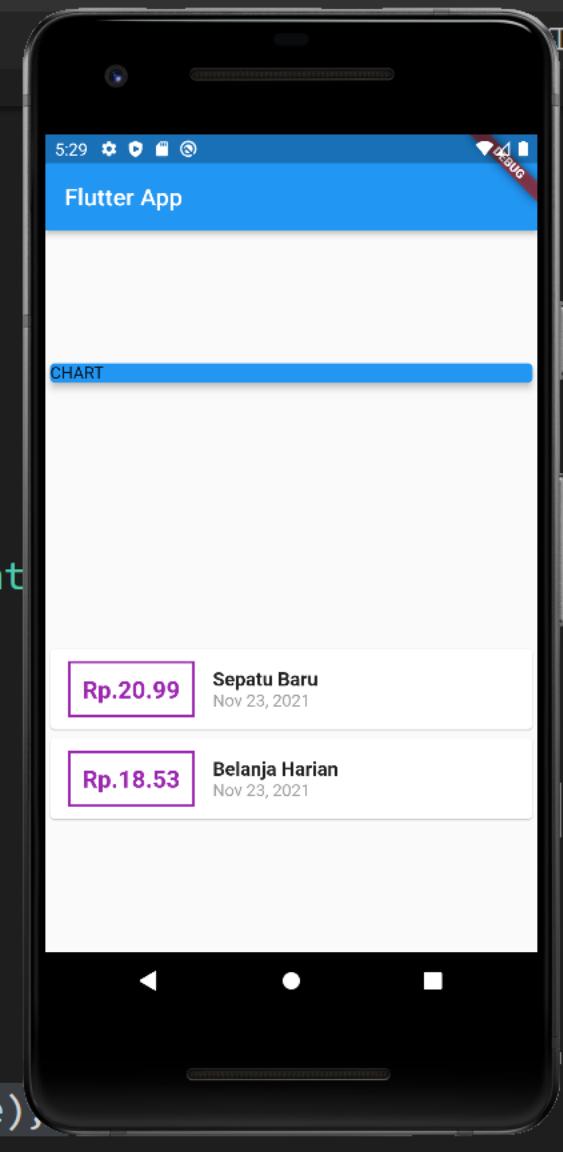
```
style: TextStyle(  
    fontWeight: FontWeight.bold,  
    fontSize: 20,  
    color: Colors.purple,  
, // TextStyle  
, // Text  
, // Container  
Column(  
    mainAxisAlignment: MainAxisAlignment  
    children: <Widget>[  
        Text(  
            tx.title,  
            style: TextStyle(  
                fontSize: 16,  
                fontWeight: FontWeight.bold,  
, // TextStyle  
, // Text  
        Text(  
            DateFormat.yMMMd().format(tx.date),  
            style: TextStyle(  
                color: Colors.grey,  
, // TextStyle
```

5:29 ⚡ 4 Aug Flutter App CHART

Rp.20.99 Sepatu Baru Nov 23, 2021

Rp.18.53 Belanja Harian Nov 23, 2021

main.dart



# **ADDING TEXT INPUT WIDGETS (TEXTFIELD)**

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_test.dart lib > main.dart > MyHomePage > build

OPEN EDITORS main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib main.dart transaction.dart

test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

OUTLINE DEPENDENCIES

main.dart 33  
34 @override  
35 Widget build(BuildContext context) {  
36 return Scaffold(  
37 appBar: AppBar(  
38 title: Text('Flutter App'),  
39 ), // AppBar  
40 body: Column(  
41 // mainAxisAlignment: MainAxisAlignment.spaceAround  
42 crossAxisAlignment: CrossAxisAlignment.stretch,  
43 children: <Widget>[  
44 Card(  
45 color: Colors.blue,  
46 child: Container(  
47 width: double.infinity,  
48 child: Text('CHART'),  
49 ), // Container  
50 elevation: 5,  
51 ), // Card  
52 Column(  
53 children: transactions.map((tx) {  
54 return Card(  
55 child: Row(

Flutter App

CHART

Rp.20.99 Sepatu Baru Nov 23, 2021

Rp.18.53 Belanja Harian Nov 23, 2021

main.dart

0 △ 0 ⌂ 10 ↻ Debug my code Ln 42, Col 1 (62 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



EXPLORER

OPEN EDITORS

- main.dart lib
- transaction.dart lib
- widget\_test.dart test
- pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - main.dart
  - transaction.dart
- test
  - widget\_test.dart
- web
  - .gitignore
  - .metadata
  - .packages
  - analysis\_options.yaml
  - personal\_expenses\_04.iml
  - pubspec.lock
  - pubspec.yaml
  - README.md

OUTLINE

DEPENDENCIES

main.dart X transaction.dart X widget\_test.dart X MyHomePage X build

```
body: Column(
  // mainAxisAlignment: MainAxisAlignment.spaceAround,
  crossAxisAlignment: CrossAxisAlignment.stretch,
  children: <Widget>[
    Card(
      color: Colors.blue,
      child: Container(
        width: double.infinity,
        child: Text('CHART'),
      ), // Container
      elevation: 5,
    ), // Card
    Card(
      elevation: 5,
      child: Container(
        padding: EdgeInsets.all(10),
        child: Column(
          crossAxisAlignment: CrossAxisAlignment.end,
          children: <Widget>[
            TextField(
              decoration: InputDecoration(labelText: 'Title'),
            ), // TextField
          ],
        ),
      ),
    ), // Card
  ],
), // Column
```

main.dart

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

main.dart transaction.dart widget\_test.dart pubspec.yaml

lib > main.dart > MyHomePage > build

```
58     children: <Widget>[  
59       TextField(  
60         decoration: InputDecoration(labelText: 'Title'),  
61       ), // TextField  
62       TextField(  
63         decoration: InputDecoration(labelText: 'Amount'),  
64       ), // TextField  
65       FlatButton(  
66         child: Text('Add Transaction'),  
67         textColor: Colors.purple,  
68         onPressed: () {},  
69       ), // FlatButton  
70     ], // <Widget>[]  
71   ), // Column  
72   ), // Container  
73   ), // Card  
74   Column(  
75     children: transactions.map((tx) {  
76       return Card(  
77         child: Row(  
78           children: <Widget>[  
79             Container(  
80               child: Text(tx.title),  
81             width: 80,  
82           ),  
83           Container(  
84             child: Text(tx.amount),  
85             width: 80,  
86           ),  
87           Container(  
88             child: Text(tx.date),  
89             width: 150,  
90           ),  
91         ),  
92       ),  
93     ),  
94   ),  
95 
```

Flutter App

CHART

Title

Amount

Add Transaction

Rp.20.99 Sepatu Baru Nov 23, 2021

Rp.18.53 Belanja Harian Nov 23, 2021

main.dart

The screenshot shows a Flutter application running on an Android emulator. The app has a light blue header bar with the text "Flutter App". Below it is a "CHART" section containing two input fields for "Title" and "Amount", and a "Add Transaction" button. A purple button labeled "Rp.20.99" with the text "Sepatu Baru" and date "Nov 23, 2021" is listed below. Another purple button labeled "Rp.18.53" with the text "Belanja Harian" and date "Nov 23, 2021" is listed below it. The bottom of the screen shows the Android navigation bar.

# **FETCHING USER INPUT**

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_test.dart MyHomePage

OPEN EDITORS main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib main.dart transaction.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

main.dart

```
id: 't2',
title: 'Belanja Harian',
amount: 18.53,
date: DateTime.now(),
), // Transaction
];
String titleInput;
String amountInput;

@Override
Widget build(BuildContext context) {
    return Scaffold(
        appBar: AppBar(
            title: Text('Flutter App'),
        ), // AppBar
        body: Column(
            // mainAxisAlignment: MainAxisAlignment.spaceAround,
            crossAxisAlignment: CrossAxisAlignment.stretch,
            children: <Widget>[
                Card(
                    color: Colors.blue,
                    child: Container(

```

main.dart

Ln 35, Col 1 (45 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



EXPLORER

...

main.dart X

transaction.dart

widget\_test.dart

build

...



OPEN EDITORS

X main.dart lib  
transaction.dart lib  
widget\_test.dart test  
pubspec.yaml

PERSONAL\_EXPENSES\_04

> .dart\_tool  
> .idea  
> android  
> build  
> ios  
> lib  
  main.dart  
  transaction.dart  
> test  
  widget\_test.dart  
> web  
  .gitignore  
  .metadata  
  .packages  
  analysis\_options.yaml  
  personal\_expenses\_04.iml  
  pubspec.lock  
  pubspec.yaml  
  README.md

&gt; OUTLINE

&gt; DEPENDENCIES

```
56   child: Container(  
57     padding: EdgeInsets.all(10),  
58     child: Column(  
59       mainAxisAlignment: MainAxisAlignment.end,  
60       children: <Widget>[  
61         TextField(  
62           decoration: InputDecoration(labelText: 'Title'),  
63           onChanged: (val) {  
64             titleInput = val;  
65           },  
66           ), // TextField  
67           TextField(  
68             decoration: InputDecoration(labelText: 'Amount'),  
69             ), // TextField  
70           FlatButton(  
71             child: Text('Add Transaction'),  
72             textColor: Colors.purple,  
73             onPressed: () {},  
74           ), // FlatButton  
75           ], // <Widget>[]  
76           ), // Column  
77           ), // Container
```

main.dart



EXPLORER

...

main.dart X transaction.dart

widget\_test.dart build

...



- main.dart lib
- transaction.dart lib
- widget\_test.dart test
- pubspec.yaml



PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - main.dart
  - transaction.dart
- test
  - widget\_test.dart
- web
  - .gitignore
  - .metadata
  - .packages
  - analysis\_options.yaml
  - personal\_expenses\_04.iml
  - pubspec.lock
  - pubspec.yaml
  - README.md



```
58     child: Column(
59       crossAxisAlignment: CrossAxisAlignment.end,
60       children: <Widget>[
61         TextField(
62           decoration: InputDecoration(labelText: 'Title'),
63           onChanged: (val) {
64             titleInput = val;
65           },
66         ), // TextField
67         TextField(
68           decoration: InputDecoration(labelText: 'Amount'),
69           onChanged: (val) => amountInput = val,
70         ), // TextField
71         FlatButton(
72           child: Text('Add Transaction'),
73           textColor: Colors.purple,
74           onPressed: () {},
75         ), // FlatButton
76       ], // <Widget>[]
77     ), // Column
78   ), // Container
79 ), // Card
```

main.dart

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_test.dart lib > main.dart > MyHomePage > build

OPEN EDITORS

main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - main.dart
  - transaction.dart
- test
  - widget\_test.dart
- web
  - .gitignore
  - .metadata
  - .packages
  - analysis\_options.yaml
  - personal\_expenses\_04.iml
  - pubspec.lock
  - pubspec.yaml
  - README.md

OUTLINE

DEPENDENCIES

main.dart

```
decoration: InputDecoration(labelText: 'Title'),  
onChanged: (val) {  
    titleInput = val;  
},  
, // TextField  
TextField(  
    decoration: InputDecoration(labelText: 'Amount'),  
    onChanged: (val) => amountInput = val,  
, // TextField  
FlatButton(  
    child: Text('Add Transaction'),  
    textColor: Colors.purple,  
    onPressed: () {  
        print(titleInput);  
        print(amountInput);  
    },  
, // FlatButton  
], // <Widget>[]  
, // Column  
, // Container  
, // Card  
Column(  
Ln 78, Col 1 (146 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier
```

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_test.dart lib > main.dart > MyHomePage > build

OPEN EDITORS main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib main.dart transaction.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

titleInput = val;  
},  
, // TextField  
TextField(  
decoration: InputDecoration(labelText:  
onChanged: (val) => amountInput = val  
, // TextField  
FlatButton(  
child: Text('Add Transaction'),  
textColor: Colors.purple,  
onPressed: () => {  
print(titleInput);  
print(amountInput);  
},

PROBLEMS 18 OUTPUT DEBUG CONSOLE TERMINAL

W/nal\_expenses\_0( 5782): Reducing the number of considered missed Gc histograms.  
W/IInputConnectionWrapper( 5782): getTextBeforeCursor on inactive InputConnection.  
W/IInputConnectionWrapper( 5782): getSelectedText on inactive InputConnection.  
W/IInputConnectionWrapper( 5782): getTextAfterCursor on inactive InputConnection.  
I/flutter ( 5782): Test  
I/flutter ( 5782): 12.44

Flutter App  
CHART  
Title Test  
Amount 12.44  
Add Transaction  
Rp.20.99 Sepatu Baru Nov 23, 2021  
BOTTOM OVERFLOWED BY 47 PIXELS

main.dart

Ln 78, Col 1 (146 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart transaction.dart widget\_test.dart lib > main.dart > MyHomePage > transactions

OPEN EDITORS

main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
- main.dart
- transaction.dart

test

- widget\_test.dart

web

- .gitignore
- .metadata
- .packages
- analysis\_options.yaml
- personal\_expenses\_04.iml
- pubspec.lock
- pubspec.yaml
- README.md

OUTLINE

DEPENDENCIES

main.dart

```
9 @override
10 Widget
11     This class (or a class that this class inherits from) is
12     marked as '@immutable', but one or more of its instance
13     fields aren't final: MyHomePage.titleInput,
14     MyHomePage.amountInput dart(must_be_immutable)
15 );
16 }
17
18 class MyHomePage extends StatelessWidget
19 {
20     final List<Transaction> transactions = [
21         Transaction(
22             id: 't1',
23             title: 'Sepatu Baru',
24             amount: 20.99,
25             date: DateTime.now(),
26         ), // Transaction
27         Transaction(
28             id: 't2',
29             title: 'Belanja Harian',
30             amount: 18.53,
31             date: DateTime.now(),
32         ),
33     ];
34 }
```

Ln 20, Col 16 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



EXPLORER

...

main.dart X

transaction.dart

widget\_test.dart

main.dart &gt; MyHomePage

D V I ...



OPEN EDITORS

- main.dart lib
- transaction.dart lib
- widget\_test.dart test
- pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - main.dart
  - transaction.dart
- test
  - widget\_test.dart
- web
  - .gitignore
  - .metadata
  - .packages
  - analysis\_options.yaml
  - personal\_expenses\_04.iml
  - pubspec.lock
  - pubspec.yaml
  - README.md

> OUTLINE

> DEPENDENCIES

0 0 0 0 0 17 Debug my code

Ln 37, Col 1 (105 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

```
TRANSACTION
27     id: 't2',
28     title: 'Belanja Harian',
29     amount: 18.53,
30     date: DateTime.now(),
31   ), // Transaction
32 ];
33 // String titleInput;
34 // String amountInput;
35 final titleController = TextEditingController();
36 final amountController = TextEditingController();

@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      title: Text('Flutter App'),
    ), // AppBar
    body: Column(
      // mainAxisAlignment: MainAxisAlignment.spaceAround,
      crossAxisAlignment: CrossAxisAlignment.stretch,
      children: <Widget>[
        Card(
          main.dart
```

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_test.dart lib > main.dart > MyHomePage > build

OPEN EDITORS

main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - main.dart
  - transaction.dart
- test
  - widget\_test.dart
- web
- .gitignore
- .metadata
- .packages
- analysis\_options.yaml
- personal\_expenses\_04.iml
- pubspec.lock
- pubspec.yaml
- README.md

OUTLINE

DEPENDENCIES

main.dart

```
59     padding: EdgeInsets.all(10),
60     child: Column(
61       crossAxisAlignment: CrossAxisAlignment.end,
62       children: <Widget>[
63         TextField(
64           decoration: InputDecoration(labelText: 'Title'),
65           controller: titleController,
66           // onChanged: (val) {
67           //   titleInput = val;
68           // },
69         ), // TextField
70         TextField(
71           decoration: InputDecoration(labelText: 'Amount'),
72           controller: amountController,
73           // onChanged: (val) => amountInput = val,
74         ), // TextField
75         FlatButton(
76           child: Text('Add Transaction'),
77           textColor: Colors.purple,
78           onPressed: () {},
79         ), // FlatButton
80     ], // <Widget>[]
```

Ln 66, Col 1 (50 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X transaction.dart widget\_test.dart lib > main.dart > MyHomePage > build

OPEN EDITORS main.dart lib transaction.dart lib widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib main.dart transaction.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

PROBLEMS 17 OUTPUT DEBUG CONSOLE TERMINAL

```
    ), // TextField
    FlatButton(
      child: Text('Add Transaction'),
      textColor: Colors.purple,
      onPressed: () {
        print(titleController.text);
        print(amountController.text);
      },
    ), // FlatButton
  ], // <Widget>[]
), // Column
), // Container
), // Card
Column(
  children: transactions.map((tx) {
```

Reloaded 1 of 586 libraries in 2,083ms.

W/IInputConnectionWrapper( 5782): getTextBeforeCursor on inactive InputConnection

W/IInputConnectionWrapper( 5782): getSelectedText on inactive InputConnection

W/IInputConnectionWrapper( 5782): getTextAfterCursor on inactive InputConnection

I/flutter ( 5782): Test Lagi

I/flutter ( 5782): 26.93

main.dart

Flutter App

CHART

Title Test Lagi

Amount 26.93

Add Transaction

Rp.20.99 Sepatu Baru Nov 23, 2021

BOTTOM OVERFLOWED BY 47 PIXELS

Inspect Widget Never Ask

Ln 80, Col 50 Spaces: 2 UFT-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# **SPLITTING THE APP INTO WIDGETS**

A screenshot of the Visual Studio Code interface. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help. The title bar shows "transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code". The left sidebar contains icons for Explorer, Search, Issues, Pull Requests, Personal Expenses, Outline, and Dependencies. The Explorer view shows an open folder named "personal\_expenses\_04" containing files like ".dart\_tool", ".idea", "android", "build", "ios", "lib", "models", "transaction.dart", "test", "widget\_test.dart", "web", ".gitignore", ".metadata", ".packages", "analysis\_options.yaml", "personal\_expenses\_04.iml", "pubspec.lock", "pubspec.yaml", and "README.md". The main editor area has tabs for "main.dart", "transaction\_list.dart 2", and "transaction\_list.dart". The current file is "transaction\_list.dart". A code completion dropdown is open at the cursor position, displaying suggestions starting with "Flutter StatefulWidget". The dropdown also includes "Flutter StatelessWidget", "Flutter widget with Animation...", "StackOverflowError", "StackTrace", "StateError", "Stopwatch", "Stream", "String", "StringBuffer", "StringSink", and "Stack". To the right of the dropdown, a preview pane shows the code for creating a StatefulWidget:

```
Insert a StatefulWidget ×  
class $1 extends StatefulWidget  
  const $1({ Key? key })  
  
  @override  
  _$1State createState() => _$1State();  
  
class _$1State extends State<$1>  
  @override  
  Widget build(BuildContext context) => Container(  
    child: Text(widget.title),  
  );  
}
```

The status bar at the bottom shows "Ln 1, Col 3" and other system information.

A screenshot of the Visual Studio Code interface showing a Flutter application named "personal\_expenses\_04".

The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, and Help.

The title bar shows "new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code".

The Explorer sidebar on the left lists the project structure:

- OPEN EDITORS (1 UNSAVED): main.dart, new\_transaction.dart (highlighted), user\_trans, transaction.dart, widget\_test.dart, pubspec.yaml.
- PERSONAL\_EXPENSES\_04: .dart\_tool, .idea, android, build, ios, lib (models: transaction.dart), widgets (new\_transaction.dart, transaction\_list.dart (1), user\_transactions.dart, main.dart), test (widget\_test.dart), web, .gitignore, .metadata, .packages, analysis\_options.yaml, personal\_expenses\_04.iml, pubspec.lock, pubspec.yaml.
- OUTLINE and DEPENDENCIES sections are also present.

The main code editor window displays the "new\_transaction.dart" file under the "lib/widgets" directory. The code defines a StatelessWidget named "NewTransaction" which returns a Card with two TextFields for title and amount.

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

class NewTransaction extends StatelessWidget {
    final titleController = TextEditingController();
    final amountController = TextEditingController();

    @override
    Widget build(BuildContext context) {
        return Card(
            elevation: 5,
            child: Container(
                padding: EdgeInsets.all(10),
                child: Column(
                    crossAxisAlignment: CrossAxisAlignment.end,
                    children: <Widget>[
                        TextField(
                            decoration: InputDecoration(labelText: 'Title'),
                            controller: titleController,
                        ), // TextField
                        TextField(
                            decoration: InputDecoration(labelText: 'Amount'),
                            controller: amountController,
                        ), // TextField
                    ],
                ),
            ),
        );
    }
}
```

The status bar at the bottom shows: Ln 3, Col 47, Spaces: 2, CRLF, Dart, Dart DevTools, Flutter: 2.5.3, Pixel 2 API 29 (android-x86 emulator), Prettier, and a message "widgets\\new\_transaction.dart".

File Edit Selection View Go Run Terminal Help

new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS 1 UNSAVED lib > widgets > new\_transaction.dart > NewTransaction

main.dart lib new\_transaction.dart lib... user\_transactions.dart lib... transaction\_list.dart 1 transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart 1 user\_transactions.dart main.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE DEPENDENCIES

16 decoration: InputDecoration(labelText: 'Title'),  
17 controller: titleController,  
18 ), // TextField  
19 TextField(  
20 decoration: InputDecoration(labelText: 'Amount'),  
21 controller: amountController,  
22 ), // TextField  
23 FlatButton(  
24 child: Text('Add Transaction'),  
25 textColor: Colors.purple,  
26 onPressed: () {  
27 print(titleController.text);  
28 print(amountController.text);  
29 },  
30 ), // FlatButton  
31 ], // <Widget>[]  
32 ), // Column  
33 ), // Container  
34 ); // Card  
35 }  
36 }  
37

widgets\new\_transaction.dart

Ln 3, Col 47 Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Title Bar:** user\_transactions.dart - personal\_expenses\_04 - Visual Studio Code.
- Explorer View (Left):**
  - OPEN EDITORS (1 UNSAVED): main.dart, new\_transaction.dart, user\_trans (highlighted), transaction.dart, transaction\_list.dart, widget\_test.dart, pubspec.yaml.
  - PERSONAL\_EXPENSES\_04:
    - .dart\_tool
    - .idea
    - android
    - build
    - ios
    - lib
      - models (transaction.dart)
      - widgets
        - new\_transaction.dart
        - transaction\_list.dart
        - user\_transactions.dart (highlighted)
    - main.dart
    - test
      - widget\_test.dart
    - web
      - .gitignore
      - .metadata
      - .packages
      - analysis\_options.yaml
      - personal\_expenses\_04.iml
      - pubspec.lock
      - pubspec.yaml
- Editor View (Center):** The code for `user_transactions.dart` is displayed. It defines a `UserTransaction` class that extends `StatefulWidget`, returning a `_UserTransactionState` object. The `_UserTransactionState` class extends `State<UserTransaction>` and initializes a list of transactions. Two transactions are shown: one for a new shoe purchase and another for daily groceries.

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

import 'new_transaction.dart';
import 'transaction_list.dart';

class UserTransaction extends StatefulWidget {
    @override
    _UserTransactionState createState() => _UserTransactionState();
}

class _UserTransactionState extends State<UserTransaction> {
    final List<Transaction> _userTransactions = [
        Transaction(
            id: 't1',
            title: 'Sepatu Baru',
            amount: 20.99,
            date: DateTime.now(),
        ), // Transaction
        Transaction(
            id: 't2',
            title: 'Belanja Harian',
        ),
    ];
}
```
- Bottom Status Bar:** Ln 33, Col 42, Spaces: 2, UTF-8, CRLF, Dart, Dart DevTools, Flutter: 2.5.3, Pixel 2 API 29 (android-x86 emulator), Prettier.
- Bottom Icons:** Save, Undo, Redo, Find, Replace, Run, Debug my code.

File Edit Selection View Go Run Terminal Help user\_transactions.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS 1 UNSAVED lib > widgets > user\_transactions.dart > \_UserTransactionState > transactions

main.dart lib new\_transaction.dart lib... user\_transactions.dart lib... transaction\_list.dart 1 transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart 1 user\_transactions.dart main.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE DEPENDENCIES

1 △ 0 ① 21 Debug my code

17 amount: 20.99,  
18 date: DateTime.now(),  
19 ), // Transaction  
20 Transaction(  
21 id: 't2',  
22 title: 'Belanja Harian',  
23 amount: 18.53,  
24 date: DateTime.now(),  
25 ), // Transaction  
26 ];  
27  
28 @override  
29 Widget build(BuildContext context) {  
30 return Column(  
31 children: <Widget>[  
32 NewTransaction(),  
33 TransactionList(),  
34 ], // <Widget>[]  
35 ); // Column  
36 }  
37 }  
38 }

widgets\user\_transactions.dart

Ln 19, Col 7 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

A screenshot of the Visual Studio Code interface showing a Flutter application named "personal\_expenses\_04".

The Explorer sidebar on the left shows the project structure:

- OPEN EDITORS**:
  - main.dart
  - new\_transaction.dart
  - user\_trans
  - transaction\_list.dart 1**
  - transaction.dart lib\models
  - widget\_test.dart test
  - pubspec.yaml
- PERSONAL\_EXPENSES\_04**:
  - .dart\_tool
  - .idea
  - android
  - build
  - ios
  - lib
    - models
      - transaction.dart
    - widgets
      - new\_transaction.dart
      - transaction\_list.dart 1**
      - user\_transactions.dart
      - main.dart
  - test
    - widget\_test.dart
  - web
    - .gitignore
    - .metadata
    - .packages
    - analysis\_options.yaml
    - personal\_expenses\_04.iml
    - pubspec.lock
    - pubspec.yaml

- OUTLINE**
- DEPENDENCIES**

The main editor area displays the code for **transaction\_list.dart**:

```
lib > widgets > transaction_list.dart > TransactionList > build
1 import 'package:flutter/material.dart';
2 import 'package:intl/intl.dart';
3
4 import '../models/transaction.dart';
5
6 class TransactionList extends StatelessWidget {
7   @override
8   Widget build(BuildContext context) {
9     return Column(
10       children: transactions.map((tx) {
11         return Card(
12           child: Row(
13             children: <Widget>[
14               Container(
15                 margin: EdgeInsets.symmetric(
16                   vertical: 10,
17                   horizontal: 15,
18                 ), // EdgeInsets.symmetric
19                 decoration: BoxDecoration(
20                   border: Border.all(
21                     color: Colors.purple,
22                     width: 2,
```

The file path in the status bar indicates the current file is **transaction\_list.dart** in the **widgets** directory.

Bottom status bar: Ln 9, Col 19 | Spaces: 2 | UTF-8 | CRLF | Dart | Dart DevTools | Flutter: 2.5.3 | Pixel 2 API 29 (android-x86 emulator) | Prettier

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS main.dart lib new\_transaction.dart lib... user\_transactions.dart lib... transaction\_list.dart 1 transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart 1 user\_transactions.dart main.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE 1 DEPENDENCIES

transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code lib > widgets > transaction\_list.dart > TransactionList > build

```
decoration: BoxDecoration(  
    border: Border.all(  
        color: Colors.purple,  
        width: 2,  
    ), // Border.all  
, // BoxDecoration  
padding: EdgeInsets.all(10),  
child: Text(  
    'Rp.${tx.amount}',  
    style: TextStyle(  
        fontWeight: FontWeight.bold,  
        fontSize: 20,  
        color: Colors.purple,  
    ), // TextStyle  
, // Text  
, // Container  
Column(  
    mainAxisAlignment: MainAxisAlignment.start,  
    children: <Widget>[  
        Text(  
            tx.title,  
            style: TextStyle(  
                color: Colors.purple,  
                fontWeight: FontWeight.bold,  
                fontSize: 20,  
            ), // TextStyle  
        ), // Text  
    ], // children  
), // Column  
), // Container  
), // Column  
) // Column
```

wIDGETS\TRANSACTION\_LIST.DART

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction\_list.dart 1 transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > transaction\_list.dart > TransactionList > build

tx.title,  
style: TextStyle(  
fontSize: 16,  
fontWeight: FontWeight.bold,  
), // TextStyle  
, // Text  
Text(  
DateFormat.yMMMd().format(tx.date),  
style: TextStyle(  
color: Colors.grey,  
), // TextStyle  
, // Text  
], // <Widget>[]  
, // Column  
], // <Widget>[]  
, // Row  
); // Card

widgets\transaction\_list.dart

Ln 49, Col 23 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

A screenshot of the Visual Studio Code interface showing the code editor with the file `transaction.dart` open. The file is located in the `lib\models` directory. The code defines a `Transaction` class with required fields: `id`, `title`, `amount`, and `date`. The code editor shows syntax highlighting for Dart and includes a status bar at the bottom with file navigation and tool information.

File Edit Selection View Go Run Terminal Help transaction.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart X widget\_test.dart pubspec.yaml

OPEN EDITORS lib > models > transaction.dart > ...

```
1 import 'package:flutter/foundation.dart';  
2  
3 class Transaction {  
4     final String id;  
5     final String title;  
6     final double amount;  
7     final DateTime date;  
8  
9     Transaction({  
10         @required this.id,  
11         @required this.title,  
12         @required this.amount,  
13         @required this.date,  
14     });  
15 }  
16
```

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart 1 user\_transactions.dart main.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE 1 DEPENDENCIES

models\transaction.dart

Ln 16, Col 1 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X new\_transaction.dart user\_trans rt 1 transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS main.dart lib new\_transaction.dart lib\... user\_transactions.dart lib\... transaction\_list.dart 1 transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart 1 user\_transactions.dart main.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE 1 DEPENDENCIES

lib > main.dart > MyHomePage > build

```
1 import 'package:flutter/material.dart';
2 import './widgets/user_transactions.dart';
3
4 void main() => runApp(MyApp());
5
6 class MyApp extends StatelessWidget {
7   @override
8   Widget build(BuildContext context) {
9     return MaterialApp(
10       title: 'Flutter App',
11       home: MyHomePage(),
12     ); // MaterialApp
13   }
14 }
15
16 class MyHomePage extends StatelessWidget {
17   @override
18   Widget build(BuildContext context) {
19     return Scaffold(
20       appBar: AppBar(
21         title: Text('Flutter App'),
```

main.dart

Ln 24, Col 1 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X new\_transaction.dart user\_trans rt 1 transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart > MyHomePage > build

main.dart lib new\_transaction.dart lib... user\_transactions.dart lib... transaction\_list.dart 1 transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart 1 user\_transactions.dart main.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE 1 DEPENDENCIES

19 return Scaffold(  
20 appBar: AppBar(  
21 title: Text('Flutter App'),  
22 ), // AppBar  
23 body: Column(  
24 crossAxisAlignment: CrossAxisAlignment.stretch,  
25 children: <Widget>[  
26 Card(  
27 color: Colors.blue,  
28 child: Container(  
29 width: double.infinity,  
30 child: Text('CHART'),  
31 ), // Container  
32 elevation: 5,  
33 ), // Card  
34 UserTransaction(),  
35 ], // <Widget>[]  
36 ), // Column  
37 ); // Scaffold  
38 }  
39 }  
40 }

main.dart

Ln 24, Col 1 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# **CONNECTING WIDGETS AND MANAGING DATASTATE**

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS main.dart lib new\_transaction.dart lib\... user\_transactions.da... 1 transaction\_list.dart lib\... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.... 1 main.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE DEPENDENCIES

transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

lib > widgets > transaction\_list.dart > TransactionList

```
1 import 'package:flutter/material.dart';
2 import 'package:intl/intl.dart';
3
4 import '../models/transaction.dart';
5
6 class TransactionList extends StatelessWidget {
7   final List<Transaction> transactions;
8
9   TransactionList(this.transactions);
10
11  @override
12  Widget build(BuildContext context) {
13    return Column(
14      children: transactions.map((tx) {
15        return Card(
16          child: Row(
17            children: <Widget>[
18              Container(
19                margin: EdgeInsets.symmetric(
20                  vertical: 10,
21                  horizontal: 15,
22                ), // EdgeInsets.symmetric
```

wIDGETS\TRANSACTION\_LIST.DART

Ln 11, Col 1 (84 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help • user\_transactions.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS 1 UNSAVED lib > widgets > user\_transactions.dart > \_UserTransactionState > build

main.dart lib new\_transaction.dart lib\... user\_transactions.dart lib\... transaction\_list.dart lib\... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE DEPENDENCIES

amount: 20.99,  
date: DateTime.now(),  
, // Transaction  
Transaction(  
id: 't2',  
title: 'Belanja Harian',  
amount: 18.53,  
date: DateTime.now(),  
, // Transaction  
];  
  
@override  
Widget build(BuildContext context) {  
return Column(  
children: <Widget>[  
NewTransaction(),  
TransactionList(\_userTransactions),  
], // <Widget>[]  
); // Column  
}  
}  
}

widgets\user\_transactions.dart

Ln 34, Col 1 (45 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help user\_transactions.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS main.dart lib new\_transaction.dart lib\... user\_transactions.dart lib\... transaction\_list.dart lib\... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

UserTransactionsState

```
amount: 18.53,
date: DateTime.now(),
),
// Transaction
];
void _addNewTransaction(String txTitle, double txAmount) {
final newTx = Transaction(
title: txTitle,
amount: txAmount,
date: DateTime.now(),
id: DateTime.now().toString(),
);
// Transaction
 setState(() {
_userTransactions.add(newTx);
});
}

@Override
Widget build(BuildContext context) {
return Column(
children: <Widget>[
```

wIDGETS\user\_transactions.dart

Ln 40, Col 1 (289 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# **ADDING USER TRANSACTIONS TO THE LIST**

File Edit Selection View Go Run Terminal Help user\_transactions.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > user\_transactions.dart > \_UserTransactionState > build

main.dart lib new\_transaction.dart lib\... user\_transactions.dart 1 transaction\_list.dart lib\... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart 1 main.dart test widget\_test.dart web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE 1 DEPENDENCIES

28 void \_addNewTransaction(String txTitle, double txAmount) {  
29 final newTx = Transaction(  
30 title: txTitle,  
31 amount: txAmount,  
32 date: DateTime.now(),  
33 id: DateTime.now().toString(),  
34 ); // Transaction  
35  
36 setState(() {  
37 \_userTransactions.add(newTx);  
38 });  
39 }  
40  
41 @override  
42 Widget build(BuildContext context) {  
43 return Column(  
44 children: <Widget>[  
45 NewTransaction(\_addNewTransaction),  
46 TransactionList(\_userTransactions),  
47 ], // <Widget>[]  
48 ); // Column  
49 }

widgets\user\_transactions.dart

Ln 46, Col 1 (45 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

A screenshot of the Visual Studio Code interface, showing a Flutter application named "personal\_expenses\_04".

The Explorer sidebar on the left shows the project structure:

- OPEN EDITORS:
  - main.dart
  - new\_transaction.dart (selected)
  - user\_trans
  - transaction.dart
  - widget\_test.dart
  - pubspec.yaml
- PERSONAL\_EXPENSES\_04:
  - .dart\_tool
  - .idea
  - android
  - build
  - ios
  - lib
    - models
      - transaction.dart
    - widgets
      - new\_transaction.dart (selected)
      - transaction\_list.dart
      - user\_transactions.dart
      - main.dart
  - test
    - widget\_test.dart
  - web
    - .gitignore
    - .metadata
    - .packages
    - analysis\_options.yaml
    - personal\_expenses\_04.iml
    - pubspec.lock
    - pubspec.yaml
- OUTLINE
- DEPENDENCIES

The code editor displays the file `new_transaction.dart` under the `lib/widgets` directory. The code defines a `NewTransaction` widget that extends `StatelessWidget`. It includes fields for `addTx`, `titleController`, and `amountController`. The `build` method returns a `Card` with a `Container` child containing a `Column` with a `TextField` and a `Text` widget.

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

class NewTransaction extends StatelessWidget {
  final Function addTx;
  final TextEditingController titleController = TextEditingController();
  final TextEditingController amountController = TextEditingController();

  NewTransaction(this.addTx);

  @override
  Widget build(BuildContext context) {
    return Card(
      elevation: 5,
      child: Container(
        padding: EdgeInsets.all(10),
        child: Column(
          crossAxisAlignment: CrossAxisAlignment.end,
          children: <Widget>[
            TextField(
              decoration: InputDecoration(labelText: 'Title'),
              controller: titleController,
            ), // TextField
            Text('Amount')
          ],
        ),
      ),
    );
  }
}
```

The status bar at the bottom shows the file path `lib/widgets\new_transaction.dart` and the line number `Ln 5, Col 1 (25 selected)`.

File Edit Selection View Go Run Terminal Help new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code

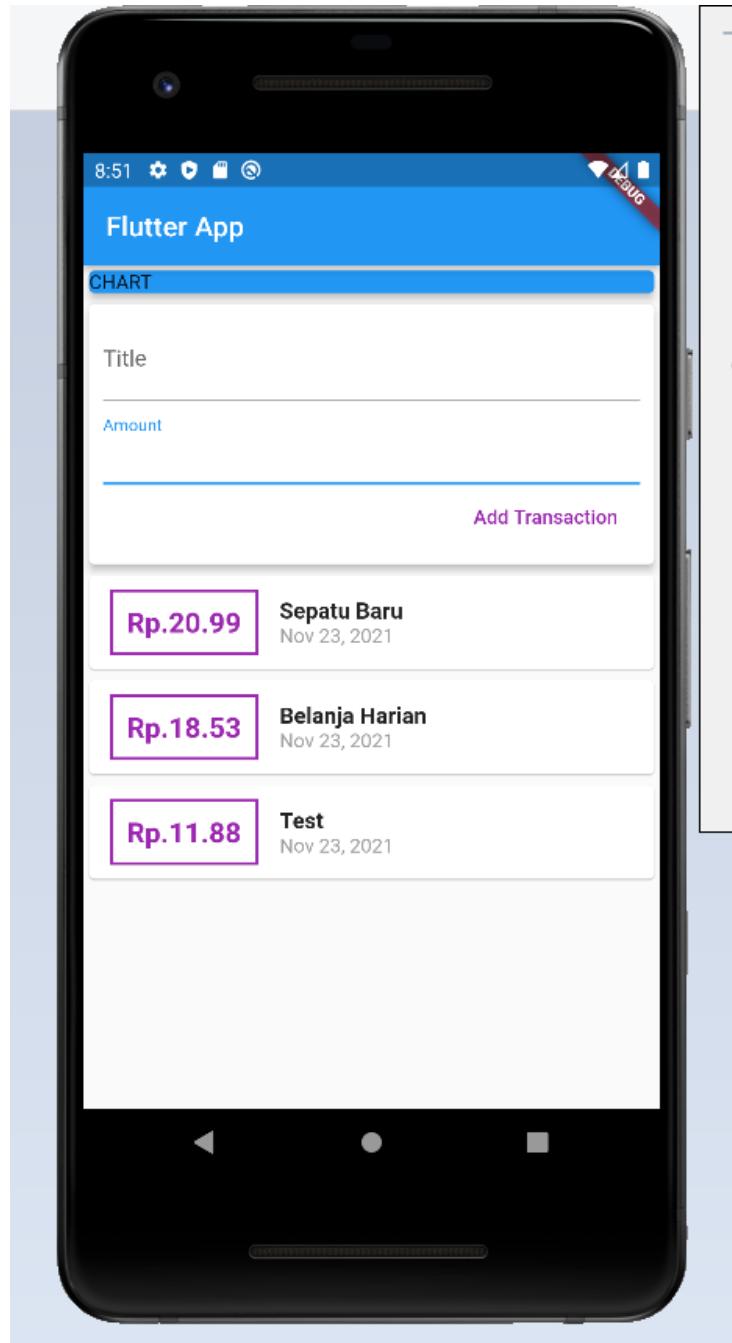
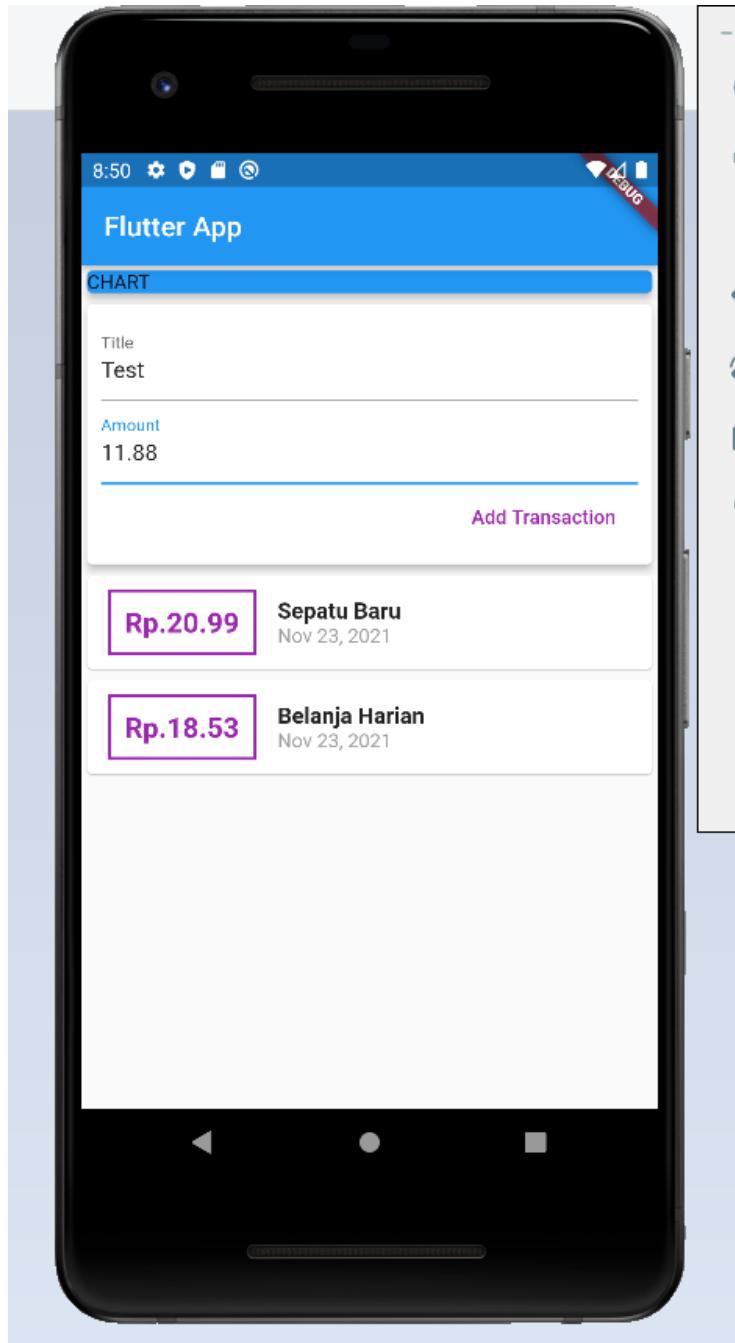
EXPLORER ... main.dart new\_transaction.dart user\_trans ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ transaction.dart widget\_test.dart pubspec.yaml ⚡ ⚡ ⚡ ⚡ ⚡ ⚡

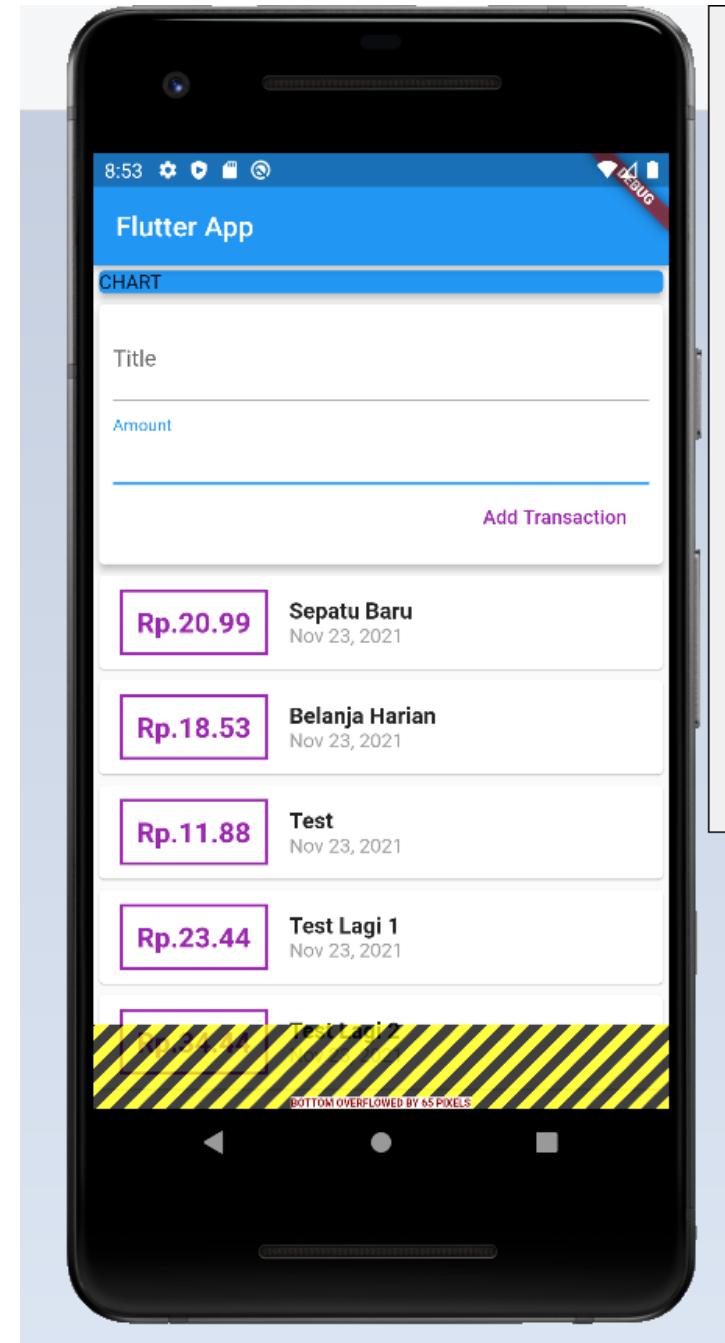
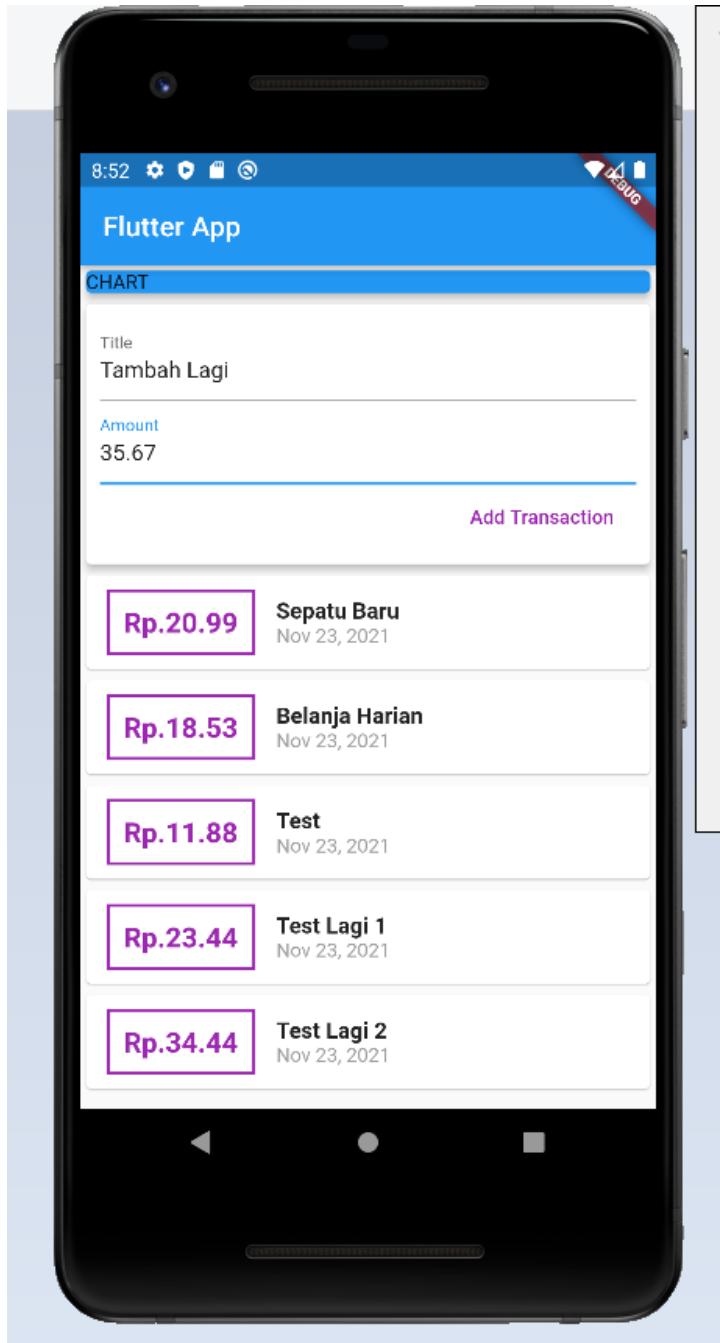
lib > widgets > new\_transaction.dart > NewTransaction > build

```
19     TextField(  
20       decoration: InputDecoration(labelText: 'Title'),  
21       controller: titleController,  
22     ), // TextField  
23     TextField(  
24       decoration: InputDecoration(labelText: 'Amount'),  
25       controller: amountController,  
26     ), // TextField  
27     FlatButton(  
28       child: Text('Add Transaction'),  
29       textColor: Colors.purple,  
30       onPressed: () {  
31       addTx(  
32         titleController.text,  
33         double.parse(amountController.text),  
34       );  
35     },  
36     ), // FlatButton  
37   ], // <Widget>[]  
38   ), // Column  
39   ), // Container  
40 ); // Card
```

widgets\new\_transaction.dart

Ln 35, Col 1 (141 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) ⚡ Prettier ⚡ ⚡ ⚡ ⚡ ⚡ ⚡





# **MAKING THE LIST SCROLLABLE!**

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X new\_transaction.dart user\_trans lib > main.dart > MyHomePage > build transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS

main.dart lib  
new\_transaction.dart lib...  
user\_transactions.dart lib...  
transaction\_list.dart lib...  
transaction.dart lib\models  
widget\_test.dart test  
pubspec.yaml

PERSONAL\_EXPENSES\_04

.dart\_tool  
.idea  
android  
build  
ios  
lib  
models  
transaction.dart  
widgets  
new\_transaction.dart  
transaction\_list.dart  
user\_transactions.dart  
main.dart  
test  
web  
.gitignore  
.metadata  
.packages  
analysis\_options.yaml  
personal\_expenses\_04.iml  
pubspec.lock  
pubspec.yaml

OUTLINE  
TIMELINE  
DEPENDENCIES

15  
16 class MyHomePage extends StatelessWidget {  
17 @override  
18 Widget build(BuildContext context) {  
19 return Scaffold(  
20 appBar: AppBar(  
21 title: Text('Flutter App'),  
22 ), // AppBar  
23 body: Column(  
24 crossAxisAlignment: CrossAxisAlignment.stretch,  
25 mainAxisAlignment: MainAxisAlignment.spaceEvenly,  
26 children: [  
27 Container(  
28 decoration: BoxDecoration(  
29 color: Colors.white,  
30 border: Border.all(  
31 color: Colors.grey,  
32 width: 1.0,  
33 ),  
34 elevation: 5,  
35 ), // Card  
36 UserTransaction(),  
37 ], // <Widget>[]  
38 ), // Column

Right click on Column and choose Refactor or:  
CTRL + SHIFT + R

Wrap with Builder  
Wrap with Center  
Wrap with Container  
Wrap with Padding  
Wrap with SizedBox  
Wrap with StreamBuilder  
Wrap with widget...  
Extract Local Variable  
Extract Widget

main.dart

Ln 23, Col 19 (6 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X new\_transaction.dart user\_trans lib main.dart > MyHomePage > build transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS

main.dart lib new\_transaction.dart lib... user\_transactions.dart lib... transaction\_list.dart lib... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - models
    - transaction.dart
  - widgets
    - new\_transaction.dart
    - transaction\_list.dart
    - user\_transactions.dart
  - main.dart
- test
- web
- .gitignore
- .metadata
- .packages
- analysis\_options.yaml
- personal\_expenses\_04.iml
- pubspec.lock
- pubspec.yaml

OUTLINE

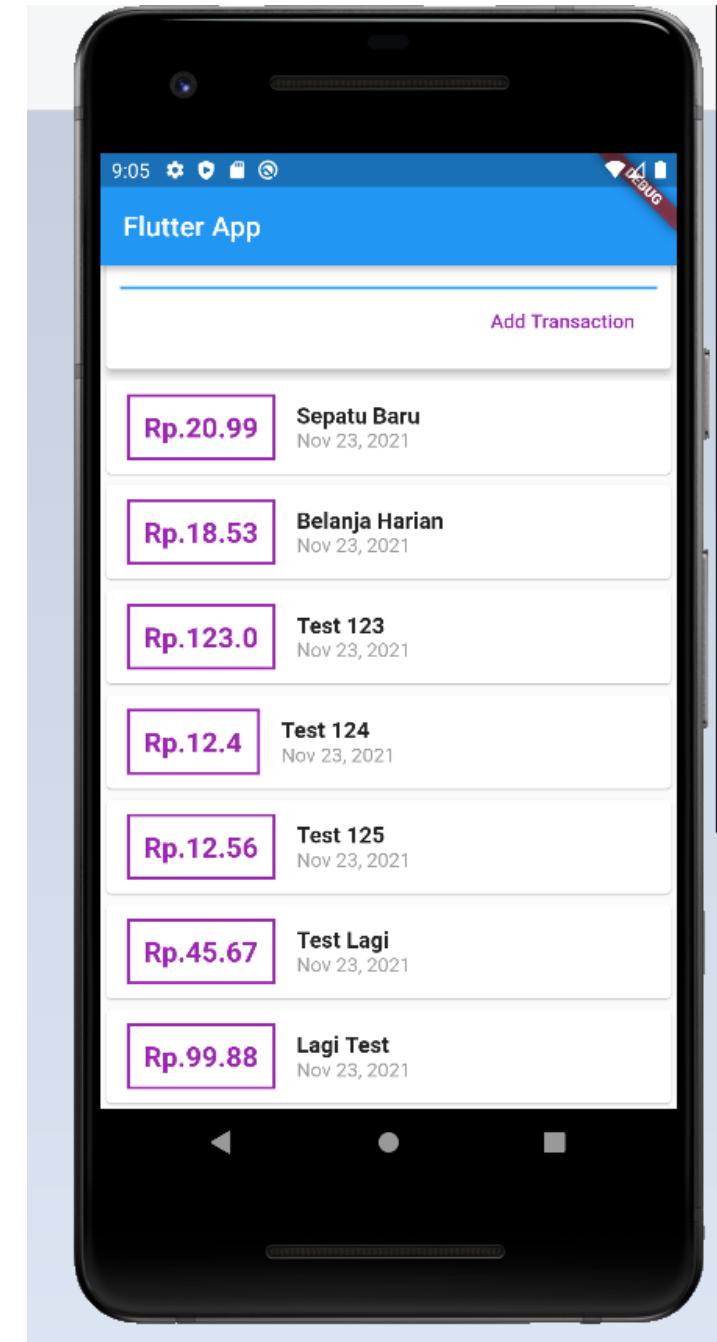
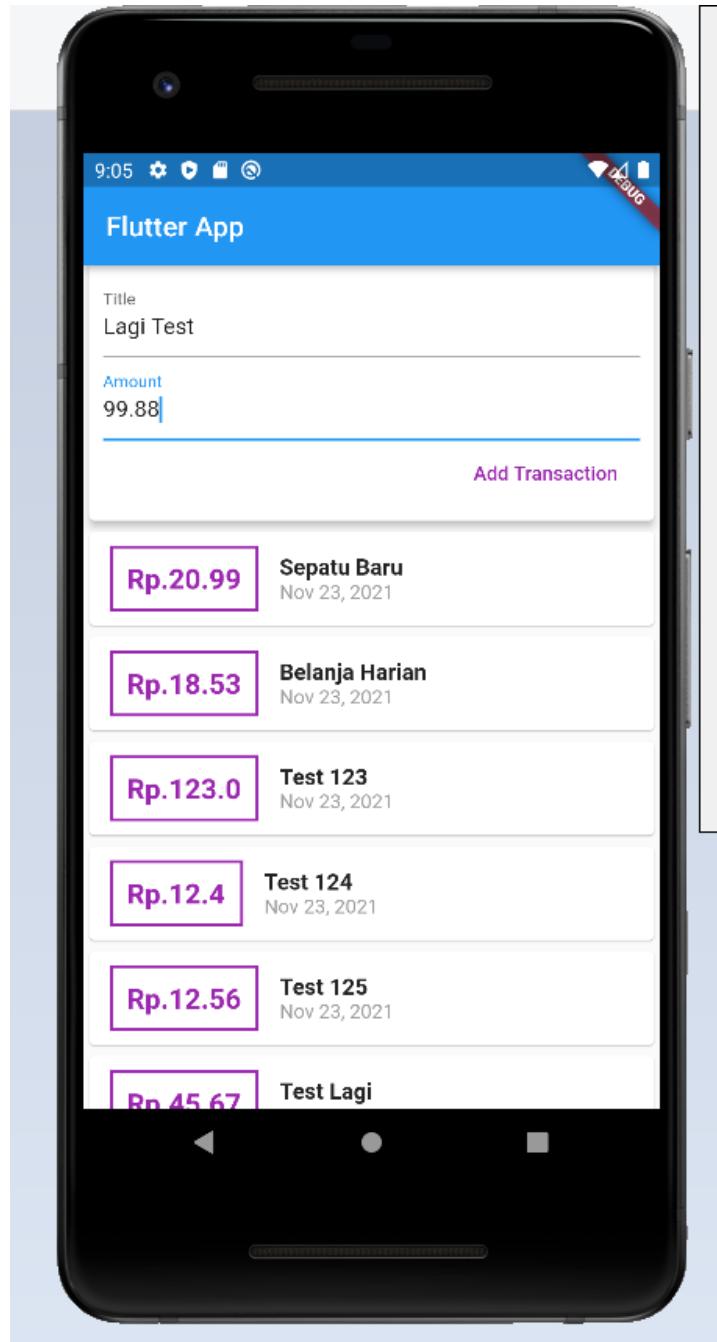
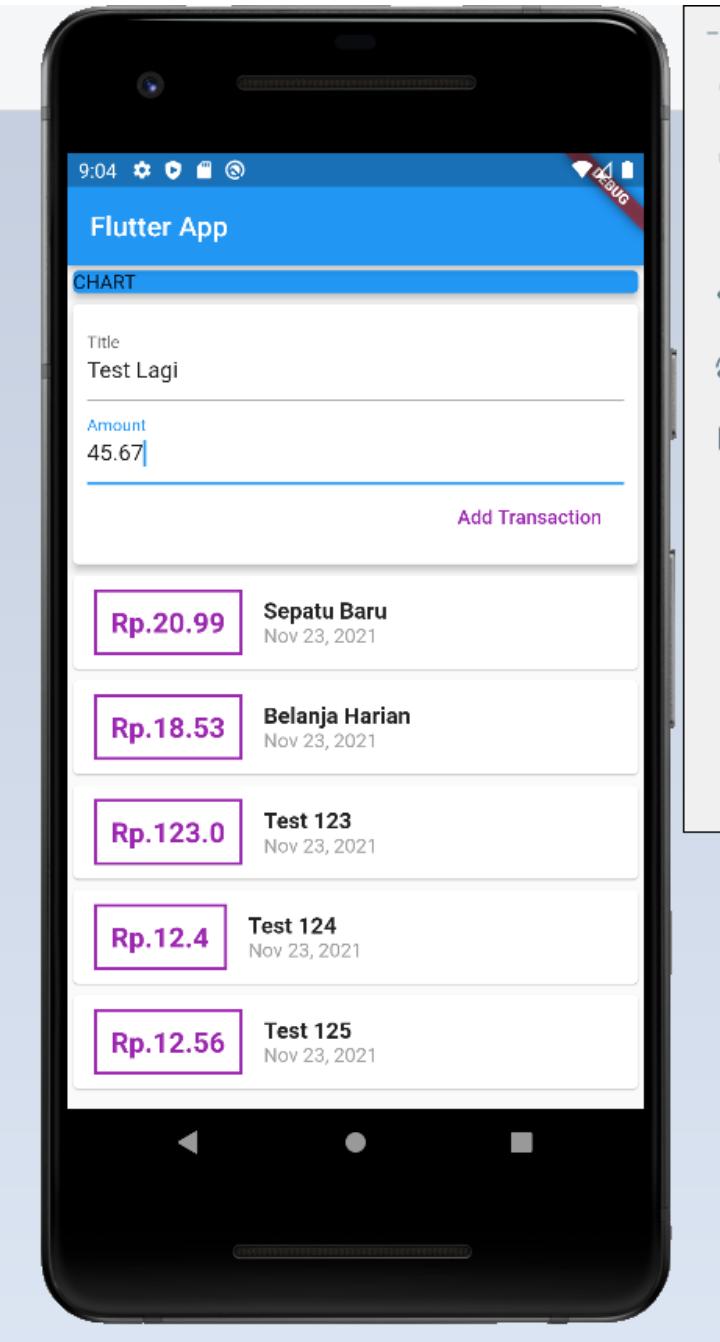
TIMELINE

DEPENDENCIES

stable 0 △ 0 ① 19 Debug my code Ln 24, Col 1 (36 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

```
19     return Scaffold(
20       appBar: AppBar(
21         title: Text('Flutter App'),
22       ), // AppBar
23       body: SingleChildScrollView(
24         child: Column(
25           crossAxisAlignment: CrossAxisAlignment.stretch,
26           children: <Widget>[
27             Card(
28               color: Colors.blue,
29               child: Container(
30                 width: double.infinity,
31                 child: Text('CHART'),
32               ), // Container
33               elevation: 5,
34             ), // Card
35             UserTransaction(),
36           ], // <Widget>[]
37         ), // Column
38       ), // SingleChildScrollView
39     ); // Scaffold
40 }
```

main.dart



File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X new\_transaction.dart user\_trans lib main.dart > MyHomePage > build transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS

main.dart lib  
new\_transaction.dart lib...  
user\_transactions.dart lib...  
transaction\_list.dart lib...  
transaction.dart lib\models  
widget\_test.dart test  
pubspec.yaml

PERSONAL\_EXPENSES\_04

.dart\_tool  
.idea  
android  
build  
ios  
lib

models  
transaction.dart

widgets  
new\_transaction.dart  
transaction\_list.dart  
user\_transactions.dart  
main.dart

test  
web  
.gitignore  
.metadata  
.packages  
analysis\_options.yaml  
personal\_expenses\_04.iml  
pubspec.lock  
pubspec.yaml

OUTLINE  
TIMELINE  
DEPENDENCIES

stable Debug my code Ln 37, Col 1 (373 selected) Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

```
19     return Scaffold(  
20         appBar: AppBar(  
21             title: Text('Flutter App'),  
22         ), // AppBar  
23         body: Column(  
24             mainAxisAlignment: MainAxisAlignment.spaceEvenly,  
25             children: <Widget>[  
26                 Card(  
27                     color: Colors.blue,  
28                     child: Container(  
29                         width: double.infinity,  
30                         child: Text('CHART'),  
31                     ), // Container  
32                     elevation: 5,  
33                 ), // Card  
34                 UserTransaction(),  
35             ], // <Widget>[]  
36         ), // Column  
37     ); // Scaffold  
38 }  
39 }  
40 }
```

main.dart

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > transaction\_list.dart > TransactionList > build

main.dart lib new\_transaction.dart lib... user\_transactions.dart lib... transaction\_list.dart lib... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE TIMELINE DEPENDENCIES

stable 0 △ 0 ① 19 Debug my code Ln 13, Col 15 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

```
final List<Transaction> transactions;  
TransactionList(this.transactions);  
  
@override  
Widget build(BuildContext context) {  
  return Column(  
    children: map((tx) {  
      return child;  
    }).  
  );  
}  
  
sets.symmetric(  
  0,  
  15,  
  sets.symmetric  
  oxDecoration(  
    border: Border.all(  
      color: Colors.purple,  
      width: 2,  
    ), // Border.all  
  ), // BoxDecoration
```

Wrap with Builder  
Wrap with Center  
Wrap with Column  
Wrap with Container  
Wrap with Padding  
Wrap with Row  
Wrap with SizedBox  
Wrap with StreamBuilder  
Wrap with widget...  
Extract Method  
Extract Local Variable  
Extract Widget

windows\transaction\_list.dart

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS 1 UNSAVED lib > widgets > transaction\_list.dart > TransactionList > build

main.dart lib new\_transaction.dart lib\... user\_transactions.dart lib\... transaction\_list.dart lib\... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE TIMELINE DEPENDENCIES

transaction\_list.dart

```
final List<Transaction> transactions;
TransactionList(this.transactions);

@Override
Widget build(BuildContext context) {
    return Container(
        height: 300,
        child: Column(
            child: Wrap with Builder
            ns.map((tx) {
                ret
                c
                get>[
                    Wrap with Center
                    Wrap with Container
                    Wrap with Padding
                    Wrap with SizedBox
                    Wrap with StreamBuilder
                    Wrap with widget...
                    Extract Local Variable
                    Extract Widget
                ],
                geInsets.symmetric(
                    : 10,
                    horizontal: 15,
                ), // EdgeInsets.symmetric
                decoration: BoxDecoration(
                    border: Border.all(
                        color: Colors.purple,
                        width: 2,

```

Ln 15, Col 20 (6 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > transaction\_list.dart > TransactionList > build

main.dart lib new\_transaction.dart lib\... user\_transactions.dart lib\... transaction\_list.dart lib\... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE TIMELINE DEPENDENCIES

stable 0 △ 0 ① 20 Debug my code Ln 16, Col 1 (57 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

```
5
6 class TransactionList extends StatelessWidget {
7   final List<Transaction> transactions;
8
9 TransactionList(this.transactions);
10
11 @override
12 Widget build(BuildContext context) {
13   return Container(
14     height: 300,
15     child: SingleChildScrollView(
16       child: Column(
17         children: transactions.map((tx) {
18           return Card(
19             child: Row(
20               children: <Widget>[
21                 Container(
22                   margin: EdgeInsets.symmetric(
23                     vertical: 10,
24                     horizontal: 15,
25                   ), // EdgeInsets.symmetric
26                   decoration: BoxDecoration(
```

widgets\transaction\_list.dart

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart > MyHomePage > build

main.dart lib new\_transaction.dart lib... user\_transactions.dart lib... transaction\_list.dart lib... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE TIMELINE DEPENDENCIES

main.dart

```
Widget build(BuildContext context) {  
    return Scaffold(  
        appBar: AppBar(  
            title: Text('Flutter App'),  
        ), // AppBar  
        body: Column(  
            crossAxisAlignment: CrossAxisAlignment.stretch,  
            mainAxisAlignment: MainAxisAlignment.start,  
            children: [  
                Container(  
                    height: 150,  
                    width: 150,  
                    color: Colors.purple,  
                ),  
                Container(  
                    height: 150,  
                    width: 150,  
                    color: Colors.pink,  
                ),  
                Container(  
                    height: 150,  
                    width: 150,  
                    color: Colors.purple,  
                ),  
                Container(  
                    height: 150,  
                    width: 150,  
                    color: Colors.pink,  
                ),  
            ],  
        ), // Column  
    ); // Scaffold  
}
```

Ln 23, Col 19 (6 selected) Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart > MyHomePage > build

main.dart lib new\_transaction.dart lib... user\_transactions.dart lib... transaction\_list.dart lib... transaction.dart lib\models widget\_test.dart test pubspec.yaml

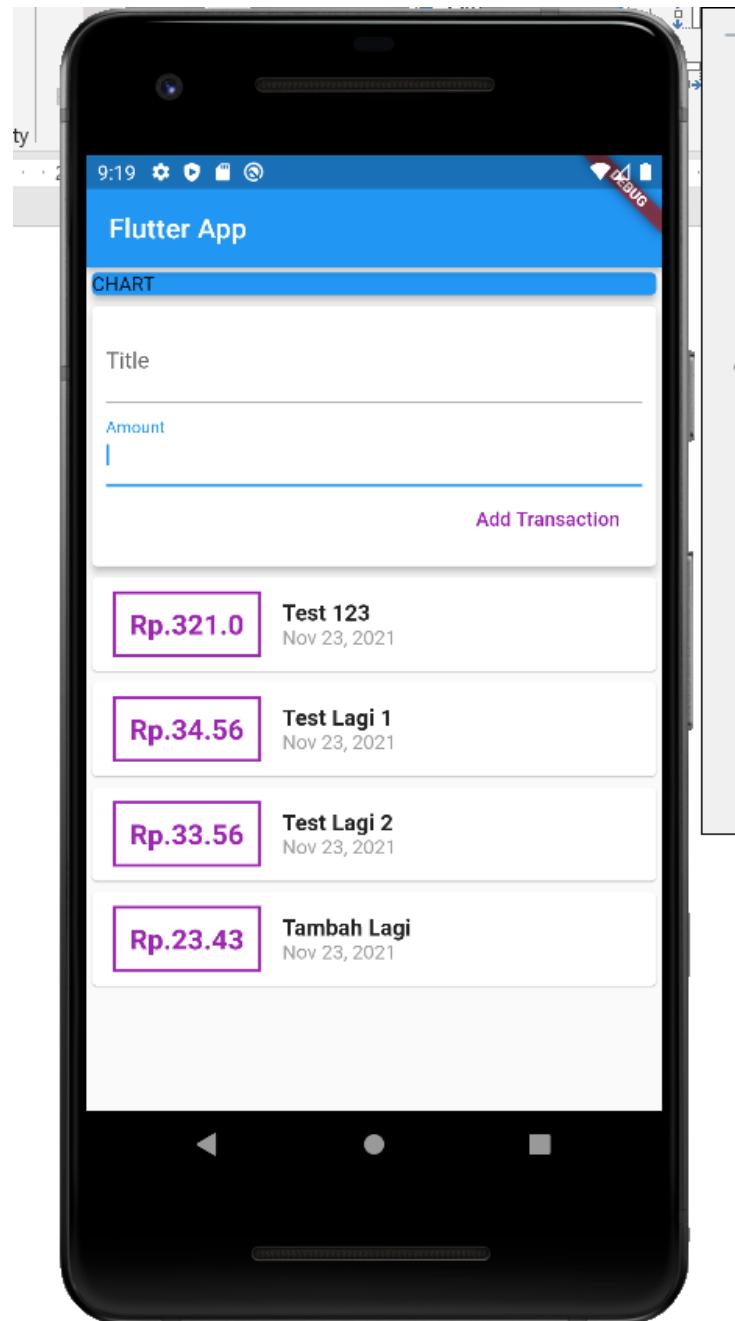
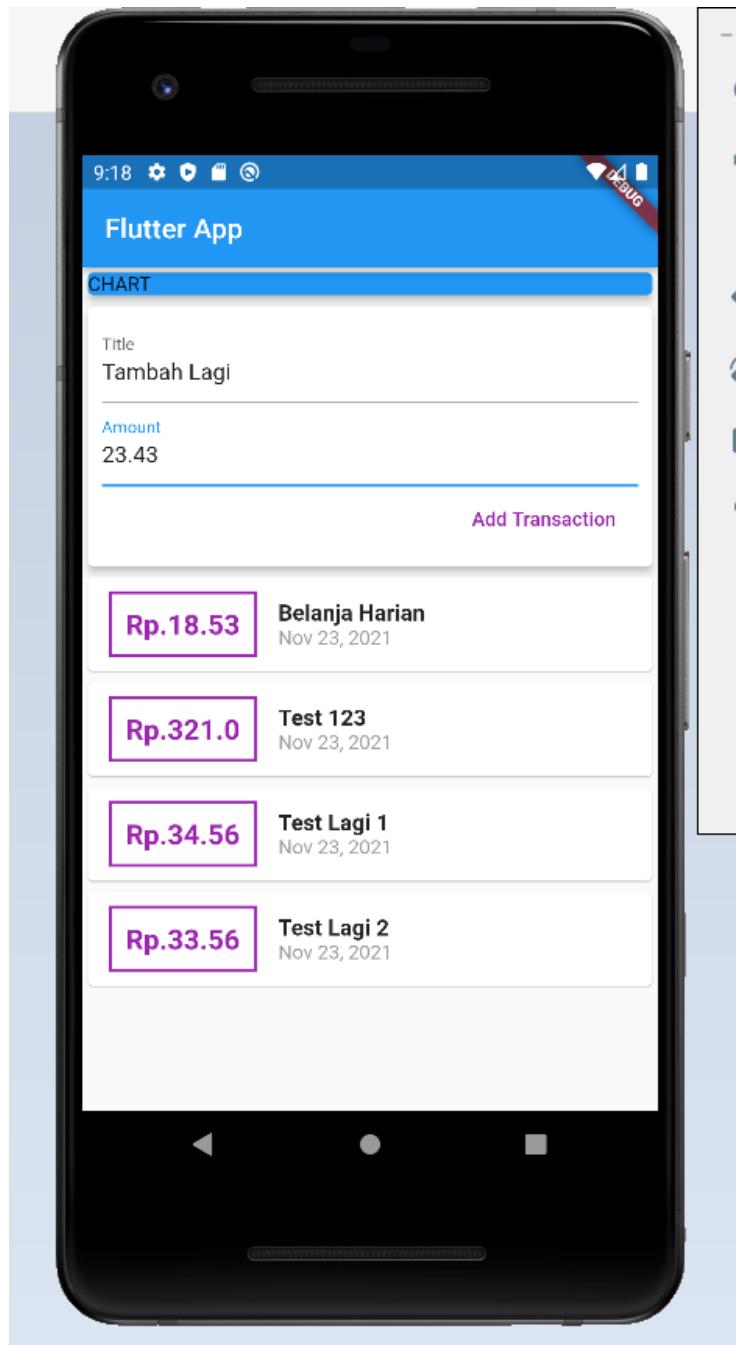
PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

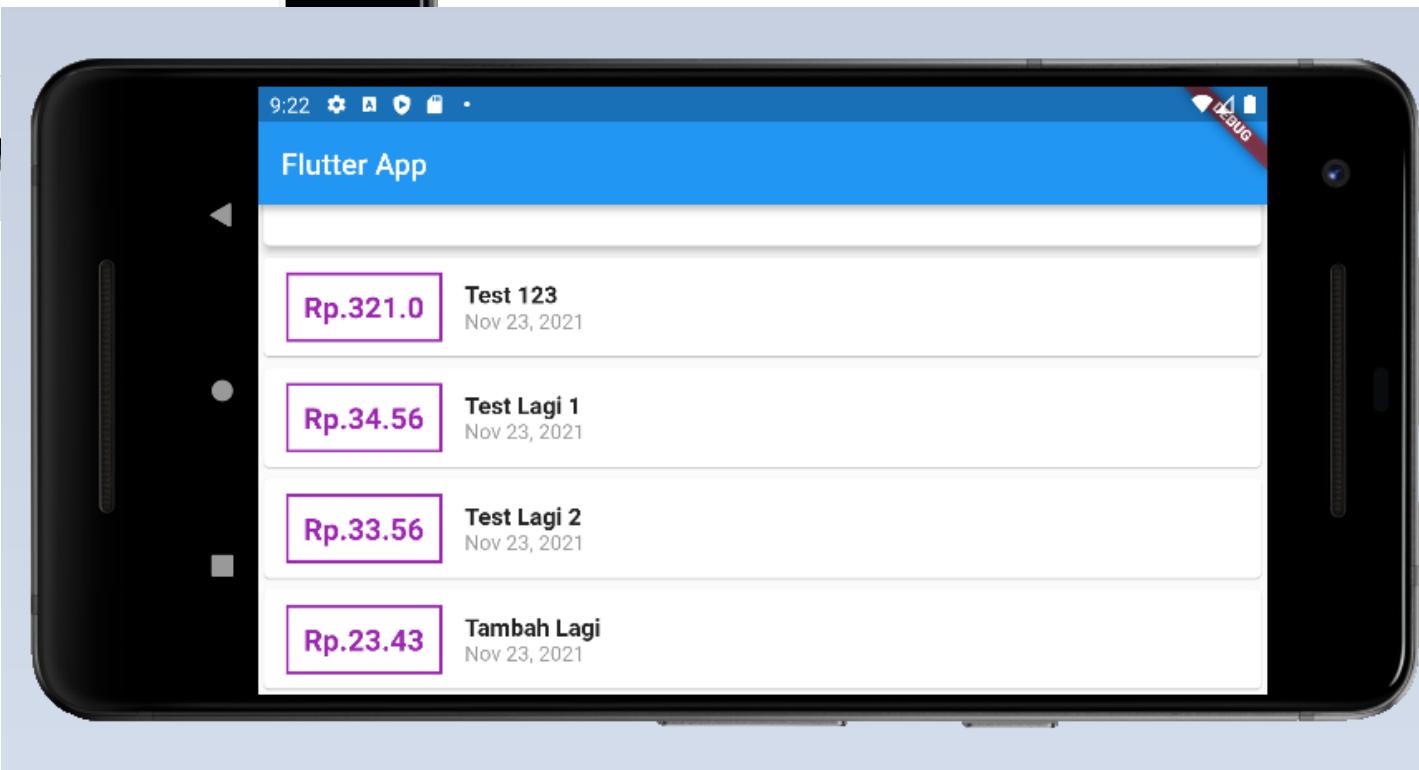
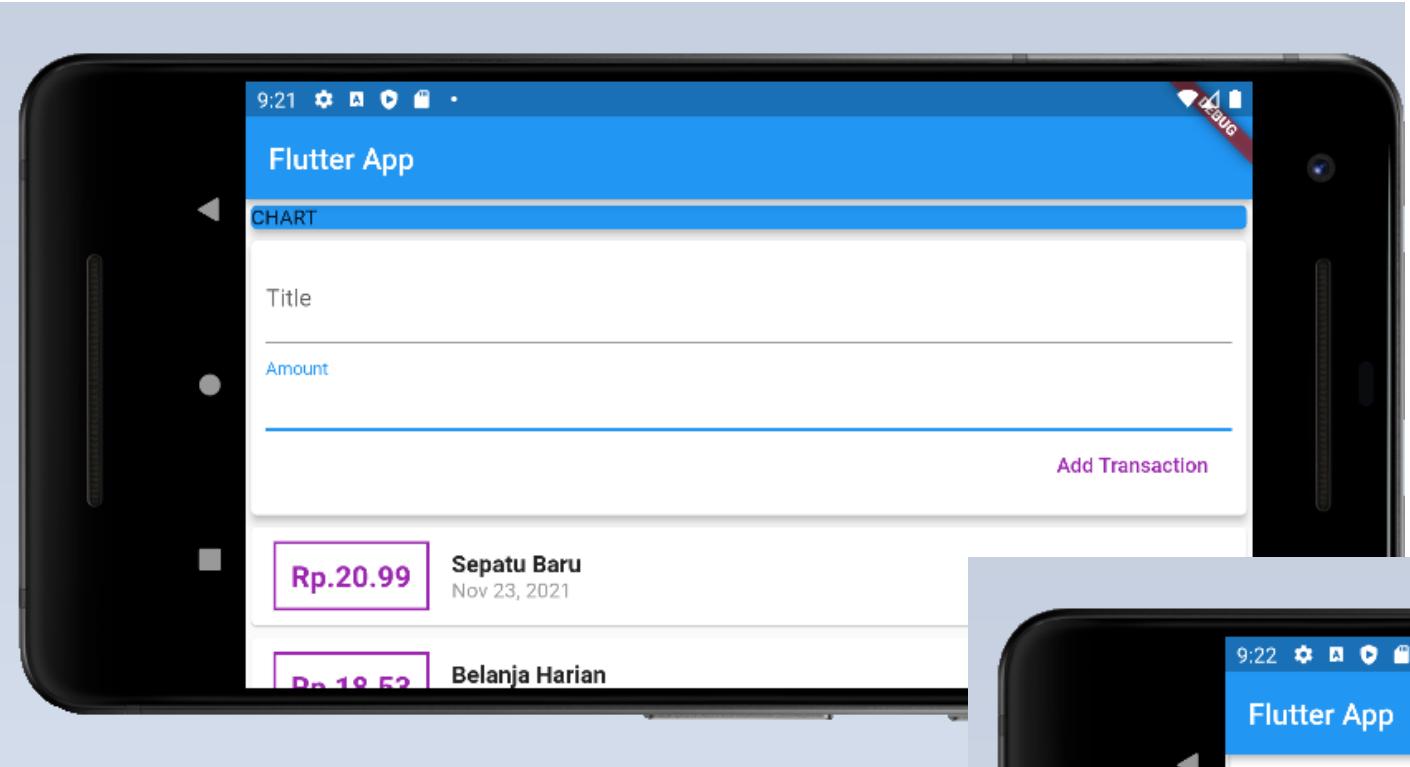
OUTLINE TIMELINE DEPENDENCIES

stable 0 △ 0 ① 20 Debug my code Ln 39, Col 1 (448 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

```
Widget build(BuildContext context) {  
    return Scaffold(  
        appBar: AppBar(  
            title: Text('Flutter App'),  
        ), // AppBar  
        body: SingleChildScrollView(  
            child: Column(  
                mainAxisAlignment: MainAxisAlignment.spaceEvenly,  
                children: <Widget>[  
                    Card(  
                        color: Colors.blue,  
                        child: Container(  
                            width: double.infinity,  
                            child: Text('CHART'),  
                        ), // Container  
                        elevation: 5,  
                    ), // Card  
                    UserTransaction(),  
                ], // <Widget>[]  
            ), // Column  
        ), // SingleChildScrollView  
    ); // Scaffold
```

main.dart





# **WORKING WITH LISTVIEWS**

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart transaction\_list.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > transaction\_list.dart > TransactionList > build

main.dart lib new\_transaction.dart lib\... user\_transactions.dart lib\... transaction\_list.dart lib\... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE TIMELINE DEPENDENCIES

final List<Transaction> transactions;

TransactionList(this.transactions);

@override

Widget build(BuildContext context) {

return Container(

height: 300,

child: ListView(

children: transactions.map((tx) {

return Card(

child: Row(

children: <Widget>[

Container(

margin: EdgeInsets.symmetric(

vertical: 10,

horizontal: 15,

), // EdgeInsets.symmetric

decoration: BoxDecoration(

border: Border.all(

color: Colors.purple,

width: 2,

// Border.all

wIDGETS\transaction\_list.dart

Ln 16, Col 1 (24 selected) Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# ListView

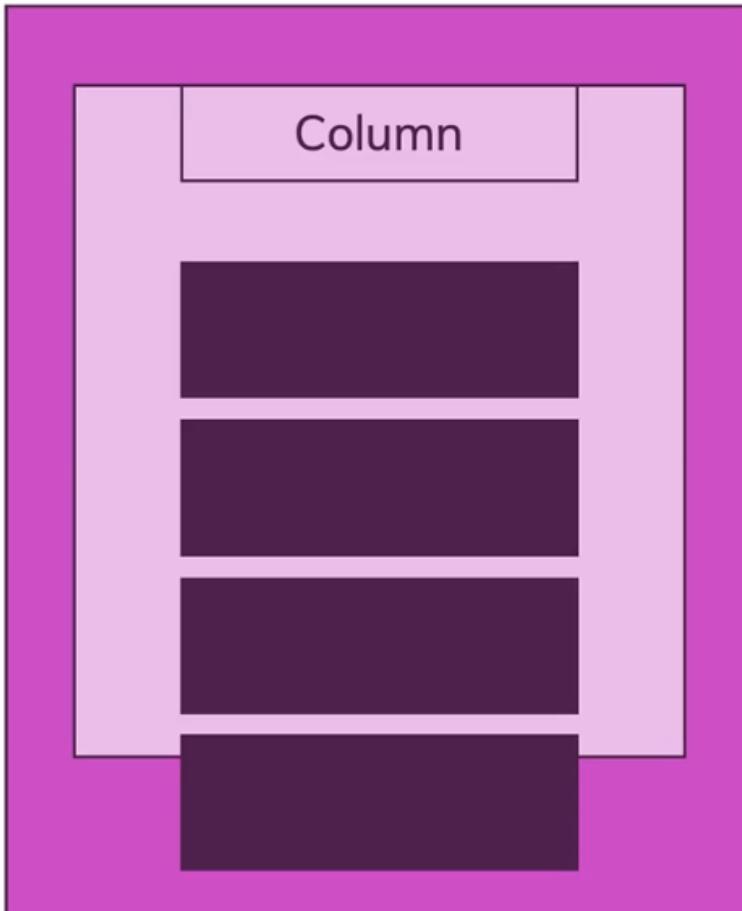
ListView(children: [])

ListView.builder()

# ListView

ListView(children: [])

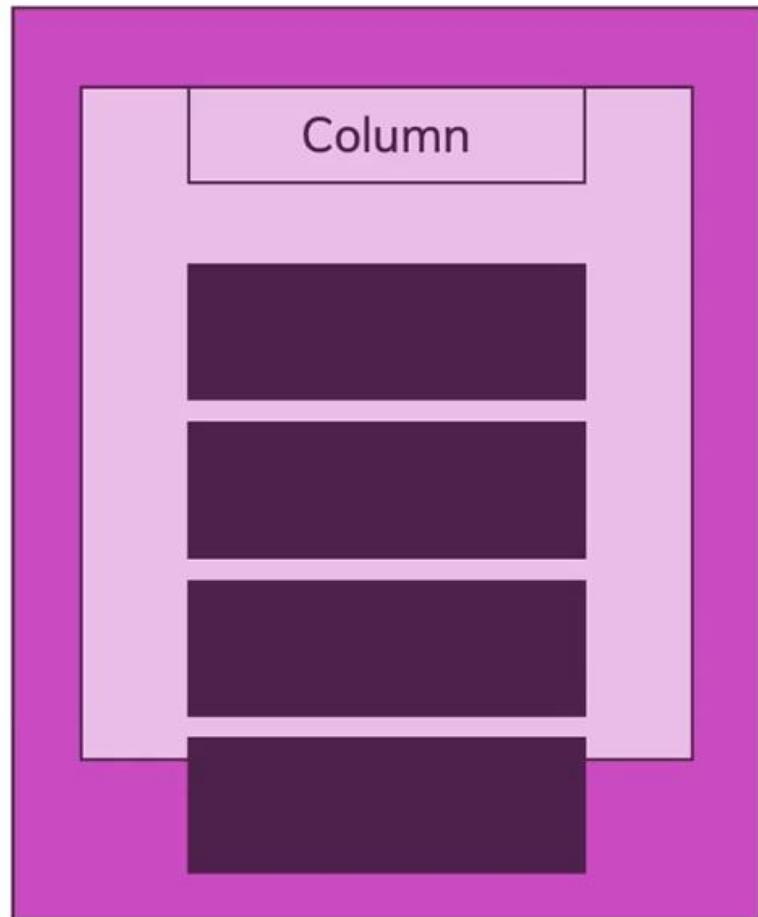
ListView.builder()



SingleChildScrollView()

# ListView

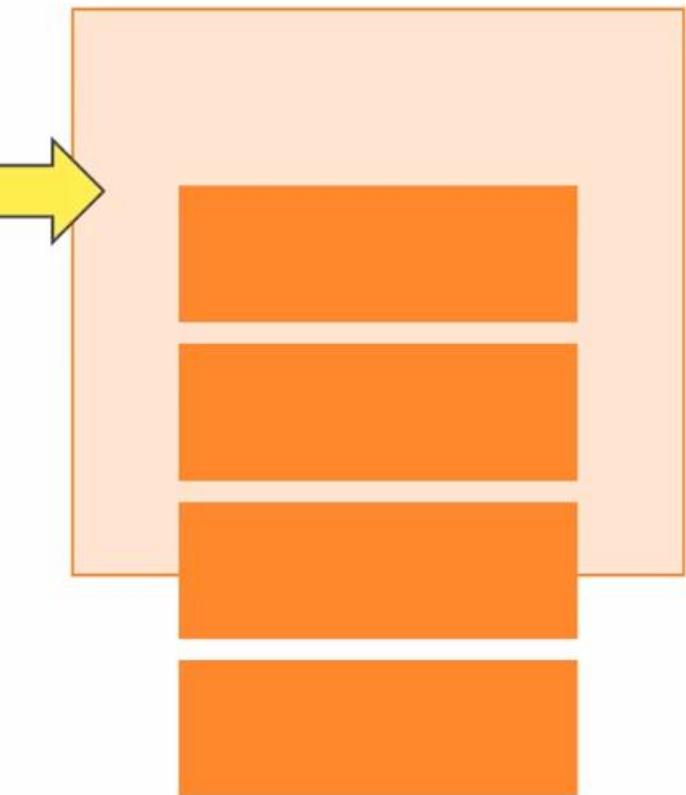
ListView(children: [])



ListView.builder()

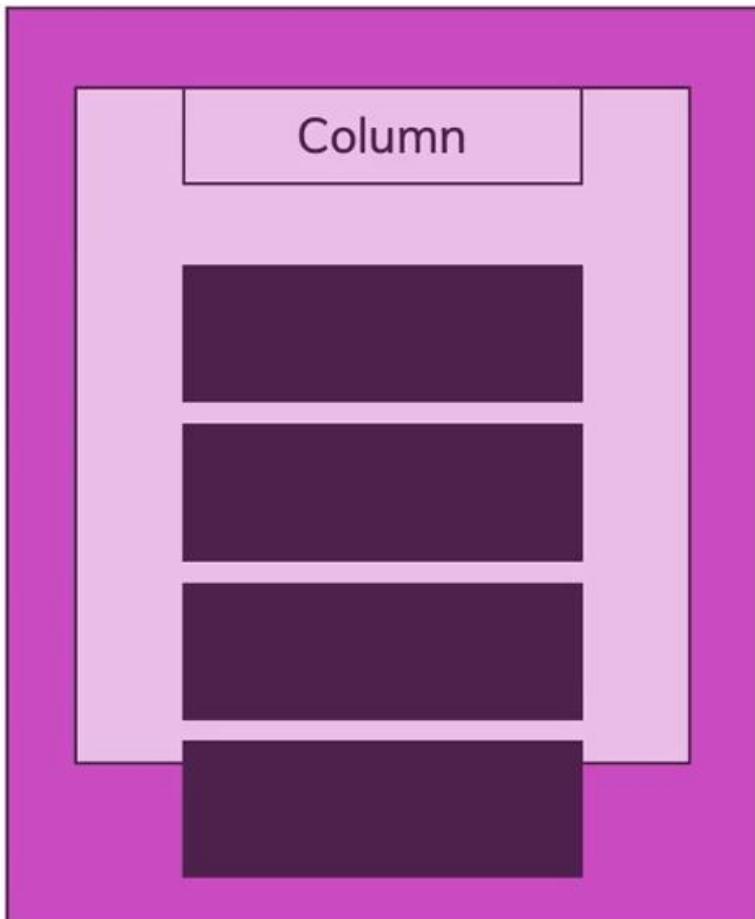
Only load  
what's visible!

SingleChildScrollView()



# ListView

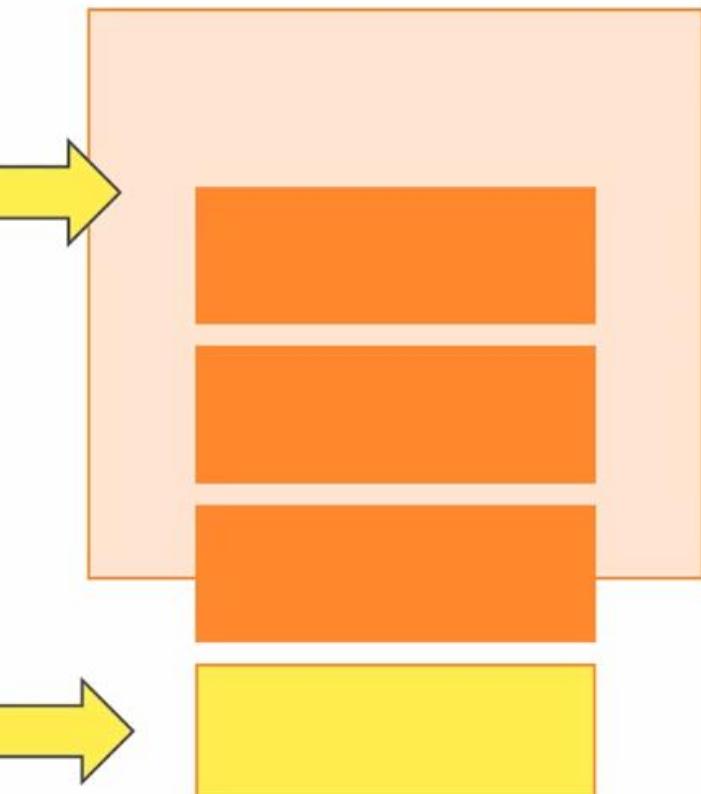
ListView(children: [])



ListView.builder()

Only load what's visible!

SingleChildScrollView()



File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart transaction\_list.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > transaction\_list.dart > TransactionList > build

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE TIMELINE DEPENDENCIES

stable 0 △ 0 ① 20 Debug my code Ln 17, Col 1 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

```
11 @override
12 Widget build(BuildContext context) {
13   return Container(
14     height: 300,
15     // child: Column(
16     child: ListView.builder(
17       // children: transactions.map((tx) {
18       itemBuilder: (ctx, index) {
19         return Card(
20           child: Row(
21             children: <Widget>[
22               Container(
23                 margin: EdgeInsets.symmetric(
24                   vertical: 10,
25                   horizontal: 15,
26                 ), // EdgeInsets.symmetric
27                 decoration: BoxDecoration(
28                   border: Border.all(
29                     color: Colors.purple,
30                     width: 2,
31                   ), // Border.all
32                 ), // BoxDecoration
33               ],
34             ),
35           ),
36         );
37       }
38     );
39   )
40 }
```

wIDGETS\transaction\_list.dart

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > transaction\_list.dart > TransactionList > build

main.dart lib  
new\_transaction.dart lib  
user\_transactions.dart lib  
transaction\_list.dart lib  
transaction.dart lib\models  
widget\_test.dart test  
pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE  
TIMELINE  
DEPENDENCIES

31 ), // Border.all  
32 ), // BoxDecoration  
33 padding: EdgeInsets.all(10),  
34 child: Text(  
35 // 'Rp.\${tx.amount}',  
36 'Rp.\${transactions[index].amount}',  
37 style: TextStyle(  
38 fontWeight: FontWeight.bold,  
39 fontSize: 20,  
40 color: Colors.purple,  
41 ), // TextStyle  
42 ), // Text  
43 ), // Container  
44 Column(  
45 mainAxisAlignment: CrossAxisAlignment.start,  
46 children: <Widget>[  
47 Text(  
48 // tx.title,  
49 transactions[index].title,  
50 style: TextStyle(  
51 fontSize: 16,  
52 fontWeight: FontWeight.bold,

widgets\transaction\_list.dart

Ln 17, Col 1 Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS main.dart lib new\_transaction.dart lib\... user\_transactions.dart lib\... transaction\_list.dart lib\... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE TIMELINE DEPENDENCIES

transaction\_list.dart -> TransactionList -> build

```
fontSize: 16,  
fontWeight: FontWeight.bold,  
, // TextStyle  
, // Text  
Text(  
// DateFormat.yMMMd().format(tx.date),  
DateFormat.yMMMd().format(transactions[index].date),  
style: TextStyle(  
color: Colors.grey,  
, // TextStyle  
, // Text  
], // <Widget>[]  
, // Column  
], // <Widget>[]  
, // Row  
); // Card  

```

# **FURTHER INPUT AND OUTPUT STYLING AND CONFIGURATION**

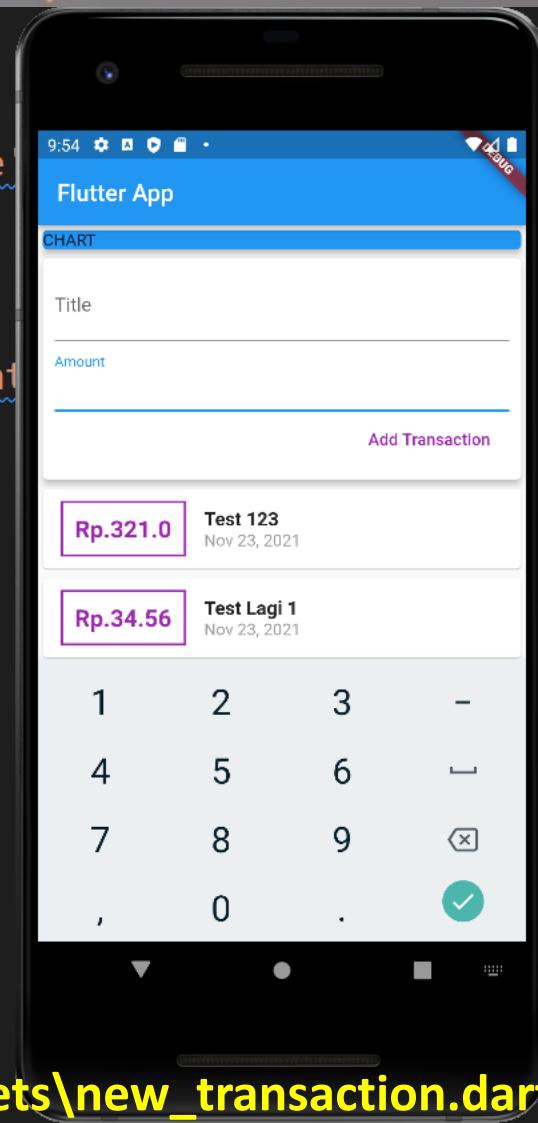
File



On iOS, this might not allow for decimal places. Use `TextInputType.numberWithOptions(decimal: true)` instead then.

```
new_transaction.dart lib\\...  
user_transactions.dart li...  
transaction_list.dart lib\\...  
transaction.dart lib\\models  
widget_test.dart test  
pubspec.yaml  
  
PERSONAL_EXPENSES_04  
.dart_tool  
.idea  
android  
build  
ios  
lib  
models  
transaction.dart  
widgets  
new_transaction.dart  
transaction_list.dart  
user_transactions.dart  
main.dart  
test  
web  
.gitignore  
.metadata  
.packages  
analysis_options.yaml  
personal_expenses_04.iml  
pubspec.lock  
pubspec.yaml  
  
OUTLINE  
TIMELINE  
DEPENDENCIES
```

CROSSAXISALIGNMENT. CROSSAXISALIGNMENT. end,  
children: <Widget>[  
    TextField(  
        decoration: InputDecoration(labelText: 'Title',  
                          controller: titleController),  
        ), // TextField  
    TextField(  
        decoration: InputDecoration(labelText: 'Amount',  
                          controller: amountController),  
        keyboardType: TextInputType.number,  
        ), // TextField  
    FlatButton(  
        child: Text('Add Transaction'),  
        textColor: Colors.purple,  
        onPressed: () {  
            addTx(  
                titleController.text,  
                double.parse(amountController.text),  
            );  
        },  
        ), // FlatButton  
    ], // <Widget>[]



Flutter App  
CHART  
Title  
Amount  
Add Transaction  
Rp.321.0 Test 123 Nov 23, 2021  
Rp.34.56 Test Lagi 1 Nov 23, 2021  
1 2 3 -  
4 5 6 -  
7 8 9   
,

widgets\\new\_transaction.dart

File Edit Selection View Go Run Terminal Help

new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans ⏪ ⏴ ⏵ ⏶ ⏷ ⏸ ⏹ ⏺ transaction.dart widget\_test.dart pubspec.yaml ⏴ ⏵ ⏹ ⏺

OPEN EDITORS lib > widgets > new\_transaction.dart > NewTransaction

main.dart lib  
new\_transaction.dart lib  
user\_transactions.dart lib  
transaction\_list.dart lib  
transaction.dart lib\models  
widget\_test.dart test  
pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE ⏴ ⏵ ⏹ ⏺

TIMELINE ⏴ ⏵ ⏹ ⏺

DEPENDENCIES ⏴ ⏵ ⏹ ⏺

new\_transaction.dart

```
8
9     NewTransaction(this.addTx);
10
11    void submitData() {
12        final enteredTitle = titleController.text;
13        final enteredAmount = double.parse(amountController.text);
14
15        if (enteredTitle.isEmpty || enteredAmount <= 0) {
16            return;
17        }
18
19        addTx(
20            enteredTitle,
21            enteredAmount,
22        );
23    }
24
25    @override
26    Widget build(BuildContext context) {
27        return Card(
28            elevation: 5,
29            child: Container(
```

Ln 24, Col 1 (284 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier ⏴ ⏵ ⏹ ⏺

wIDGETS\new\_transaction.dart

File Edit Selection View Go Run Terminal Help new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans build transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > new\_transaction.dart > NewTransaction > build

main.dart lib  
new\_transaction.dart lib  
user\_transactions.dart lib  
transaction\_list.dart lib  
transaction.dart lib\models  
widget\_test.dart test  
pubspec.yaml

PERSONAL\_EXP... .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

29 child: Container(  
30 padding: EdgeInsets.all(10),  
31 child: Column(  
32 crossAxisAlignment: CrossAxisAlignment.end,  
33 children: <Widget>[  
34 TextField(  
35 decoration: InputDecoration(labelText: 'Title'),  
36 controller: titleController,  
37 onSubmitted: () => submitData(),  
38 ), // TextField  
39 TextField(  
40 decoration: InputDecoration(labelText: 'Amount'),  
41 controller: amountController,  
42 keyboardType: TextInputType.number,  
43 onSubmitted: () => submitData(),  
44 ), // TextField  
45 FlatButton(  
46 child: Text('Add Transaction'),  
47 textColor: Colors.purple,  
48 onPressed: submitData,  
49 ), // FlatButton  
50 ], // <Widget>[]

widgets\new\_transaction.dart

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction\_list.dart transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS main.dart lib new\_transaction.dart lib\... user\_transactions.dart lib\... transaction\_list.dart lib\... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

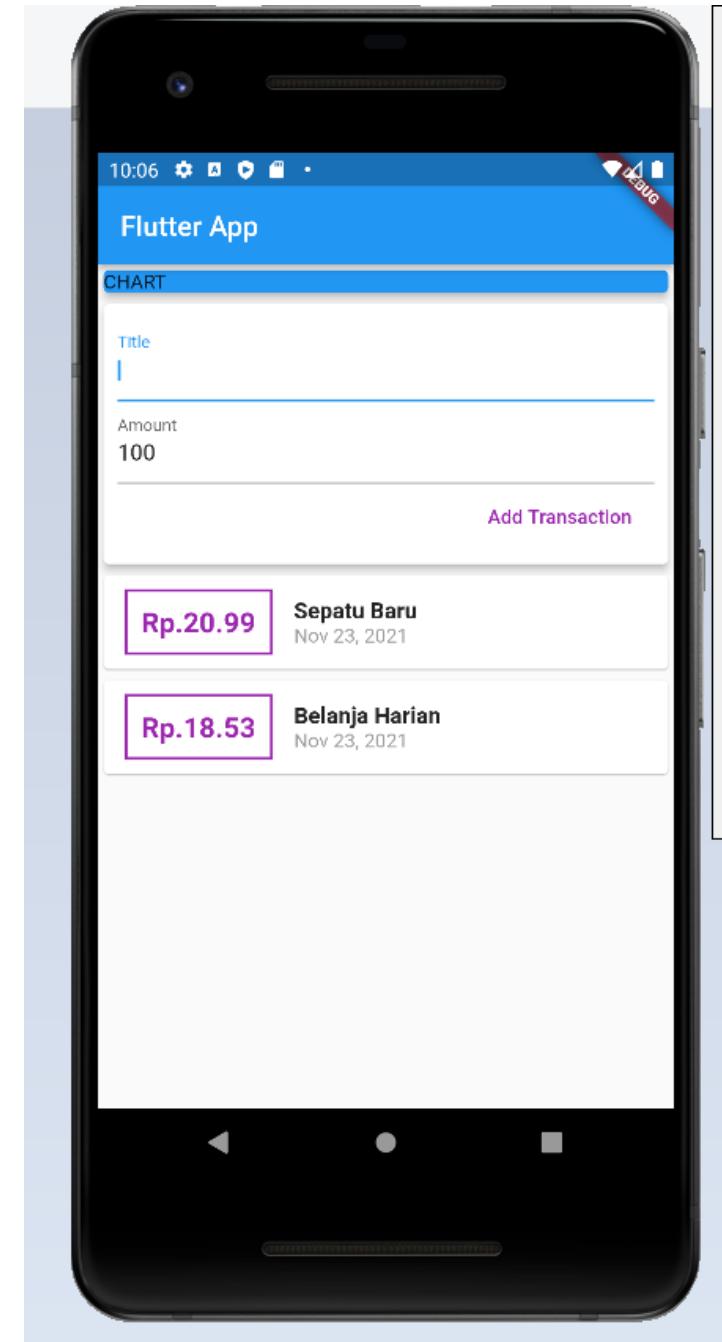
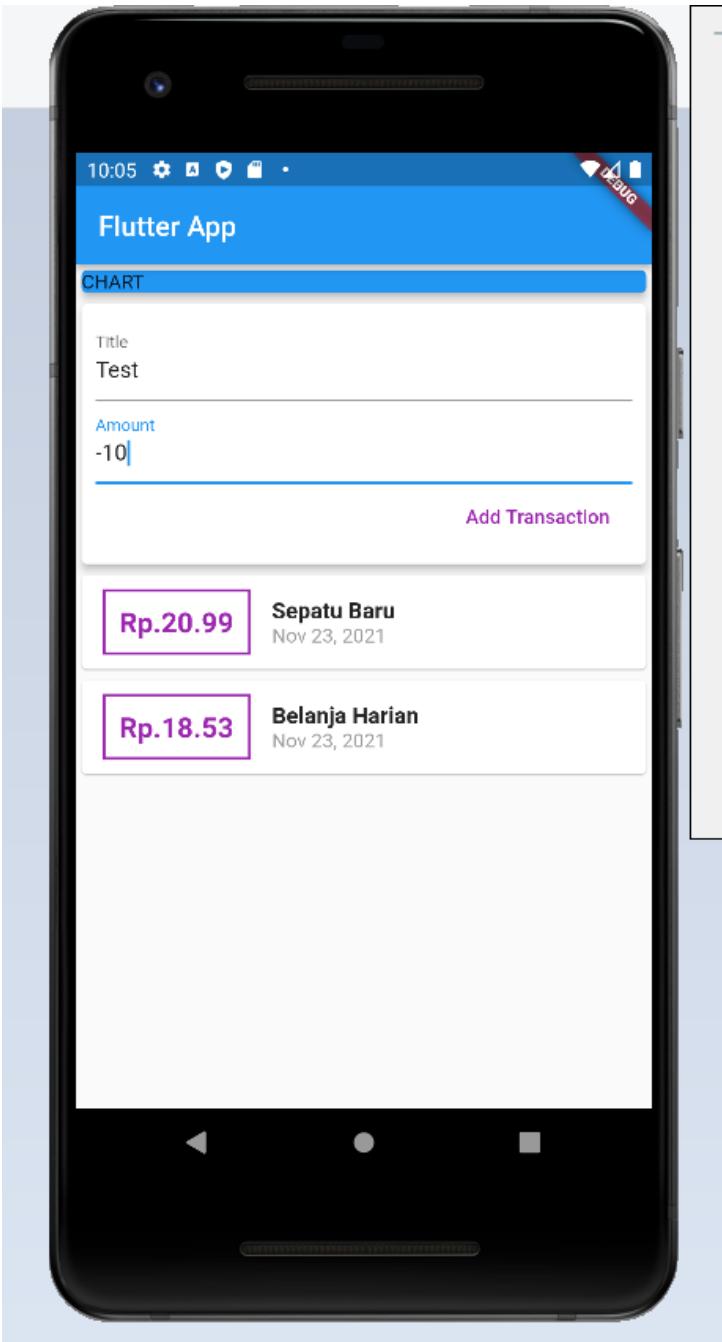
OUTLINE TIMELINE DEPENDENCIES

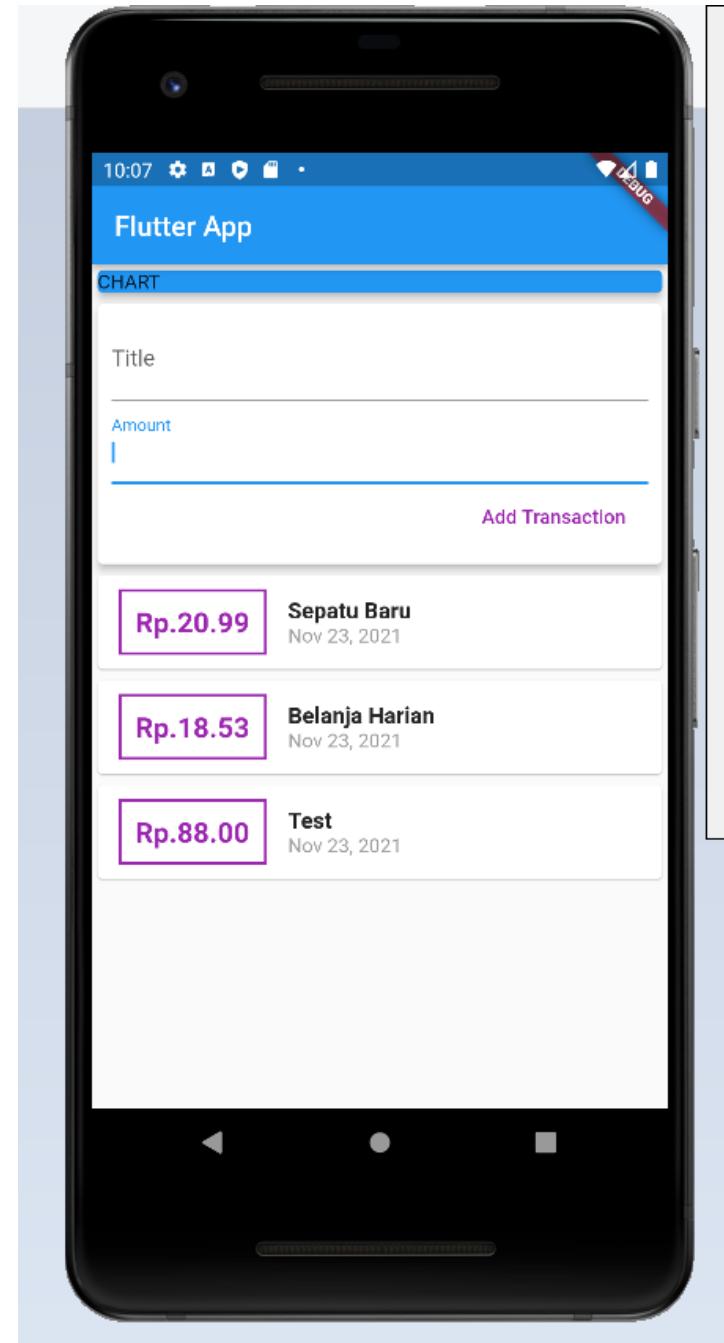
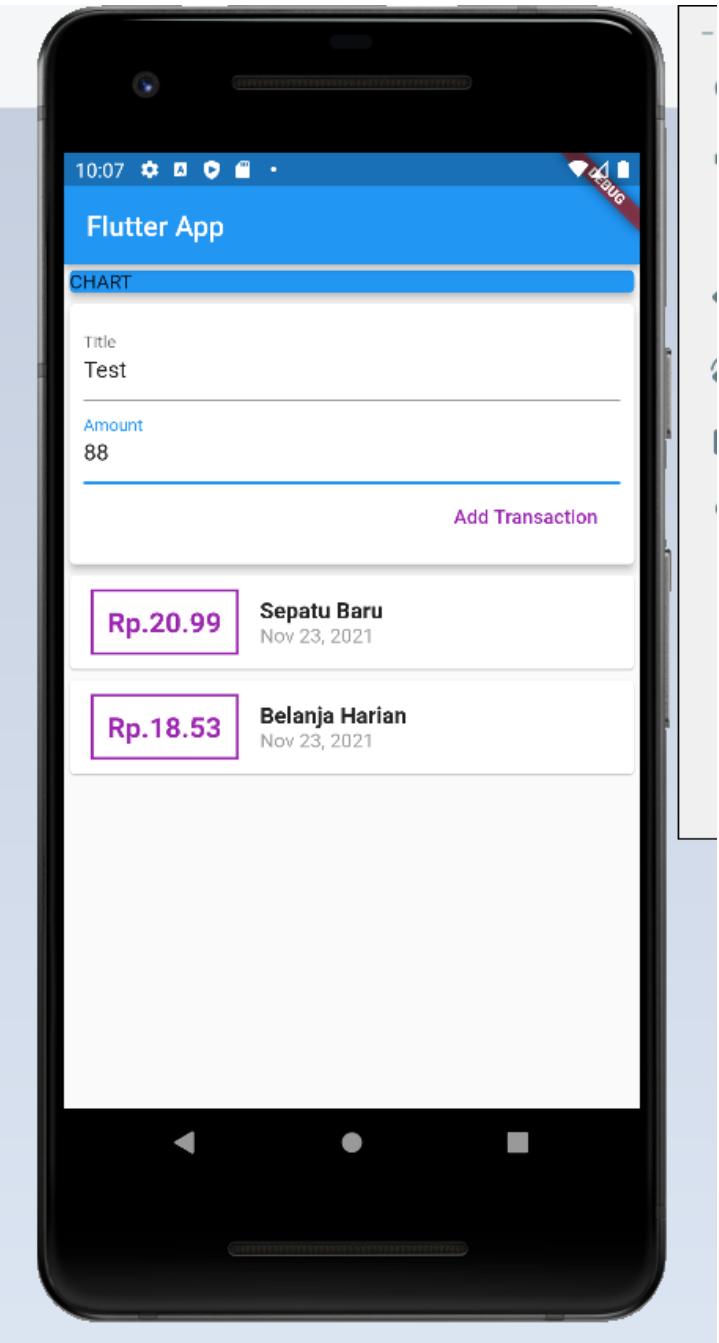
transaction\_list.dart > TransactionList > build

```
decoration: BoxDecoration(  
    border: Border.all(  
        color: Colors.purple,  
        width: 2,  
    ), // Border.all  
, // BoxDecoration  
padding: EdgeInsets.all(10),  
child: Text(  
    // 'Rp.${tx.amount}',  
    'Rp.${transactions[index].amount.toStringAsFixed(2)}',  
    style: TextStyle(  
        fontWeight: FontWeight.bold,  
        fontSize: 20,  
        color: Colors.purple,  
    ), // TextStyle  
, // Text  
, // Container  
Column(  
    mainAxisAlignment: MainAxisAlignment.start,  
    children: <Widget>[  
        Text(  
            // tx.title,  
            transactions[index].title,
```

Ln 37, Col 1 (76 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

wIDGETS\transaction\_list.dart





# **ADDING APPBAR BUTTONS AND FLOATING ACTION BUTTONS**

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X new\_transaction.dart user\_trans build transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart > MyHomePage > build

main.dart lib new\_transaction.dart lib... user\_transactions.dart lib... transaction\_list.dart lib... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE TIMELINE DEPENDENCIES

stable 0 △ 0 ① 22 Debug my code Ln 29, Col 1 (217 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

```
15
16 class MyHomePage extends StatelessWidget {
17   @override
18   Widget build(BuildContext context) {
19     return Scaffold(
20       appBar: AppBar(
21         title: Text('Flutter App'),
22         actions: <Widget>[
23           IconButton(
24             icon: Icon(Icons.add),
25             onPressed: () => {},
26           ), // IconButton
27         ], // <Widget>[]
28       ), // AppBar
29       body: SingleChildScrollView(
30         child: Column(
31           crossAxisAlignment: CrossAxisAlignment.stretch,
32           children: <Widget>[
33             Card(
34               color: Colors.blue,
35               child: Container(
36                 width: double.infinity,
```

main.dart

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X new\_transaction.dart user\_trans lib > main.dart > MyHomePage > build transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS

main.dart lib new\_transaction.dart lib... user\_transactions.dart lib... transaction\_list.dart lib... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - models
    - transaction.dart
  - widgets
    - new\_transaction.dart
    - transaction\_list.dart
    - user\_transactions.dart
  - main.dart
- test
- web
- .gitignore
- .metadata
- .packages
- analysis\_options.yaml
- personal\_expenses\_04.iml
- pubspec.lock
- pubspec.yaml

OUTLINE

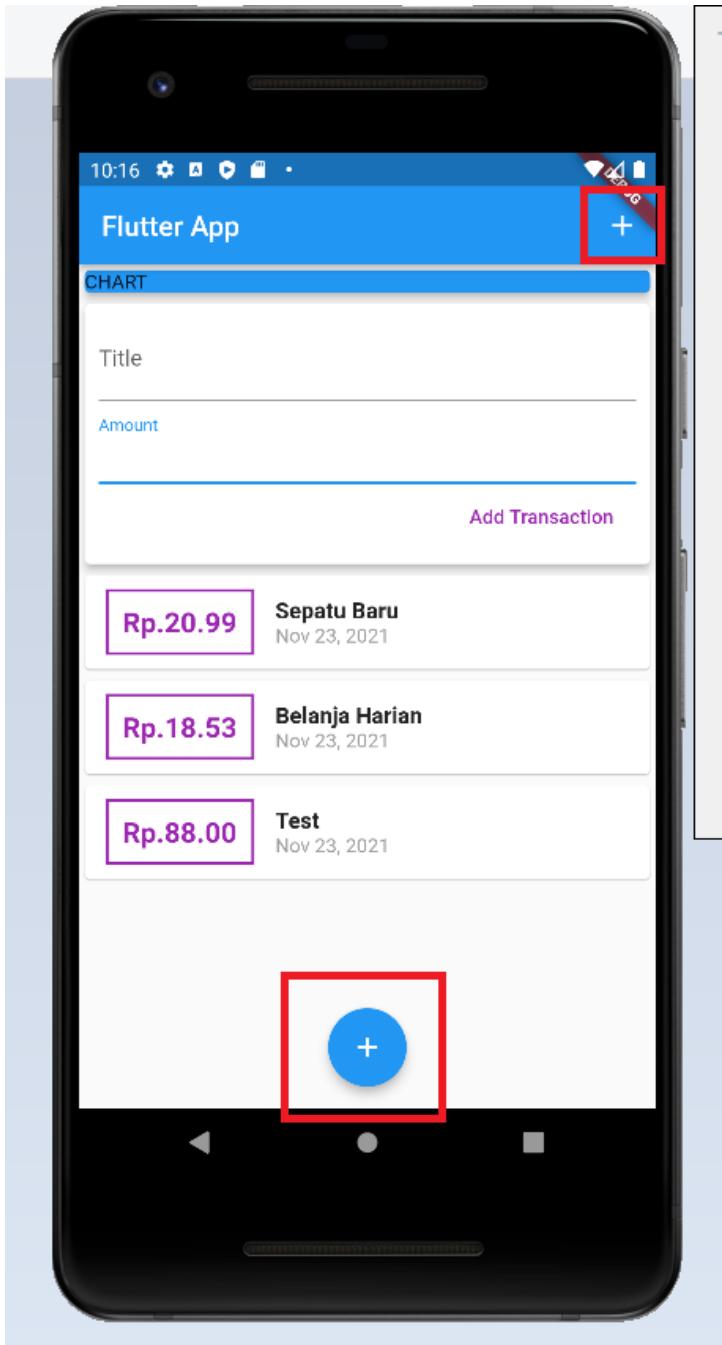
TIMELINE

DEPENDENCIES

main.dart

```
children: <Widget>[  
  Card(  
    color: Colors.blue,  
    child: Container(  
      width: double.infinity,  
      child: Text('CHART'),  
    ), // Container  
    elevation: 5,  
  ), // Card  
  UserTransaction(),  
, // <Widget>[]  
, // Column  
, // SingleChildScrollView  
floatingActionButtonLocation: FloatingActionButtonLocation.centerFloat,  
floatingActionButton: FloatingActionButton(  
  child: Icon(Icons.add),  
  onPressed: () => {},  
, // FloatingActionButton  
); // Scaffold  
}  
}  
}
```

Ln 50, Col 1 (203 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



# **SHOWING A MODAL BOTTOM SHEET**

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

lib > main.dart > MyApp

```
1 import 'package:flutter/material.dart';
2 import './widgets/user_transactions.dart';
3
4 void main() => runApp(MyApp());
5
6 class MyApp extends StatelessWidget {
7     @override
8     Widget build(BuildContext context) {
9         return MaterialApp(
10             title: 'Flutter App',
11             home: MyHomePage(),
12         ); // MaterialApp
13     }
14 }
15
16 class MyHomePage extends StatelessWidget {
17     @override
18     Widget build(BuildContext context) {
19         return Scaffold(
20             appBar: AppBar(
21                 title: Text('Flutter App'),
```

Run | Debug | Profile

Right click on Column and choose Refactor  
or:  
CTRL + SHIFT + R

main.dart

Ln 6, Col 29 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

The screenshot shows the Visual Studio Code interface with a Flutter application named "personal\_expenses\_04".

**File Explorer (Left):**

- OPEN EDITORS:** main.dart, new\_transaction.dart, user\_transactions.dart, transaction\_list.dart, transaction.dart, widget\_test.dart, pubspec.yaml.
- PERSONAL\_EXPENSES\_04:**
  - .dart\_tool
  - .idea
  - android
  - build
  - ios
  - lib:**
    - models (transaction.dart)
    - widgets (new\_transaction.dart, transaction\_list.dart, user\_transactions.dart, main.dart)
  - test
  - web
  - .gitignore
  - .metadata
  - .packages
  - analysis\_options.yaml
  - personal\_expenses\_04.iml
  - pubspec.lock
  - pubspec.yaml
  - README.md
- OUTLINE**
- DEPENDENCIES**

**Editor Area (Center):**

File main.dart - personal\_expenses\_04 - Visual Studio Code

```
main.dart X new_transaction.dart user_transactions.dart transaction_list.dart transaction.dart widget_test.dart pubspec.yaml
```

lib > main.dart

```
1 import 'package:flutter/material.dart';
2
3 import './widgets/transaction_list.dart';
4 import './widgets/new_transaction.dart';
5 import './models/transaction.dart';
6
7 void main() => runApp(MyApp());
8
9 class MyApp extends StatelessWidget {
10   @override
11   Widget build(BuildContext context) {
12     return MaterialApp(
13       title: 'Flutter App',
14       home: MyHomePage(),
15     );
16   }
17 }
18
19 class MyHomePage extends StatefulWidget {
20   @override
21   _MyHomePageState createState() => _MyHomePageState();
22 }
```

**Status Bar (Bottom):**

Ln 6, Col 1 Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Chrome (web-javascript) Prettier

**Bottom Right:** main.dart

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X new\_transaction.dart user\_transactions.dart transaction\_list.dart transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart

main.dart lib new\_transaction.dart lib... user\_transactions.dart lib... transaction\_list.dart lib... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

OUTLINE 1 DEPENDENCIES

main.dart

```
23
24 class _MyHomePageState extends State<MyHomePage> {
25   final List<Transaction> _userTransactions = [
26     Transaction(
27       id: 't1',
28       title: 'Sepatu Baru',
29       amount: 20.99,
30       date: DateTime.now(),
31     ),
32     Transaction(
33       id: 't2',
34       title: 'Belanja Harian',
35       amount: 18.53,
36       date: DateTime.now(),
37     ),
38   ];
39
40   void _addNewTransaction(String txTitle, double txAmount) {
41     final newTx = Transaction(
42       title: txTitle,
43       amount: txAmount,
44       date: DateTime.now(),
```

Ln 6, Col 1 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Chrome (web-javascript) Prettier

EXPLORER ...

OPEN EDITORS

- main.dart lib
- new\_transaction.dart lib\...
- user\_transactions.dart lib\...
- transaction\_list.dart lib\...
- transaction.dart lib\models
- widget\_test.dart test
- pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - models
    - transaction.dart
  - widgets
    - new\_transaction.dart
    - transaction\_list.dart
    - user\_transactions.dart
  - main.dart
- test
- web
- .gitignore
- .metadata
- .packages
- analysis\_options.yaml
- personal\_expenses\_04.iml
- pubspec.lock
- pubspec.yaml

OUTLINE

DEPENDENCIES

lib > main.dart

```
final newTx = Transaction(  
    title: txTitle,  
    amount: txAmount,  
    date: DateTime.now(),  
    id: DateTime.now().toString(),  
);  
  
setState(() {  
    _userTransactions.add(newTx);  
});  
  
void _startAddNewTransaction(BuildContext ctx) {  
    showModalBottomSheet(  
        context: ctx,  
        builder: (_) {  
            return GestureDetector(  
                onTap: () {},  
                child: NewTransaction(_addNewTransaction),  
                behavior: HitTestBehavior.opaque,  
            );  
        },  
    );  
},
```

main.dart

The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Title Bar:** main.dart - personal\_expenses\_04 - Visual Studio Code.
- Explorer View (Left):**
  - OPEN EDITORS: main.dart lib, new\_transaction.dart, user\_transactions.dart, transaction\_list.dart, transaction.dart, widget\_test.dart, pubspec.yaml.
  - PERSONAL\_EXPENSES\_04: .dart\_tool, .idea, android, build, ios, lib (models: transaction.dart), widgets (new\_transaction.dart, transaction\_list.dart, user\_transactions.dart), main.dart, test, web, .gitignore, .metadata, .packages, analysis\_options.yaml, personal\_expenses\_04.iml, pubspec.lock, pubspec.yaml, README.md.
  - OUTLINE and DEPENDENCIES sections are also present.
- Editor Area (Center):** The main.dart file is open, showing Dart code for a Flutter application. The code includes imports like 'import 'package:flutter/material.dart';' and 'import 'package:provider/provider.dart';'. It defines a StatelessWidget named 'MyApp' with a build method that returns a Scaffold. The Scaffold has an AppBar with a title and an IconButton with an add icon. The body is a SingleChildScrollView containing a Column with children.
- Status Bar (Bottom):** Shows file statistics (0 0 0 0 0 0 0 0), an analysis status (Analyzing...), and various tool icons (Ln 6, Col 1, Spaces: 2, UTF-8, CRLF, Dart, Dart DevTools, Flutter: 2.5.3, Chrome (web-javascript), Prettier).

EXPLORER ...

OPEN EDITORS

- main.dart lib
- new\_transaction.dart lib\...
- user\_transactions.dart lib\...
- transaction\_list.dart lib\...
- transaction.dart lib\models
- widget\_test.dart test
- pubspec.yaml

PERSONAL\_EXPENSES\_04

- .dart\_tool
- .idea
- android
- build
- ios
- lib
  - models
    - transaction.dart
  - widgets
    - new\_transaction.dart
    - transaction\_list.dart
    - user\_transactions.dart
  - main.dart
- test
- web
- .gitignore
- .metadata
- .packages
- analysis\_options.yaml
- personal\_expenses\_04.iml
- pubspec.lock
- pubspec.yaml

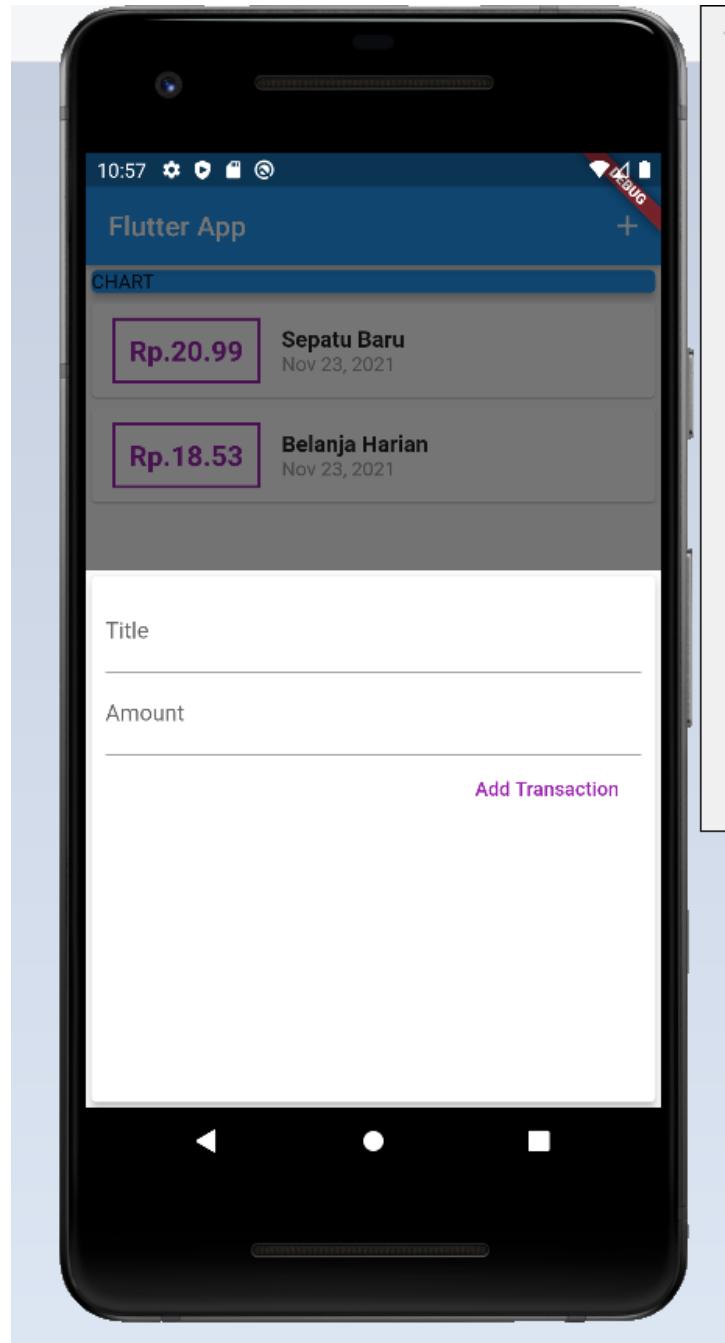
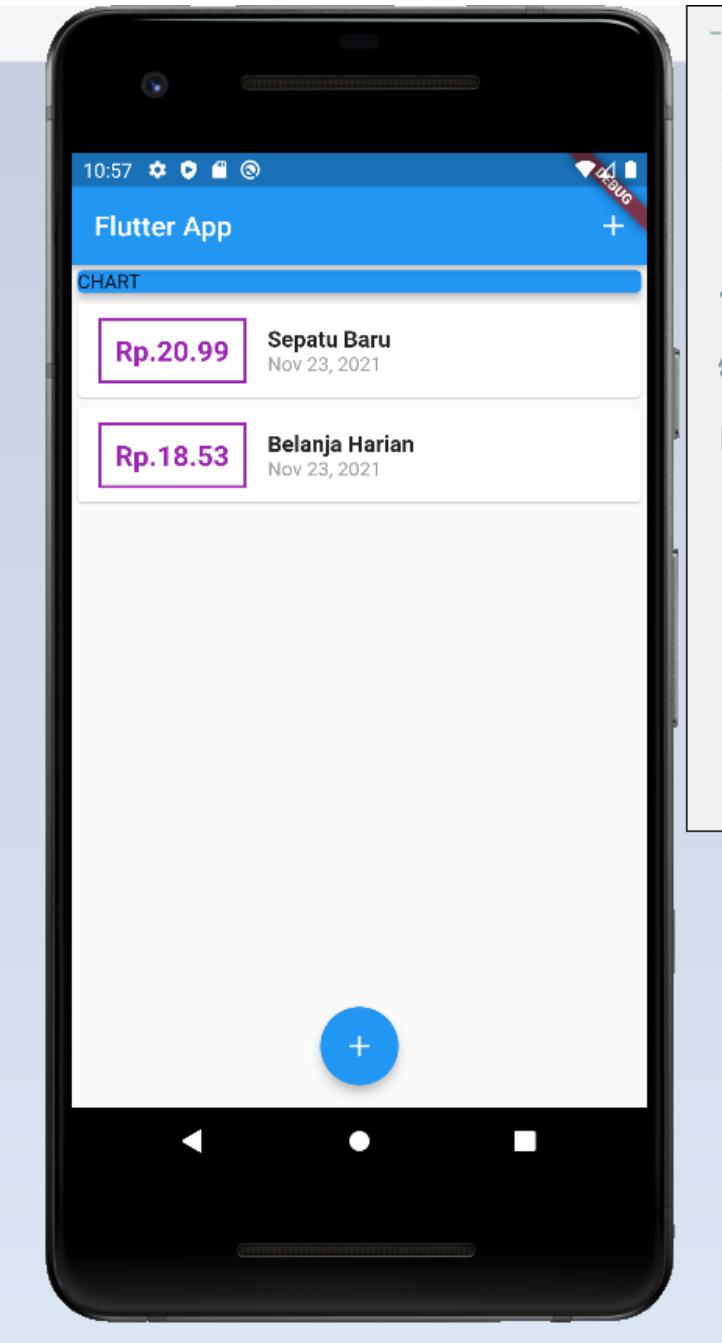
OUTLINE

DEPENDENCIES

lib > main.dart > ...

```
80   crossAxisAlignment: CrossAxisAlignment.stretch,
81   children: <Widget>[
82     Card(
83       color: Colors.blue,
84       child: Container(
85         width: double.infinity,
86         child: Text('CHART'),
87       ), // Container
88       elevation: 5,
89     ), // Card
90     TransactionList(_userTransactions),
91   ], // <Widget>[]
92   ), // Column
93   ), // SingleChildScrollView
94   floatingActionButtonLocation: FloatingActionButtonLocation.centerFloat,
95   floatingActionButton: FloatingActionButton(
96     child: Icon(Icons.add),
97     onPressed: () => _startAddNewTransaction(context),
98   ), // FloatingActionButton
99   ); // Scaffold
100 }
101 }
```

## main.dart



# **IMPROVING AND STYLING THE MODAL BOTTOM SHEET**

File Edit Selection View Go Run Terminal Help new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > new\_transaction.dart > NewTransaction

```
1 import 'package:flutter/material.dart';
2 import 'package:flutter/services.dart';
3
4 class NewTransaction extends StatelessWidget {
5   final Function addTx;
6   final titleController = TextEditingController();
7   final amountController = TextEditingController();
8
9   NewTransaction(this.addTx);
10
11 void submitData() {
12   final enteredTitle = titleController.text;
13   final enteredAmount = double.parse(amountController.text);
14
15   if (enteredTitle.isEmpty || enteredAmount <= 0) {
16     return;
17   }
18
19   addTx(
20     enteredTitle,
21     enteredAmount,
22   );
}
```

Convert to StatefulWidget

windows\new\_transaction.dart

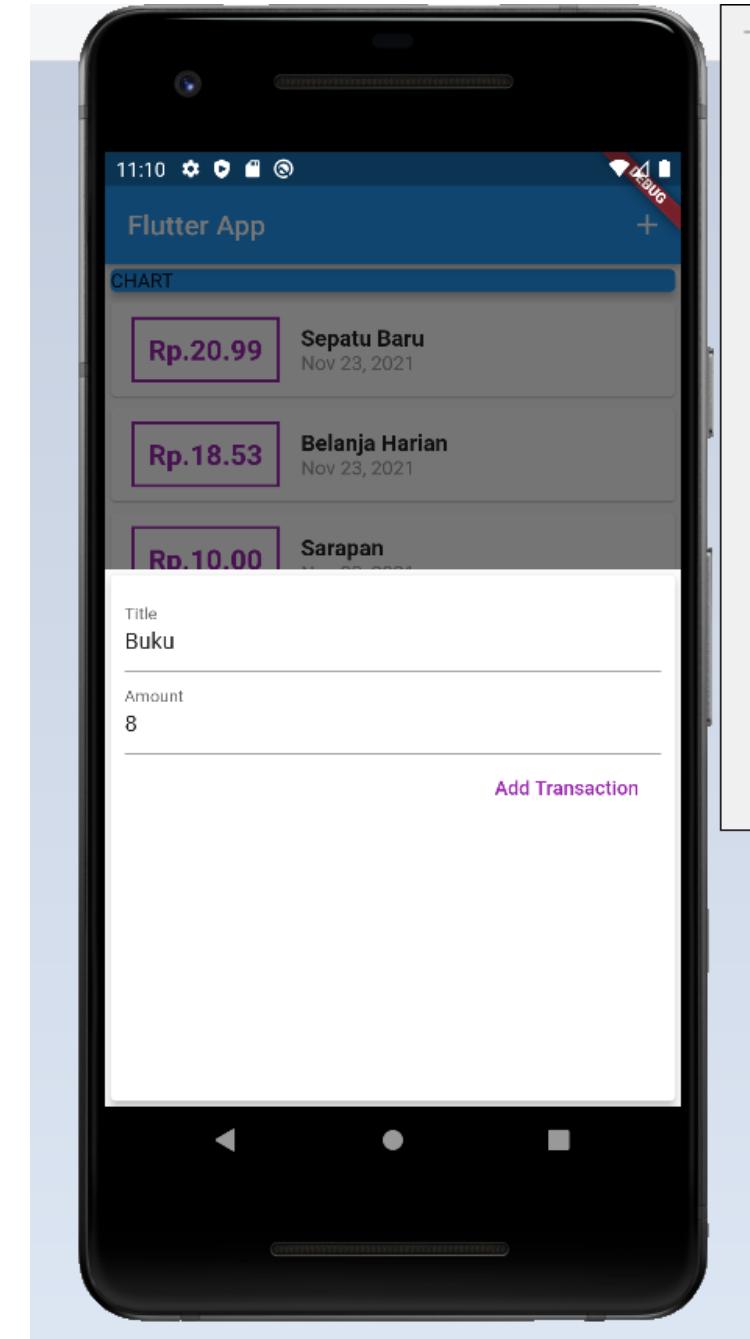
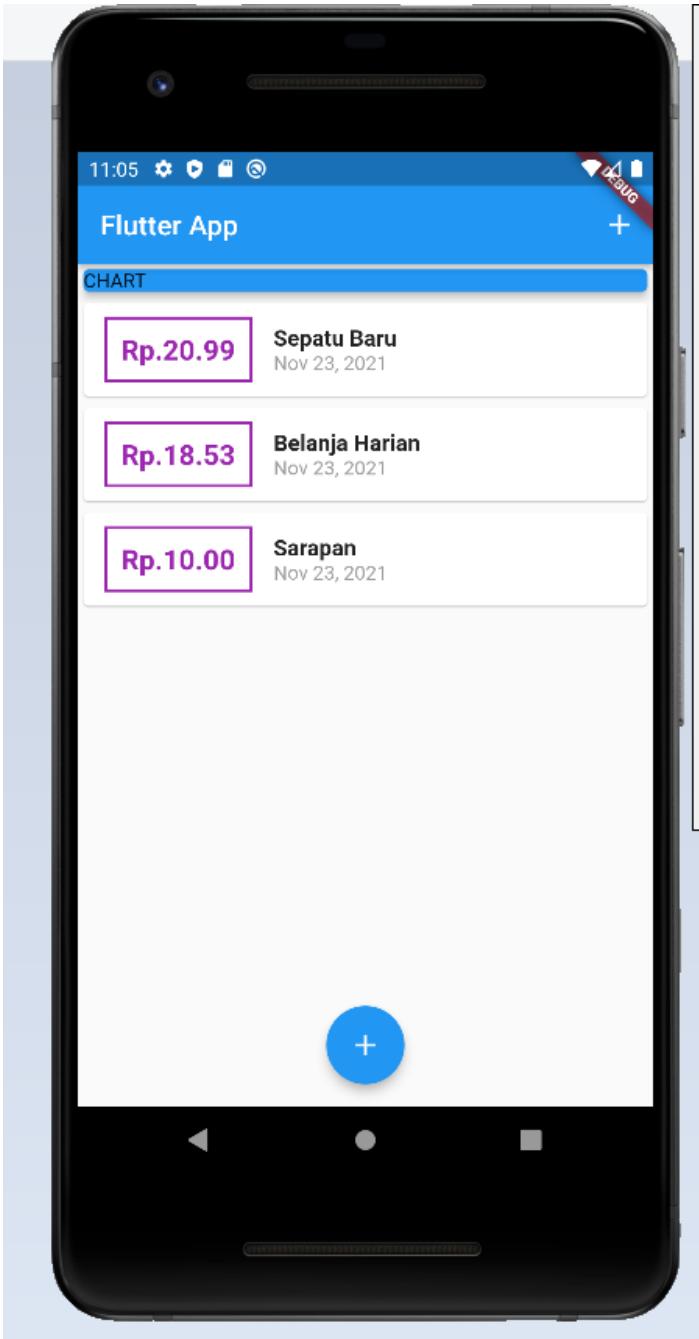
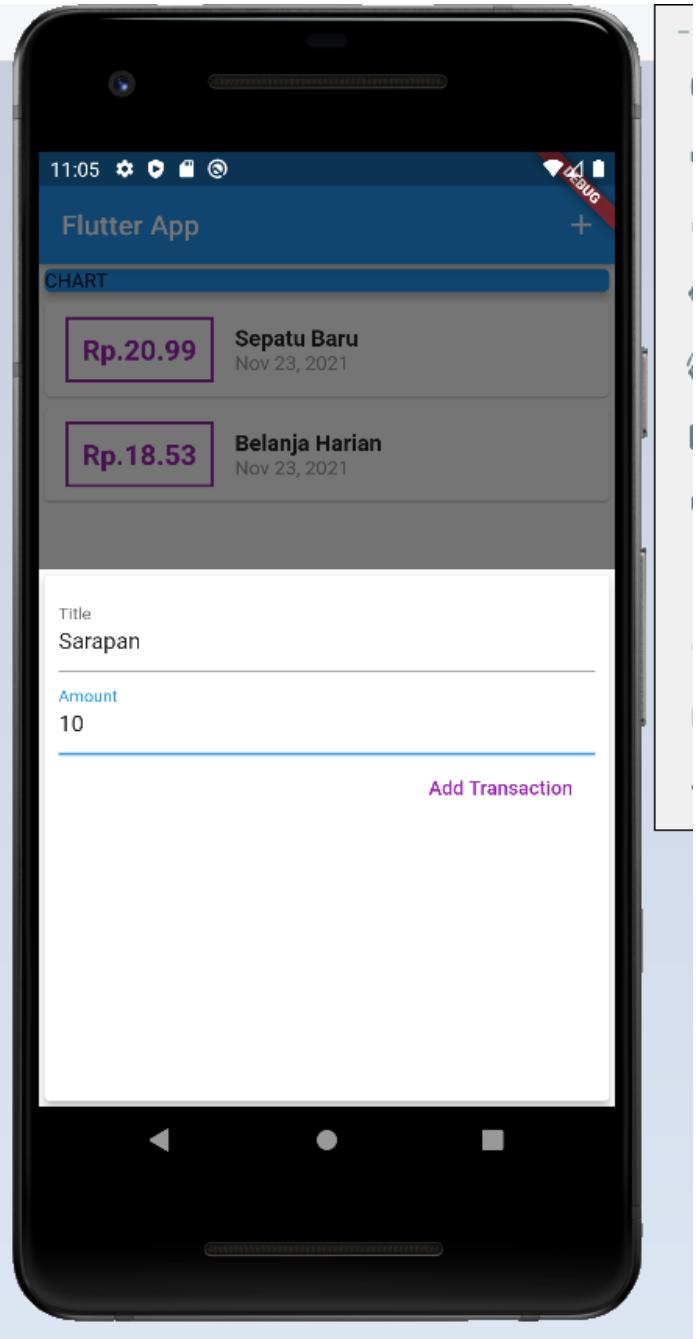
Ln 4, Col 41 Spaces: 2 UTF-8 Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

The screenshot shows the Visual Studio Code interface with the following details:

- File Bar:** File, Edit, Selection, View, Go, Run, Terminal, Help.
- Title Bar:** new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code
- Explorer View (Left):**
  - OPEN EDITORS: main.dart, new\_transaction.dart (highlighted), user\_trans, transaction.dart, widget\_test.dart, pubspec.yaml
  - PERSONAL\_EXPENSES\_04 folder:
    - .dart\_tool
    - .idea
    - android
    - build
    - ios
    - lib
      - models (transaction.dart)
    - widgets
      - new\_transaction.dart (highlighted)
      - transaction\_list.dart
      - user\_transactions.dart
      - main.dart
    - test
    - web
    - .gitignore
    - .metadata
    - .packages
    - analysis\_options.yaml
    - personal\_expenses\_04.iml
    - pubspec.lock
    - pubspec.yaml
  - README.md
  - OUTLINE
  - DEPENDENCIES
- Editor View (Center):** The code editor displays the `new_transaction.dart` file from the `widgets` directory. The cursor is at the end of line 22. The code is as follows:

```
1 import 'package:flutter/material.dart';
2 import 'package:flutter/services.dart';
3
4 class NewTransaction extends StatefulWidget {
5   final Function addTx;
6
7   NewTransaction(this.addTx);
8
9   @override
10  State<NewTransaction> createState() => _NewTransactionState();
11 }
12
13 class _NewTransactionState extends State<NewTransaction> {
14   final titleController = TextEditingController();
15
16   final amountController = TextEditingController();
17
18   void submitData() {
19     final enteredTitle = titleController.text;
20     final enteredAmount = double.parse(amountController.text);
21
22     if (enteredTitle.isEmpty || enteredAmount <= 0) { widgets\new_transaction.dart
```

- Bottom Status Bar:** Ln 4, Col 40, Spaces: 2, UTF-8, CRLF, Dart, Dart DevTools, Flutter: 2.5.3, Pixel 2 API 29 (android-x86 emulator), Prettier



File Edit Selection View Go Run Terminal Help new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart X user\_trans :: || ⌂ ⌄ ⌅ ⌆ ⌇ ⌈ ⌉ ⌊ ⌋ ⌍ rt transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > new\_transaction.dart > \_NewTransactionState > submitData

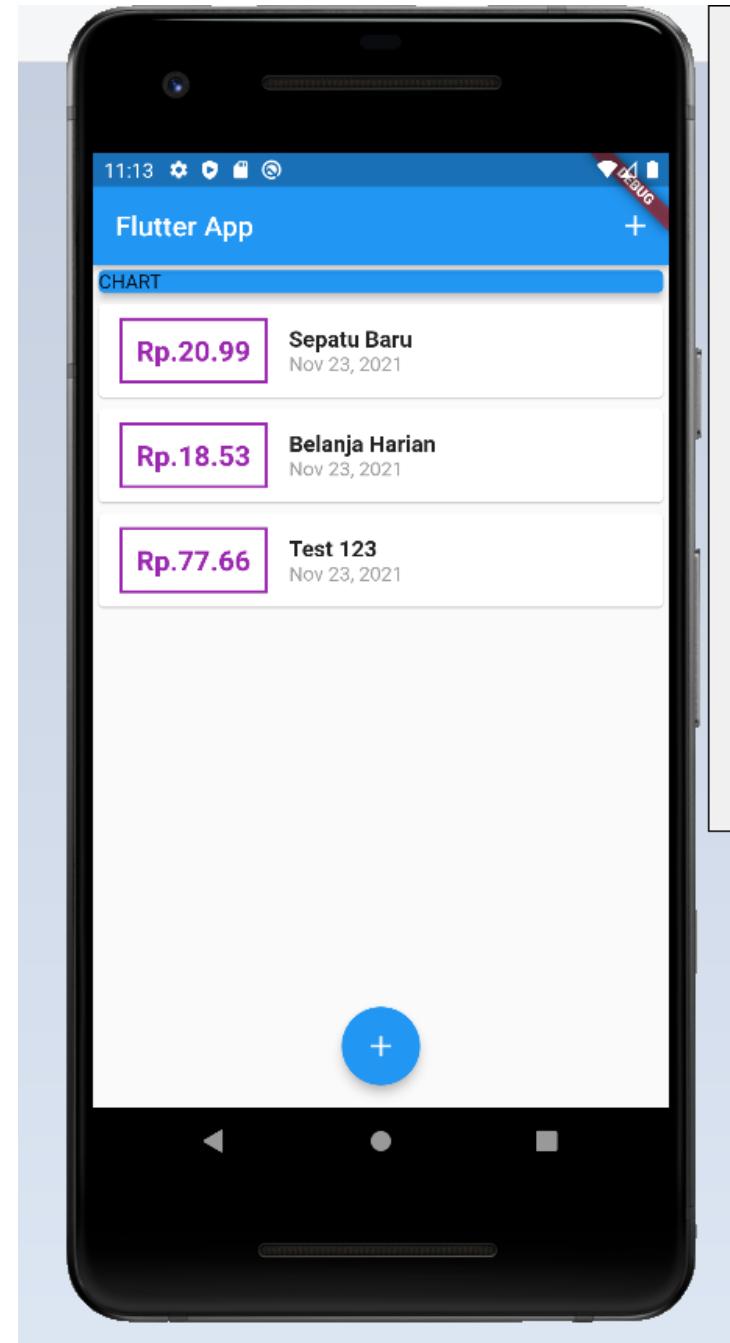
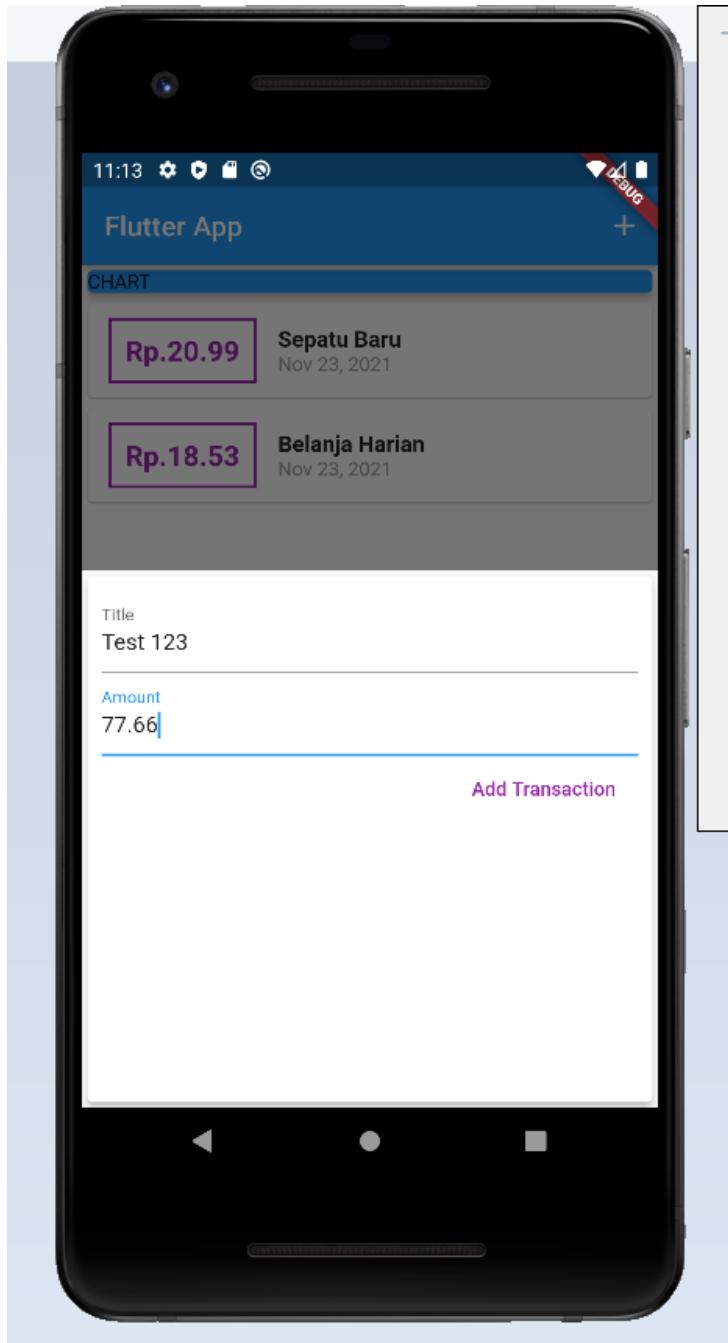
main.dart lib  
new\_transaction.dart lib  
user\_transactions.dart lib  
transaction\_list.dart lib  
transaction.dart lib\models  
widget\_test.dart test  
pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md OUTLINE DEPENDENCIES

17  
18 void submitData() {  
19 final enteredTitle = titleController.text;  
20 final enteredAmount = double.parse(amountController.text);  
21  
22 if (enteredTitle.isEmpty || enteredAmount <= 0) {  
23 return;  
24 }  
25  
26 widget.addTx(  
27 enteredTitle,  
28 enteredAmount,  
29 );  
30  
31 Navigator.of(context).pop();  
32 }  
33  
34 @override  
35 Widget build(BuildContext context) {  
36 return Card(  
37 elevation: 5,  
38 child: Container(

widgets\new\_transaction.dart

Ln 32, Col 1 (34 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



# **CONFIGURING AND USING THEMES**

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart > MyApp > build

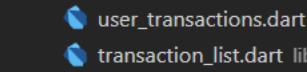
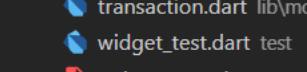
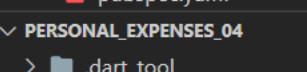
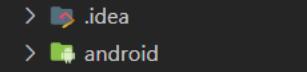
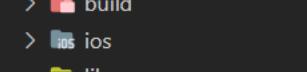
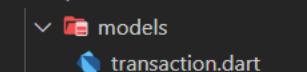
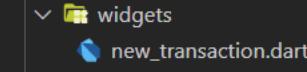
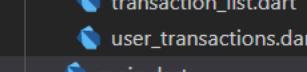
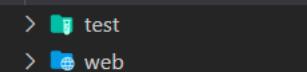
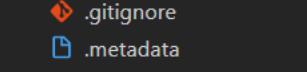
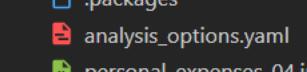
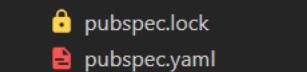
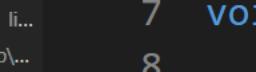
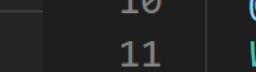
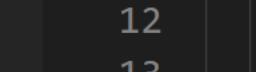
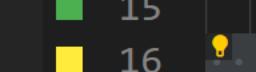
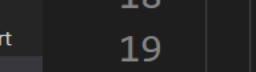
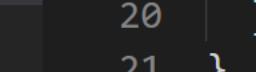
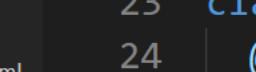
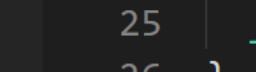
Run | Debug | Profile

```
7 void main() => runApp(MyApp());  
8  
9 class MyApp extends StatelessWidget {  
10    @override  
11    Widget build(BuildContext context) {  
12        return MaterialApp(  
13            title: 'Flutter App',  
14            theme: ThemeData(  
15                primarySwatch: Colors.green,  
16            ), // ThemeData  
17            home: MyHomePage(),  
18        ); // MaterialApp  
19    }  
20 }  
21  
22 class MyHomePage extends StatefulWidget {  
23    @override  
24    _MyHomePageState createState() => _MyHomePageState();  
25 }  
26  
27 class _MyHomePageState extends State<MyHomePage> {
```

11:22 ⚡ 🔍 +  
Flutter App  
CHART  
Rp.20.99 Sepatu Baru Nov 23, 2021  
Rp.18.53 Belanja Harian Nov 23, 2021  
Rp.77.66 Test 123 Nov 23, 2021  
+

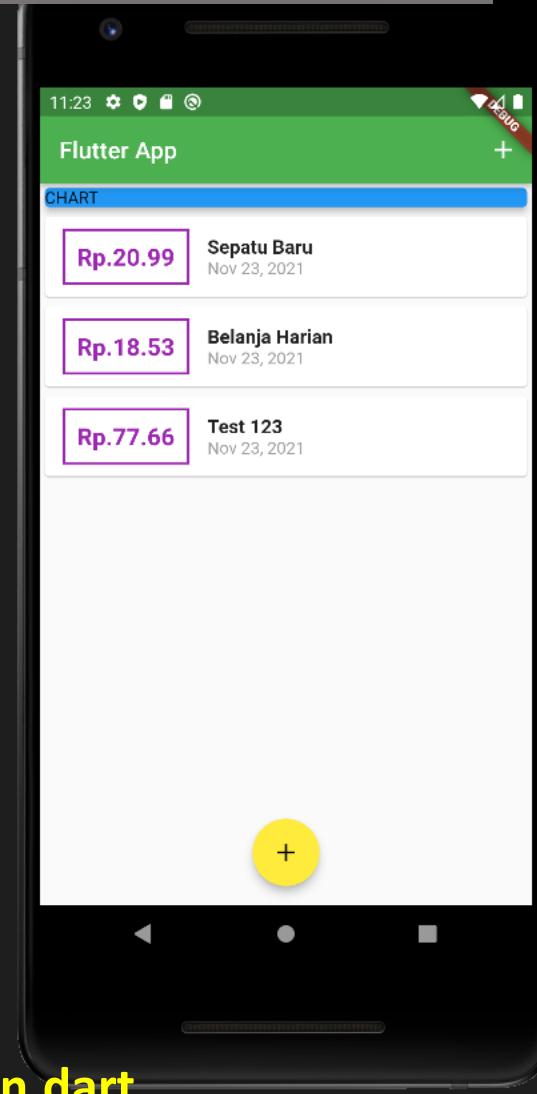
main.dart

Ln 16, Col 1 (38 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit S  Explorer Open Editor                                           

# Important: There is no accentSwatch, so you can only set the accentColor!

```
7 void main() => runApp(MyApp());  
8  
9 class MyApp extends StatelessWidget {  
10   @override  
11   Widget build(BuildContext context) {  
12     return MaterialApp(  
13       title: 'Flutter App',  
14       theme: ThemeData(  
15         primarySwatch: Colors.green,  
16         accentColor: Colors.yellow,  
17       ), // ThemeData  
18       home: MyHomePage(),  
19     ); // MaterialApp  
20   }  
21 }  
22  
23 class MyHomePage extends StatefulWidget {  
24   @override  
25   _MyHomePageState createState() => _MyHomePageState();  
26 }  
27
```



main.dart

Ln 17, Col 1 (37 selected) Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > transaction\_list.dart > TransactionList > build

main.dart lib new\_transaction.dart lib... user\_transactions.dart lib... transaction\_list.dart lib... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

OUTLINE DEPENDENCIES

17 // children: transactions.map((tx) {  
18 itemBuilder: (ctx, index) {  
19 return Card(  
20 child: Row(  
21 children: <Widget>[  
22 Container(  
23 margin: EdgeInsets.symmetric(  
24 vertical: 10,  
25 horizontal: 15,  
26 ), // EdgeInsets.symmetric  
27 decoration: BoxDecoration(  
28 border: Border.all(  
29 color: Theme.of(context).primaryColor,  
30 width: 2,  
31 ), // Border.all  
32 ), // BoxDecoration  
33 padding: EdgeInsets.all(10),  
34 child: Text(  
35 // 'Rp.\${tx.amount}',  
36 'Rp.\${transactions[index].amount.toStringA  
37 style: TextStyle(  
38 fontWeight: FontWeight.bold,

11:24 ⚡ 🌐 +  
Flutter App  
CHART  
Rp.20.99 Sepatu Baru Nov 23, 2021  
Rp.18.53 Belanja Harian Nov 23, 2021  
Rp.77.66 Test 123 Nov 23, 2021

+

wIDGETS\transaction\_list.dart

Ln 30, Col 1 (62 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_trans transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS main.dart lib new\_transaction.dart lib\... user\_transactions.dart lib\... transaction\_list.dart lib\... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android build ios lib models transaction.dart widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md OUTLINE DEPENDENCIES

lib > widgets > transaction\_list.dart > TransactionList > build

```
margin: EdgeInsets.symmetric( vertical: 10, horizontal: 15, ), // EdgeInsets.symmetric decoration: BoxDecoration( border: Border.all( color: Theme.of(context).primaryColor, width: 2, ), // Border.all ), // BoxDecoration padding: EdgeInsets.all(10), child: Text( // 'Rp.${tx.amount}', 'Rp.${transactions[index].amount.toStringA style: TextStyle( fontWeight: FontWeight.bold, fontSize: 20, color: Theme.of(context).primaryColor, ), // TextStyle ), // Text ), // Container Column(
```

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widgtes\transaction\_list.dart

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart X new\_transaction.dart user\_trans rt transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart > MyApp > build

Run | Debug | Profile

```
7 void main() => runApp(MyApp());  
8  
9 class MyApp extends StatelessWidget {  
10    @override  
11    Widget build(BuildContext context) {  
12        return MaterialApp(  
13            title: 'Flutter App',  
14            theme: ThemeData(  
15                primarySwatch: Colors.deepPurple,  
16                accentColor: Colors.yellow,  
17            ), // ThemeData  
18            home: MyHomePage(),  
19        ); // MaterialApp  
20    }  
21 }  
22  
23 class MyHomePage extends StatefulWidget {  
24    @override  
25    _MyHomePageState createState() => _MyHomePageState();  
26 }  
27
```

Flutter App

CHART

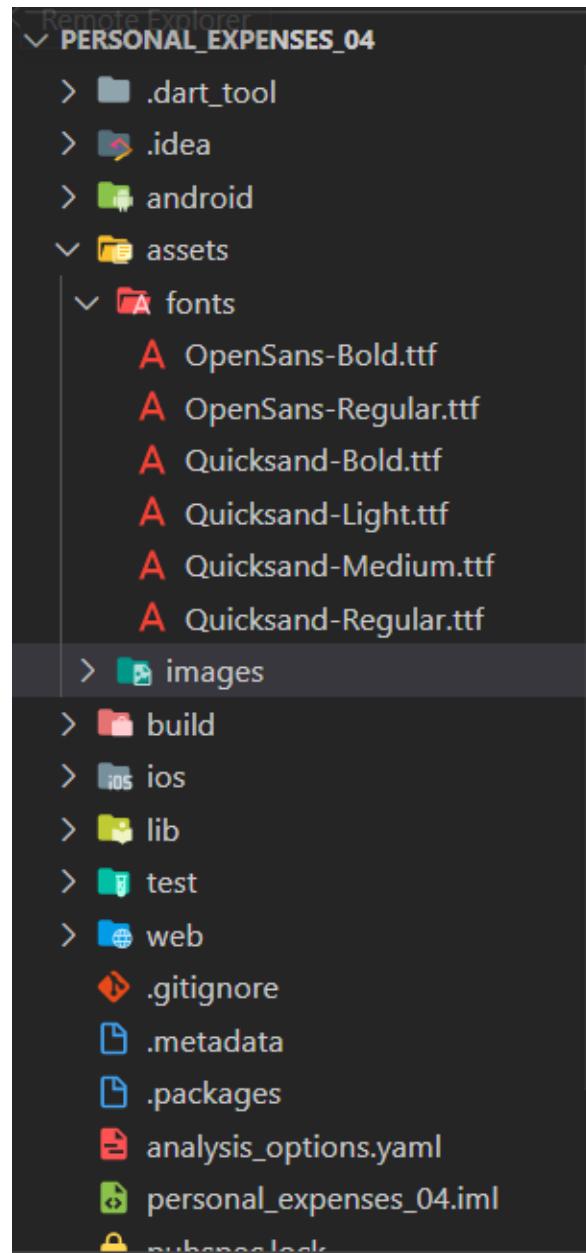
	Value	Date
Rp.20.99	Sepatu Baru	Nov 23, 2021
Rp.18.53	Belanja Harian	Nov 23, 2021
Rp.77.66	Test 123	Nov 23, 2021

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main.dart

Ln 16, Col 1 (43 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# **CUSTOM FONTS AND WORKING WITH TEXT THEMES**



File Edit Selection View Go Run Terminal Help pubspec.yaml - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_tran pubspec.yaml transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS main.dart lib new\_transaction.dart lib\widgets user\_transactions.dart lib\widg... transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 assets fonts OpenSans-Bold.ttf OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images build ios lib test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

OUTLINE DEPENDENCIES

pubspec.yaml

```
# To add custom fonts to your application, add a fonts section here,  
# in this "flutter" section. Each entry in this list should have a  
# "family" key with the font family name, and a "fonts" key with a  
# list giving the asset and other descriptors for the font. For  
# example:  
fonts:  
  - family: OpenSans  
    fonts:  
      - asset: assets/fonts/OpenSans-Regular.ttf  
      - asset: assets/fonts/OpenSans-Bold.ttf  
        weight: 700  
  - family: Quicksand  
    fonts:  
      - asset: assets/fonts/Quicksand-Regular.ttf  
      - asset: assets/fonts/Quicksand-Bold.ttf  
        weight: 700  
  - family: Trajan Pro  
    fonts:  
      - asset: fonts/TrajanPro.ttf  
      - asset: fonts/TrajanPro_Bold.ttf  
        weight: 700
```

pubspec.yaml

Ln 86, Col 1 (327 selected) Spaces: 2 UTF-8 CRLF YAML Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) ✓ Prettier

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user list.dart transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart > MyApp > build

Run | Debug | Profile

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

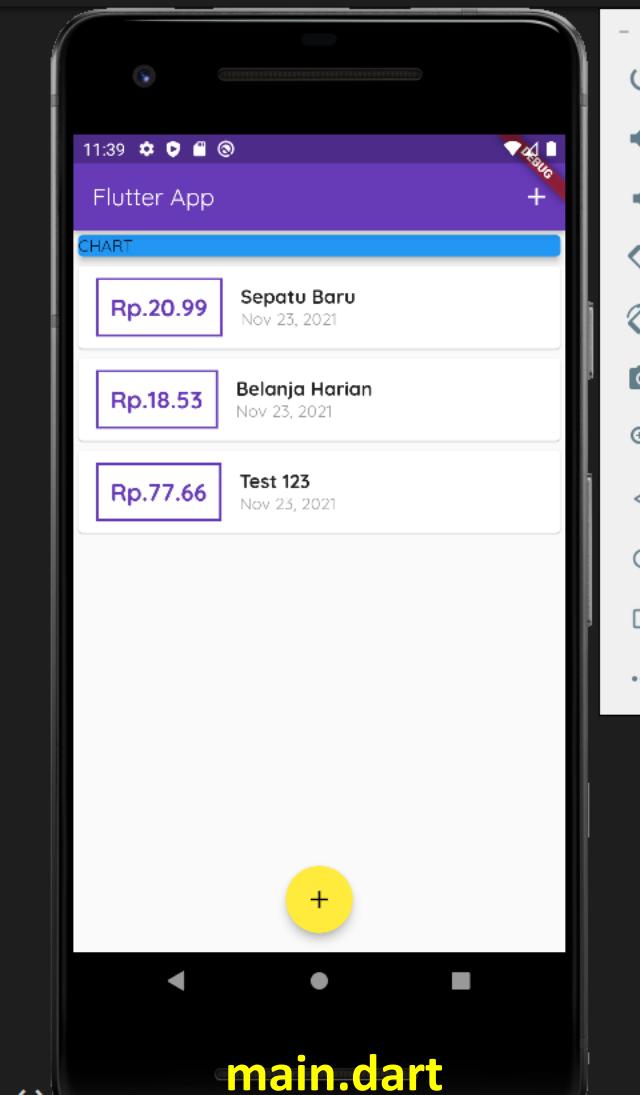
class MyApp extends StatelessWidget {  
 @override  
 Widget build(BuildContext context) {  
 return MaterialApp(  
 title: 'Flutter App',  
 theme: ThemeData(  
 primarySwatch: Colors.deepPurple,  
 accentColor: Colors.yellow,  
 fontFamily: 'Quicksand',  
 ), // ThemeData  
 home: MyHomePage(),  
 ); // MaterialApp  
 }  
}  
  
class MyHomePage extends StatefulWidget {  
 @override  
 \_MyHomePageState createState() => \_MyHomePageState();  
}

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android assets fonts OpenSans-Bold.ttf OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images build ios lib models widgets main.dart test web .gitignore .metadata packages

OUTLINE 1 DEPENDENCIES

0 △ 0 ① 23 Debug my code

Ln 18, Col 1 (34 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user list.dart transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart > \_MyHomePageState > build

main.dart lib new\_transaction.dart lib\widgets user\_transactions.dart lib\widgets transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android assets fonts OpenSans-Bold.ttf OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images build ios lib models widgets main.dart test web .gitignore .metadata packages

OUTLINE 1 DEPENDENCIES

67 },  
68 );  
69 }  
70  
71 @override  
72 Widget build(BuildContext context) {  
73 return Scaffold(  
74 appBar: AppBar(  
75 title: Text(  
76 'Personal Expenses',  
77 style: TextStyle(fontFamily: 'Open Sans'),  
78 ), // Text  
79 actions: <Widget>[  
80 IconButton(  
81 icon: Icon(Icons.add),  
82 onPressed: () => \_startAddNewTransaction(co  
83 ), // IconButton  
84 ], // <Widget>[]  
85 ), // AppBar  
86 body: SingleChildScrollView(  
87 child: Column(  
88 crossAxisAlignment: CrossAxisAlignment.stretch,

11:41 ⚡ 🔍 +  
Personal Expenses  
CHART  
Rp.20.99 Sepatu Baru Nov 23, 2021  
Rp.18.53 Belanja Harian Nov 23, 2021  
Rp.77.66 Test 123 Nov 23, 2021  
+  
main.dart

Ln 79, Col 1 (120 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user list.dart transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart > \_MyHomePageState > build

main.dart lib new\_transaction.dart lib\widgets user\_transactions.dart lib\widgets transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android assets fonts OpenSans-Bold.ttf OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images build ios lib models widgets main.dart test web .gitignore .metadata packages

67 },  
68 );  
69 }  
70  
71 @override  
72 Widget build(BuildContext context) {  
73 return Scaffold(  
74 appBar: AppBar(  
75 title: Text(  
76 'Personal Expenses',  
77 ), // Text  
78 actions: <Widget>[  
79 IconButton(  
80 icon: Icon(Icons.add),  
81 onPressed: () => \_startAddNewTransaction(co  
82 ), // IconButton  
83 ], // <Widget>[]  
84 ), // AppBar  
85 body: SingleChildScrollView(  
86 child: Column(  
87 mainAxisAlignment: MainAxisAlignment.stretch,  
88 children: <Widget>[

11:42 ⚡ 🔍 + Personal Expenses CHART Rp.20.99 Sepatu Baru Nov 23, 2021 Rp.18.53 Belanja Harian Nov 23, 2021 Rp.77.66 Test 123 Nov 23, 2021 + main.dart

- x Power Sound Screen Rotation Camera Search ...

Ln 77, Col 1 Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

0 △ 0 ① 23 Debug my code

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user list.dart transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart > MyApp > build

main.dart lib new\_transaction.dart lib\widgets user\_transactions.dart lib\widgets transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android assets fonts OpenSans-Bold.ttf OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images build ios lib models widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web

main.dart

```
14 theme: ThemeData( 15     primarySwatch: Colors.purple, 16     accentColor: Colors.amber, 17     fontFamily: 'Quicksand', 18     textTheme: ThemeData.light().textTheme.copyWith( 19         headline1: TextStyle( 20             fontFamily: 'OpenSans', 21             fontWeight: FontWeight.bold, 22             fontSize: 18, 23         ), // TextStyle 24     ), 25     appBarTheme: AppBarTheme( 26         textTheme: ThemeData.light().textTheme.copyWith( 27             headline1: TextStyle( 28                 fontFamily: 'OpenSans', 29                 fontSize: 20, 30                 fontWeight: FontWeight.bold, 31             ), // TextStyle 32         ), 33     ), // AppBarTheme // ThemeData 34     home: MyHomePage(), 35 ); // MaterialApp
```

Ln 34, Col 1 (588 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user list.dart transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart > \_MyHomePageState > build

main.dart lib new\_transaction.dart lib\widgets user\_transactions.dart lib\widgets transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android assets fonts OpenSans-Bold.ttf OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images build ios lib models widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web

OVERVIEW

```
87     Widget build(BuildContext context) {  
88         return Scaffold(  
89             appBar: AppBar(  
90                 titleTextStyle: Theme.of(context).appBarTheme.textTheme.headline1,  
91                 title: Text(  
92                     'Personal Expenses',  
93                 ), // Text  
94                 actions: <Widget>[  
95                     IconButton(  
96                         icon: Icon(Icons.add),  
97                         onPressed: () => _startAddNewTransaction,  
98                     ), // IconButton  
99                 ], // <Widget>[]  
100            ), // AppBar  
101            body: SingleChildScrollView(  
102                child: Column(  
103                    mainAxisAlignment: MainAxisAlignment.start,  
104                    children: <Widget>[  
105                        Card(  
106                            color: Colors.blue,  
107                            child: Container(  
108                                width: double.infinity,
```

12:16 4G Personal Expenses +  
CHART  
Rp.20.99 Sepatu Baru Nov 24, 2021  
Rp.18.53 Belanja Harian Nov 24, 2021

main.dart +

Ln 91, Col 1 (76 selected) Spaces: 2 CRLF Dart Dart DevTools 0 Prettier

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user list.dart X transaction.dart widget\_test.dart pubspec.yaml ...

OPEN EDITORS lib > widgets > transaction\_list.dart > TransactionList > build

main.dart lib new\_transaction.dart lib\widgets user\_transactions.dart lib\widgets transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android assets fonts OpenSans-Bold.ttf OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images build ios lib models widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web

transaction\_list.dart

```
46 children: <Widget>|
47   Text(
48     // tx.title,
49     transactions[index].title,
50     style: Theme.of(context).textTheme.headline1,
51     // style: TextStyle(
52     //   fontSize: 16,
53     //   fontWeight: FontWeight.bold,
54     // ),
55   ), // Text
56   Text(
57     // DateFormat.yMMMd().format(tx.
58     DateFormat.yMMMd().format(transa
59     style: TextStyle(
60       color: Colors.grey,
61     ), // TextStyle
62     ), // Text
63   ], // <Widget>[]
64   ), // Column
65   ], // <Widget>[]
66   ), // Row
67 ); // Card
68 // } toList()
```

12:17 ⚡ DEBUG Personal Expenses CHART Rp.20.99 Sepatu Baru Nov 24, 2021 Rp.18.53 Belanja Harian Nov 24, 2021

widgets\transaction\_list.dart

Ln 55, Col 23 Spaces: 2 UTF-8 CRLF Dart Dart DevTools

# **ADDING IMAGES TO THE APP**

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user list.dart transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > main.dart > \_MyHomePageState > \_userTransactions

```
41 |     _MyHomePageState createState() => _MyHomePageState();
42 |
43 |
44 | class _MyHomePageState extends State<MyHomePage> {
45 |     final List<Transaction> _userTransactions = [
46 |         // Transaction(
47 |         //   id: 't1',
48 |         //   title: 'Sepatu Baru',
49 |         //   amount: 20.99,
50 |         //   date: DateTime.now(),
51 |         // ),
52 |         // Transaction(
53 |         //   id: 't2',
54 |         //   title: 'Belanja Harian',
55 |         //   amount: 18.53,
56 |         //   date: DateTime.now(),
57 |         // ),
58 |     ];
59 |
60 |     void _addNewTransaction(String txTitle, double txAm
61 |         final newTx = Transaction(
62 |             title: txTitle,
63 |             amount: txAmount,
```

PERSONAL\_EXPENSES\_04 .dart\_tool .idea android assets fonts OpenSans-Bold.ttf OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images build ios lib models widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web

OUTLINE 1 DEPENDENCIES

0 △ 0 0 26 Debug my code Ln 58, Col 1 (285 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

main.dart

File Edit Selection View Go Run Terminal Help

pubspec.yaml - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_tran pubspec.yaml transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS

- main.dart lib
- new\_transaction.dart lib\widgets
- user\_transactions.dart lib\widgets
- transaction\_list.dart lib\widgets
- transaction.dart lib\models
- widget\_test.dart test

×

pubspec.yaml

PERSONAL\_EXPENSES\_04

- Quicksand-Regular.ttf
- images
- waiting.png
- > build
- > ios
- lib
- > models
- widgets

  - new\_transaction.dart
  - transaction\_list.dart
  - user\_transactions.dart
  - main.dart

> test

> web

.gitignore

.metadata

.packages

analysis\_options.yaml

personal\_expenses\_04.iml

pubspec.lock

pubspec.yaml

README.md

> OUTLINE

> DEPENDENCIES

pubspec.yaml

```
54 # The following line ensures that the Material Icons font is
55 # included with your application, so that you can use the icons in
56 # the material Icons class.
57 uses-material-design: true

58
59 # To add assets to your application, add an assets section, like this:
60 ..assets:
61 ..|..assets/images/waiting.png
62 #   - images/a_dot_burr.jpeg
63 #   - images/a_dot_ham.jpeg

64
65 # An image asset can refer to one or more resolution-specific "variants", see
66 # https://flutter.dev/assets-and-images/#resolution-aware.
67
68 # For details regarding adding assets from package dependencies, see
69 # https://flutter.dev/assets-and-images/#from-packages
70
71 # To add custom fonts to your application, add a fonts section here,
72 # in this "flutter" section. Each entry in this list should have a
73 # "family" key with the font family name, and a "fonts" key with a
74 # list giving the asset and other descriptors for the font. For
75 # example:
```

Ln 62, Col 1 (44 selected) Spaces: 2 UTF-8 CRLF YAML Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) ✓ Prettier

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user list.dart X transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > transaction\_list.dart > TransactionList > build

main.dart lib new\_transaction.dart lib\widgets user\_transactions.dart lib\widgets transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 Quicksand-Regular.ttf images waiting.png build ios lib models widgets new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md

OUTLINE DEPENDENCIES

13 return Container(  
14 height: 300,  
15 child: transactions.isEmpty  
16 ? Column(  
17 children: <Widget>[  
18 Text(  
19 'No transactions added yet!',  
20 style: Theme.of(context).textTheme.headline1,  
21 ), // Text  
22 SizedBox(  
23 height: 20,  
24 ), // SizedBox  
25 Container(  
26 height: 200,  
27 child: Image.asset(  
28 'assets/images/waiting.png',  
29 fit: BoxFit.cover,  
30 ), // Image.asset // Container  
31 ], // <Widget>[]  
32 ) // Column  
33 : ListView.builder(  
34 // children: transactions.map((tx) {

12:31 Personal Expenses CHART No transactions added yet!

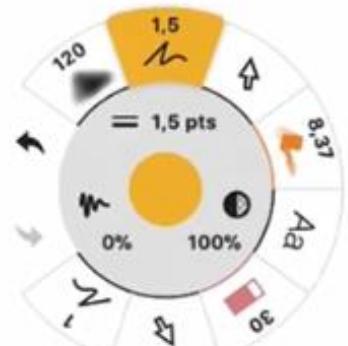
Z Z Z

+ widgets\transaction\_list.dart

Ln 34, Col 1 (612 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# **PLANNING THE CHART WIDGET**

Precision



Layers

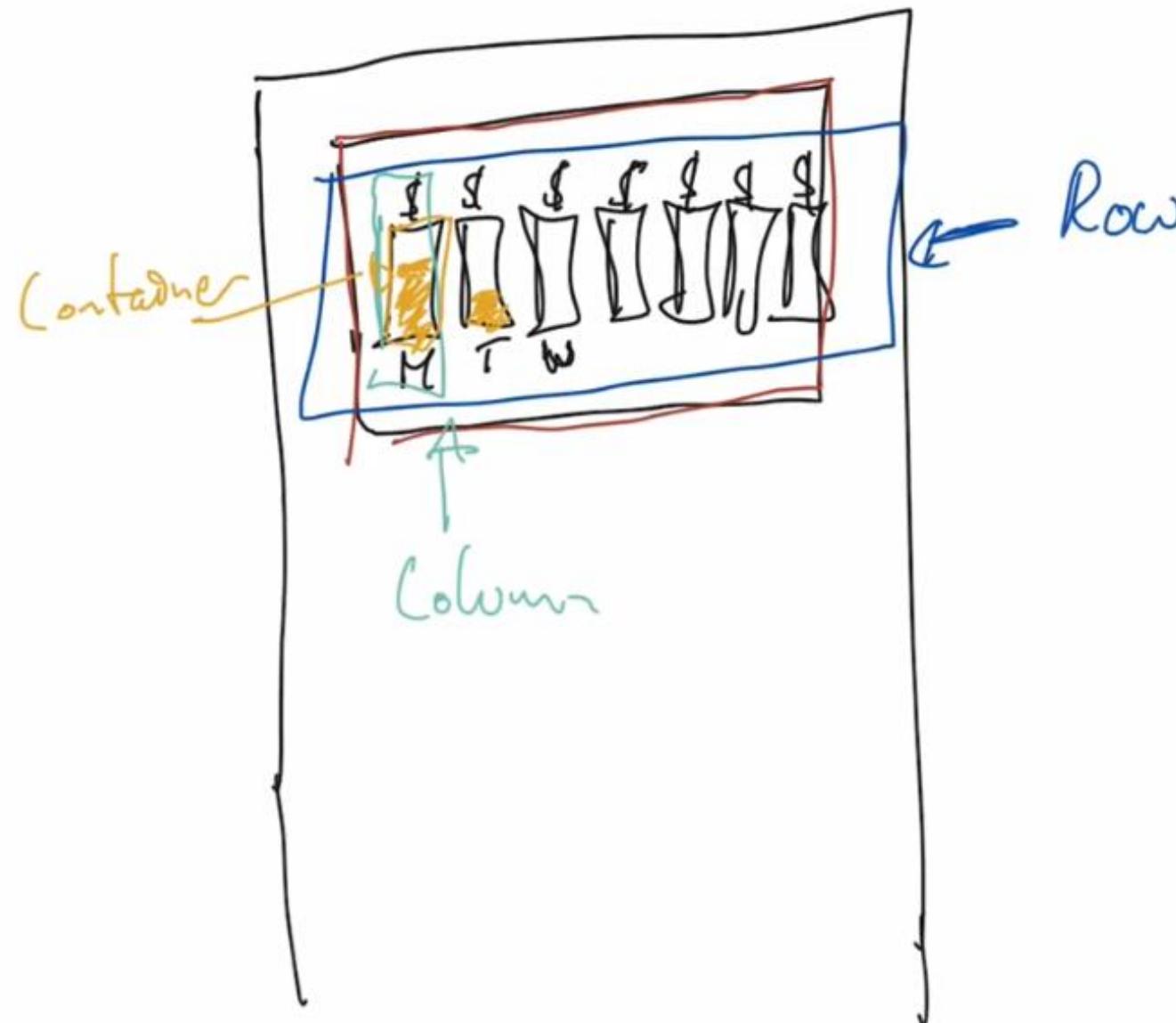
Sorting | Automatic

+ New Layer



Export ↑

Import ↓



A screenshot of the Visual Studio Code interface showing a Flutter application named "personal\_expenses\_04".

The Explorer sidebar on the left shows the project structure:

- OPEN EDITORS**:
  - main.dart
  - new\_transaction.dart
  - user.dart
  - chart.dart** (selected)
  - transaction\_list.dart
  - transaction.dart
  - widget\_test.dart
  - pubspec.yaml
- PERSONAL\_EXPENSES\_04**:
  - OpenSans-Regular.ttf
  - Quicksand-Bold.ttf
  - Quicksand-Light.ttf
  - Quicksand-Medium.ttf
  - Quicksand-Regular.ttf
- images: waiting.png
- build
- ios
- lib:
  - models: transaction.dart
  - widgets:
    - chart.dart** (selected)
    - new\_transaction.dart
    - transaction\_list.dart
    - user\_transactions.dart
    - main.dart
- test
- web
- .gitignore
- .metadata

- OUTLINE
- DEPENDENCIES

The code editor displays the content of `chart.dart`:

```
1 import 'package:flutter/material.dart';
2
3 class Cart extends StatelessWidget {
4   @override
5   Widget build(BuildContext context) {
6     return Container();
7   }
8 }
9
```

The status bar at the bottom indicates the file is at Line 2, Column 1, with 2 spaces, using CRLF line endings, and is a Dart file. It also shows the current Flutter version (2.5.3) and the device/emulator (Pixel 2 API 29). A yellow annotation "widgets\chart.dart" is overlaid on the bottom right of the code editor area.

File Edit Selection View Go Run Terminal Help chart.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user chart.dart transaction\_list.dart transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > chart.dart > ...

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

2

3 class Cart extends StatelessWidget {

4 @override

5 Widget build(BuildContext context) {

6 return Container();

7 }

8 }

9

PERSONAL\_EXPENSES\_04

OpenSans-Regular.ttf

Quicksand-Bold.ttf

Quicksand-Light.ttf

Quicksand-Medium.ttf

Quicksand-Regular.ttf

images

waiting.png

build

ios

lib

models

transaction.dart

widgets

chart.dart

new\_transaction.dart

transaction\_list.dart

user\_transactions.dart

main.dart

test

web

.gitignore

.metadata

OUTLINE

DEPENDENCIES

widgets\chart.dart

Ln 2, Col 1 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# LOOPING THROUGH LISTS

A screenshot of the Visual Studio Code interface showing a Dart file named `chart.dart` from a project titled `personal_expenses_04`. The code implements a `Chart` widget that displays recent transactions. It uses `Flutter` and `intl` packages, and imports `transaction.dart` from a sibling directory. The code includes logic to group transactions by day, month, and year.

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

import '../models/transaction.dart';

class Chart extends StatelessWidget {
    final List<Transaction> recentTransactions;

    Chart(this.recentTransactions);

    List<Map<String, Object>> get groupedTransactionValues {
        return List.generate(7, (index) {
            final weekDay = DateTime.now().subtract(
                Duration(days: index),
            );
            var totalSum = 0.0;

            for (var i = 0; i < recentTransactions.length; i++) {
                if (recentTransactions[i].date.day == weekDay.day &&
                    recentTransactions[i].date.month == weekDay.month &&
                    recentTransactions[i].date.year == weekDay.year) {
                    totalSum += recentTransactions[i].amount;
                }
            }
            return {
                'day': DateFormat.E().format(weekDay).toString(),
                'total': totalSum,
            };
        });
    }

    @override
    Widget build(BuildContext context) {
        return Container(
            height: 200,
            width: double.infinity,
            child: BarChart(
                BarChartData(
                    barsSpace: 5,
                    titles: BarChartTitles(
                        title: Text('Recent Transactions'),
                        subtitle: Text('Total Amount'),
                    ),
                    grid: BarChartGrid(
                        gridType: GridType.pie,
                    ),
                    xLabels: recentTransactions.map((t) => t.date.toIso8601String()).take(7).toList(),
                    xTitle: Text('Date'),
                    yTitle: Text('Amount'),
                    yLabels: [
                        Text('0.00'),
                        Text('100.00'),
                        Text('200.00'),
                        Text('300.00'),
                        Text('400.00'),
                        Text('500.00'),
                        Text('600.00'),
                    ],
                    barGroups: groupedTransactionValues,
                ),
            ),
        );
    }
}
```

The code is annotated with a yellow callout pointing to the `chart.dart` file in the Explorer sidebar, indicating that the current file being edited is `chart.dart`.

File Edit Selection View Go Run Terminal Help chart.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user transaction\_list.dart transaction.dart widget\_test.dart pubspec.yaml

OPEN EDITORS lib > widgets > chart.dart > Chart > groupedTransactionValues

main.dart lib new\_transaction.dart lib\widgets user\_transactions.dart lib\widgets... chart.dart lib\widgets transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images waiting.png build ios lib models transaction.dart widgets chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata OUTLINE DEPENDENCIES

```
18     for (var i = 0; i < recentTransactions.length; i++) {  
19         if (recentTransactions[i].date.day == weekDay.day &&  
20             recentTransactions[i].date.month == weekDay.month &&  
21             recentTransactions[i].date.year == weekDay.year) {  
22             totalSum += recentTransactions[i].amount;  
23         }  
24     }  
25  
26     print(DateTimeFormat.E().format(weekDay));  
27     print(totalSum);  
28  
29     return {  
30         'day': DateTimeFormat.E().format(weekDay).substring(0, 1),  
31         'amount': totalSum,  
32     };  
33 }); // List.generate  
34 }  
35  
36 @override  
37 Widget build(BuildContext context) {  
38     print(groupedTransactionValues);  
39     return Card(  
40         child: Column(  
41             children: groupedTransactionValues.map((transactionValue) {  
42                 return ListTile(  
43                     title: Text(transactionValue['day']),  
44                     subtitle: Text('Total: £' + transactionValue['amount'].toString()),  
45                     trailing: IconButton(  
46                         icon: Icon(Icons.delete),  
47                         onPressed: () {  
48                             setState(() {  
49                                 recentTransactions.removeWhere((transaction) =>  
50                                     transaction.date == transactionValue['day']);  
51                             });  
52                         },  
53                     ),  
54                 );  
55             }).  
56         ).  
57     );  
58 }  
59  
60 class TransactionList extends StatelessWidget {  
61     final List<RecentTransaction> recentTransactions;  
62  
63     TransactionList(this.recentTransactions);  
64  
65     @override  
66     Widget build(BuildContext context) {  
67         return Container(  
68             padding: EdgeInsets.all(16.0),  
69             child: ListView.builder(  
70                 itemCount: recentTransactions.length,  
71                 itemBuilder: (context, index) {  
72                     return Card(  
73                         child: Column(  
74                             children: recentTransactions[index].transactionList.map((transaction) {  
75                                 return ListTile(  
76                                     title: Text(transaction.title),  
77                                     subtitle: Text('Amount: £' + transaction.amount.toString()),  
78                                     trailing: IconButton(  
79                                         icon: Icon(Icons.delete),  
80                                         onPressed: () {  
81                                             setState(() {  
82                                                 recentTransactions.removeWhere((transaction) =>  
83                                                     transaction.id == transaction.id);  
84                                             });  
85                                         },  
86                                     ),  
87                                 );  
88                             }).  
89                         ).  
90                     );  
91                 },  
92             );  
93         );  
94     }  
95 }
```

wIDGETS\CHART.DART

File Edit Selection View Go Run Terminal Help chart.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user transaction\_list.dart transaction.dart widget\_test.dart pubspec.yaml

lib > widgets > chart.dart > Chart > groupedTransactionValues

```
26     print(DateTime.E().format(weekDay));
27     print(totalSum);
28
29     return {
30         'day': DateTime.E().format(weekDay).substring(0, 1),
31         'amount': totalSum,
32     };
33 }; // List.generate
34 }
35
36 @override
37 Widget build(BuildContext context) {
38     print(groupedTransactionValues);
39     return Card(
40         elevation: 6,
41         margin: EdgeInsets.all(20),
42         child: Row(
43             children: <Widget>[],
44         ), // Row
45     ); // Card
46 }
47 }
```

widgets\chart.dart

LN 26, Col 35 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# **DERIVING RECENT TRANSACTIONS**

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user transaction\_list.dart transaction.dart widget\_test.dart pub: ...

OPEN EDITORS lib > main.dart > \_MyHomePageState

main.dart lib new\_transaction.dart lib\widgets user\_transactions.dart lib\widgets chart.dart lib\widgets transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04

- A OpenSans-Regular.ttf
- A Quicksand-Bold.ttf
- A Quicksand-Light.ttf
- A Quicksand-Medium.ttf
- A Quicksand-Regular.ttf

images waiting.png

> build

> ios

> lib

- models transaction.dart
- widgets chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart

main.dart

> test

> web

.gitignore .metadata

> OUTLINE

> DEPENDENCIES

49      title: 'Sepatu Baru',  
50      amount: 20.99,  
51      date: DateTime.now(),  
52      ), // Transaction  
53      Transaction(  
54      id: 't2',  
55      title: 'Belanja Harian',  
56      amount: 18.53,  
57      date: DateTime.now(),  
58      ), // Transaction  
59      ];  
60  
61     List<Transaction> get \_recentTransactions {  
62        return \_userTransactions.where((tx) {  
63            return tx.date.isAfter(  
64              DateTime.now().subtract(  
65                Duration(days: 7)),  
66            ),  
67            );  
68        }).toList();  
69     }  
70  
71 void addNewTransaction(String txTitle, double txAmount) {

main.dart

Ln 70, Col 1 (230 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user transaction\_list.dart transaction.dart widget\_test.dart pub: ...

OPEN EDITORS lib > main.dart > \_MyHomePageState > build

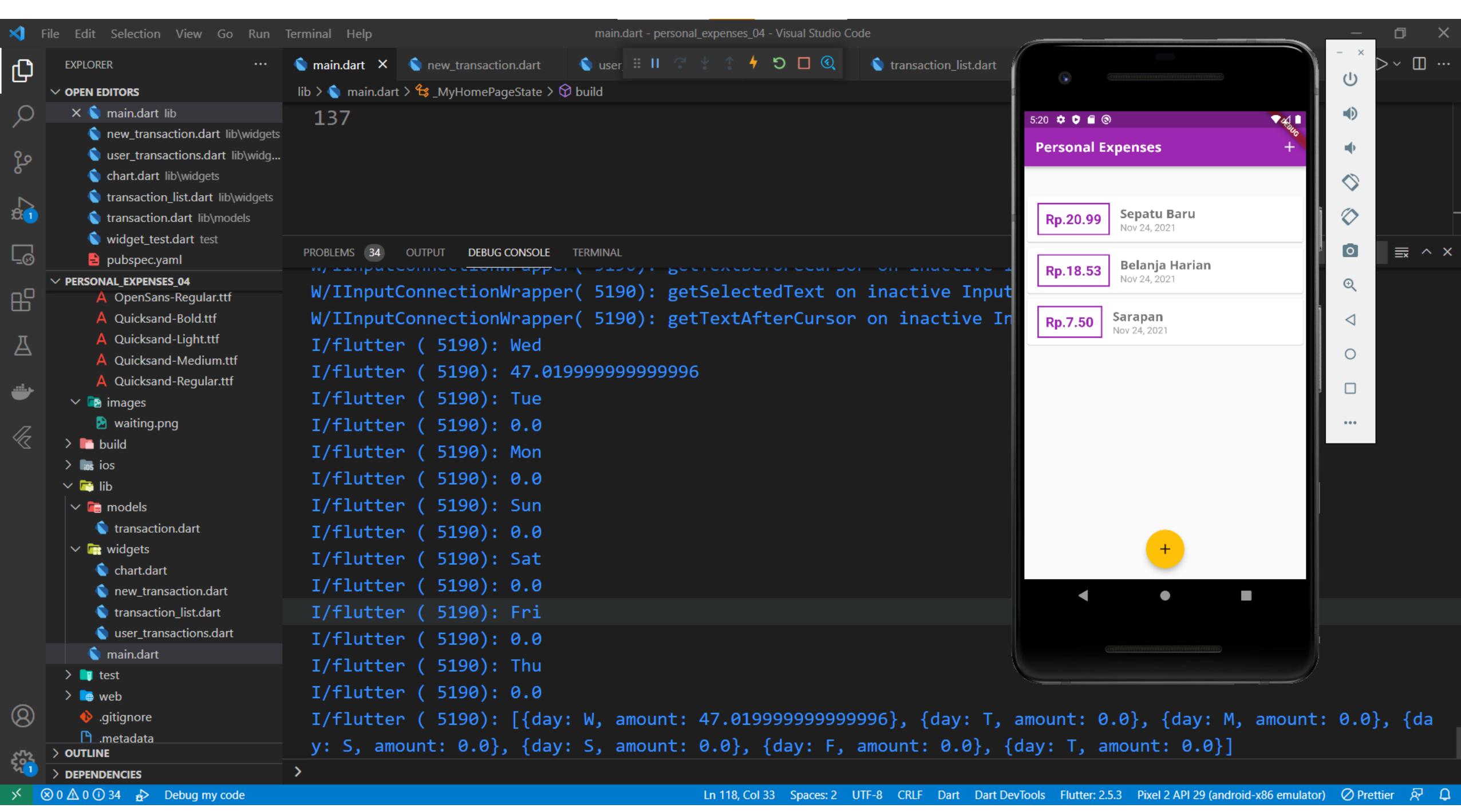
main.dart lib new\_transaction.dart lib\widgets user\_transactions.dart lib\widgets chart.dart lib\widgets transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images waiting.png build ios lib models transaction.dart widgets chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata OUTLINE DEPENDENCIES

```
109     ), // IconButton
110   ], // <Widget>[]
111   ), // AppBar
112   body: SingleChildScrollView(
113     child: Column(
114       mainAxisAlignment: MainAxisAlignment.spaceEvenly,
115       children: <Widget>[
116         Card(
117           color: Colors.blue,
118           child: Container(
119             width: double.infinity,
120             child: Text('CHART'),
121           ),
122           elevation: 5,
123         ),
124         Chart(_recentTransactions),
125         TransactionList(_userTransactions),
126       ], // <Widget>[]
127     ), // Column
128   ), // SingleChildScrollView
129   floatingActionButtonLocation: FloatingActionButtonLocation.centerFloat,
130   floatingActionButton: FloatingActionButton(
```

main.dart

Ln 129, Col 1 (530 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



# **CREATING BARS FOR A CHART**

File Edit Selection View Go Run Terminal Help chart.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user lib > widgets > chart.dart > Chart > build transaction\_list.dart transaction.dart widget\_test.dart pubspec.yaml

25  
26     return {  
27         'day': DateFormat.E().format(weekDay).substring(0, 1),  
28         'amount': totalSum,  
29     };  
30 }; // List.generate  
31 }  
  
32  
33 @override  
34 Widget build(BuildContext context) {  
35     return Card(  
36         elevation: 6,  
37         margin: EdgeInsets.all(20),  
38         child: Row(  
39             children: groupedTransactionValues.map((data) {  
40                 return Text('\${data['day']} : \${data['amount']}');  
41             }).toList(),  
42             ), // Row  
43     ); // Card  
44 }  
45 }  
46 }

5:30 ⚡ Personal Expenses  
W : 47.01999999999996 T : 0.0M : 0.0S : 0.0S : 0.0F : 0.0  
+ Sepatu Baru Nov 24, 2021  
Rp.20.99  
Belanja Harian Nov 24, 2021  
Rp.18.53 Sarapan Nov 24, 2021  
Rp.7.50

widgets\chart.dart

File Edit Selection View Go Run Terminal Help

chart\_bar.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER

OPEN EDITORS 1 UNSAVED

- main.dart lib
- new\_transaction.dart lib\widgets
- user\_transactions.dart lib\widg...
- chart.dart lib\widgets
- chart\_bar.dart lib\widgets
- transaction\_list.dart lib\widgets
- transaction.dart lib\models
- widget\_test.dart test
- pubspec.yaml

PERSONAL\_EXPENSES\_04

- A Quicksand-Light.ttf
- A Quicksand-Medium.ttf
- A Quicksand-Regular.ttf
- images
- waiting.png
- > build
- > ios
- lib
- models
- transaction.dart
- widgets
- chart\_bar.dart
- chart.dart
- new\_transaction.dart
- transaction\_list.dart
- user\_transactions.dart
- main.dart

lib > widgets > chart\_bar.dart > ChartBar > build

```
1 import 'package:flutter/material.dart';
2
3 class ChartBar extends StatelessWidget {
4   final String label;
5   final double spendingAmount;
6   final double spendingPctOfTotal;
7
8   ChartBar(this.label, this.spendingAmount, this.spendingPctOfTotal);
9
10 @override
11 Widget build(BuildContext context) {
12   return Column(
13     children: <Widget>[
14       Text('\$${spendingAmount.toStringAsFixed(0)}'),
15       SizedBox(
16         height: 4,
17       ), // SizedBox
18       Container(
19         height: 60,
20         width: 10,
21         child: Stack(
22           children: <Widget>[
```

wIDGETS\CHART\_BAR.DART

Ln 37, Col 19 Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help

chart\_bar.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user chart\_bar.dart transaction\_list.dart transaction.dart widget\_t ...

OPEN EDITORS 1 UNSAVED lib > widgets > chart\_bar.dart > ChartBar > build

main.dart lib  
new\_transaction.dart lib\widgets  
user\_transactions.dart lib\widgets  
chart.dart lib\widgets  
chart\_bar.dart lib\widgets  
transaction\_list.dart lib\widgets  
transaction.dart lib\models  
widget\_test.dart test  
pubspec.yaml

PERSONAL\_EXPENSES\_04 Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf

images waiting.png

> build

> ios

> lib

> models transaction.dart

> widgets chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart

> test

> web .gitignore

> OUTLINE

> DEPENDENCIES

17 ), // SizedBox  
18 Container(  
19 height: 60,  
20 width: 10,  
21 child: Stack(  
22 children: <Widget>[  
23 Container(  
24 decoration: BoxDecoration(  
25 border: Border.all(color: Colors.grey, width: 1.0),  
26 color: Color.fromRGBO(220, 220, 220, 1),  
27 borderRadius: BorderRadius.circular(10),  
28 ), // BoxDecoration  
29 ), // Container  
30 FractionallySizedBox(  
31 heightFactor: spendingPctOfTotal,  
32 child: Container(  
33 decoration: BoxDecoration(  
34 color: Theme.of(context).primaryColor,  
35 borderRadius: BorderRadius.circular(10),  
36 ), // BoxDecoration  
37 ), // Container  
38 ), // FractionallySizedBox

Ln 37, Col 19 Spaces: 2 UTR-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

windows\chart\_bar.dart

File Edit Selection View Go Run Terminal Help

chart\_bar.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_chart\_bar.dart transaction\_list.dart transaction.dart widget\_t...

OPEN EDITORS 1 UNSAVED lib > widgets > chart\_bar.dart > ChartBar > build

main.dart lib new\_transaction.dart lib\widgets user\_transactions.dart lib\widgets chart.dart lib\widgets chart\_bar.dart lib\widgets transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images waiting.png build ios lib models transaction.dart widgets chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore

LIBRARY EXPANSION

29 ), // Container  
30 FractionallySizedBox(  
31 heightFactor: spendingPctOfTotal,  
32 child: Container(  
33 decoration: BoxDecoration(  
34 color: Theme.of(context).primaryColor,  
35 borderRadius: BorderRadius.circular(10),  
36 ), // BoxDecoration  
37 ), // Container  
38 ), // FractionallySizedBox  
39 ], // <Widget>[]  
40 ), // Stack  
41 ), // Container  
42 SizedBox(  
43 height: 4,  
44 ), // SizedBox  
45 Text(label),  
46 ], // <Widget>[]  
47 ); // Column  
48 }  
49 }  
50 }

widgets\chart\_bar.dart

Ln 37, Col 19 Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# **POPULATING A CHART WITH VALUES**

File Edit Selection View Go Run Terminal Help chart.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_chart.dart transaction\_list.dart transaction.dart widget\_test.dart

OPEN EDITORS 1 UNSAVED lib > widgets > chart.dart > Chart

main.dart lib new\_transaction.dart lib\widgets user\_transactions.dart lib\widgets chart.dart lib\widgets chart\_bar.dart transaction\_list.dart transaction.dart widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images waiting.png build ios lib models transaction.dart widgets chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore

chart.dart

```
24     }
25   }
26
27   return {
28     'day': DateFormat.E().format(weekDay).substring(0, 1),
29     'amount': totalSum,
30   };
31 }); // List.generate
32 }

34   double get totalSpending {
35     return groupedTransactionValues.fold(0.0, (sum, item) {
36       return sum + item['amount'];
37     });
38   }

39
40   @override
41   Widget build(BuildContext context) {
42     return Card(
43       elevation: 6,
44       margin: EdgeInsets.all(20),
45       child: Row(
46         children: groupedTransactionValues.map((data) {
47           return Column(
48             children: [
49               Text(data['day']),
50               Text(data['amount'].toString())
51             ],
52           );
53         })
54       ),
55     );
56   }
57 }
```

wIDGETS\CHART.DART

Ln 39, Col 1 (141 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help chart.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER OPEN EDITORS 1 UNSAVED main.dart new\_transaction.dart user lib > widgets > chart.dart > build chart\_bar.dart transaction\_list.dart transaction.dart widget\_t...

38 }  
39  
40 @override  
41 Widget build(BuildContext context) {  
42 return Card(  
43 elevation: 6,  
44 margin: EdgeInsets.all(20),  
45 child: Row(  
46 children: groupedTransactionValues.map((data) {  
47 return ChartBar(  
48 data['day'],  
49 data['amount'],  
50 totalSpending == 0.0  
51 ? 0.0  
52 : (data['amount'] as double) / totalSpending,  
53 ); // ChartBar  
54 }).toList(),  
55 ), // Row  
56 ); // Card  
57 }  
58 }  
59 }

Personal Expenses

\$47\$0\$0\$0\$0\$0

WTMSSFT

Rp.20.99 Sepatu Baru Nov 24, 2021

Rp.18.53 Belanja Harian Nov 24, 2021

Rp.7.50 Sarapan Nov 24, 2021

+

wIDGETS\CHART.DART

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user chart\_bar.dart transaction\_list.dart transaction.dart widget ...

lib > main.dart > \_MyHomePageState > \_userTransactions

```
43 }  
44  
45 class _MyHomePageState extends State<MyHomePage> {  
46   final List<Transaction> _userTransactions = [  
47     // Transaction(  
48     //   id: 't1',  
49     //   title: 'Sepatu Baru',  
50     //   amount: 20.99,  
51     //   date: DateTime.now(),  
52     // ),  
53     // Transaction(  
54     //   id: 't2',  
55     //   title: 'Belanja Harian',  
56     //   amount: 18.53,  
57     //   date: DateTime.now(),  
58     // ),  
59   ];  
60  
61   List<Transaction> get _recentTransactions {  
62     return _userTransactions.where((tx) {  
63       return tx.date.isAfter(  
64         DateTime.now().subtract(
```

5:53 ⚡ Personal Expenses +  
No transactions added yet!  
Z Z Z

main.dart

Ln 47, Col 17 (267 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# **FINISHING THE CHART BARS**

File Edit Selection View Go Run Terminal Help chart.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_tr chart\_bar.dart transaction\_list.dart transaction.dart widget\_test ...

OPEN EDITORS main.dart lib new\_transaction.dart lib\wid... user\_transactions.dart lib\wi... chart.dart lib\widgets chart\_bar.dart lib\widgets transaction\_list.dart lib\wid... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 build ios lib models transaction.dart widgets chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock

OUTLINE DEPENDENCIES

lib > widgets > chart.dart > Chart > build

```
36     return sum + item['amount'];
37   });
38 }
39
40 @override
41 Widget build(BuildContext context) {
42   return Card(
43     elevation: 6,
44     margin: EdgeInsets.all(20),
45     child: Row(
46       mainAxisAlignment: MainAxisAlignment.spaceAround,
47       children: groupedTransactionValues.map((data) {
48         return ChartBar(
49           data['day'],
50           data['amount'],
51           totalSpending == 0.0
52             ? 0.0
53             : (data['amount'] as double) / totalSpending,
54         ); // ChartBar
55       }).toList(),
56     ), // Row
57   ); // Card
```

5:57 ⚡ DEBUG Personal Expenses +

No transactions added yet!

Z Z Z

+ ↻ ⏪ ⏹

widgets\chart.dart

Ln 47, Col 1 (59 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help chart.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_tr chart\_bar.dart transaction\_list.dart transaction.dart widget\_test ...

OPEN EDITORS main.dart lib new\_transaction.dart lib\wid... user\_transactions.dart lib\wi... X chart.dart lib\widgets chart\_bar.dart lib\widgets transaction\_list.dart lib\widg... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 build > ios lib models transaction.dart widgets chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock

OUTLINE ...

DEPENDENCIES ...

40 @override  
41 Widget build(BuildContext context) {  
42 return Card(  
43 elevation: 6,  
44 margin: EdgeInsets.all(20),  
45 child: Padding(  
46 padding: EdgeInsets.all(10),  
47 child: Row(  
48 mainAxisAlignment: MainAxisAlignment.spaceAround,  
49 children: groupedTransactionValues.map((data) {  
50 return ChartBar(  
51 data['day'],  
52 data['amount'],  
53 totalSpending == 0.0  
54 ? 0.0  
55 : (data['amount'] as double) / totalSpending,  
56 ); // ChartBar  
57 }).toList(),  
58 ), // Row  
59 ), // Padding  
60 ); // Card  
61 }

5:57 ⚡ 📱 DEBUG Personal Expenses +

No transactions added yet!

widgets\chart.dart

File Edit Selection View Go Run Terminal Help chart.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_tr lib > widgets > chart.dart > Chart > build chart\_bar.dart transaction\_list.dart transaction.dart widget\_test.dart test pubspec.yaml

OPEN EDITORS main.dart lib new\_transaction.dart lib\wid... user\_transactions.dart lib\wi... X chart.dart lib\widgets chart\_bar.dart lib\widgets transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 build > ios lib models transaction.dart widgets chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock

OUTLINE DEPENDENCIES

40 @override  
41 Widget build(BuildContext context) {  
42 return Card(  
43 elevation: 6,  
44 margin: EdgeInsets.all(20),  
45 child: Padding(  
46 padding: EdgeInsets.all(10),  
47 child: Row(  
48 mainAxisAlignment: MainAxisAlignment.spaceAround,  
49 children: groupedTransactionValues.map((data) {  
50 return ChartBar(  
51 data['day']  
52 data['amount']  
53 totalSpending  
54 ? 0.0  
55 : (data  
56 ); // ChartBa  
57 }).toList(),  
58 ), // Row  
59 ), // Padding  
60 ); // Card  
61 }

Wrap with Builder  
Wrap with Center  
Wrap with Column  
Wrap with Container  
Wrap with Padding  
Wrap with Row  
Wrap with SizedBox  
Wrap with StreamBuilder  
Wrap with widget...  
Extract Method  
Extract Local Variable  
Extract Widget

Ln 50, Col 26 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

widgets\chart.dart

File Edit Selection View Go Run Terminal Help chart.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_tr lib > widgets > chart.dart > Chart > build chart\_bar.dart transaction\_list.dart transaction.dart widget\_test.dart ...

OPEN EDITORS main.dart lib new\_transaction.dart lib\wid... user\_transactions.dart lib\wi... X chart.dart lib\widgets chart\_bar.dart lib\widgets transaction\_list.dart lib\wid... transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 build ios lib models transaction.dart widgets chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock

OUTLINE DEPENDENCIES

42 return Card(  
43 elevation: 6,  
44 margin: EdgeInsets.all(20),  
45 child: Padding(  
46 padding: EdgeInsets.all(10),  
47 child: Row(  
48 mainAxisAlignment: MainAxisAlignment.spaceAround,  
49 children: groupedTransactionValues.map((data) {  
50 return Flexible(  
51 fit: FlexFit.tight,  
52 child: ChartBar(  
53 data['day'],  
54 data['amount'],  
55 totalSpending == 0.0  
56 ? 0.0  
57 : (data['amount'] as double) / totalSpending  
58 ), // ChartBar  
59 ); // Flexible  
60 ).toList(),  
61 ), // Row  
62 ), // Padding  
63 ); // Card

Personal Expenses

6:03 ⚡ 📱 DEBUG

Rp.123456789.00 Test Long Nov 24, 2021

+

widgets\chart.dart

Ln 52, Col 1 (65 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help chart\_bar.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... main.dart new\_transaction.dart user\_tr lib > widgets > chart\_bar.dart > ChartBar > build chart\_bar.dart X transaction\_list.dart transaction.dart widget\_test.dart ...

OPEN EDITORS main.dart lib new\_transaction.dart lib\wid... user\_transactions.dart lib\wi... chart.dart lib\widgets chart\_bar.dart lib\widgets transaction\_list.dart lib\widgets transaction.dart lib\models widget\_test.dart test pubspec.yaml

PERSONAL\_EXPENSES\_04 build ios lib models transaction.dart widgets chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock

OUTLINE DEPENDENCIES

0 △ 0 ① 37 Debug my code

11 Widget build(BuildContext context) {  
12 return Column(  
13 children: <Widget>[  
14 FittedBox(  
15 child: Text('\\$\\${spendingAmount.toStringAsFixed(0)}'),  
16 ), // FittedBox  
17 SizedBox(  
18 height: 4,  
19 ), // SizedBox  
20 Container(  
21 height: 60,  
22 width: 10,  
23 child: Stack(  
24 children: <Widget>[  
25 Container(  
26 decoration: BoxDecoration(  
27 border: Border.all(color: Colors.g...  
28 color: Color.fromRGBO(220, 220, 220),  
29 borderRadius: BorderRadius.circular(10),  
30 ), // BoxDecoration  
31 ), // Container  
32 FractionallySizedBox(  
33 heightFactor: spendingPctOfTotal,

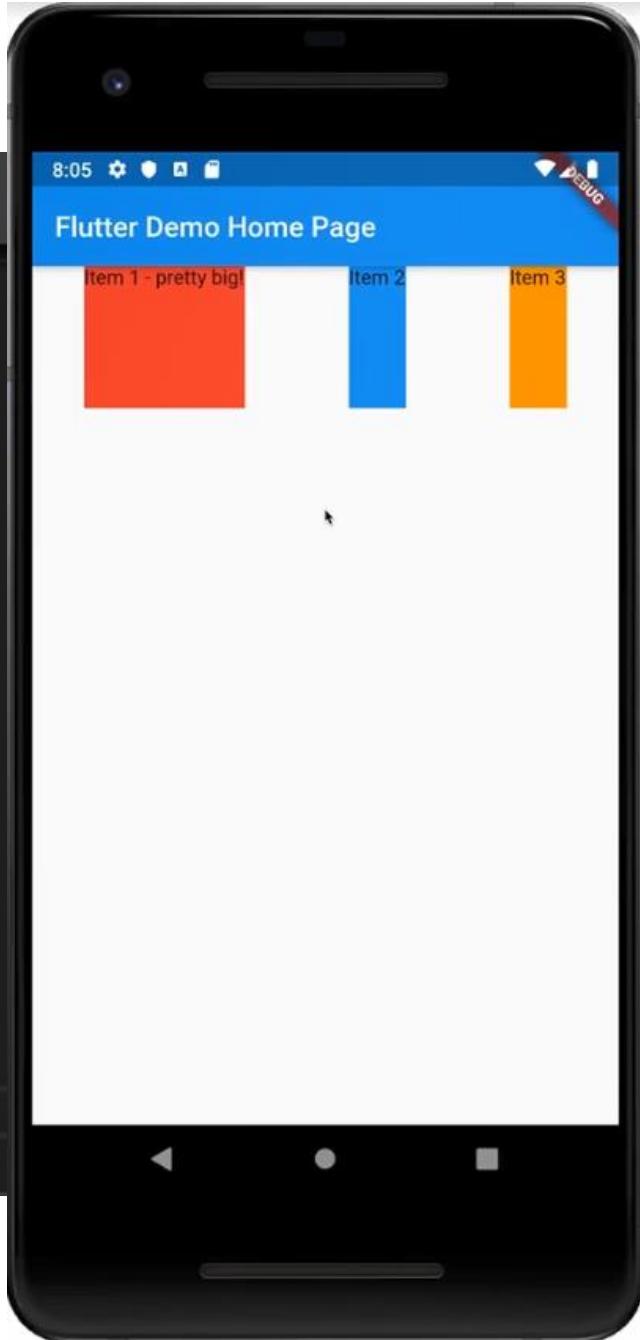
6:04 Personal Expenses +  
Rp.123456789.00 Test Long Nov 24, 2021

widgets\chart\_bar.dart

**FLEXIBLE AND EXPANDED DEEP DIVE**

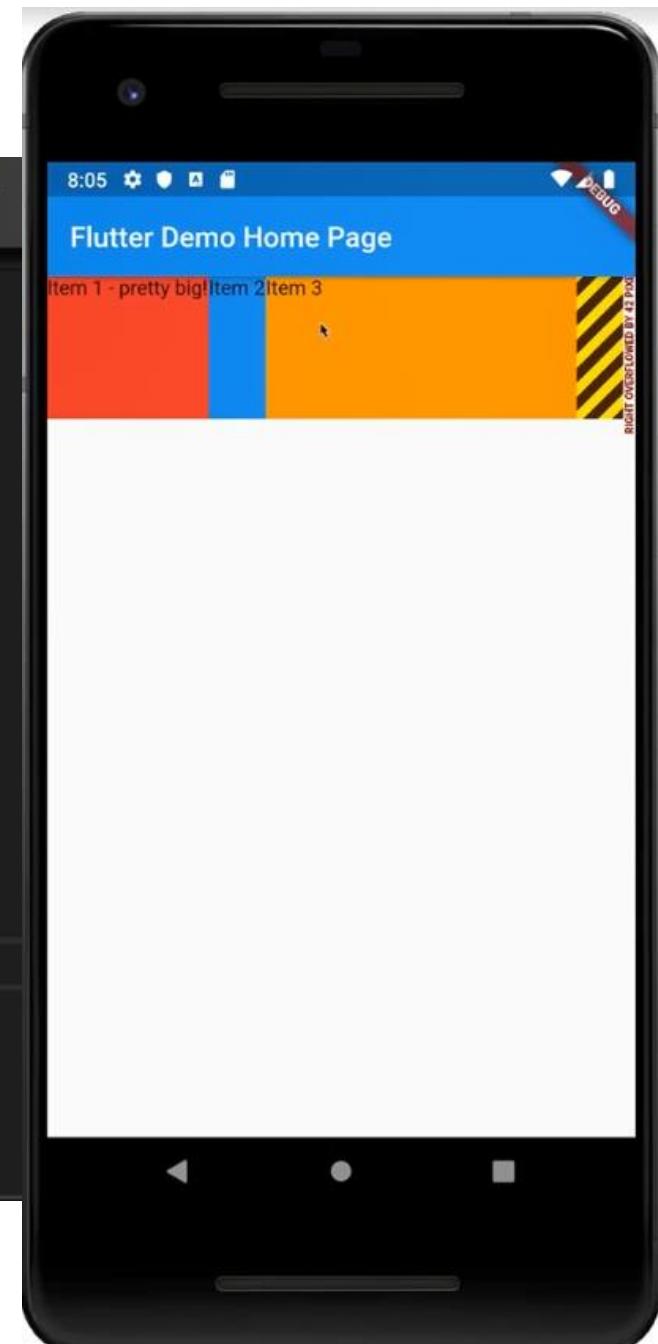
```
main.dart x

14      body: Row(
15        mainAxisSize: MainAxisSize.spaceAround,
16        children: <Widget>[
17          Container(
18            height: 100,
19            child: Text('Item 1 - pretty big!'),
20            color: Colors.red,
21          ), // Container
22          Container(
23            height: 100,
24            child: Text('Item 2'),
25            color: Colors.blue,
26          ), // Container
27          Container(
28            height: 100,
29            child: Text('Item 3'),
30            color: Colors.orange,
31          ), // Container
32        ],
33      ),
34    );
35  }
36
```



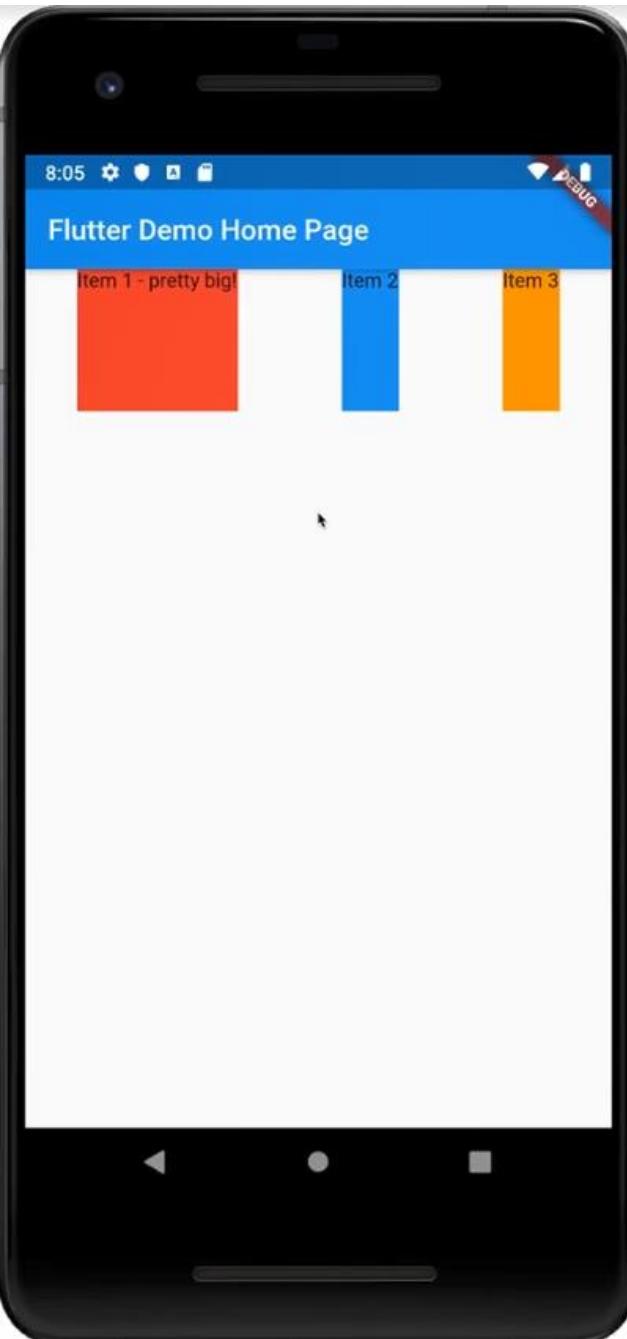
```
main.dart
```

```
76     children: <Widget>[
77       Container(
78         height: 100,
79         child: Text('Item 1 - pretty big!'),
80         color: Colors.red,
81       ), // Container
82       Container(
83         height: 100,
84         child: Text('Item 2'),
85         color: Colors.blue,
86       ), // Container
87       Container(
88         height: 100,
89         width: 300,
90         child: Text('Item 3'),
91         color: Colors.orange,
92       ), // Container
93     ], // <Widget>[]
```



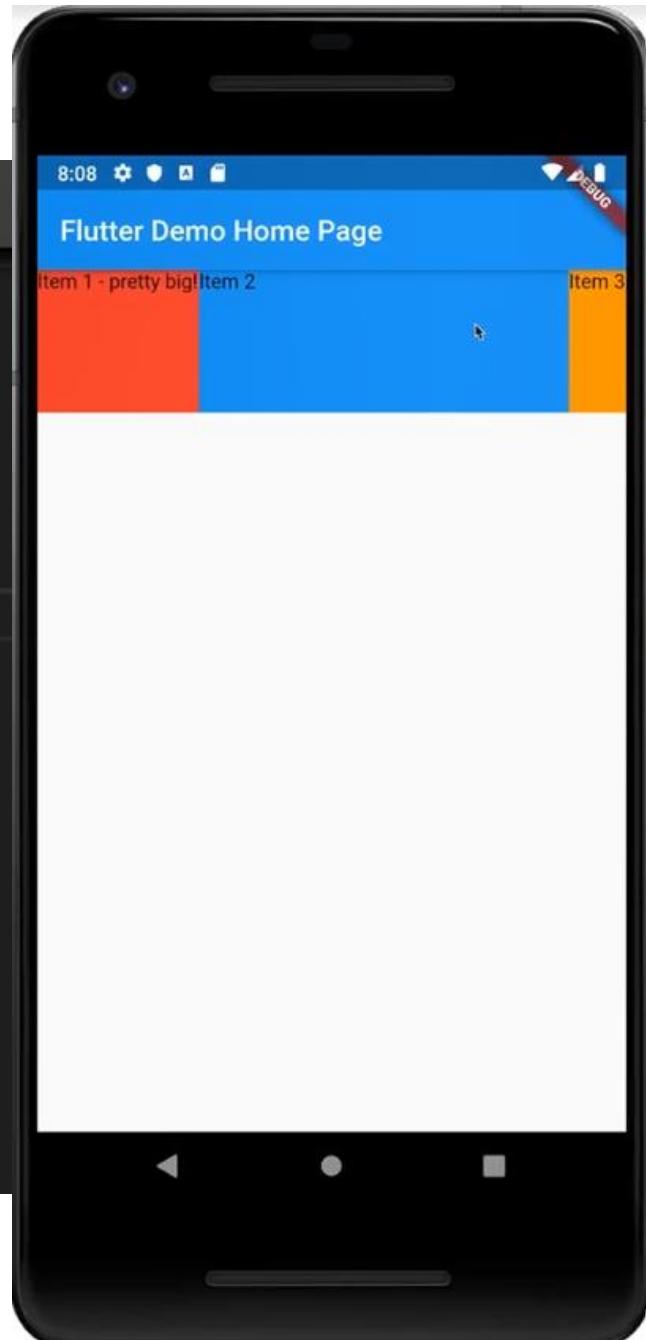
```
main.dart x

75     mainAxisSize: MainAxisSize.spaceAround,
76     children: <Widget>[
77       Container(
78         height: 100,
79         child: Text('Item 1 - pretty big!'),
80         color: Colors.red,
81       ), // Container
82       Flexible(
83         fit: FlexFit.loose,
84         child: Container(
85           height: 100,
86           child: Text('Item 2'),
87           color: Colors.blue,
88         ), // Container
89       ), // Flexible
90       Container(
91         height: 100,
92         child: Text('Item 3')
93       )
94     ],
95   ),
96 
```



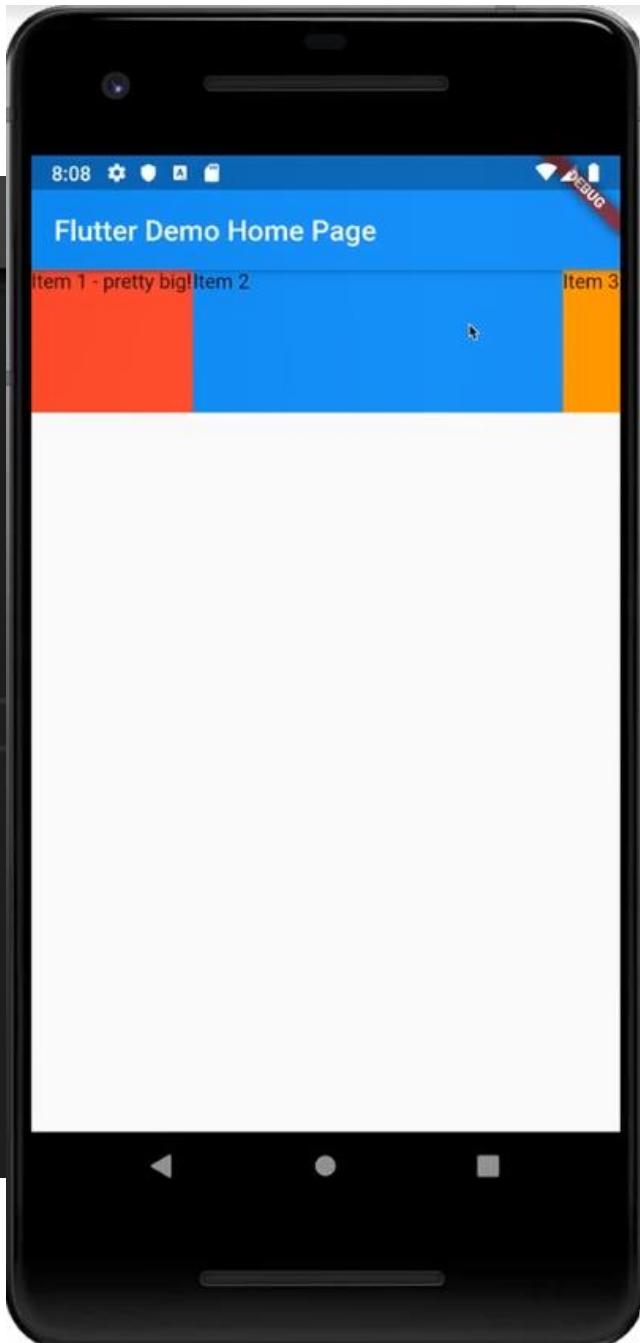
```
main.dart  x
```

```
75      mainAxisSize: MainAxisSize.spaceAround,  
76      children: <Widget>[  
77        Container(  
78          height: 100,  
79          child: Text('Item 1 - pretty big!'),  
80          color: Colors.red,  
81        ), // Container  
82        Flexible(  
83          fit: FlexFit.tight,  
84          child: Container(  
85            height: 100,  
86            child: Text('Item 2'),  
87            color: Colors.blue,  
88          ), // Container  
89        ), // Flexible  
90        Container(  
91          height: 100,
```

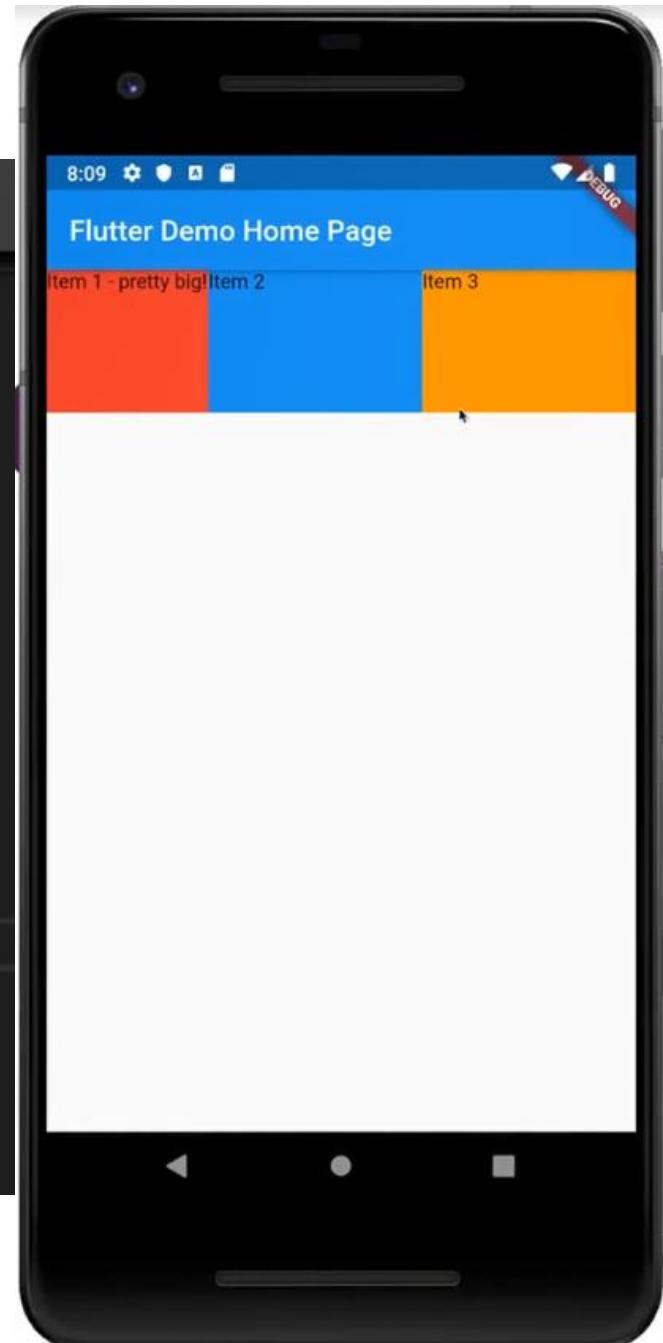


```
main.dart  x

77     Container(
78         height: 100,
79         child: Text('Item 1 - pretty big!'),
80         color: Colors.red,
81     ), // Container
82     Flexible(
83         fit: FlexFit.tight,
84         child: Container(
85             height: 100,
86             width: 100,
87             child: Text('Item 2'),
88             color: Colors.blue,
89         ), // Container
90     ), // Flexible
91     Container(
92         height: 100,
93         child: Text('Item 3'),
```



```
main.dart 80
      color: Colors.red,
81    ), // Container
82    Flexible(
83      fit: FlexFit.tight,
84      child: Container(
85        height: 100,
86        width: 100,
87        child: Text('Item 2'),
88        color: Colors.blue,
89      ), // Container
90    ), // Flexible
91    Flexible(
92      fit: FlexFit.tight,
93      child: Container(
94        height: 100,
95        child: Text('Item 3'),
96        color: Colors.orange,
```

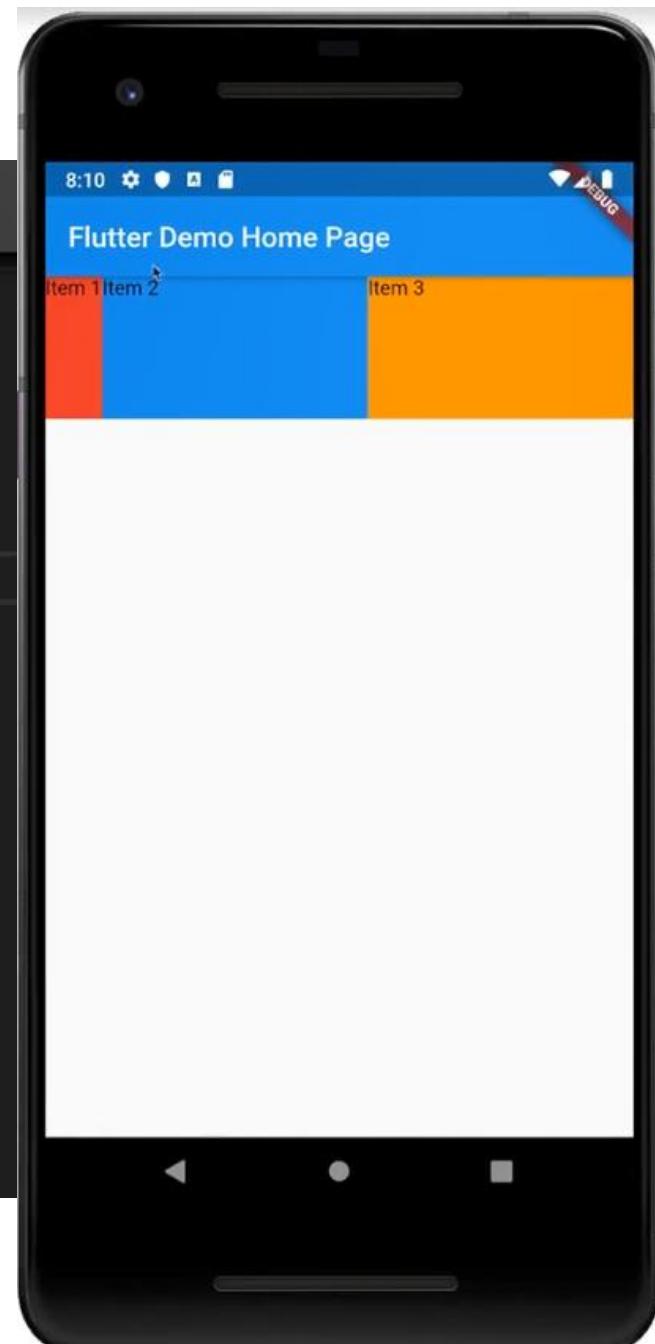


```
main.dart  x

, , // imports

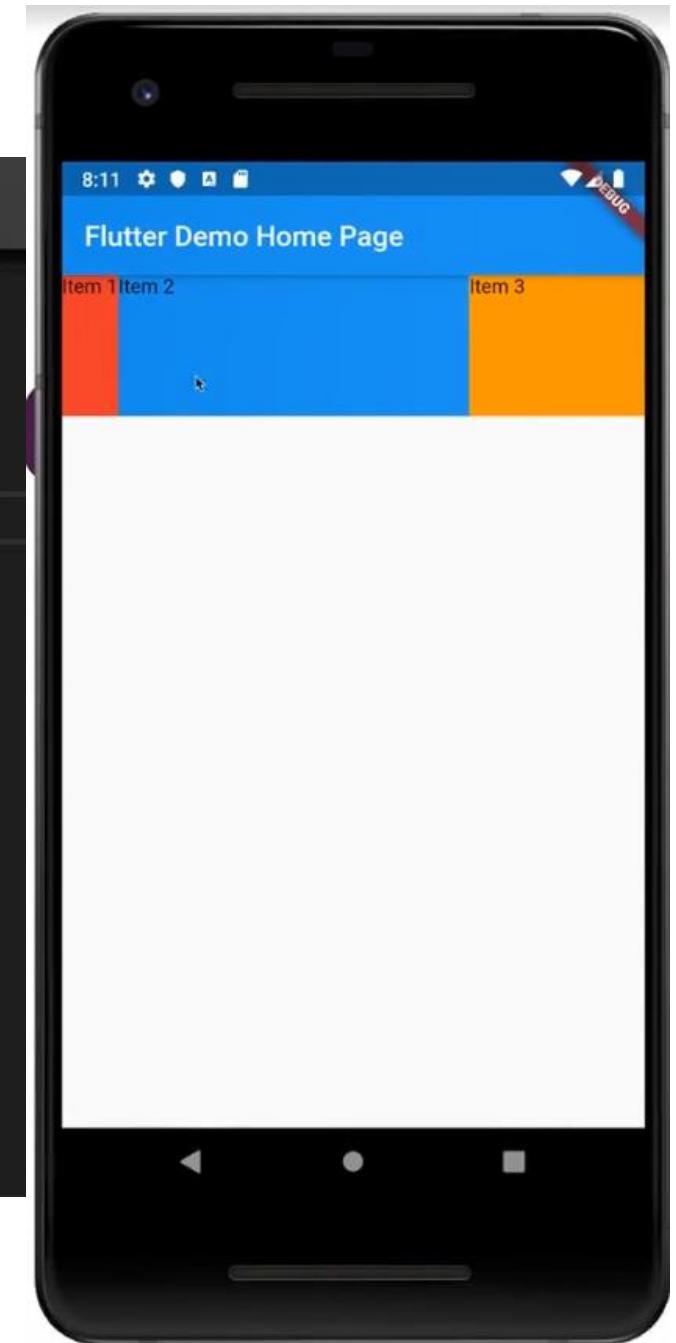
74     body: Row(
75       mainAxisAlignment: MainAxisAlignment.spaceAround,
76       children: <Widget>[
77         Container(
78           height: 100,
79           child: Text('Item 1'),
80           color: Colors.red,
81         ), // Container
82         Flexible(
83           fit: FlexFit.tight,
84           child: Container(
85             height: 100,
86             width: 100,
87             child: Text('Item 2'),
88             color: Colors.blue,
89           ), // Container
90         ), // Flexible

```



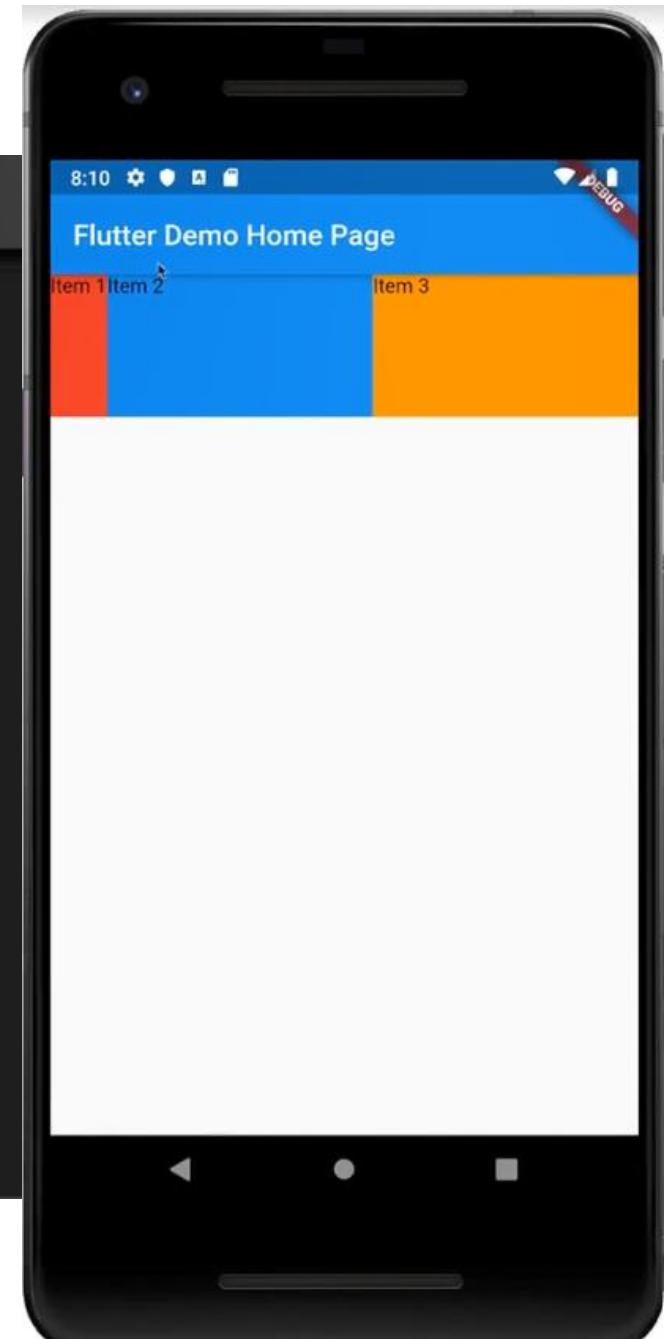
```
main.dart
```

```
79     height: 100,
80             child: Text('Item 1'),
81             color: Colors.red,
82         ), // Container
83         Flexible(
84             flex: 2,
85             fit: FlexFit.tight,
86             child: Container(
87                 height: 100,
88                 width: 100,
89                 child: Text('Item 2'),
90                 color: Colors.blue,
91             ), // Container
92         ), // Flexible
93         Flexible(
94             fit: FlexFit.tight,
95             child: Container(
                 height: 100,
```



```
main.dart x
```

```
82 Flexible(          ⚡
83   flex: 2,           ⚡
84   fit: FlexFit.tight, ⚡
85   child: Container( ⚡
86     height: 100,      ⚡
87     width: 100,       ⚡
88     child: Text('Item 2'), ⚡
89     color: Colors.blue, ⚡
90   ), // Container ⚡
91 ), // Flexible ⚡
92 Flexible(          ⚡
93   flex: 2,           ⚡
94   fit: FlexFit.tight, ⚡
95   child: Container( ⚡
96     height: 100,      ⚡
97     child: Text('Item 3'), ⚡
98     color: Colors.orange, ⚡
99   ), // Container ⚡
```



```
main.dart
```

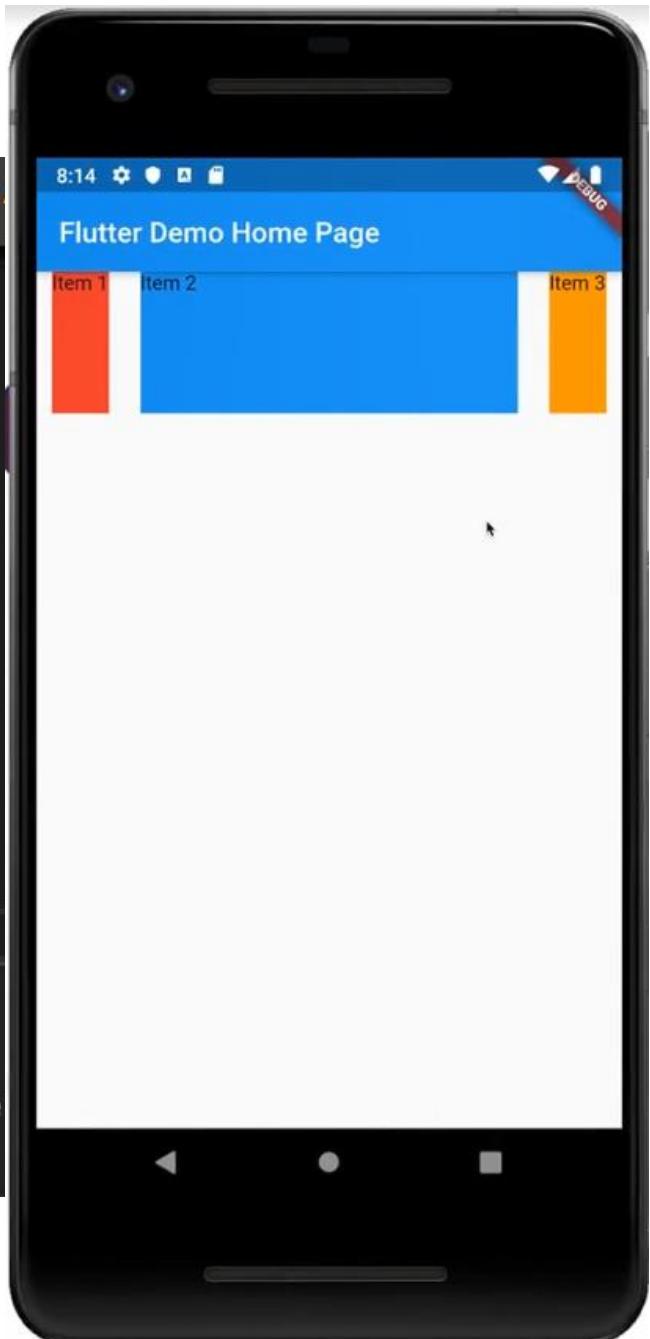
```
82     Flexible(
83         flex: 5,
84         fit: FlexFit.tight,
85         child: Container(
86             height: 100,
87             width: 100,
88             child: Text('Item 2'),
89             color: Colors.blue,
90         ), // Container
91     ), // Flexible
92     Flexible(
93         flex: 2,
94         fit: FlexFit.loose,
```

loose

```
96             height: 100,
97             child: Text('Item 3'),
98             color: Colors.orange,
```

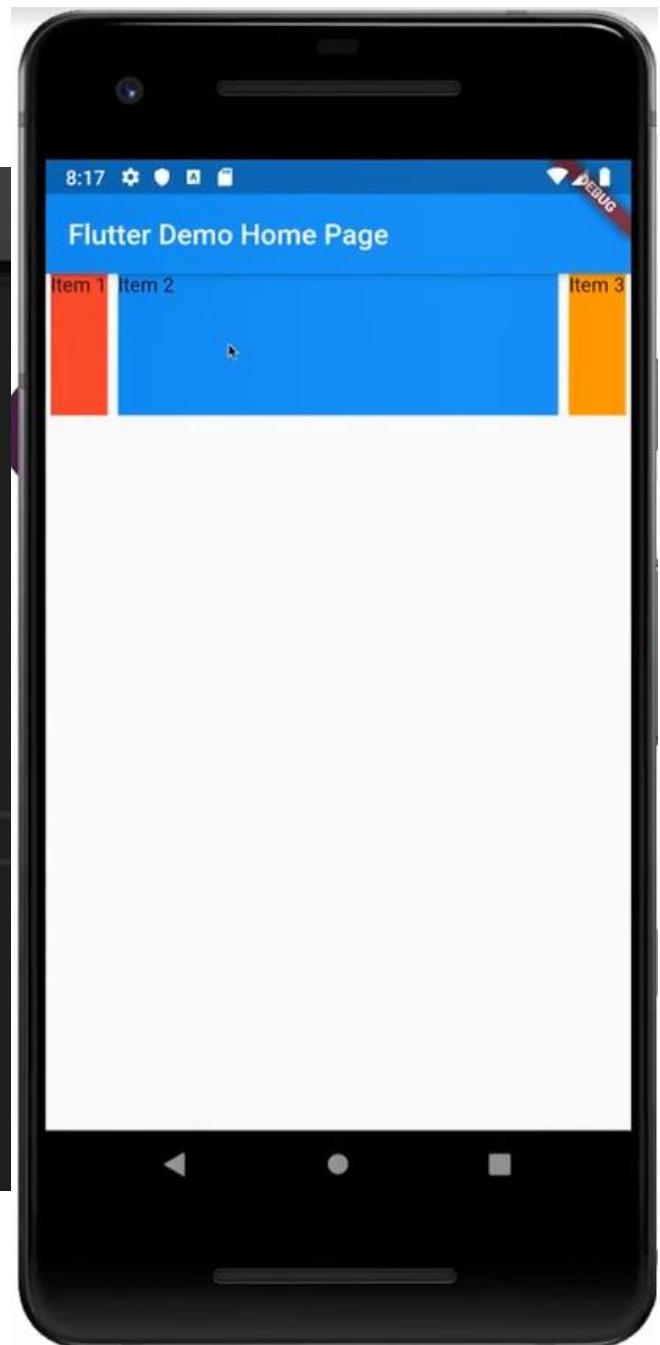
FlexFit

The child can be at most as large as the available allowed to be smaller).



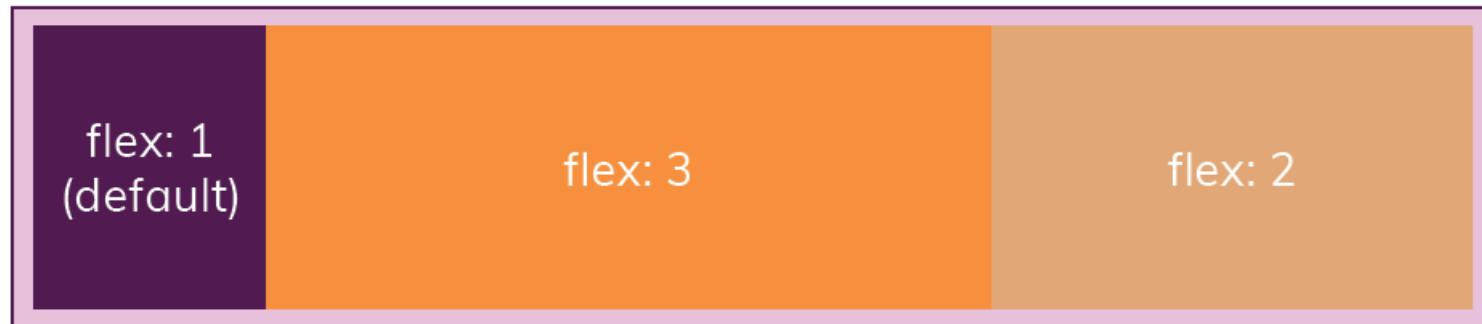
```
main.dart  x

75     mainAxisSize: MainAxisSize.spaceAround,
76     children: <Widget>[
77       Container(
78         height: 100,
79         child: Text('Item 1'),
80         color: Colors.red,
81       ), // Container
82       Expanded(
83         flex: 5,
84         // fit: FlexFit.tight,
85         child: Container(
86           height: 100,
87           width: 100,
88           child: Text('Item 2'),
89           color: Colors.blue,
90         ), // Container
91       ), // Expanded
```



# Flexible & Expanded

Row() with Flexible(fit: **FlexFit.tight** or **Expanded()**) on all child widgets



Widgets are all increased in size to fill the available space

Widgets increase in size differently, based on the **flex** values.

All child **flex** values are summed up, each widget then takes its share

Example: The middle (orange) container takes 3/6 of the available space

# **ADDING A LISTTILE WIDGET**

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart X lib > widgets > transaction\_list.dart > TransactionList > build

OPEN EDITORS

PERSONAL\_EXPENSES\_04

- OpenSans-Regular.ttf
- Quicksand-Bold.ttf
- Quicksand-Light.ttf
- Quicksand-Medium.ttf
- Quicksand-Regular.ttf

images

- waiting.png

> build

> ios

> lib

> models

- transaction.dart

> widgets

- chart\_bar.dart
- chart.dart
- new\_transaction.dart
- transaction\_list.dart
- user\_transactions.dart
- main.dart

> test

> web

.gitignore

.metadata

.packages

analysis\_options.yaml

personal\_expenses\_04.iml

pubspec.lock

pubspec.yaml

README.md

OUTLINE

DEPENDENCIES

transaction\_list.dart

```
32     ) // Column
33     : ListView.builder(
34         itemBuilder: (ctx, index) {
35             return Card(
36                 elevation: 5,
37                 margin: EdgeInsets.symmetric(
38                     vertical: 8,
39                     horizontal: 5,
40                 ), // EdgeInsets.symmetric
41                 child: ListTile(
42                     leading: CircleAvatar(
43                         radius: 30,
44                     ),
45                     child: Padding(
46                         padding: EdgeInsets.all(6),
47                         child: FittedBox(
48                             child: Text('\${transactions[index].amount}'),
49                         ), // FittedBox
50                     ), // Padding
51                     child: CircleAvatar(
52                         title: Text(
53                             transactions[index].title,
54                         style: Theme.of(context).textTheme
```

windows\transaction\_list.dart

Ln 60, Col 1 (963 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

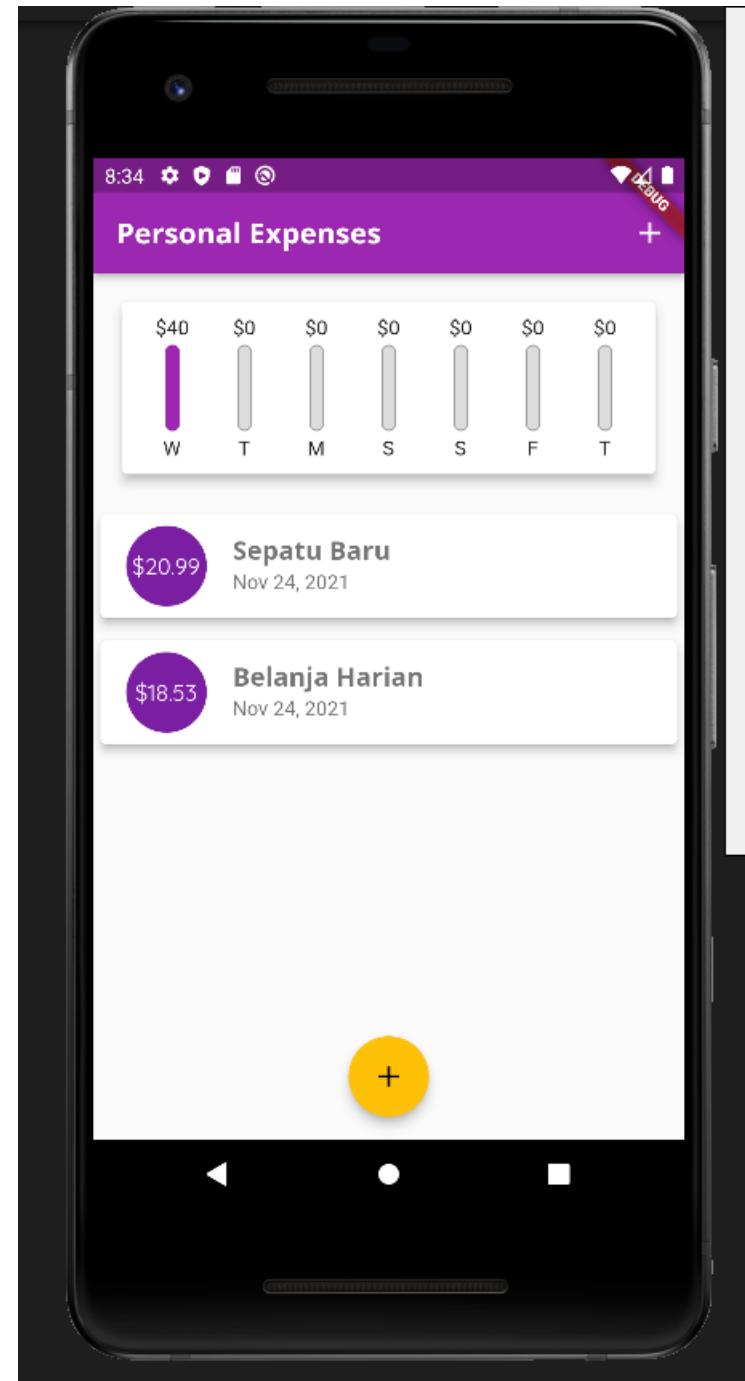
EXPLORER ... transaction\_list.dart X lib > widgets > transaction\_list.dart > TransactionList > build

OPEN EDITORS transaction\_list.dart lib\wid... PERSONAL\_EXPENSES\_04 OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images waiting.png build iOS lib models transaction.dart widgets chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml README.md OUTLINE DEPENDENCIES

42 leading: CircleAvatar(  
43 radius: 30,  
44 child: Padding(  
45 padding: EdgeInsets.all(6),  
46 child: FittedBox(  
47 child: Text('\\$\${transactions[index].amount}'),  
48 ), // FittedBox  
49 ), // Padding  
50 ), // CircleAvatar  
51 title: Text(  
52 transactions[index].title,  
53 style: Theme.of(context).textTheme.headline1,  
54 ), // Text  
55 subtitle: Text(  
56 DateFormat.yMMMd().format(transactions[index].date),  
57 ), // Text  
58 ), // ListTile  
59 ); // Card  
60 },  
61 itemCount: transactions.length,  
62 ), // ListView.builder  
63 ); // Container

windows\transaction\_list.dart

Ln 60, Col 1 (963 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



# **IMPROVING THE OVERALL CHART**

File Edit Selection View Go Run Terminal Help

transaction\_list.dart main.dart chart\_bar.dart

lib > widgets > chart\_bar.dart > ChartBar > build

```
children: <Widget>[  
    Container(  
        height: 20,  
        child: FittedBox(  
            child: Text('${spendingAmount.toStringAsFixed(0)}'),  
        ), // FittedBox  
    ), // Container  
    SizedBox(  
        height: 4,  
    ), // SizedBox  
    Container(  
        height: 60,  
        width: 10,  
        child: Stack(  
            children: <Widget>[  
                Container(  
                    decoration: BoxDecoration(  
                        border: Border.all(color: Colors.grey,  
                        color: Color.fromRGBO(220, 220, 220, 1),  
                        borderRadius: BorderRadius.circular(10)  
                    ), // BoxDecoration  
                ), // Container
```

Personal Expenses

8:38

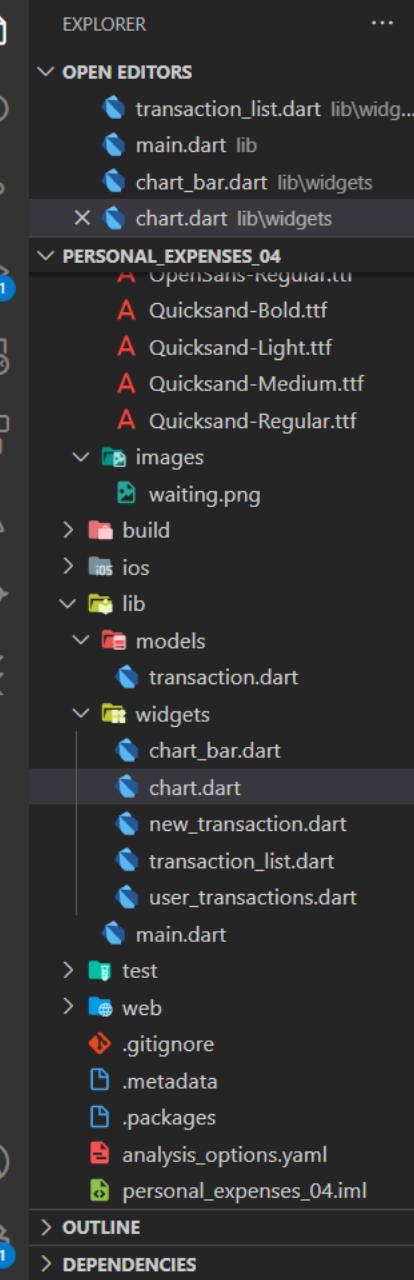
W \$100040 T \$0 M \$0 S \$0 S \$0 F \$0 T \$0

Sepatu Baru \$20.99 Nov 24, 2021

Belanja Harian \$18.53 Nov 24, 2021

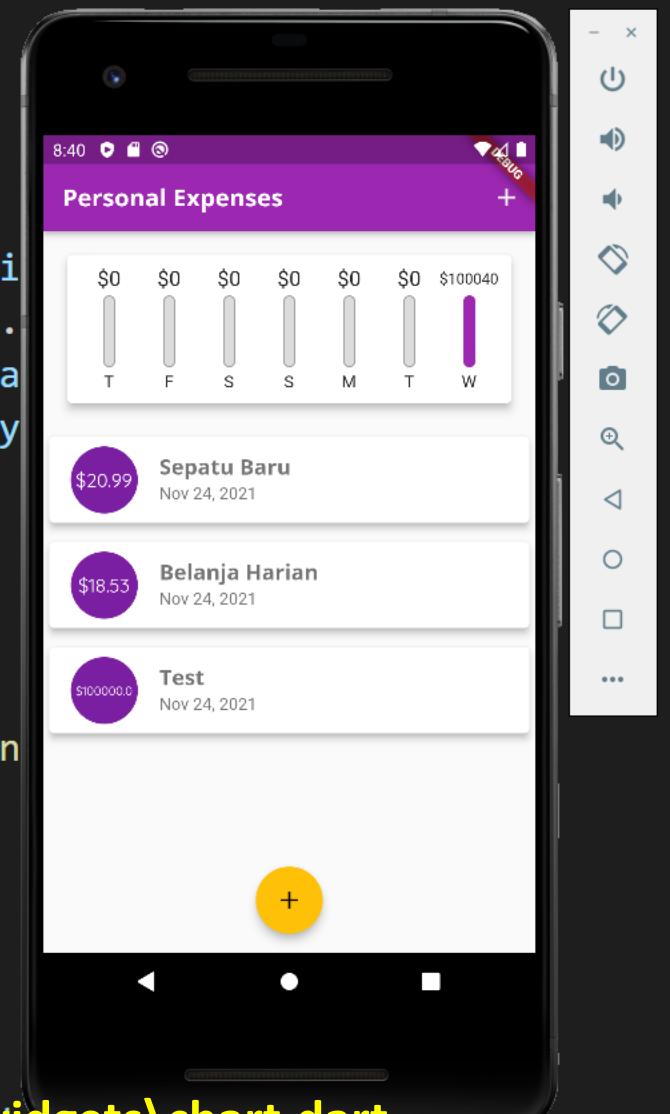
Test \$100000.0 Nov 24, 2021

wIDGETS\CHART\_BAR.DART



lib > widgets > chart.dart > Chart > groupedTransactionValues

```
14 final weekDay = DateTime.now().subtract(  
15     Duration(days: index),  
16 );  
17 var totalSum = 0.0;  
18  
19 for (var i = 0; i < recentTransactions.length; i  
20     if (recentTransactions[i].date.day == weekDay.  
21         recentTransactions[i].date.month == weekDa  
22         recentTransactions[i].date.year == weekDay  
23             totalSum += recentTransactions[i].amount;  
24     }  
25 }  
26  
27 return {  
28     'day': DateFormat.E().format(weekDay).substrin  
29     'amount': totalSum,  
30 };  
31 ... }).reversed.toList(); // List.generate  
32 }  
33  
34 double get totalSpending {  
35     return groupedTransactionValues.fold(0.0, (sum, widgets\chart.dart  
36         return sum + item['amount']);
```



# **WIDGETS AND CONFIGURING WIDGETS – SUMMARY OVERVIEW**

```
    child: ListTile(  
        leading: Container(  
            height: 60,  
            width: 60,  
            decoration: BoxDecoration(  
                color: Theme.of(context).primaryColor,  
                shape: BoxShape.circle,  
            ), // BoxDecoration
```

```
    child: ListTile(  
        leading: CircleAvatar(  
            radius: 30,  
            child: Padding(  
                padding: EdgeInsets.all(6),  
                child: FittedBox(  
                    child: Text('\$${transactions[index].amount}'),  
                ), // FittedBox  
            ), // Padding  
        ), // CircleAvatar
```

```
    child: Container(  
        padding: new Container({Key key, AlignmentGeometry alignment,  
        chi EdgeInsetsGeometry padding, Color color, Decoration dec  
        oration, Decoration foregroundDecoration, double width,  
        double height, BoxConstraints constraints, EdgeInsetsG  
        eometry margin, Matrix4 transform, Widget child}) → Con  
        tainer
```

# **GETTING STARTED WITH DATE SELECTION**

File Edit Selection View Go Run Terminal Help new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart main.dart chart\_bar.dart chart.dart new\_transaction.dart 1

lib > widgets > new\_transaction.dart > \_NewTransactionState

```
1 import 'package:flutter/material.dart';
2 import 'package:flutter/services.dart';
3 import 'package:intl/intl.dart';
4
5 class NewTransaction extends StatefulWidget {
6     final Function addTx;
7
8     NewTransaction(this.addTx);
9
10    @override
11    State<NewTransaction> createState() => _NewTransactionState();
12 }
13
14 class _NewTransactionState extends State<NewTransaction> {
15     final titleController = TextEditingController();
16     final amountController = TextEditingController();
17     DateTime _selectedDate;
18
19     void _submitData() {
20         final enteredTitle = titleController.text;
21         final enteredAmount = double.parse(amountController.text);
22     }
}
```

windows\new\_transaction.dart

File Edit Selection View Go Run Terminal Help new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart main.dart chart\_bar.dart chart.dart new\_transaction.dart X

OPEN EDITORS lib > widgets > new\_transaction.dart > \_NewTransactionState > build

transaction\_list.dart lib\widgets\transaction\_list.dart  
main.dart lib\widgets\main.dart  
chart\_bar.dart lib\widgets\chart\_bar.dart  
user\_transactions.dart lib\widgets\user\_transactions.dart  
chart.dart lib\widgets\chart.dart  
new\_transaction.dart lib\widgets\new\_transaction.dart

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Quicksand-Medium.ttf  
Quicksand-Regular.ttf

images  
waiting.png

> build

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< widgets  
chart\_bar.dart  
chart.dart  
new\_transaction.dart  
transaction\_list.dart  
user\_transactions.dart

main.dart

> test

> web  
.gitignore  
.metadata  
.packages

> OUTLINE

> DEPENDENCIES

TextField(  
decoration: InputDecoration(labelText: 'Amount'),  
controller: amountController,  
keyboardType: TextInputType.number,  
onSubmitted: (\_) => submitData(),  
, // TextField  
Container(  
height: 70,  
child: Row(  
children: <Widget>[  
Expanded(  
child: Text(  
\_selectedDate == null  
? 'No Date Chosen!'  
: 'Picked Date: \${DateFormat.yMd().format(\_selectedDate)}',  
, // Text  
, // Expanded  
FlatButton(  
textColor: Theme.of(context).primaryColor,  
child: Text(  
'Choose Date',  
style: TextStyle(  
Ln 96, Col 1 (843 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

widgets\new\_transaction.dart

File Edit Selection View Go Run Terminal Help

new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart main.dart chart\_bar.dart chart.dart new\_transaction.dart

OPEN EDITORS 1 UNSAVED lib > widgets > new\_transaction.dart > \_NewTransactionState > build

transaction\_list.dart lib\widgets\transaction\_list.dart  
main.dart lib\widgets\main.dart  
chart\_bar.dart lib\widgets\chart\_bar.dart  
user\_transactions.dart lib\widgets\user\_transactions.dart  
chart.dart lib\widgets\chart.dart  
new\_transaction.dart lib\widgets\new\_transaction.dart

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transaction\_list.dart  
user\_transactions.dart  
main.dart

> test

> web  
.gitignore  
.metadata  
.packages

> OUTLINE

> DEPENDENCIES

83 FlatButton(  
84     textColor: Theme.of(context).primaryColor,  
85     child: Text(  
86         'Choose Date',  
87         style: TextStyle(  
88             fontWeight: FontWeight.bold,  
89         ), // TextStyle  
90         ), // Text  
91         onPressed: \_presentDatePicker,  
92             ), // FlatButton  
93     ], // <Widget>[]  
94     ), // Row  
95     ), // Container  
96     RaisedButton(  
97         child: Text('Add Transaction'),  
98         color: Theme.of(context).primaryColor,  
99         textColor: Theme.of(context).textTheme.button.color,  
100         onPressed: \_submitData,  
101             ), // RaisedButton  
102     ], // <Widget>[]  
103     ), // Column  
104     ), // Container

widgets\new\_transaction.dart

Ln 72, Col 1 (1092 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart main.dart X chart\_bar.d lib main.dart > MyApp > build chart.dart new\_transaction.dart

OPEN EDITORS transaction\_list.dart lib\w... main.dart lib chart\_bar.dart lib\widgets user\_transactions.dart lib... chart.dart lib\widgets new\_transaction.dart lib\... PERSONAL\_EXPENSES\_04 OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images waiting.png build ios lib models transaction.dart widgets chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages OUTLINE DEPENDENCIES

10 class MyApp extends StatelessWidget {  
11 @override  
12 Widget build(BuildContext context) {  
13 return MaterialApp(  
14 title: 'Personal Expenses',  
15 theme: ThemeData(  
16 primarySwatch: Colors.purple,  
17 accentColor: Colors.amber,  
18 fontFamily: 'Quicksand',  
19 textTheme: ThemeData.light().textTheme.copyWith(  
20 headline1: TextStyle(  
21 fontFamily: 'OpenSans',  
22 fontWeight: FontWeight.bold,  
23 fontSize: 18,  
24 ), // TextStyle  
25 button: TextStyle(color: Colors.white),  
26 ),  
27 appBarTheme: AppBarTheme(  
28 textTheme: ThemeData.light().textTheme.copyWith(  
29 headline1: TextStyle(  
30 fontFamily: 'OpenSans',  
31 fontSize: 20,

main.dart

Ln 26, Col 1 (57 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

# SHOWING A DATEPICKER

File Edit Selection View Go Run Terminal Help new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart main.dart chart\_bar.dart chart.dart new\_transaction.dart X

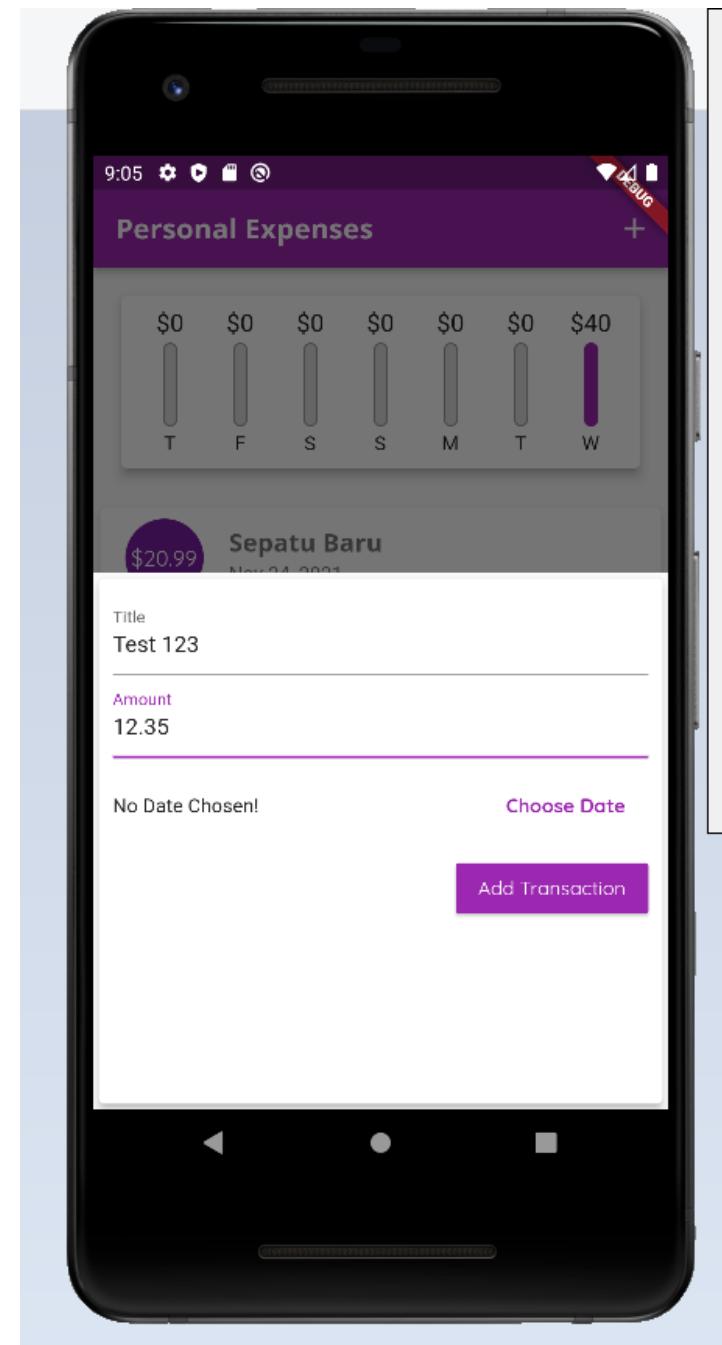
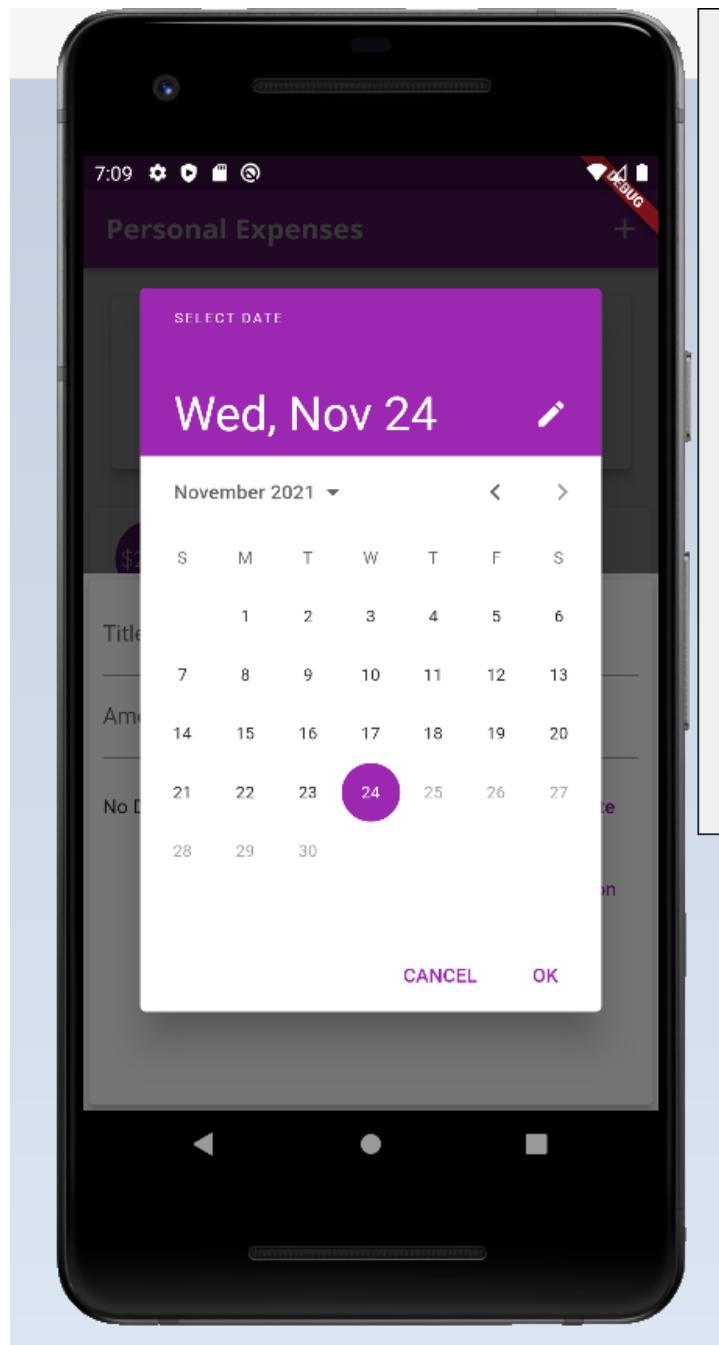
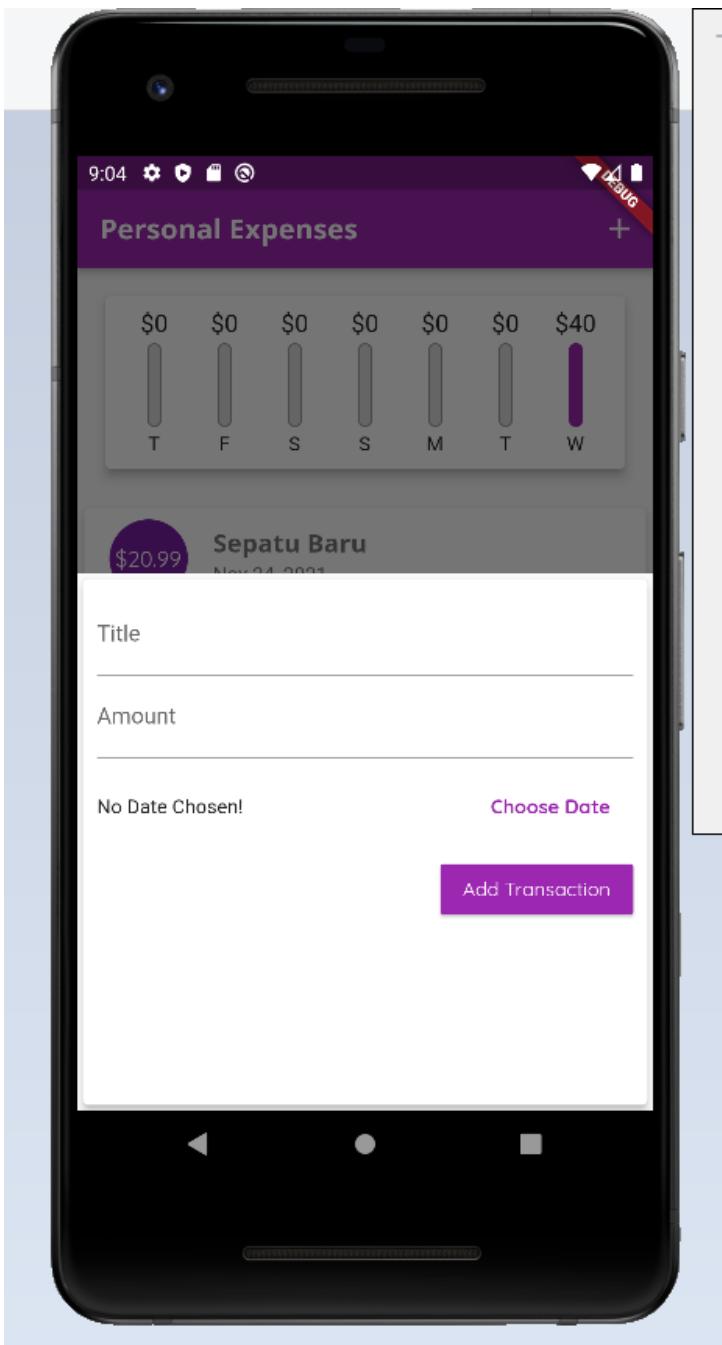
lib > widgets > new\_transaction.dart > \_NewTransactionState

```
34
35 void _presentDatePicker() {
36   showDatePicker(
37     context: context,
38     initialDate: DateTime.now(),
39     firstDate: DateTime(2019),
40     lastDate: DateTime.now(),
41   ).then((pickedDate) {
42     if (pickedDate == null) {
43       return;
44     }
45     setState(() {
46       _selectedDate = pickedDate;
47     });
48   });
49   print('...');
50 }
```

@override  
Widget build(BuildContext context) {  
 return Card(  
 elevation: 5,

widgets\new\_transaction.dart

Ln 51, Col 1 (368 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



# **ADDING TRANSACTIONS WITH A DATE**

File Edit Selection View Go Run Terminal Help new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart main.dart chart\_bar.d...

OPEN EDITORS lib > widgets > new\_transaction.dart > \_NewTransactionState > \_submitData

transaction\_list.dart lib\widgets\transaction\_list.dart  
main.dart lib\widgets\main.dart  
chart\_bar.dart lib\widgets\chart\_bar.dart  
user\_transactions.dart lib\widgets\user\_transactions.dart  
chart.dart lib\widgets\chart.dart  
new\_transaction.dart lib\widgets\new\_transaction.dart

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chart.dart  
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transaction\_list.dart  
user\_transactions.dart

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> OUTLINE

> DEPENDENCIES

14 class \_NewTransactionState extends State<NewTransaction> {  
15 final \_titleController = TextEditingController();  
16 final \_amountController = TextEditingController();  
17 DateTime \_selectedDate;  
18  
19 void \_submitData() {  
20 if (\_amountController.text.isEmpty) {  
21 return;  
22 }  
23 final enteredTitle = \_titleController.text;  
24 final enteredAmount = double.parse(\_amountController.text);  
25  
26 if (enteredTitle.isEmpty || enteredAmount <= 0 || \_selectedDate == null) {  
27 return;  
28 }  
29  
30 widget.addTx(  
31 enteredTitle,  
32 enteredAmount,  
33 \_selectedDate,  
34 );  
35 Navigator.of(context).pop();  
36

wIDGETS\new\_transaction.dart

LN 35, COL 1 (377 SELECTED) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart main.dart X chart\_bar.d lib chart.dart new\_transaction.dart

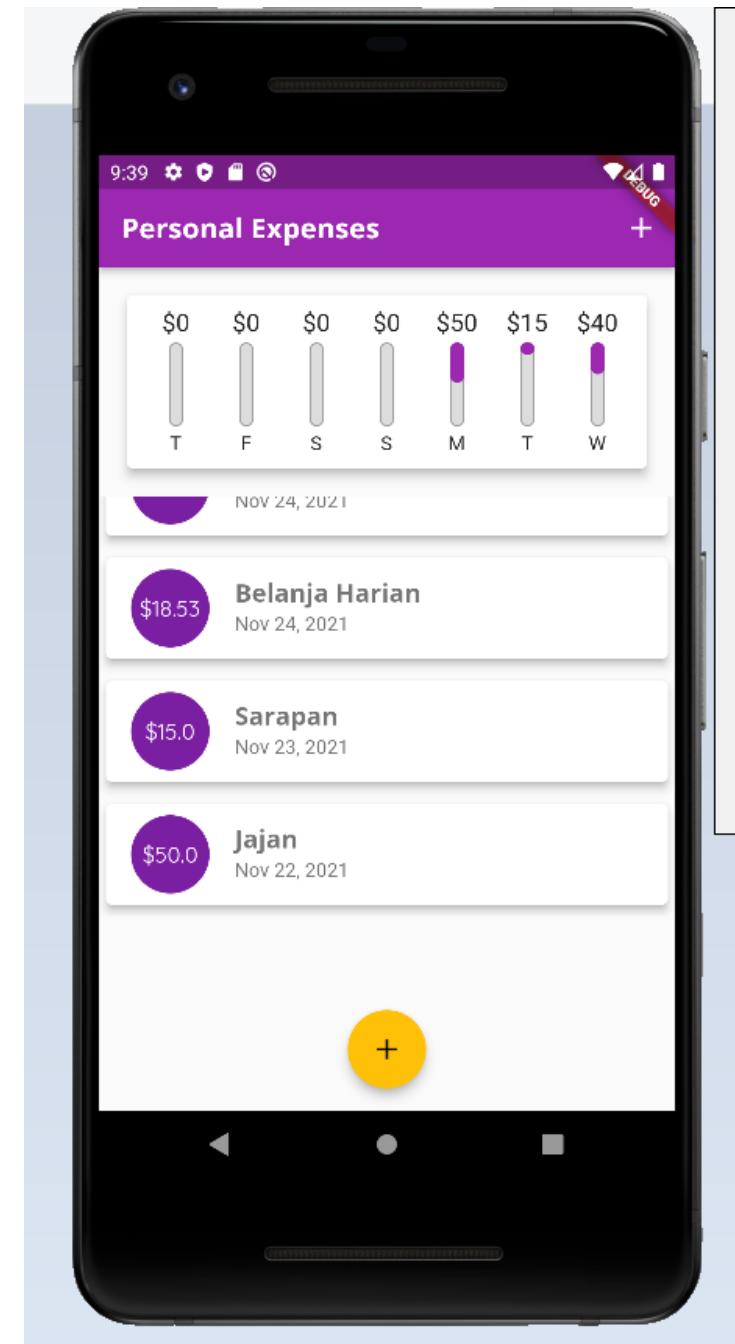
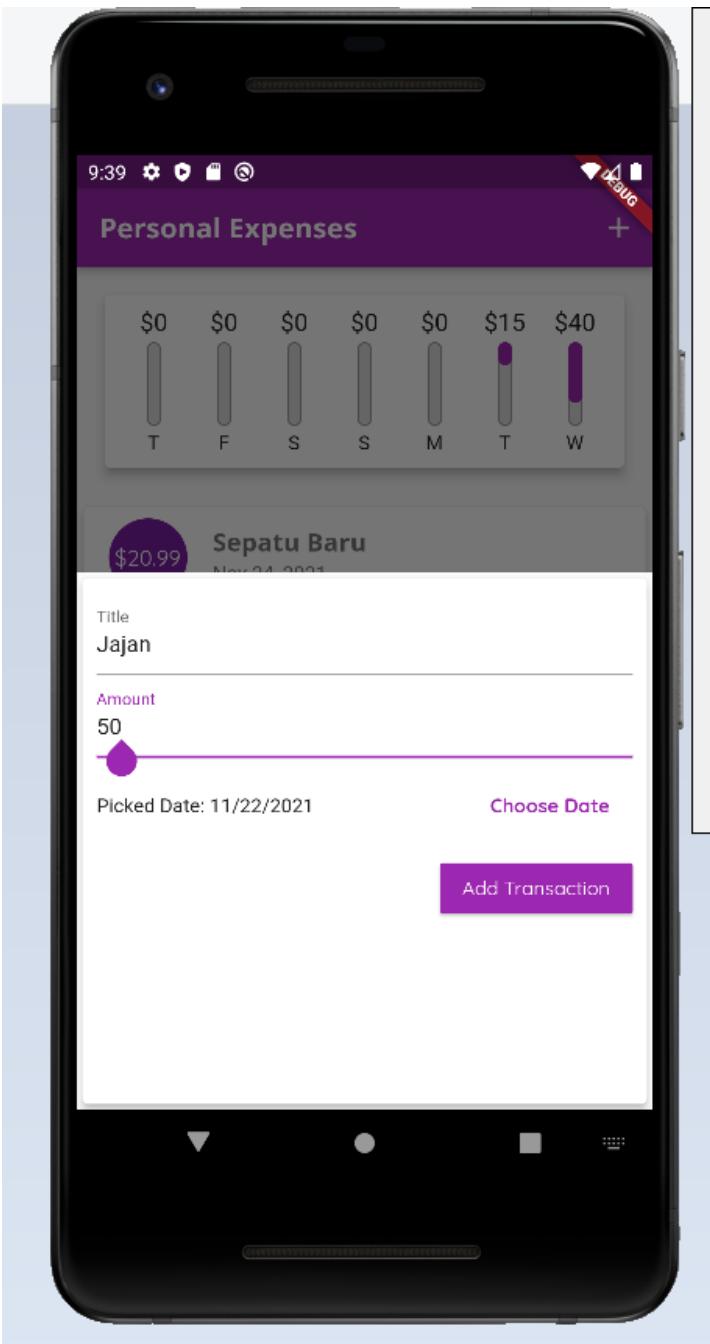
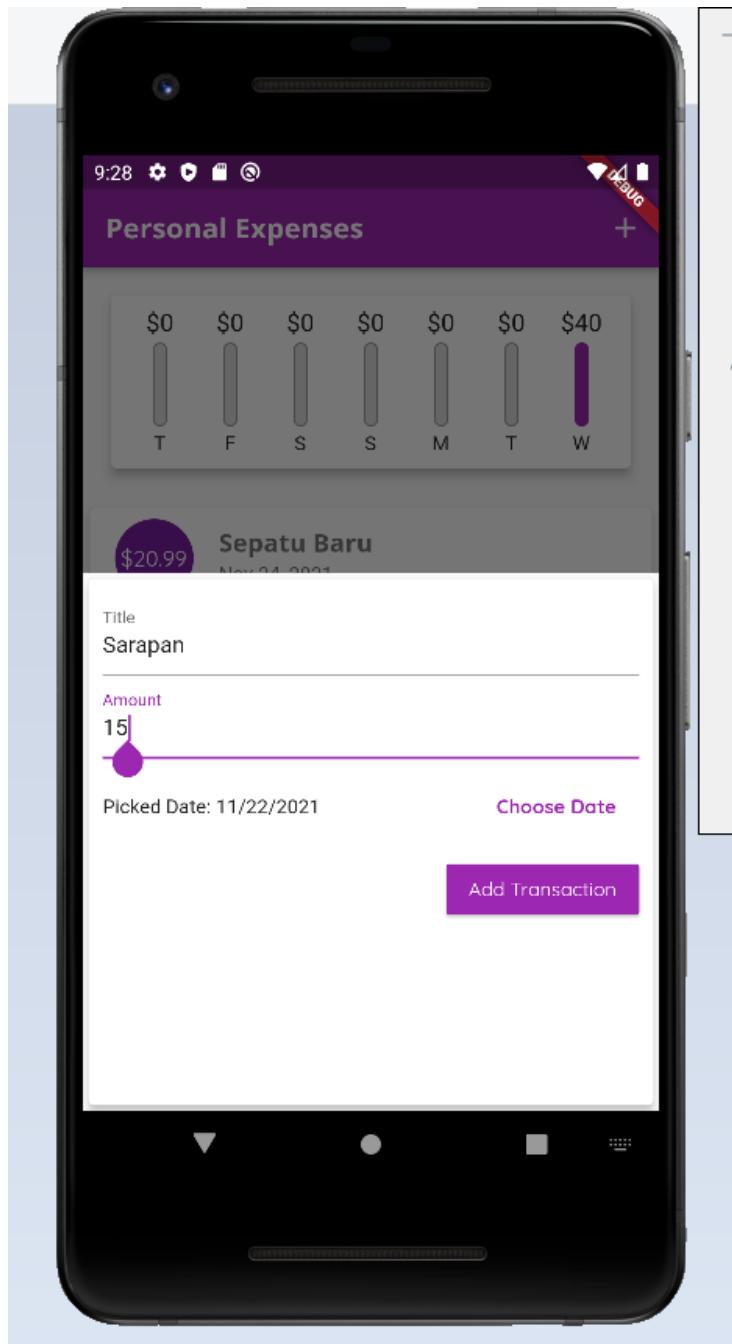
OPEN EDITORS 1 UNSAVED transaction\_list.dart lib\w... main.dart lib chart\_bar.dart lib\widgets user\_transactions.dart lib... chart.dart lib\widgets new\_transaction.dart lib\... PERSONAL\_EXPENSES\_04 Opensans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images waiting.png build ios lib models transaction.dart widgets chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages OUTLINE DEPENDENCIES

lib > main.dart > \_MyHomePageState

```
70    }
71
72    void _addNewTransaction(
73        String txTitle,
74        double txAmount,
75        DateTime chosenDate,
76    ) {
77        final newTx = Transaction(
78            title: txTitle,
79            amount: txAmount,
80            date: chosenDate,
81            id: DateTime.now().toString(),
82        ); // Transaction
83
84        setState(() {
85            _userTransactions.add(newTx);
86        });
87    }
88
89    void _startAddNewTransaction(BuildContext ctx) {
90        showModalBottomSheet(
91            context: ctx,
```

main.dart

Ln 88, Col 1 (327 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



# **DELETING TRANSACTIONS AND USING ICONBUTTONS**

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart X main.dart chart\_bar.d chart.dart new\_transaction.dart

OPEN EDITORS lib > widgets > transaction\_list.dart > TransactionList > build

transaction\_list.dart lib\widgets\transaction\_list.dart

46 padding: EdgeInsets.all(0),  
47 child: FittedBox(  
48 | child: Text('\\$\${transactions[index].amount}'),  
49 | ), // FittedBox  
50 | ), // Padding  
51 | ), // CircleAvatar  
52 title: Text(  
53 | transactions[index].title,  
54 | style: Theme.of(context).textTheme.headline1,  
55 | ), // Text  
56 subtitle: Text(  
57 | DateFormat.yMMMd().format(transactions[index].date),  
58 | ), // Text  
59 trailing: IconButton(  
60 | icon: Icon(Icons.delete),  
61 | color: Theme.of(context).errorColor,  
62 | onPressed: () => deleteTx(transactions[index].id),  
63 | ), // IconButton  
64 | ), // ListTile  
65 | ); // Card  
66 },  
67 itemCount: transactions.length,  
68 ). // ListView.builder

widgets\transaction\_list.dart

Ln 64, Col 1 (250 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart X main.dart chart\_bar.dart chart.dart new\_transaction.dart

lib > widgets > transaction\_list.dart > TransactionList

```
1 import 'package:flutter/material.dart';
2 import 'package:intl/intl.dart';
3
4 import '../models/transaction.dart';
5
6 class TransactionList extends StatelessWidget {
7   final List<Transaction> transactions;
8   final Function deleteTx;
9
10 TransactionList(this.transactions, this.deleteTx);
11
12 @override
13 Widget build(BuildContext context) {
14   return Container(
15     height: 300,
16     child: transactions.isEmpty
17       ? Column(
18         children: <Widget>[
19           Text(
20             'No transactions added yet!',
21             style: Theme.of(context).textTheme.headline1,
22           ), // Text
23         ],
24       );
25 }
```

PERSONAL\_EXPENSES\_04

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- Quicksand-Bold.ttf
- Quicksand-Light.ttf
- Quicksand-Medium.ttf
- Quicksand-Regular.ttf

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    - new\_transaction.dart
    - transaction\_list.dart
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- test
- web
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  - .metadata
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OUTLINE

DEPENDENCIES

0 △ 0 ① 48 Debug my code

Ln 11, Col 1 (84 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

windows\transaction\_list.dart

EXPLORER ...

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- transaction\_list.dart lib\w...
- main.dart lib
- chart\_bar.dart lib\widgets
- user\_transactions.dart lib...
- chart.dart lib\widgets
- new\_transaction.dart lib\...

PERSONAL\_EXPENSES\_04

- OpenSans-Regular.ttf
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- Quicksand-Light.ttf
- Quicksand-Medium.ttf
- Quicksand-Regular.ttf

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- new\_transaction.dart
- transaction\_list.dart
- user\_transactions.dart
- main.dart

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> OUTLINE

> DEPENDENCIES

transaction\_list.dart main.dart chart\_bar.dart chart.dart new\_transaction.dart

lib > main.dart > \_MyHomePageState > build

```
119     onPressed: () => _startAddNewTransaction(context),
120     ), // IconButton
121   ], // <Widget>[]
122   ), // AppBar
123   body: SingleChildScrollView(
124     child: Column(
125       crossAxisAlignment: CrossAxisAlignment.stretch,
126       children: <Widget>[
127         Chart(_recentTransactions),
128         TransactionList(
129           ..._userTransactions,
130           ..._deleteTransaction,
131         ), // TransactionList
132       ], // <Widget>[]
133     ), // Column
134   ), // SingleChildScrollView
135   floatingActionButtonLocation: FloatingActionButtonLocation.centerFloat,
136   floatingActionButton: FloatingActionButton(
137     child: Icon(Icons.add),
138     onPressed: () => _startAddNewTransaction(context),
139   ), // FloatingActionButton
140 ); // Scaffold
```

main.dart

File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

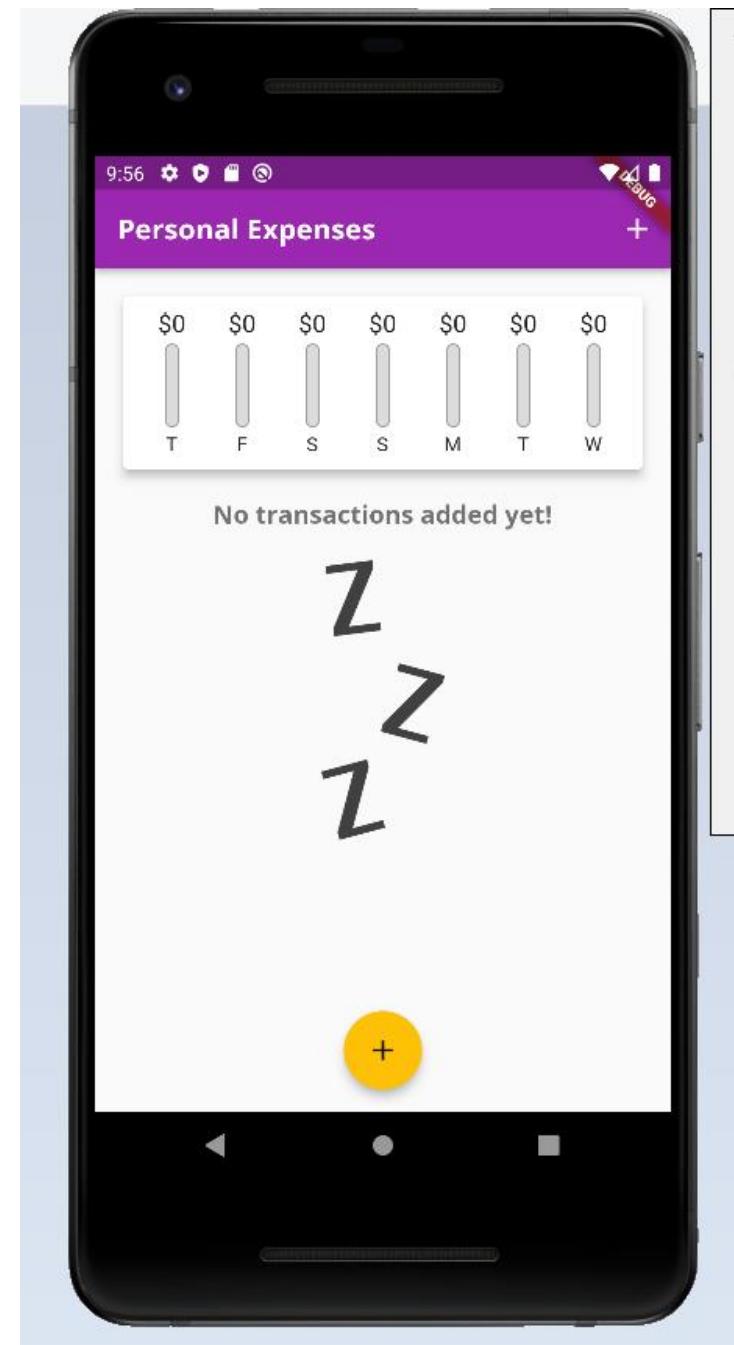
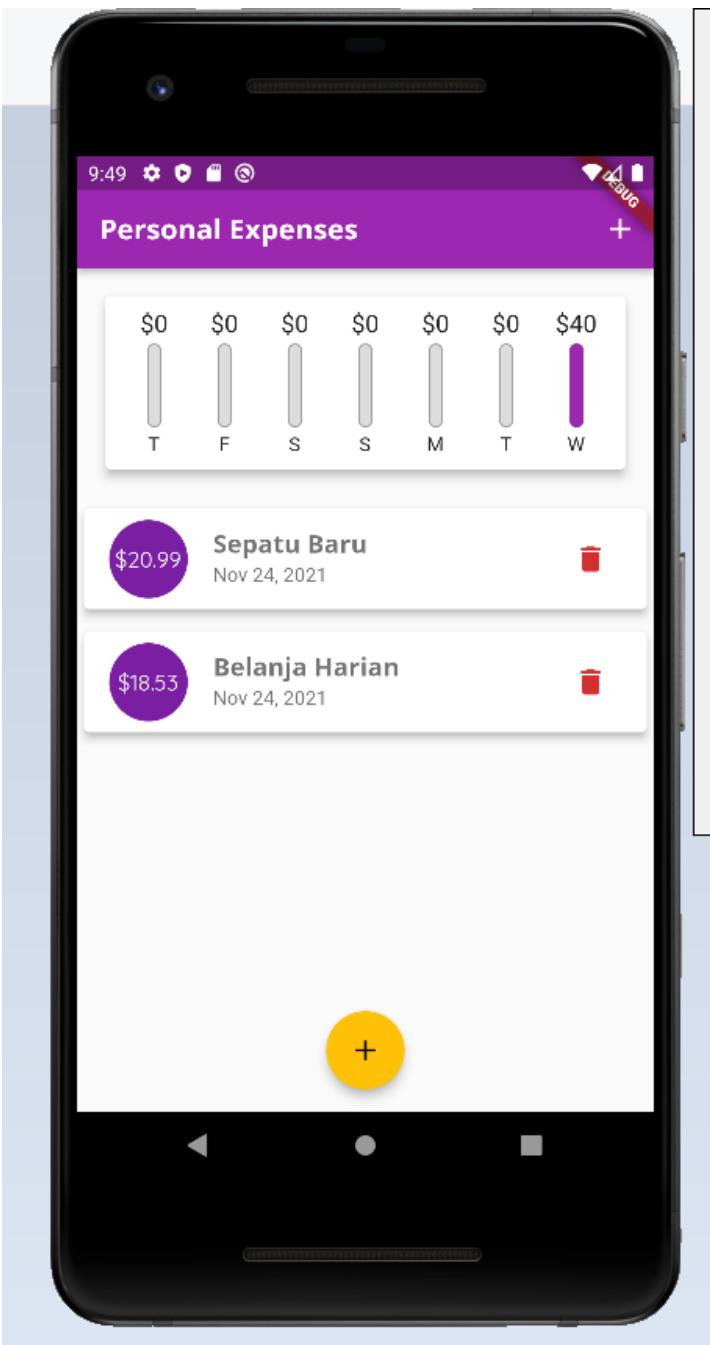
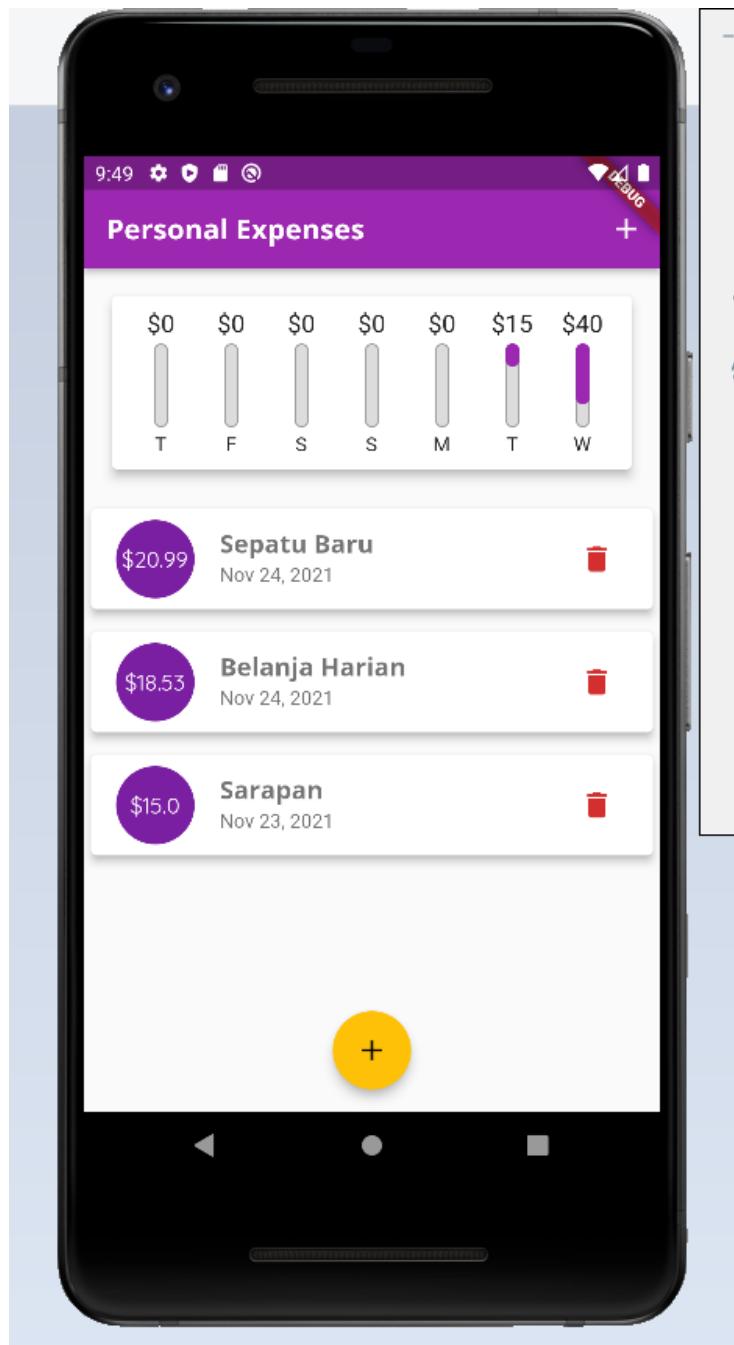
EXPLORER ... transaction\_list.dart main.dart chart\_bar.d lib \_MyHomePageState

OPEN EDITORS transaction\_list.dart lib\w... main.dart lib chart\_bar.dart lib\widgets user\_transactions.dart lib... chart.dart lib\widgets new\_transaction.dart lib\... PERSONAL\_EXPENSES\_04 OpenSans-Regular.ttf Quicksand-Bold.ttf Quicksand-Light.ttf Quicksand-Medium.ttf Quicksand-Regular.ttf images waiting.png build ios lib models transaction.dart widgets chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages OUTLINE 1 DEPENDENCIES

89 void \_startAddNewTransaction(BuildContext ctx) {  
90 showModalBottomSheet(  
91 context: ctx,  
92 builder: (\_) {  
93 return GestureDetector(  
94 onTap: () {},  
95 child: NewTransaction(\_addNewTransaction),  
96 behavior: HitTestBehavior.opaque,  
97 ); // GestureDetector  
98 },  
99 );  
100 }  
101  
102 void \_deleteTransaction(String id) {  
103 setState(() {  
104 \_userTransactions.removeWhere((tx) => tx.id == id);  
105 });  
106 }  
107  
108 @override  
109 Widget build(BuildContext context) {  
110 return Scaffold(  
111 appBar: AppBar(/

main.dart

Ln 107, Col 1 (132 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



**FINAL POLISHING!**

File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart X main.dart chart\_bar.dart chart.dart new\_transaction.dart

lib > widgets > transaction\_list.dart > TransactionList > build

```
1 import 'package:flutter/material.dart';
2 import 'package:intl/intl.dart';
3
4 import '../models/transaction.dart';
5
6 class TransactionList extends StatelessWidget {
7   final List<Transaction> transactions;
8   final Function deleteTx;
9
10 TransactionList(this.transactions, this.deleteTx);
11
12 @override
13 Widget build(BuildContext context) {
14   return Container(
15     height: 450,
16     child: transactions.isEmpty
17       ? Column(
18         children: <Widget>[
19           Text(
20             'No transactions added yet!',
21             style: Theme.of(context).textTheme.headline1,
22           ), // Text
23         ],
24       );
25 }
26
```

PERSONAL\_EXPENSES\_04

- OpenSans-Regular.ttf
- Quicksand-Bold.ttf
- Quicksand-Light.ttf
- Quicksand-Medium.ttf
- Quicksand-Regular.ttf

- images
- waiting.png

- build
- ios
- lib
  - models
    - transaction.dart
  - widgets
    - chart\_bar.dart
    - chart.dart
    - new\_transaction.dart
    - transaction\_list.dart
- user\_transactions.dart
- main.dart

- test
- web
  - .gitignore
  - .metadata
  - .packages

OUTLINE  
DEPENDENCIES

0 △ 0 ① 48 Debug my code

Ln 16, Col 1 (20 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

widgets\transaction\_list.dart

