

# **Responsive & Adaptive UIs**

Different Device Sizes & Operating Systems

# What's In This Section?

What does “Responsive” & “Adaptive” Mean?

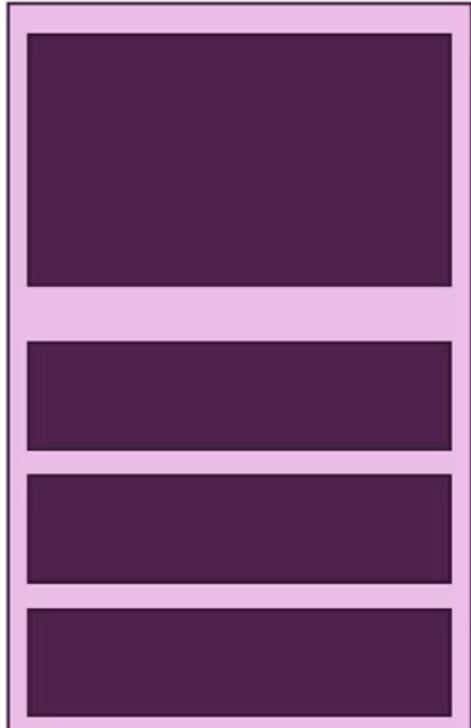
Core Tools to Create Responsive Layouts

Creating Platform-specific Layouts / Looks

# **WHAT DOES RESPONSIVE AND ADAPTIVE MEAN**

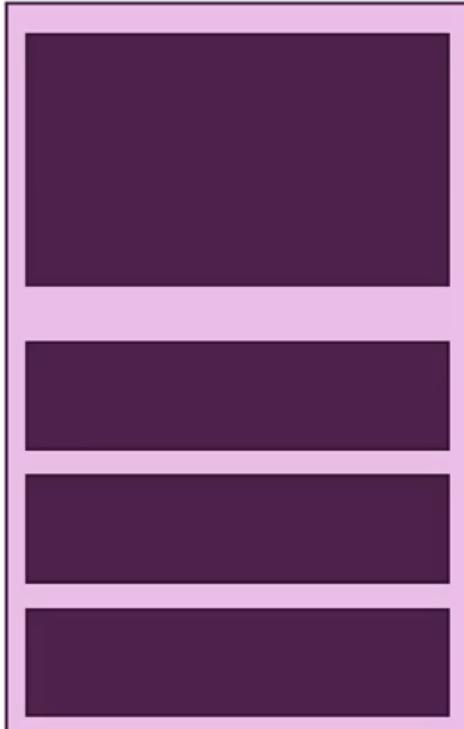
# What does “Responsive” Mean?

Portrait-mode  
Phone

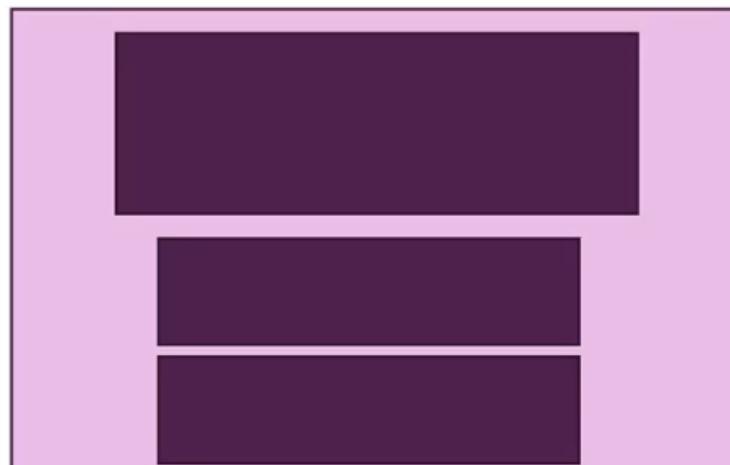


# What does “Responsive” Mean?

Portrait-mode  
Phone

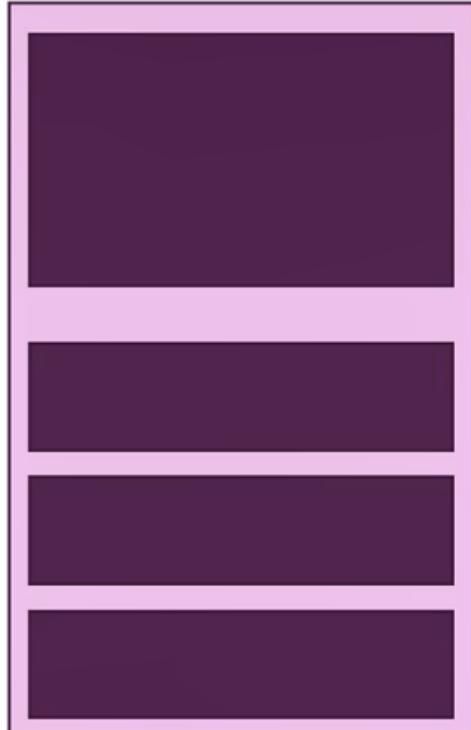


Landscape-mode  
Phone

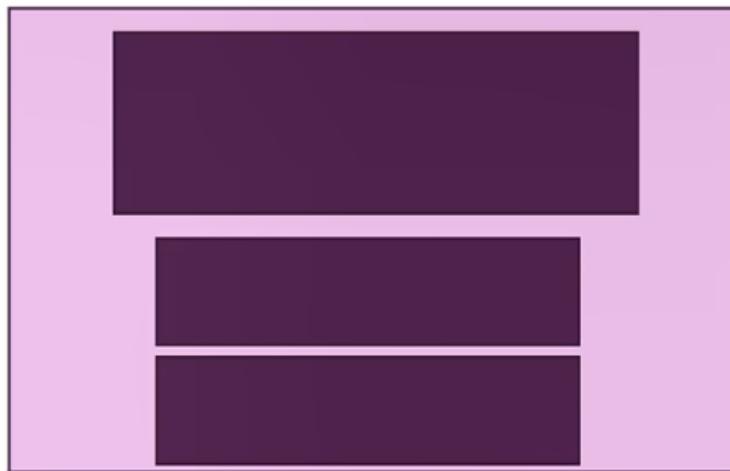


# What does “Responsive” Mean?

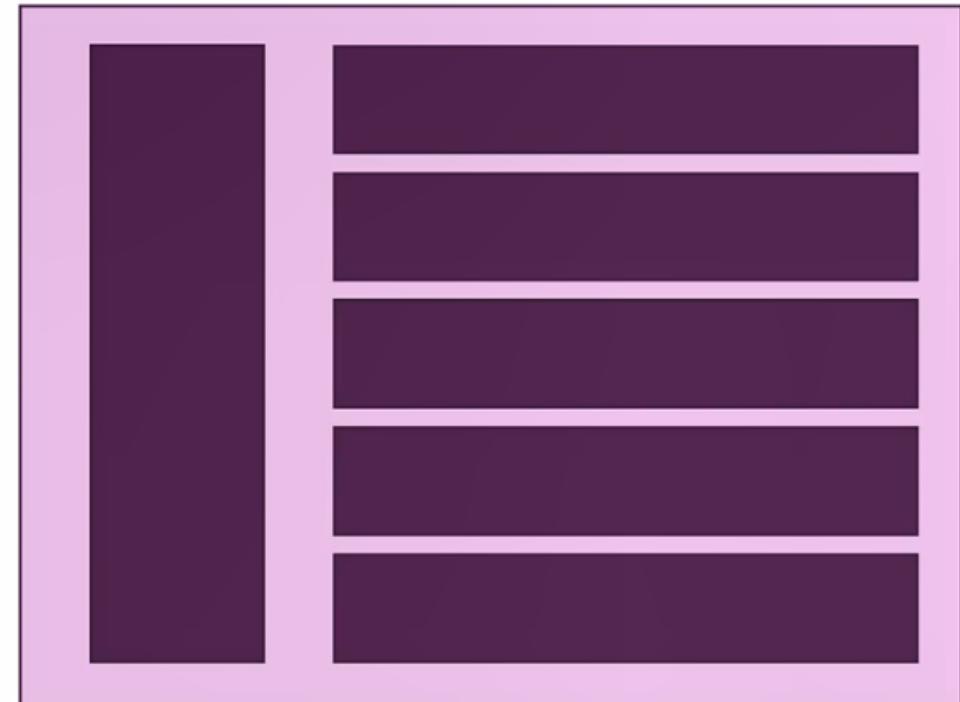
Portrait-mode  
Phone



Landscape-mode  
Phone



Tablet, Desktop  
PC



# What does “Adaptive” Mean?

Android

iOS

# What does “Adaptive” Mean?

Android

iOS

Material-Design Look / Styles

Android Animations / Route  
Transitions

Android Fonts

# What does “Adaptive” Mean?

Android

Material-Design Look / Styles

Android Animations / Route  
Transitions

Android Fonts

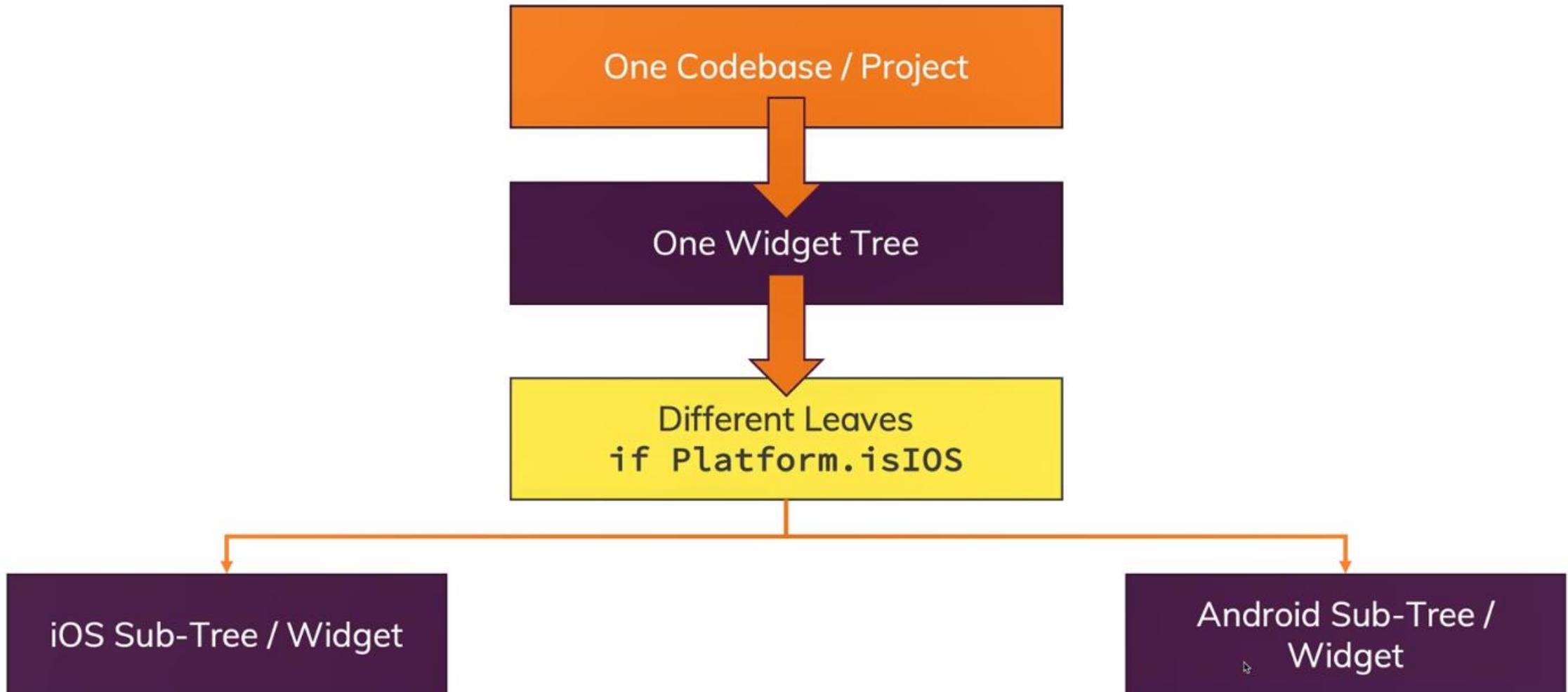
iOS

Cupertino Look / Styles

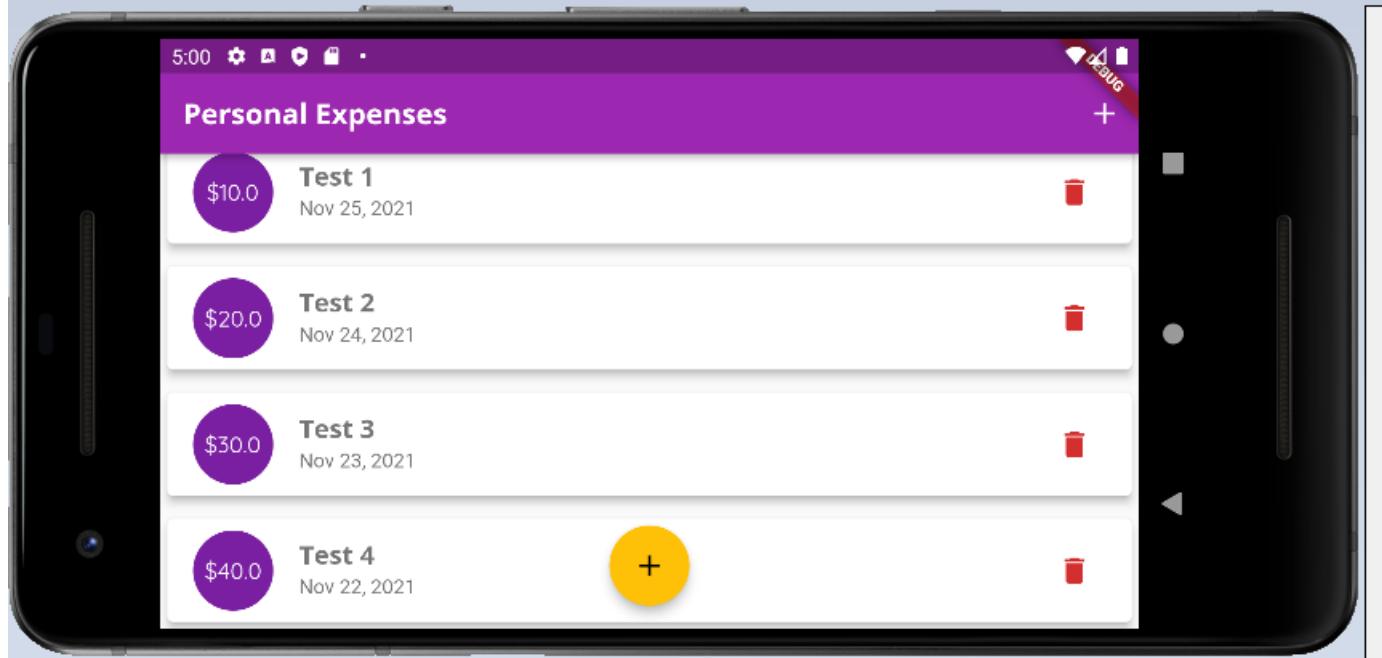
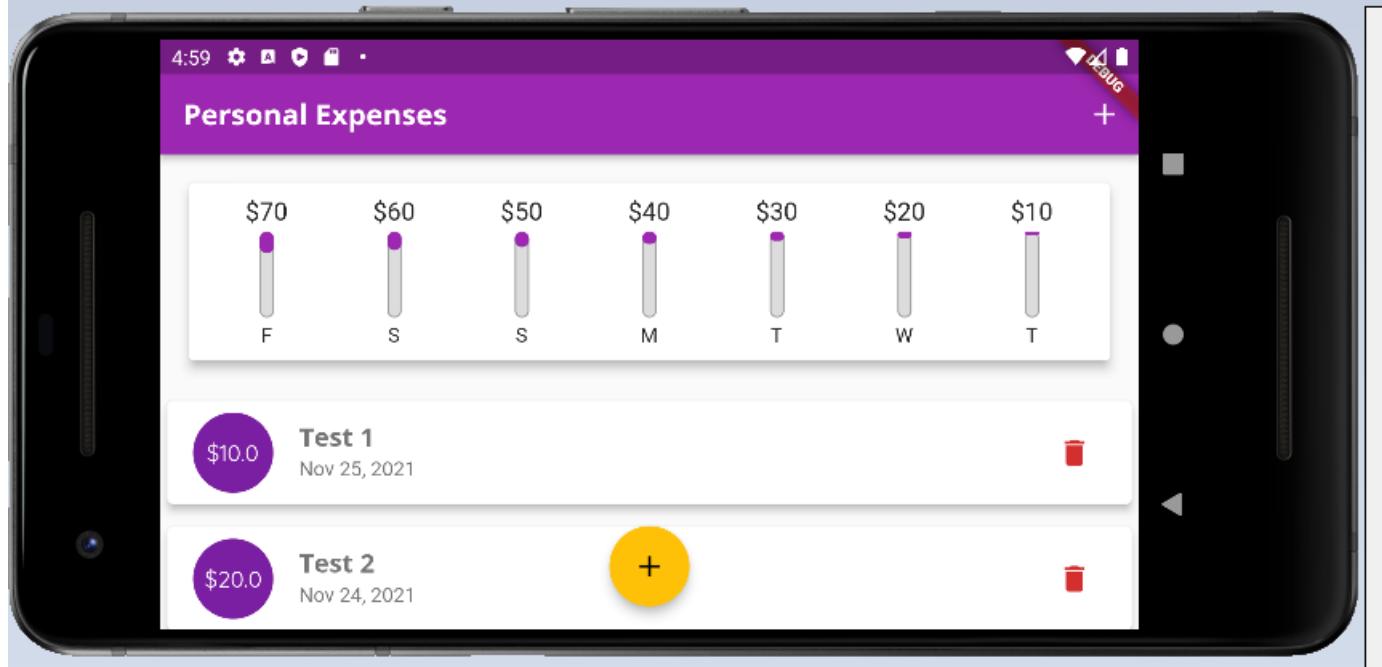
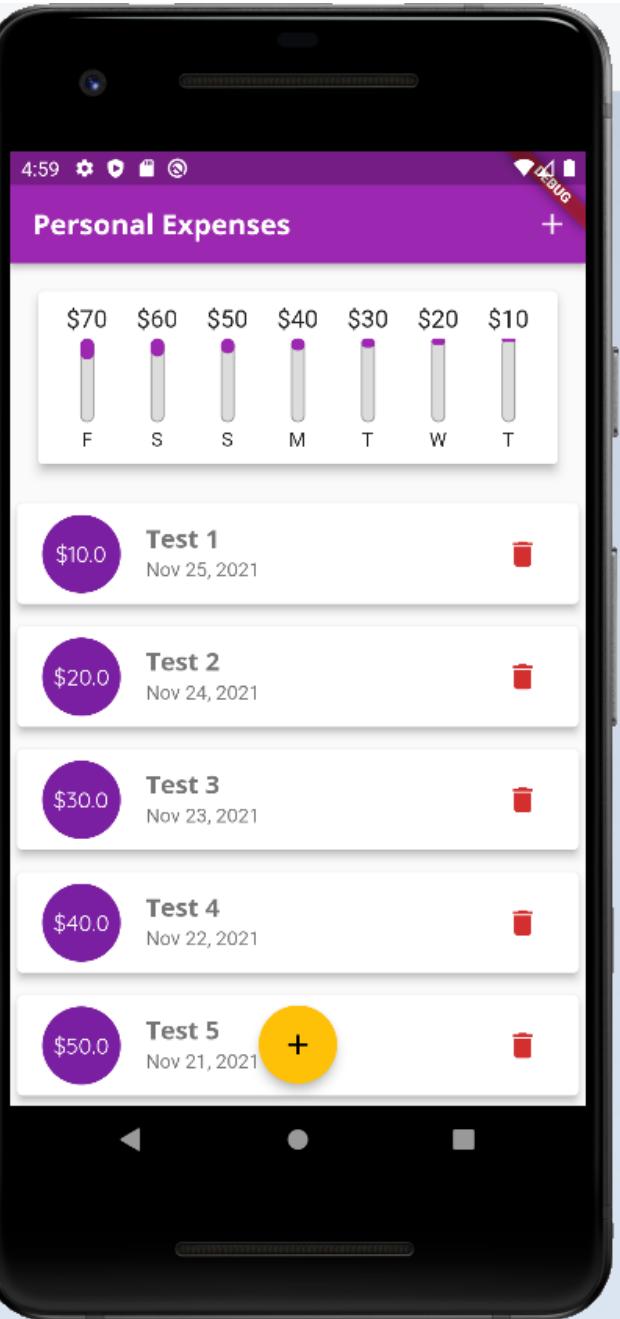
iOS Animations / Route  
Transitions

iOS Fonts

# Responsive & Adaptive Apps in Flutter



**EXAMPLES WHERE WE COULD  
IMPROVE THE APP!**



# **CALCULATING SIZES DYNAMICALLY**

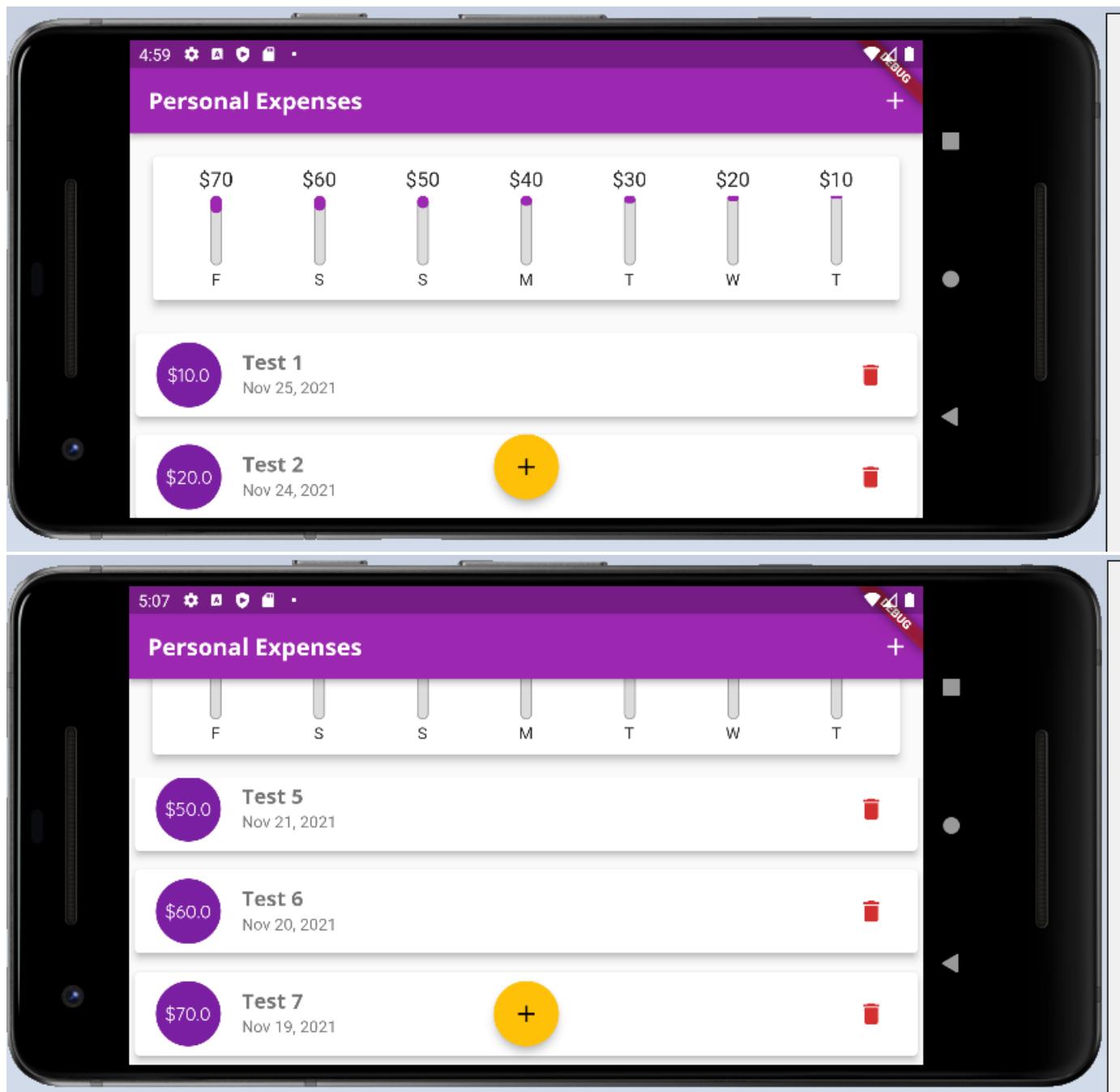
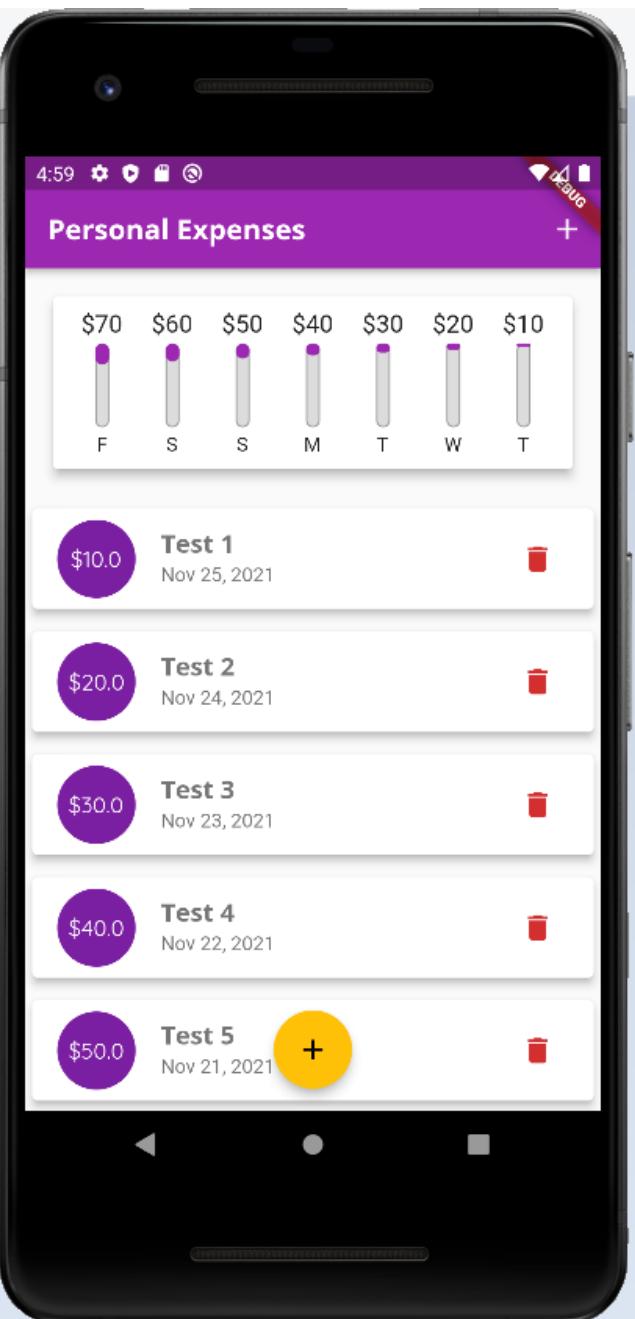
File Edit Selection View Go Run Terminal Help transaction\_list.dart - personal\_expenses\_04 - Visual Studio Code

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

```
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: MediaQuery.of(context).size.height * 0.6,
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 }
```

widgets\transaction\_list.dart

0 △ 0 ① 48 Debug my code Ln 16, Col 1 (57 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 ... transaction\_list.dart main.dart X lib > main.dart > \_MyHomePageState > build

OPEN EDITORS transaction\_list.dart lib\w... main.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 analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE DEPENDENCIES

107  
108 @override  
109 Widget build(BuildContext context) {  
110 final appBar = AppBar(  
111 titleTextStyle: Theme.of(context).appBarTheme.textTheme.headline1,  
112 title: Text(  
113 'Personal Expenses',  
114 ), // Text  
115 actions: <Widget>[  
116 IconButton(  
117 icon: Icon(Icons.add),  
118 onPressed: () => \_startAddNewTransaction(context),  
119 ), // IconButton  
120 ], // <Widget>[]  
121 ); // AppBar  
122 return Scaffold(  
123 appBar: appBar,  
124 body: SingleChildScrollView(  
125 child: Column(  
126 crossAxisAlignment: CrossAxisAlignment.stretch,  
127 children: <Widget>[  
128 Chart(\_recentTransactions),  
129 ]  
130 ); // Column  
131 ); // Scaffold  
132 } // build  
133  
main.dart

0 48 Debug my code

In 122, Col 1 (335 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 lib > main.dart > \_MyHomePageState > build

OPEN EDITORS transaction\_list.dart lib\w... main.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 analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

OUTLINE DEPENDENCIES

119 ), // IconButton  
120 ], // <Widget>[]  
121 ); // AppBar  
122 return Scaffold(  
123 appBar: appBar,  
124 body: SingleChildScrollView(  
125 child: Column(  
126 crossAxisAlignment: CrossAxisAlignment.stretch,  
127 children: <Widget>[  
128 Chart(\_recentTransactions),  
129 Tra Move widget down  
130 s, Wrap with Builder  
131 on, Wrap with Center  
132 ist Wrap with Column  
133 ], // Wrap with Container  
134 ), // Wrap with Padding  
135 ), // Wrap with Row  
136 floatingActionButton: Wrap with SizedBox  
137 floatingActionButton: Wrap with StreamBuilder  
138 child: Wrap with widget...  
139 onPressed: Extract Method  
140 ), // Extract Local Variable  
141 ), // Extract Widget

+ 138 ,  
139 tAddNewTransaction(context),  
140 ), // FloatingActionButton

Ln 128, Col 16 Spaces: 2 UTF-8 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 main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart main.dart x lib > main.dart > \_MyHomePageState > build

OPEN EDITORS transaction\_list.dart lib\w... main.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 analysis\_options.yaml personal\_expenses\_04.iml pubspec.lock pubspec.yaml

> OUTLINE

> DEPENDENCIES

125 child: Column(

126 crossAxisAlignment: CrossAxisAlignment.stretch,

127 children: <Widget>[

128 Container(

129 height: (MediaQuery.of(context).size.height -

130 appBar.preferredSize.height) \*

131 0.4,

132 child: Chart(\_recentTransactions),

133 ), // Container

134 TransactionList(

135 Move widget up

136 Wrap with Builder

137 Wrap with Center

138 Wrap with Container

139 Wrap with Padding

140 Wrap with SizedBox

141 Wrap with StreamBuilder

142 Wrap with widget...

+ 143 Extract Local Variable

144 Extract Widget

145 child: IconButton(icon: Icons.add),

146 onPressed: () => \_startAddNewTransaction(context),

147 ), // FloatingActionButton

148 ); // Scaffold

Ln 134, Col 28 (15 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 main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart main.dart X chart.dart lib main.dart > \_MyHomePageState > build

transaction\_list.dart lib\w... main.dart lib chart.dart lib\widgets chart\_bar.dart lib\widgets

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

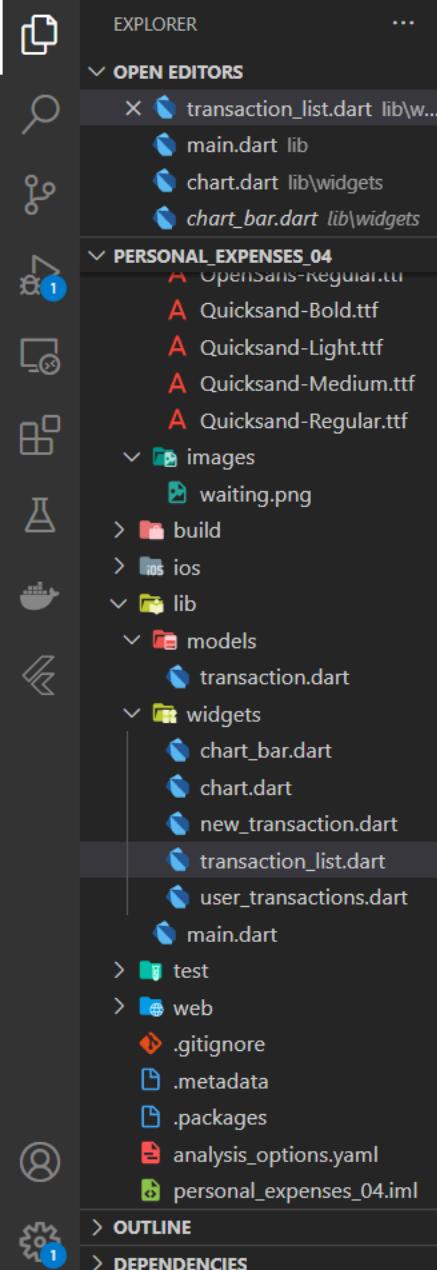
OUTLINE

DEPENDENCIES

125 child: Column(  
126     crossAxisAlignment: CrossAxisAlignment.stretch,  
127     children: <Widget>[  
128         Container(  
129             height: (MediaQuery.of(context).size.height -  
130             appBar.preferredSize.height -  
131             MediaQuery.of(context).padding.top) \*  
132             0.3,  
133             child: Chart(\_recentTransactions),  
134         ), // Container  
135         Container(  
136             height: (MediaQuery.of(context).size.height -  
137             appBar.preferredSize.height -  
138             MediaQuery.of(context).padding.top) \*  
139             0.7,  
140             child: TransactionList(  
141                 \_userTransactions,  
142                 \_deleteTransaction,  
143             ), // TransactionList  
144         ), // Container  
145     ], // <Widget>[]  
146 ), // Column

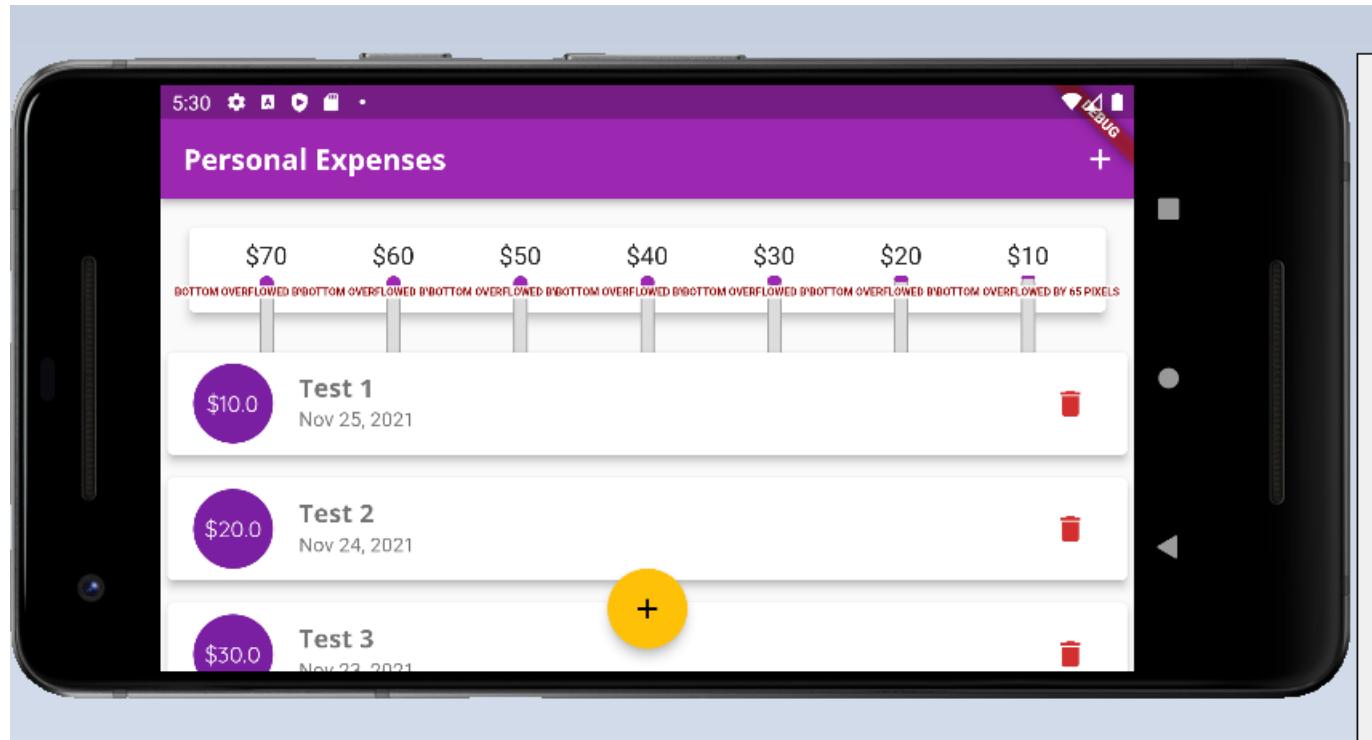
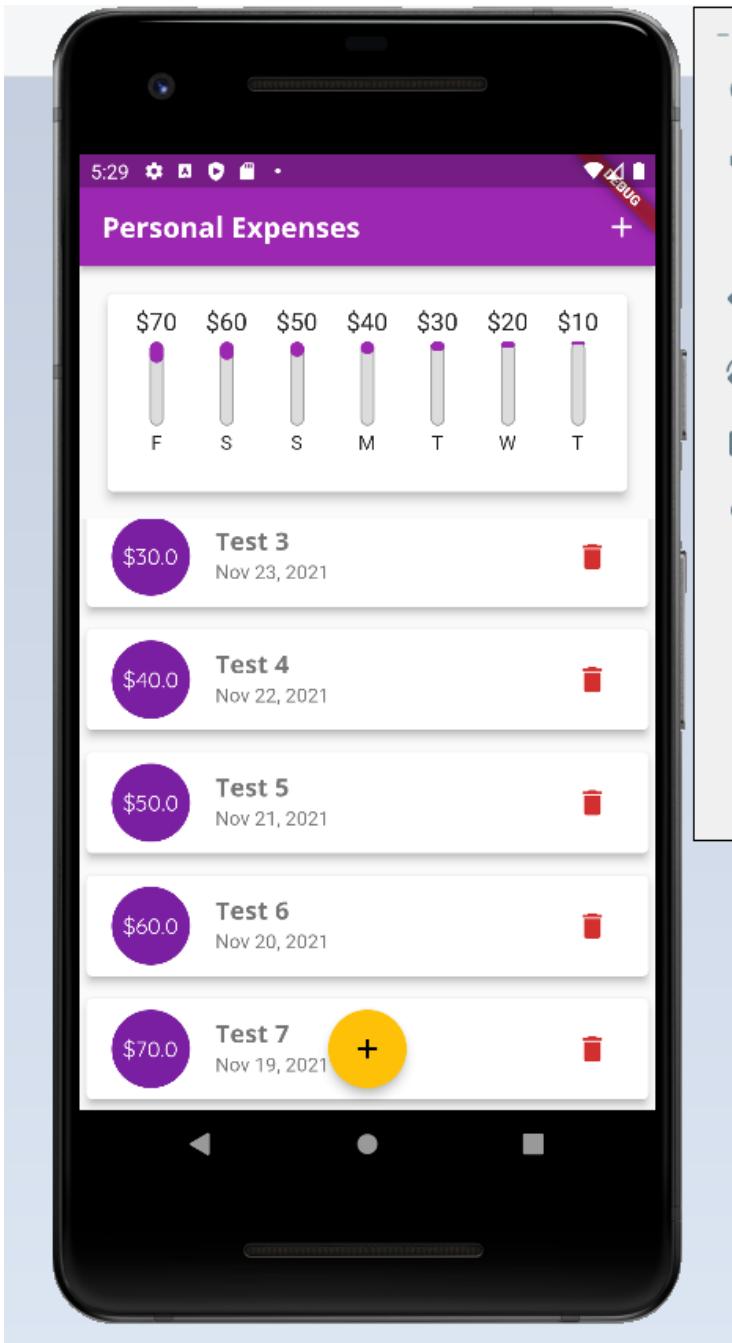
main.dart

Ln 145, Col 1 (658 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



```
8     final Function deleteTx;
9
10    TransactionList(this.transactions, this.deleteTx);
11
12    @override
13    Widget build(BuildContext context) {
14      return transactions.isEmpty
15        ? Column(
16          children: <Widget>[
17            Text(
18              'No transactions added yet!',
19              style: Theme.of(context).textTheme.headline1,
20            ), // Text
21            SizedBox(
22              height: 20,
23            ), // SizedBox
24            Container(
25              height: 200,
26              child: Image.asset(
27                'assets/images/waiting.png',
28                fit: BoxFit.cover,
29              )), // Image.asset // Container
30        );
31    }
32  }
33
```

## widgets\transaction list.dart



# **USING THE LAYOUTBUILDER WIDGET**

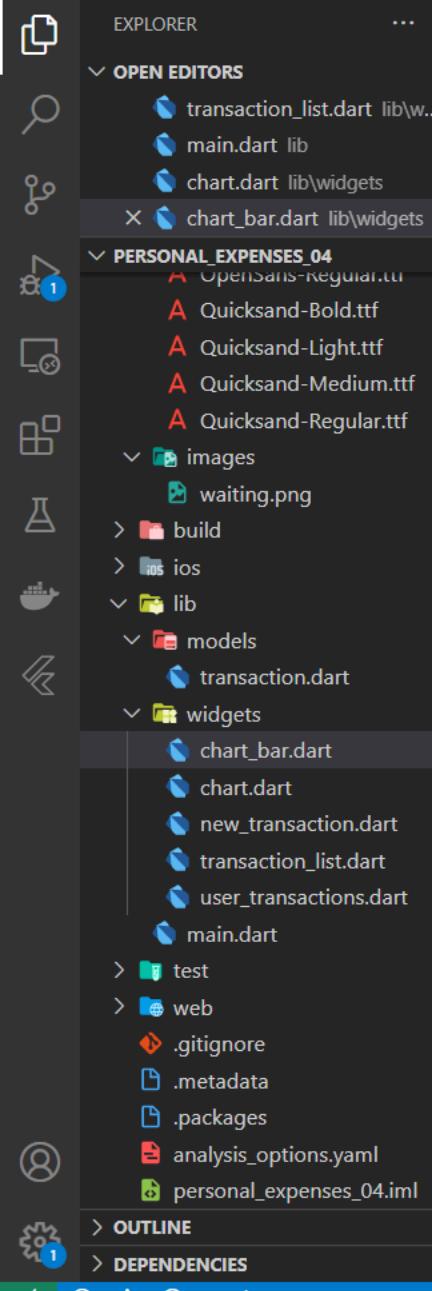
The image shows a screenshot of the Visual Studio Code (VS Code) interface. On the left, the Explorer sidebar displays the project structure for a Flutter application named "PERSONAL\_EXPENSES\_04". The structure includes files like main.dart, chart.dart, chart\_bar.dart, and various font files (OpenSans-Regular.ttf, Quicksand-Bold.ttf, etc.) under the lib folder. The widgets folder contains files such as chart\_bar.dart, chart.dart, new\_transaction.dart, transaction\_list.dart, user\_transactions.dart, and main.dart. The code editor on the right shows a Dart file named chart\_bar.dart. The code defines a StatelessWidget named ChartBar with a constructor taking label, spendingAmount, and spendingPctOfTotal. It overrides the build method to return a LayoutBuilder, which builds a Column containing a Container with a FittedBox and Text, and a SizedBox. A callout box highlights the word "widgets" in yellow. The status bar at the bottom provides information about the current file (ln 62, Col 1 (1680 selected)), code style (Spaces: 2, CRLF), and development tools (Dart DevTools). The bottom right corner shows the Flutter version (2.5.3) and device/emulator details (Pixel 2 API 29 (android-x86 emulator)).

```
class ChartBar extends StatelessWidget {
    final String label;
    final double spendingAmount;
    final double spendingPctOfTotal;

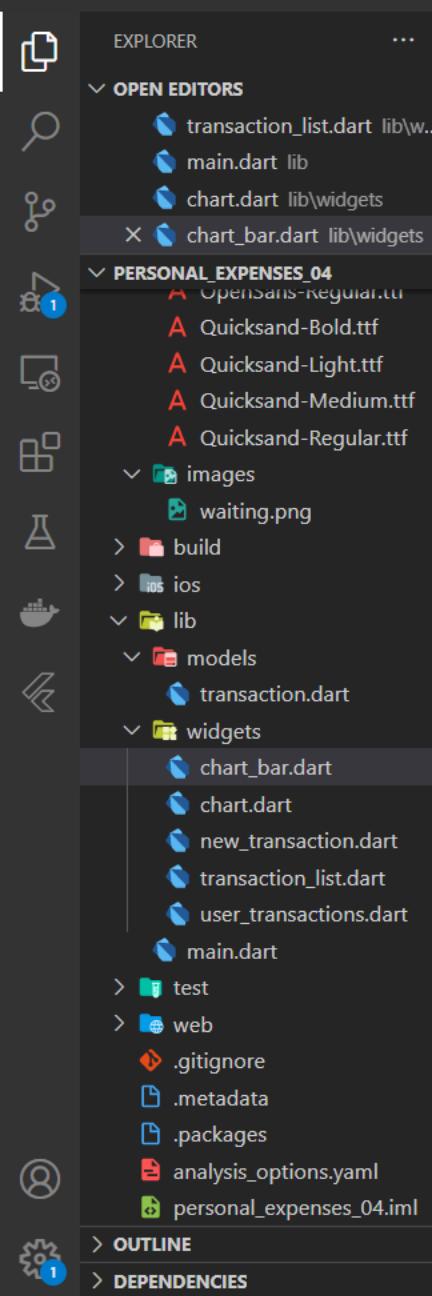
    ChartBar(this.label, this.spendingAmount, this.spendingPctOfTotal);

    @override
    Widget build(BuildContext context) {
        return LayoutBuilder(
            builder: (ctx, constraints) {
                return Column(
                    children: <Widget>[
                        Container(
                            height: constraints.maxHeight * 0.15,
                            child: FittedBox(
                                child: Text('\$${spendingAmount.toStringAsFixed(0)}'),
                            ),
                        ), // FittedBox
                    ], // Container
                    SizedBox(
                        height: constraints.maxHeight * 0.05,
                    ), // SizedBox
                );
            }
        );
    }
}
```

widgets\chart\_bar.dart

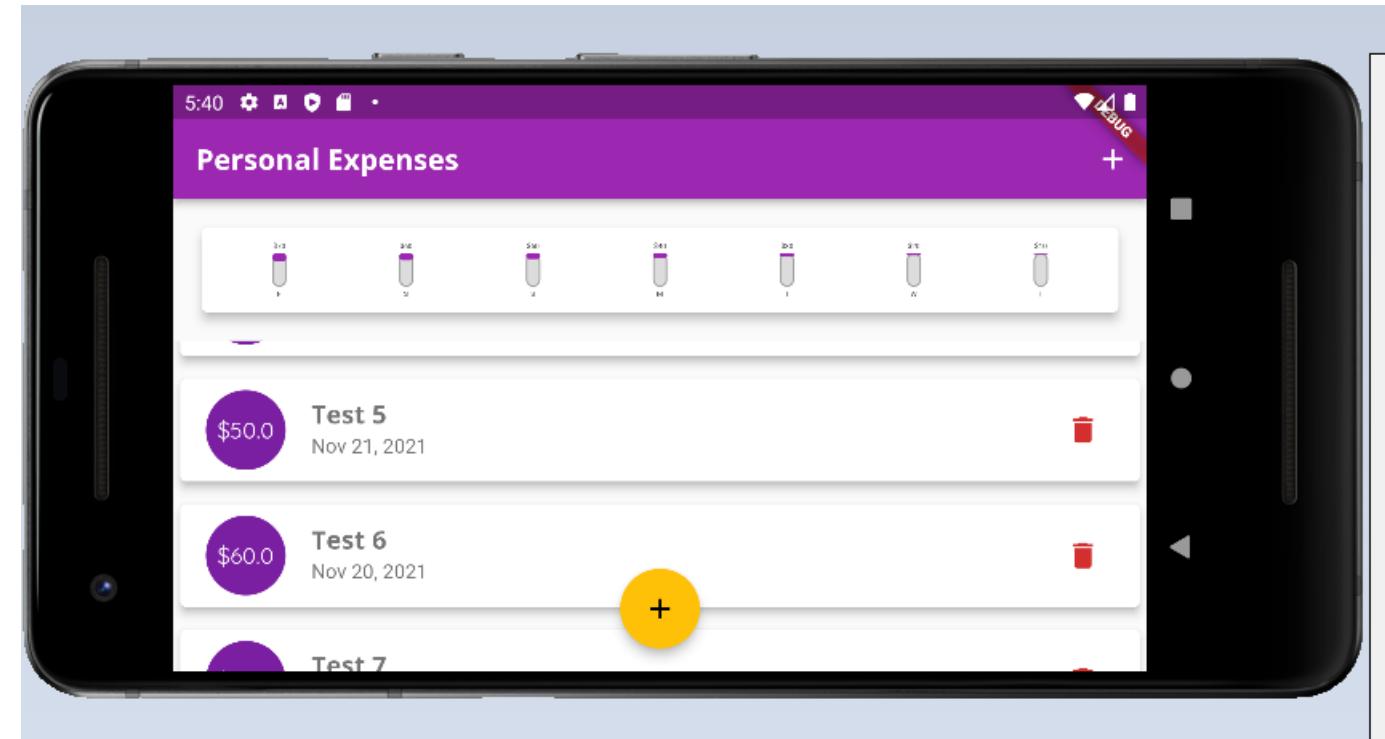
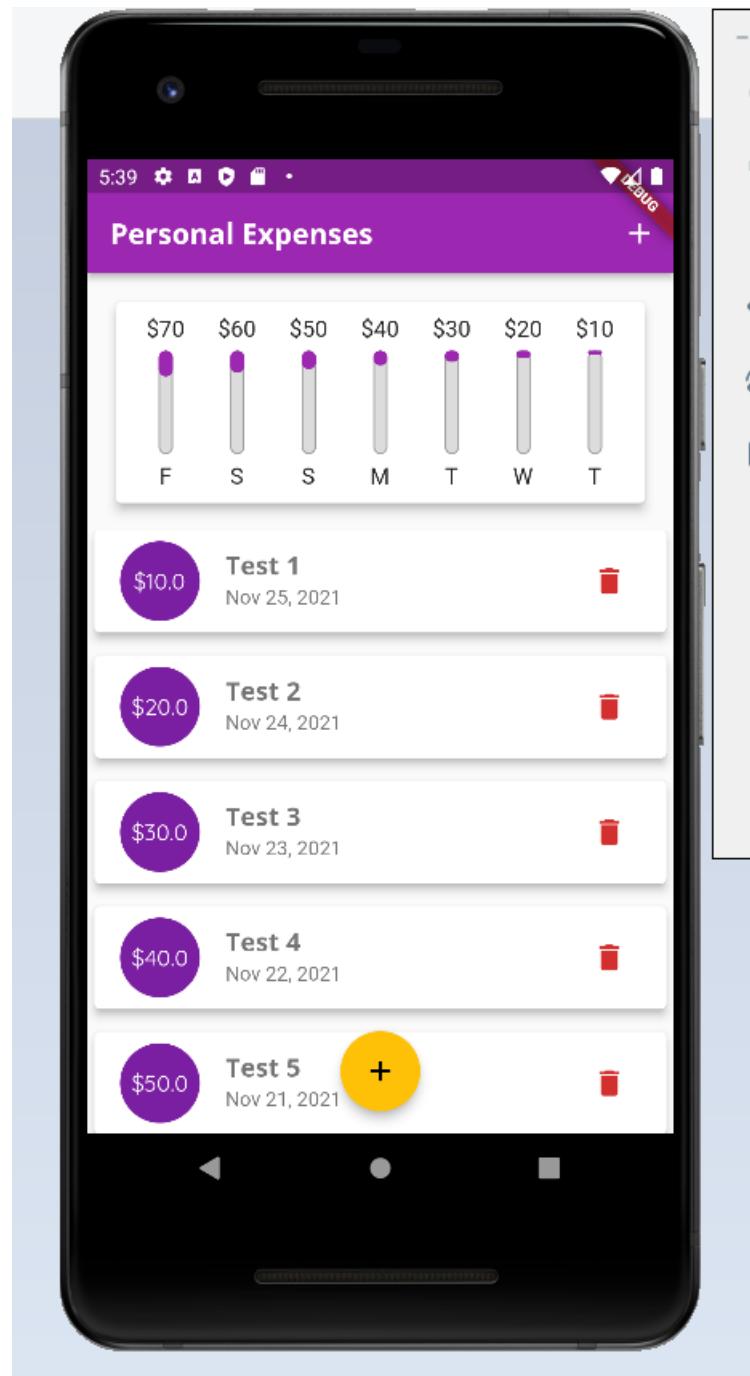


```
22     SizedBox( [REDACTED]
23       height: constraints.maxHeight * 0.05,
24     ), // SizedBox
25     Container(
26       height: constraints.maxHeight * 0.6,
27       width: 10,
28       child: Stack(
29         children: <Widget>[
30           Container(
31             decoration: BoxDecoration(
32               border: Border.all(color: Colors.grey, width: 1.0),
33               color: Color.fromRGBO(220, 220, 220, 1),
34               borderRadius: BorderRadius.circular(10),
35             ), // BoxDecoration
36           ), // Container
37           FractionallySizedBox(
38             heightFactor: spendingPctOfTotal,
39             child: Container(
40               decoration: BoxDecoration(
41                 color: Theme.of(context).primaryColor,
42                 borderRadius: BorderRadius.circular(10),
43               ), // BoxDecoration
44             ), // Container
45           ), // FractionallySizedBox
46         ],
47       ), // Stack
48     ), // Container
49   ), // Column
50 
```

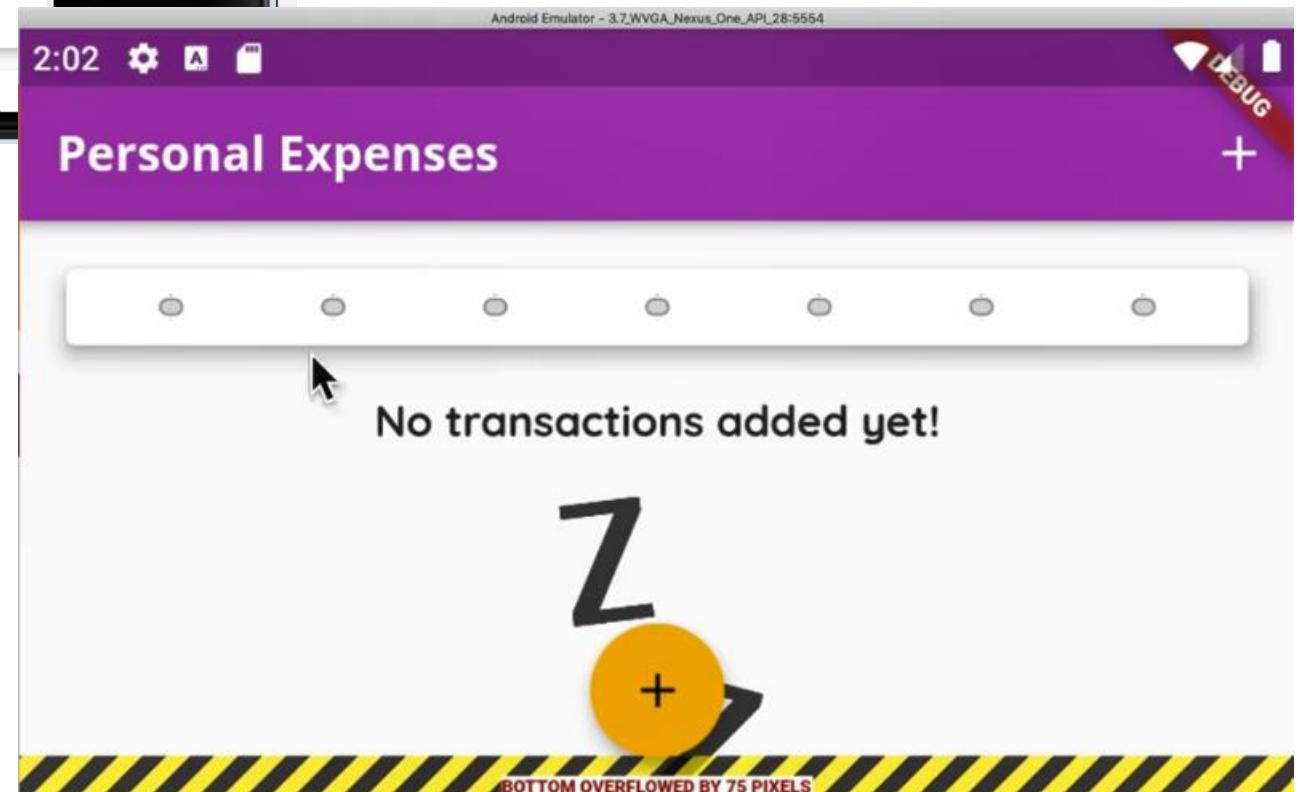
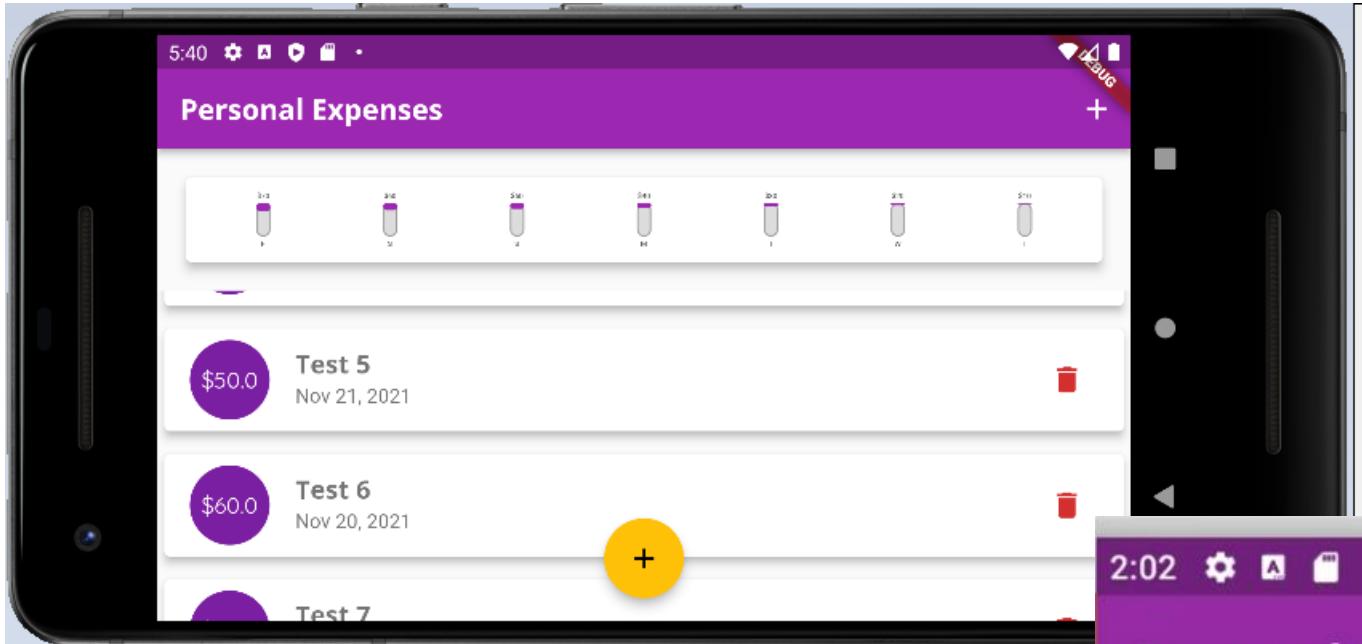


```
        color: Theme.of(context).primaryColor,  
        borderRadius: BorderRadius.circular(10),  
    ), // BoxDecoration  
), // Container  
( ), // FractionallySizedBox  
], // <Widget>[]  
( ), // Stack  
( ), // Container  
SizedBox(  
    height: constraints.maxHeight * 0.05,  
( ), // SizedBox  
Container(  
    height: constraints.maxHeight * 0.15,  
    child: FittedBox(  
        child: Text(label),  
    ), // FittedBox  
( ), // Container  
], // <Widget>[]  
); // Column  
,  
); // LayoutBuilder  
}  
} widgets\ch
```

## widgets\chart bar.dart



# **CONTROLLING DEVICE ORIENTATION**



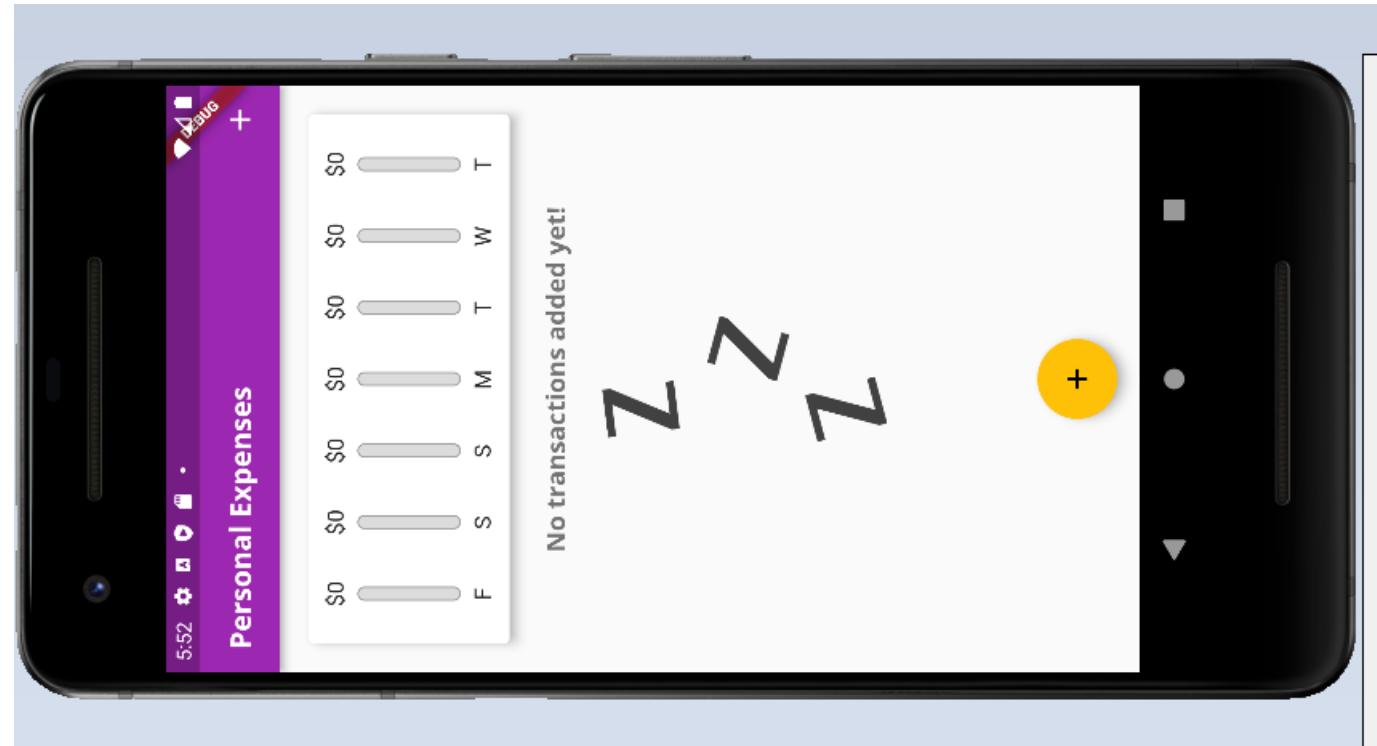
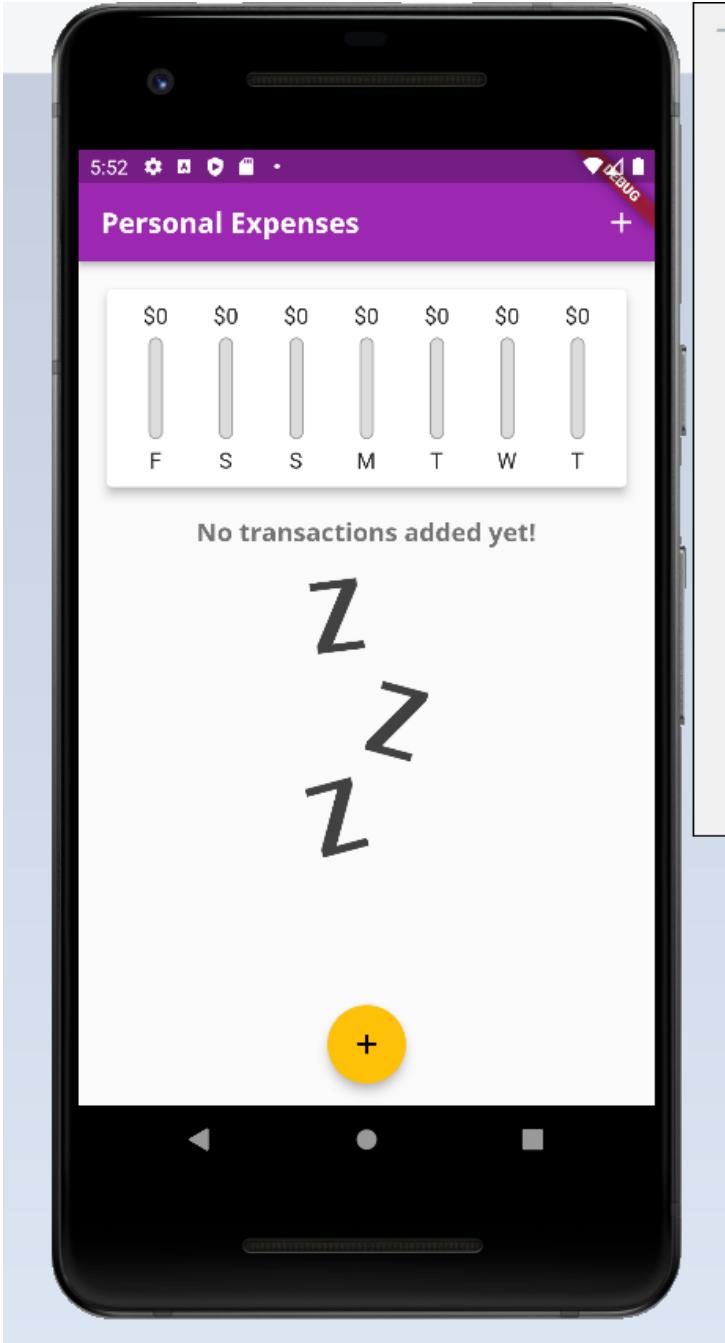
File Edit Selection View Go Run Terminal Help main.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart main.dart chart.dart lib > main.dart > ...

```
1 import 'package:flutter/material.dart';
2 import 'package:flutter/services.dart';
3
4 import './widgets/chart.dart';
5 import './widgets/transaction_list.dart';
6 import './widgets/new_transaction.dart';
7 import './models/transaction.dart';
8
9 void main() {
10   WidgetsFlutterBinding.ensureInitialized();
11   SystemChrome.setPreferredOrientations([
12     DeviceOrientation.portraitUp,
13     DeviceOrientation.portraitDown,
14   ]);
15   runApp(MyApp());
16 }
17
18 class MyApp extends StatelessWidget {
19   @override
20   Widget build(BuildContext context) {
21     return MaterialApp(
22       title: 'Personal Expenses',
23       theme: ThemeData(
24         primarySwatch: Colors.purple,
25         accentColor: Colors.amber,
26         cardColor: Colors.white,
27         buttonColor: Colors.purple,
28         buttonTheme: ButtonThemeData(
29           textTheme: TextTheme(
30             button: TextStyle(color: Colors.white),
31           ),
32           shape: RoundedRectangleBorder(
33             borderRadius: BorderRadius.circular(10.0),
34           ),
35           padding: EdgeInsets.all(10.0),
36           height: 40.0,
37           width: 150.0,
38           ),
39         ),
40         textTheme: TextTheme(
41           bodyText1: TextStyle(
42             color: Colors.black,
43             ),
44           ),
45         ),
46         ),
47       );
48     }
49   }
50 }
```

main.dart

Ln 17, Col 1 (206 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



# **RENDERING ALTERNATIVE LANDSCAPE CONTENT**

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

EXPLORER ... transaction\_list.dart main.dart X chart.dart ⚡ ⏪ ⏴ ⏵ ⏹ ⏷ ⏸ ⏹ ⏹

OPEN EDITORS lib > main.dart > \_MyHomePageState

transaction\_list.dart lib\w...  
main.dart lib  
chart.dart lib\widgets  
chart\_bar.dart lib\widgets

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

> OUTLINE

> DEPENDENCIES

59     //     amount: 20.99,  
60     //     date: DateTime.now(),  
61     // ),  
62     // Transaction(  
63     //     id: 't2',  
64     //     title: 'Belanja Harian',  
65     //     amount: 18.53,  
66     //     date: DateTime.now(),  
67     // ),  
68 ];  
69 bool \_showChart = false;  
70  
71 List<Transaction> get \_recentTransactions {  
72     return \_userTransactions.where((tx) {  
73         return tx.date.isAfter(  
74             DateTime.now().subtract(  
75                 Duration(days: 7),  
76             ),  
77         );  
78     }).toList();  
79 }  
80

main.dart

Ln 70, Col 1 (28 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.dart lib main.dart > \_MyHomePageState > build

OPEN EDITORS transaction\_list.dart lib\w... main.dart lib chart.dart lib\widgets chart\_bar.dart lib\widgets

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

OUTLINE 1 DEPENDENCIES

134 child: Column(  
135     crossAxisAlignment: CrossAxisAlignment.stretch,  
136     children: <Widget>[  
137         Row(  
138             mainAxisAlignment: MainAxisAlignment.center,  
139             children: <Widget>[  
140                 Text('Show Chart'),  
141                 Switch(  
142                     value: \_showChart,  
143                     onChanged: (val) {  
144                         setState(() {  
145                             \_showChart = val;  
146                         });  
147                 },  
148                 ), // Switch  
149             ], // <Widget>[]  
150         ), // Row  
151         Container(  
152             height: MediaQuery.of(context).size.height -  
153             appBar.preferredSize.height -  
154             MediaQuery.of(context).padding.top) \* 0.3,

Ln 151, Col 1 (428 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier

0 △ 0 ① 50 ↗ Debug my code

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

EXPLORER ... transaction\_list.dart main.dart X chart.dart lib > main.dart > \_MyHomePageState > build

OPEN EDITORS

- transaction\_list.dart lib\w...
- main.dart lib
- chart.dart lib\widgets
- chart\_bar.dart lib\widgets

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

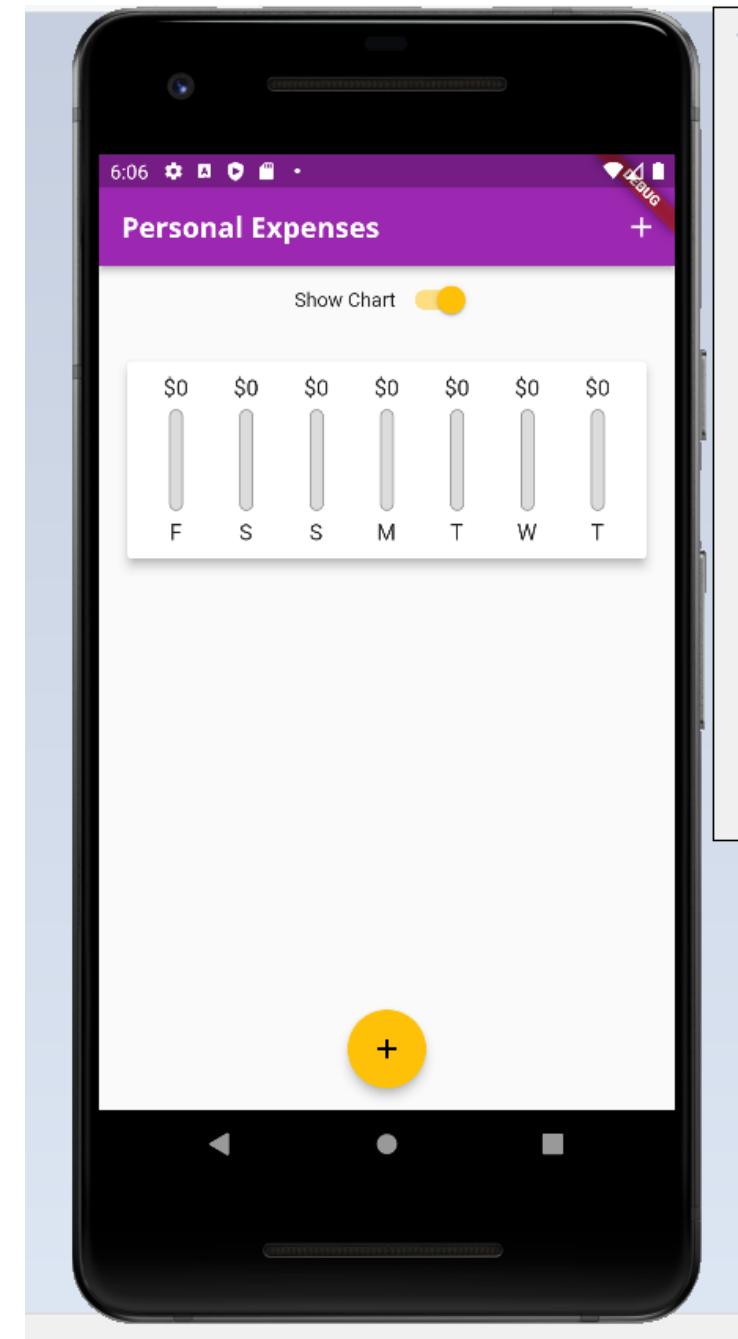
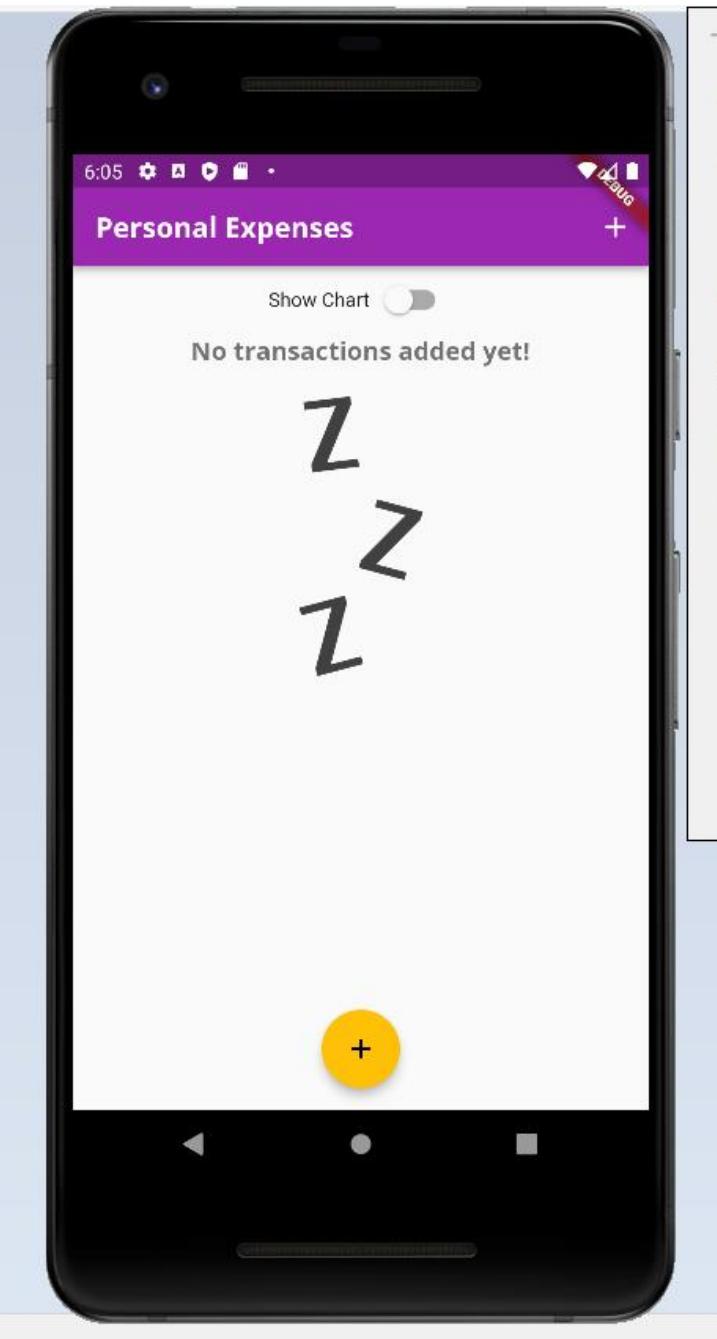
OUTLINE

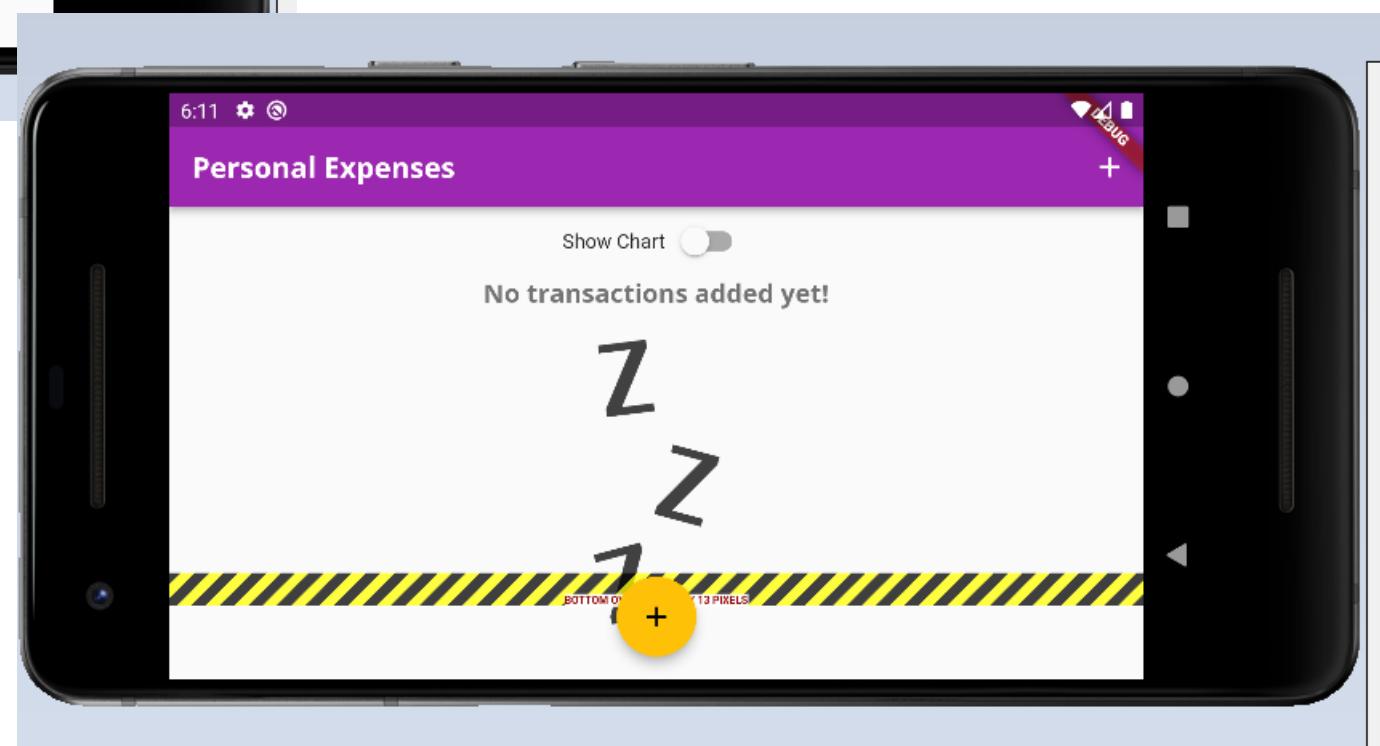
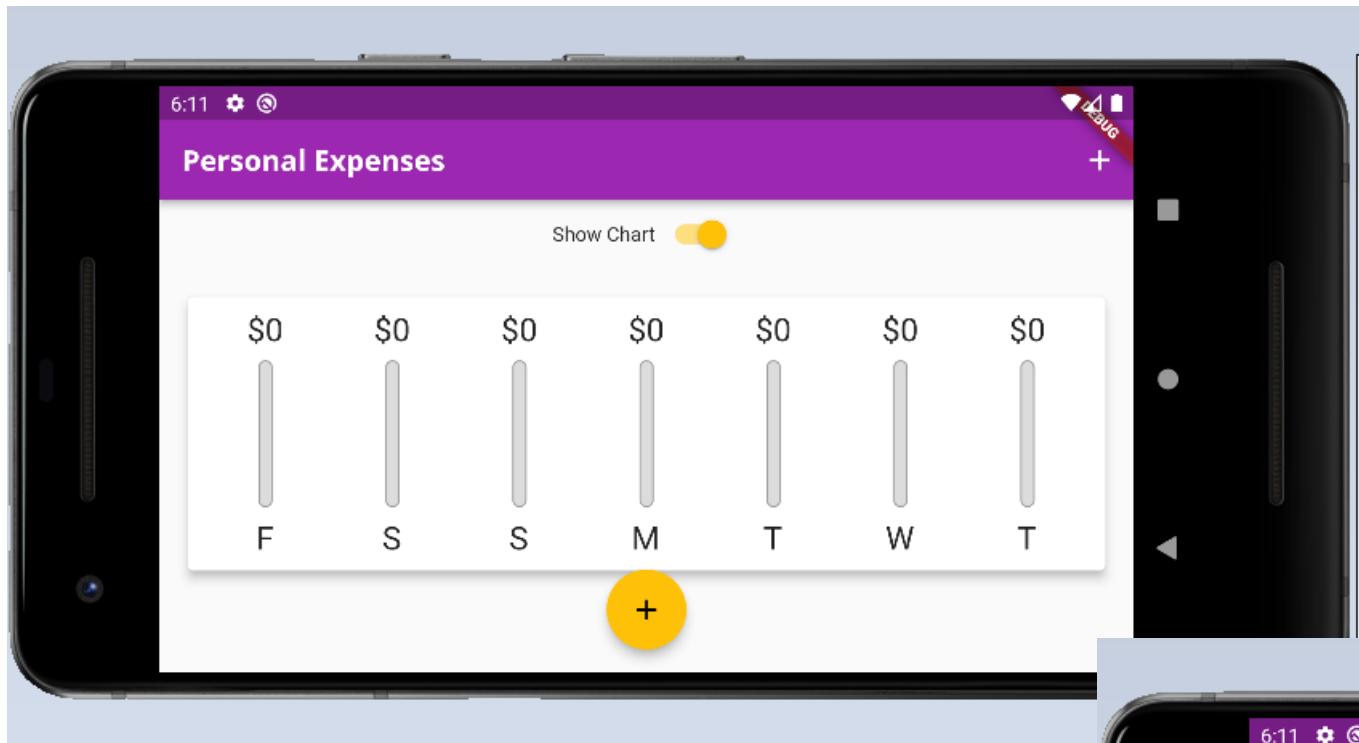
DEPENDENCIES

149 ], // <Widget>[]  
150 ), // Row  
151 \_showChart  
152 ? Container(  
153 height: (MediaQuery.of(context).size.height -  
154 appBar.preferredSize.height -  
155 MediaQuery.of(context).padding.top) \*  
156 0.3,  
157 child: Chart(\_recentTransactions),  
158 ) // Container  
159 : Container(  
160 height: (MediaQuery.of(context).size.height -  
161 appBar.preferredSize.height -  
162 MediaQuery.of(context).padding.top) \*  
163 0.7,  
164 child: TransactionList(  
165 \_userTransactions,  
166 \_deleteTransaction,  
167 ), // TransactionList  
168 ), // Container  
169 ], // <Widget>[]  
170 ), // Column

main.dart

Ln 169, Col 1 (783 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier





**FINISHING LANDSCAPE MODE**

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.dart ⏪ ⏴ ⏵ ⏶ ⏷ ⏸ ⏹ ⏺ ⏻

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

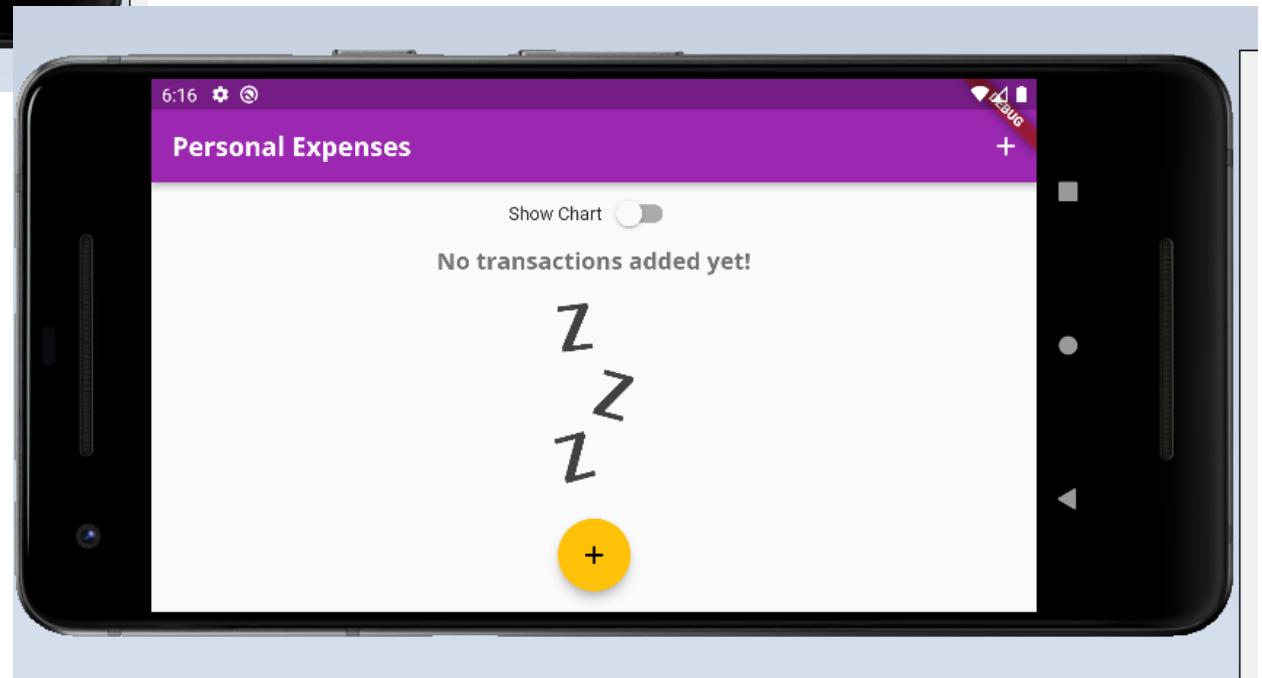
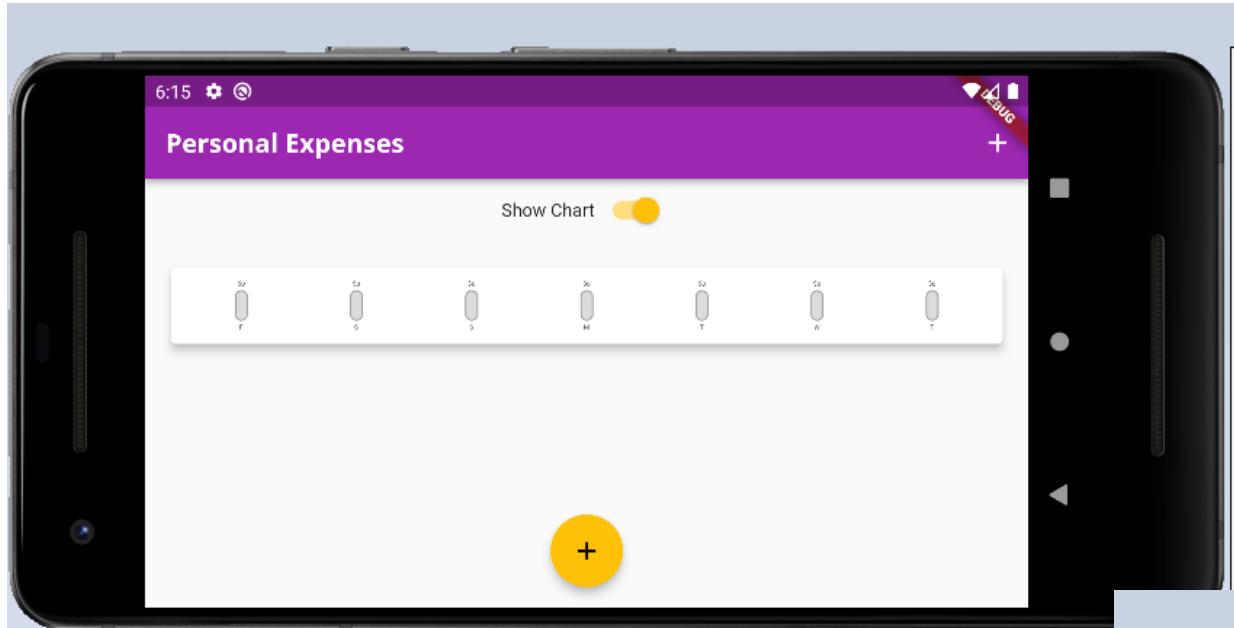
transaction\_list.dart lib\widgets\transaction\_list.dart

```
13 Widget build(BuildContext context) {  
14     return transactions.isEmpty  
15     ? LayoutBuilder(builder: (ctx, constraints) {  
16         return 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: constraints.maxHeight * 0.6,  
27                     child: Image.asset(  
28                         'assets/images/waiting.png',  
29                         fit: BoxFit.cover,  
30                     )), // Image.asset // Container  
31                 ], // <Widget>[]  
32             ); // Column  
33         } // LayoutBuilder  
34         : ListView.builder(  
35             itemBuilder: (ctx, index) {
```

windows\transaction\_list.dart

0 △ 0 ① 49 ⏹ Debug my code

Ln 33, Col 13 (645 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



**SHOWING DIFFERENT CONTENT BASED ON  
DEVICE ORIENTATION**

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

EXPLORER ... transaction\_list.dart main.dart X chart.dart lib > main.dart > \_MyHomePageState > build

OPEN EDITORS transaction\_list.dart lib\w... main.dart lib chart.dart lib\widgets chart\_bar.dart lib\widgets

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

OUTLINE

DEPENDENCIES

110  
111 void \_deleteTransaction(String id) {  
112 setState(() {  
113 \_userTransactions.removeWhere((tx) => tx.id == id);  
114 });  
115 }  
116  
117 @override  
118 Widget build(BuildContext context) {  
119 final isLandscape =  
120 MediaQuery.of(context).orientation == Orientation.landscape;  
121 final appBar = AppBar(  
122 titleTextStyle: Theme.of(context).appBarTheme.textTheme.headline1,  
123 title: Text(  
124 'Personal Expenses',  
125 ), // Text  
126 actions: <Widget>[  
127 IconButton(  
+ 128 icon: Icon(Icons.add),  
129 onPressed: () => \_startAddNewTransaction(context),  
130 ), // IconButton  
131 ], // <Widget>[]

main.dart

Ln 121, Col 1 (95 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.dart lib main.dart > \_MyHomePageState > build

OPEN EDITORS

- transaction\_list.dart lib\w...
- main.dart lib
- chart.dart lib\widgets
- chart\_bar.dart lib\widgets

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

OUTLINE

DEPENDENCIES

transaction\_list.dart main.dart X chart.dart lib main.dart > \_MyHomePageState > build

124 'Personal Expenses',  
125 ), // Text  
126 actions: <Widget>[  
127 IconButton(  
+ 128 icon: Icon(Icons.add),  
129 onPressed: () => \_startAddNewTransaction(context),  
130 ), // IconButton  
131 ], // <Widget>[]  
132 ); // AppBar  
133 final txListWidget = Container(  
134 height: MediaQuery.of(context).size.height -  
135 appBar.preferredSize.height -  
136 MediaQuery.of(context).padding.top) \*  
137 0.7,  
138 child: TransactionList(\_userTransactions, \_deleteTransaction),  
139 ); // Container  
140 return Scaffold(  
141 appBar: appBar,  
142 body: SingleChildScrollView(  
143 child: Column(  
144 crossAxisAlignment: CrossAxisAlignment.stretch,  
145 children: <Widget>[

main.dart

Ln 140, Col 1 (282 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



# Important: You DON'T use curly braces ( {} ) after if in this case. It's a special “if inside of a list” syntax!

```
142     body: SingleChildScrollView(  
143       child: Column(  
144         mainAxisAlignment: MainAxisAlignment.stretch,  
145         children: <Widget>[  
146           if (isLandscape)  
147             Row(  
148               mainAxisAlignment: MainAxisAlignment.center,  
149               children: <Widget>[  
150                 Text('Show Chart'),  
151                 Switch(  
152                   value: _showChart,  
153                   onChanged: (val) {  
154                     setState(() {  
155                       _showChart = val;  
156                     });  
157                   },  
158                   ), // Switch  
159                 ], // <Widget>[]  
160               ), // Row  
161               if (!isLandscape)  
162                 Container(  
163                   height: MediaQuery.of(context).size.height -
```

**main.dart**

File Edit S

EXPLORER OPEN EDITORS transaction\_list.dart lib\w... main.dart lib chart.dart lib\widgets chart\_bar.dart lib\widgets 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 OUTLINE DEPENDENCIES

Ln 140, Col 1 (282 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

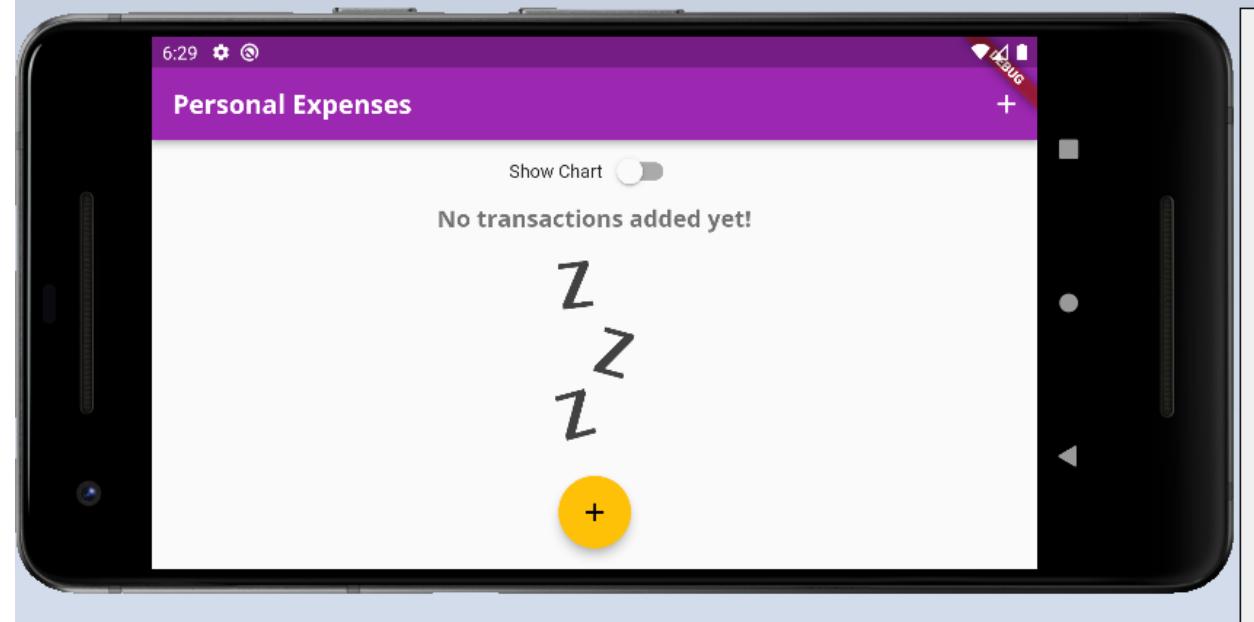
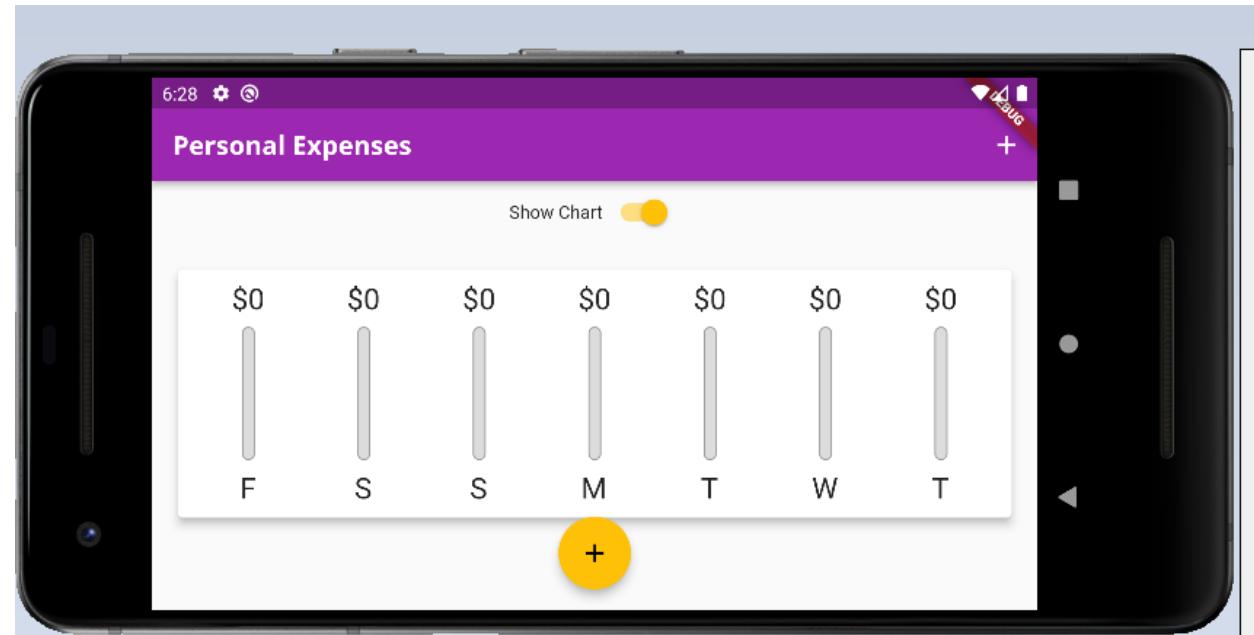
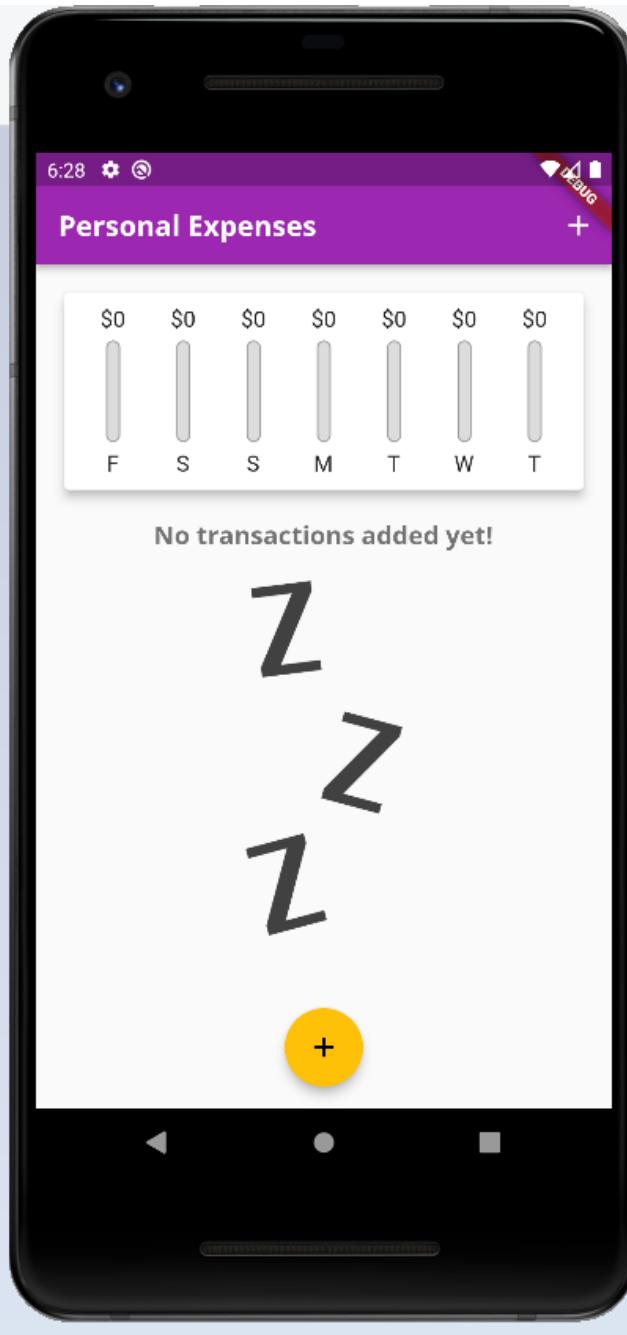
EXPLORER ... transaction\_list.dart main.dart X chart.dart lib > main.dart > \_MyHomePageState > build

transaction\_list.dart lib\w...  
main.dart lib  
chart.dart lib\widgets  
chart\_bar.dart lib\widgets  
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  
> OUTLINE  
> DEPENDENCIES

159                  ], // <Widget>[]  
160                  ), // Row  
161                  if (!isLandscape)  
162                  Container(  
163                          height: MediaQuery.of(context).size.height -  
164                          appBar.preferredSize.height -  
165                          MediaQuery.of(context).padding.top) \*  
166                          0.3,  
167                          child: Chart(\_recentTransactions),  
168                  ), // Container  
169                  if (!isLandscape) txListWidget,  
170                  if (isLandscape)  
171                  \_showChart  
172                  ? Container(  
173                          height: MediaQuery.of(context).size.height -  
174                          appBar.preferredSize.height -  
175                          MediaQuery.of(context).padding.top) \*  
176                          0.7,  
177                          child: Chart(\_recentTransactions),  
178                  ) // Container  
179                  : txListWidget  
180                  ], // <Widget>[]  
181                  ). // Column

main.dart

Ln 140, Col 1 (282 selected) Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



# **RESPECTING THE SOFTKEYBOARD Insets**

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

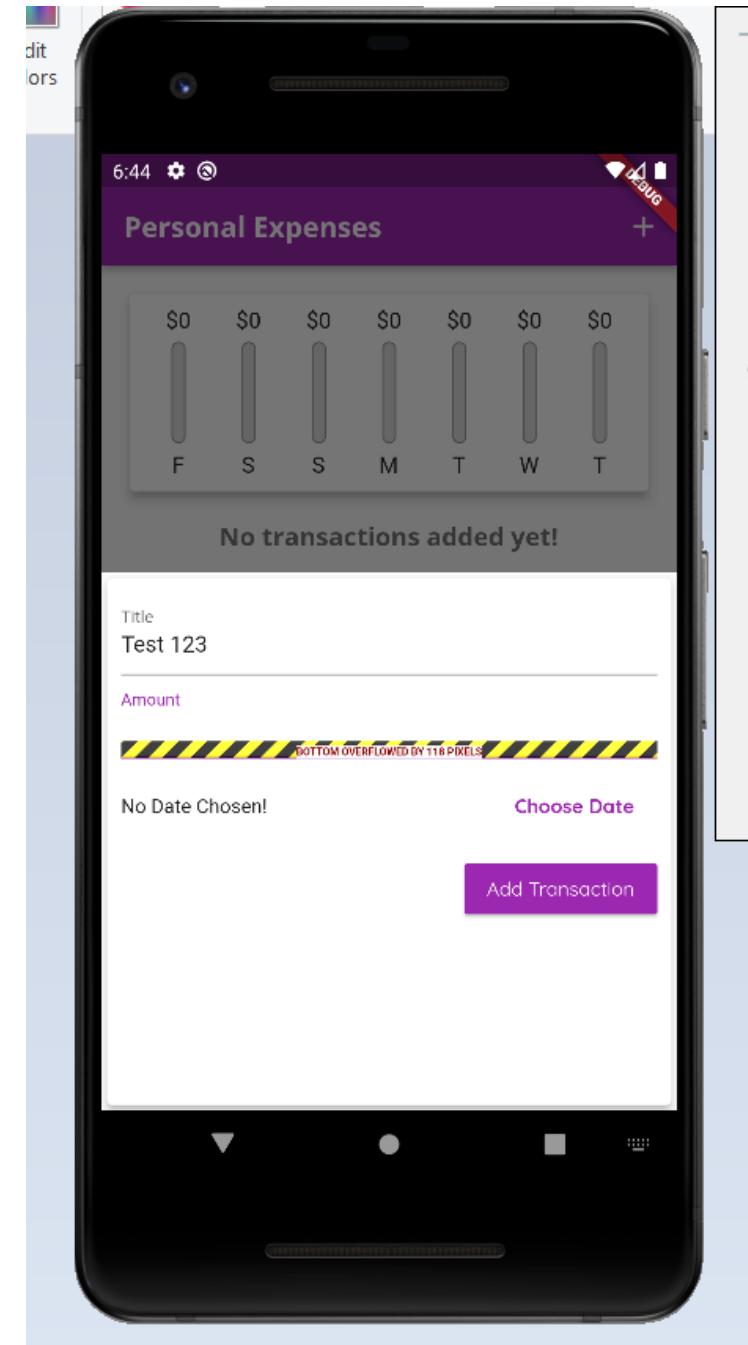
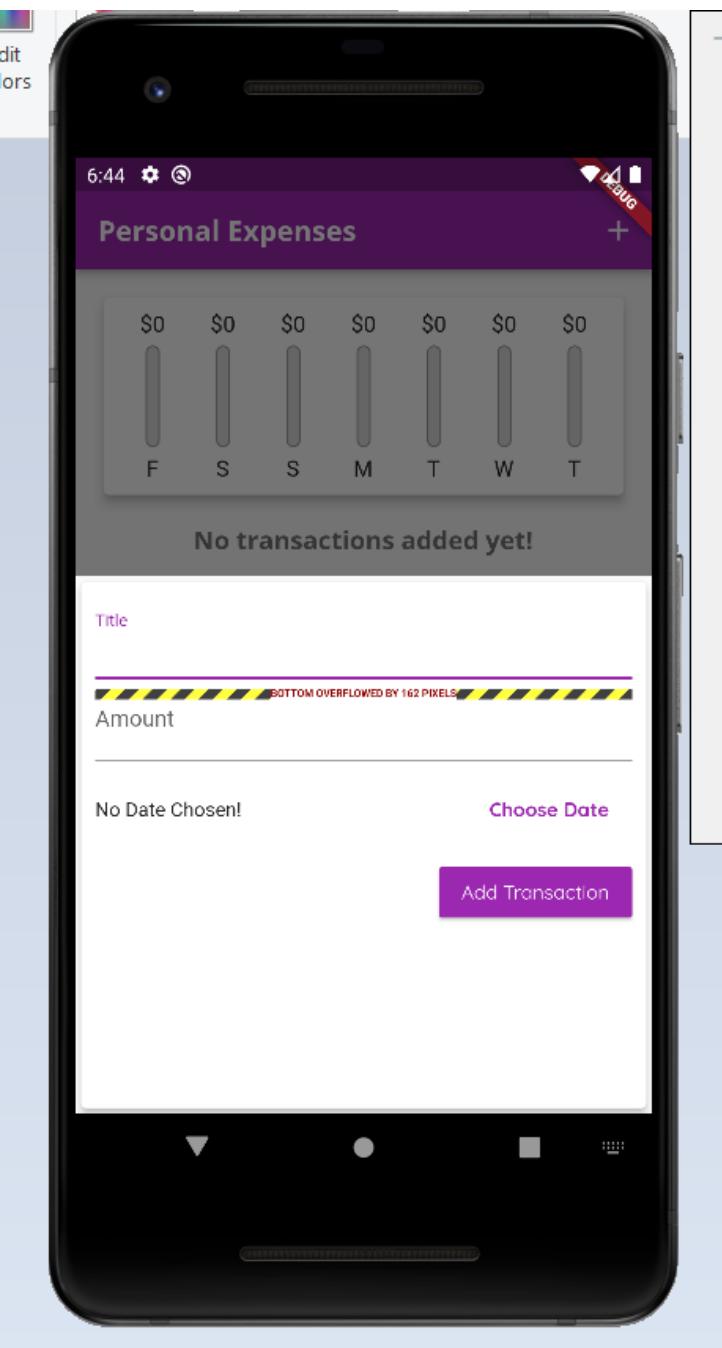
EXPLORER ... transaction\_list.dart main.dart new\_transa chart\_bar.dart

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

```
54
55 @override
56 Widget build(BuildContext context) {
57   return Card(
58     elevation: 5,
59     child: Container(
60       padding: EdgeInsets.only(
61         top: 10,
62         left: 10,
63         right: 10,
64         bottom: MediaQuery.of(context).viewInsets.bottom + 10,
65       ), // EdgeInsets.only
66       child: Column(
67         crossAxisAlignment: CrossAxisAlignment.end,
68         children: <Widget>[
69           TextField(
70             decoration: InputDecoration(labelText: 'Title'),
71             controller: _titleController,
72             onSubmitted: (_) => _submitData(),
73           ), // TextField
74           TextField(
75             decoration: InputDecoration(labelText: 'Amount'),
76             controller: amountController,
```

windows\new\_transaction.dart

Ln 66, Col 1 (176 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 new\_transaction.dart - personal\_expenses\_04 - Visual Studio Code

EXPLORER ... transaction\_list.dart main.dart new\_transa chart\_bar.dart

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

54  
55 @override  
56 Widget build(BuildContext context) {  
57 return Card(  
58 elevation:  
59 child:  
60 padding:  
61 to  
62 left:  
63 right:  
64 bottom:  
65 ), /  
66 child:  
67 crossAxisAlignment:  
68 decoration:  
69 controller:  
70 onSubmitted:  
71 ), // TextField  
72 TextField(  
73 decoration:  
74 controller:  
75 ), // TextField  
76 );

Remove this widget  
Swap with child  
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

.only(  
 EdgeInsets.only(  
 bottom: context.viewInsets.bottom + 10,  
 left: 10,  
 right: 10,  
 top: 10  
 ),  
 alignment: Alignment.center  
)

widgets\new\_transaction.dart

Ln 57, Col 13 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

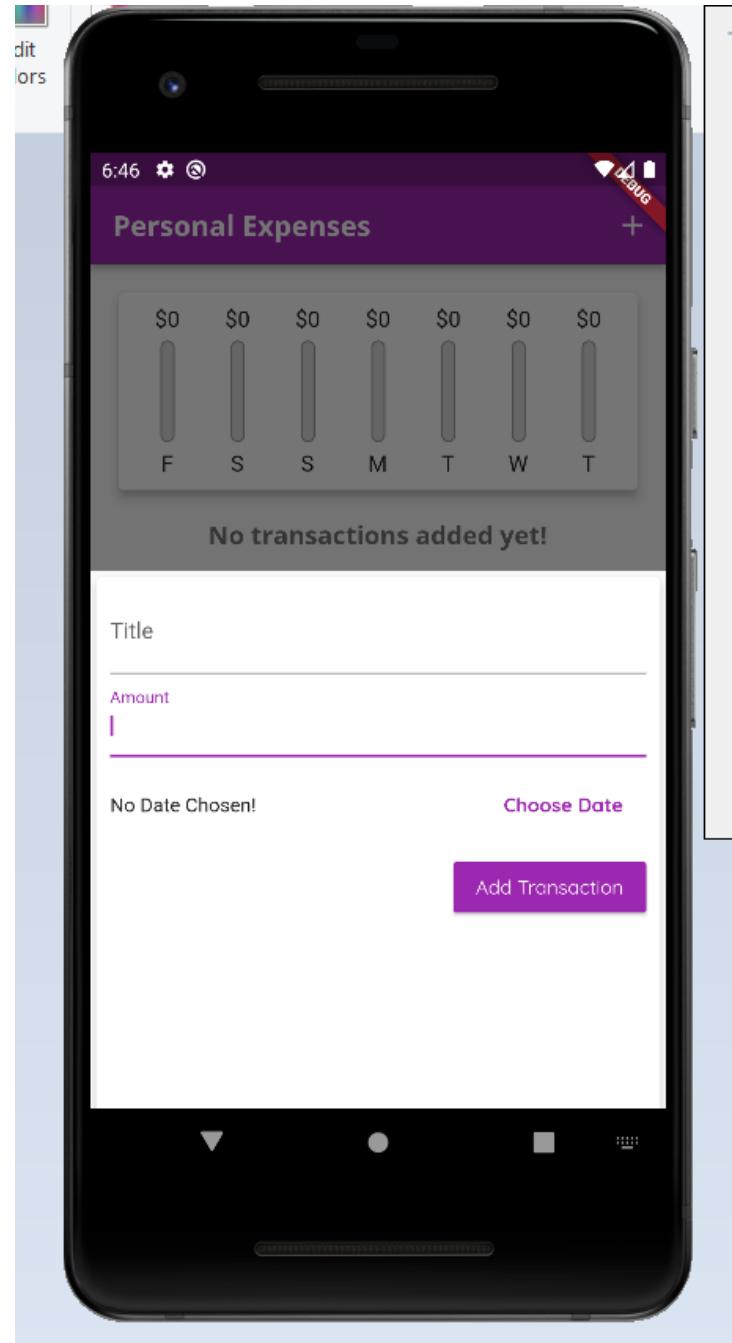
EXPLORER ... transaction\_list.dart main.dart new\_transa chart\_bar.dart

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

```
54
55 @override
56 Widget build(BuildContext context) {
57   return SingleChildScrollView(
58     child: Card(
59       elevation: 5,
60       child: Container(
61         padding: EdgeInsets.only(
62           top: 10,
63           left: 10,
64           right: 10,
65           bottom: MediaQuery.of(context).viewInsets.bottom + 10,
66         ), // EdgeInsets.only
67         child: Column(
68           crossAxisAlignment: CrossAxisAlignment.end,
69           children: <Widget>[
70             TextField(
71               decoration: InputDecoration(labelText: 'Title'),
72               controller: _titleController,
73               onSubmit: (_) => _submitData(),
74             ), // TextField
75             TextField(
76               decoration: InputDecoration(labelText: 'Amount')
```

wIDGETS\new\_transaction.dart

Ln 58, Col 1 (35 selected) Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Pixel 2 API 29 (android-x86 emulator) Prettier



# **USING THE DEVICE SIZE IN DIFFERENT CONDITIONS**

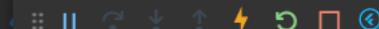


transaction\_list.dart X

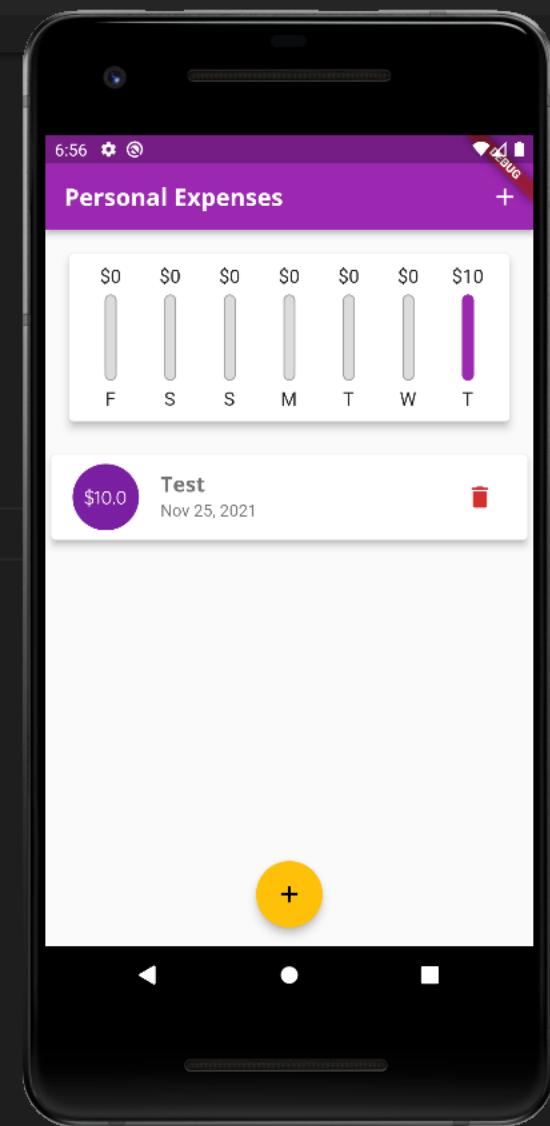
main.dart

new\_transaction.dart

chart.dart



```
lib > widgets > transaction_list.dart > TransactionList > build
  style: Theme.of(context).textTheme.headline1,
  ),
  // Text
  subtitle: Text(
    DateFormat.yMMMd().format(transactions[index].date),
  ),
  // Text
  trailing: MediaQuery.of(context).size.width > 460
    ? FlatButton.icon(
        icon: Icon(Icons.delete),
        label: Text('Delete'),
        textColor: Theme.of(context).errorColor,
        onPressed: () => deleteTx(transactions[index].id),
      ) // FlatButton.icon
    : IconButton(
        icon: Icon(Icons.delete),
        color: Theme.of(context).errorColor,
        onPressed: () => deleteTx(transactions[index].id),
      ), // IconButton
  ),
  // ListTile
);
// Card
},
itemCount: transactions.length,
); // ListView.builder
}
```



widgets\transaction\_list.dart

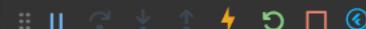


transaction\_list.dart X

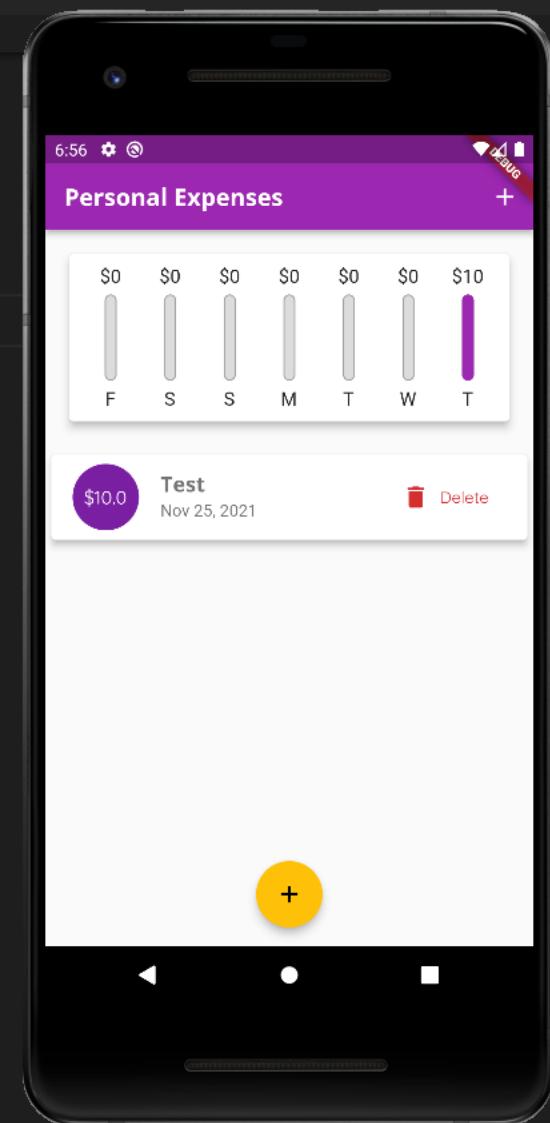
main.dart

new\_transaction.dart

chart.dart



```
lib > widgets > transaction_list.dart > TransactionList > build
  style: Theme.of(context).textTheme.headline1,
  ),
  // Text
  subtitle: Text(
    DateFormat.yMMMd().format(transactions[index].date),
  ),
  // Text
  trailing: MediaQuery.of(context).size.width > 400
    ? FlatButton.icon(
        icon: Icon(Icons.delete),
        label: Text('Delete'),
        textColor: Theme.of(context).errorColor,
        onPressed: () => deleteTx(transactions[index].id),
      ) // FlatButton.icon
    : IconButton(
        icon: Icon(Icons.delete),
        color: Theme.of(context).errorColor,
        onPressed: () => deleteTx(transactions[index].id),
      ), // IconButton
  ),
  // ListTile
);
// Card
},
itemCount: transactions.length,
); // ListView.builder
}
```



widgets\transaction\_list.dart

# **MANAGING THE MEDIAQUERY OBJECT**

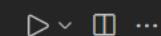


transaction\_list.dart

main.dart

new\_transaction.dart

chart.dart



```
lib > main.dart > _MyHomePageState > build
117   @override
118   Widget build(BuildContext context) {
119     final mediaQuery = MediaQuery.of(context);
120     final isLandscape = mediaQuery.orientation == Orientation.landscape;
121     final appBar = AppBar(
122       titleTextStyle: Theme.of(context).appBarTheme.textTheme.headline1,
123       title: Text(
124         'Personal Expenses',
125       ), // Text
126       actions: <Widget>[
127         IconButton(
128           icon: Icon(Icons.add),
129           onPressed: () => _startAddNewTransaction(context),
130         ), // IconButton
131       ], // <Widget>[]
132     ); // AppBar
133     final txListWidget = Container(
134       height: mediaQuery.size.height -
135         appBar.preferredSize.height -
136         mediaQuery.padding.top) *
137         0.7,
138       child: TransactionList(_userTransactions, _deleteTransaction), main.dart
139     );
140   }
141 }
```

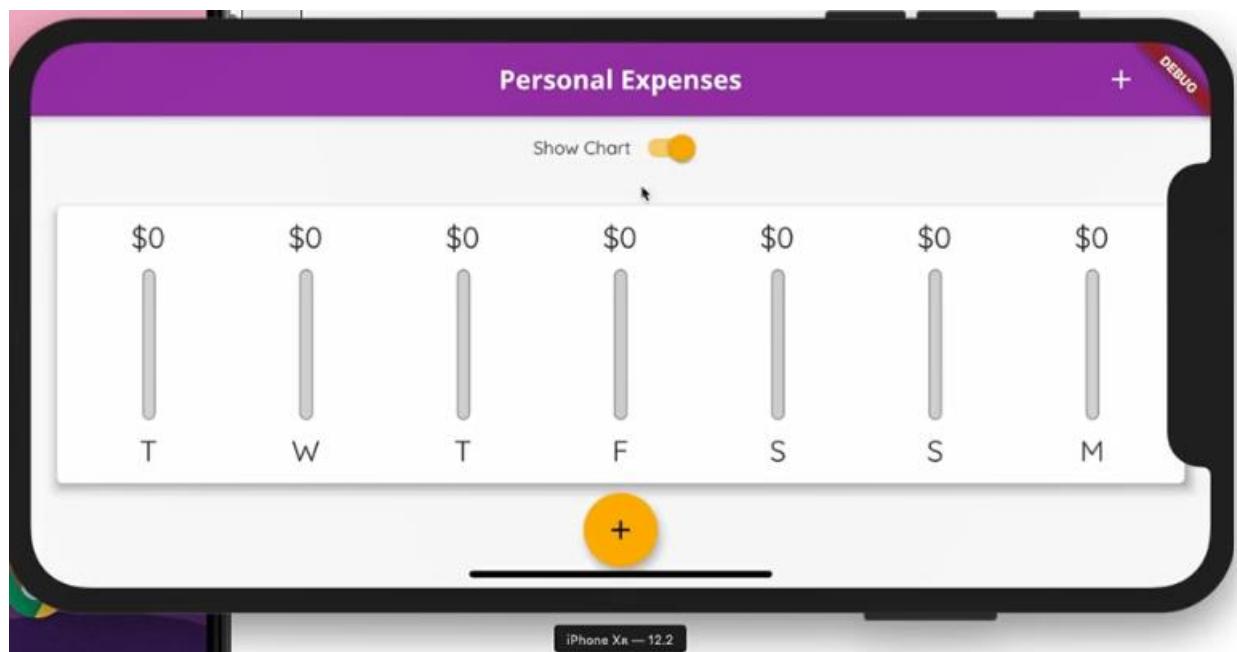
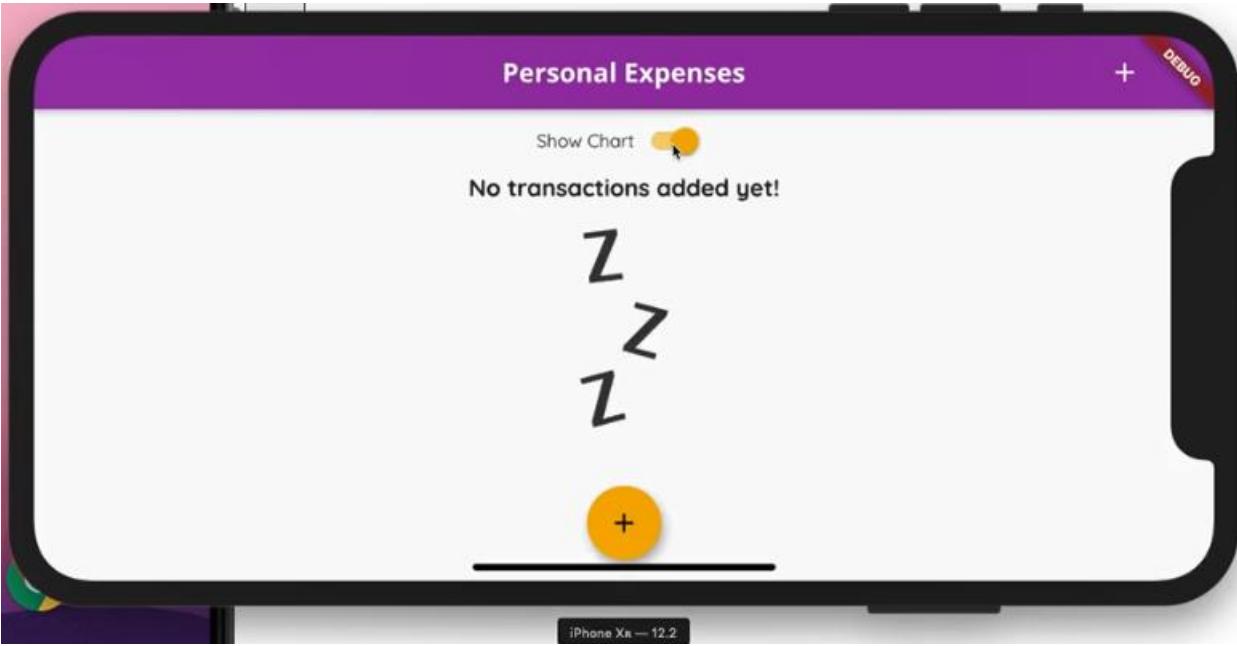
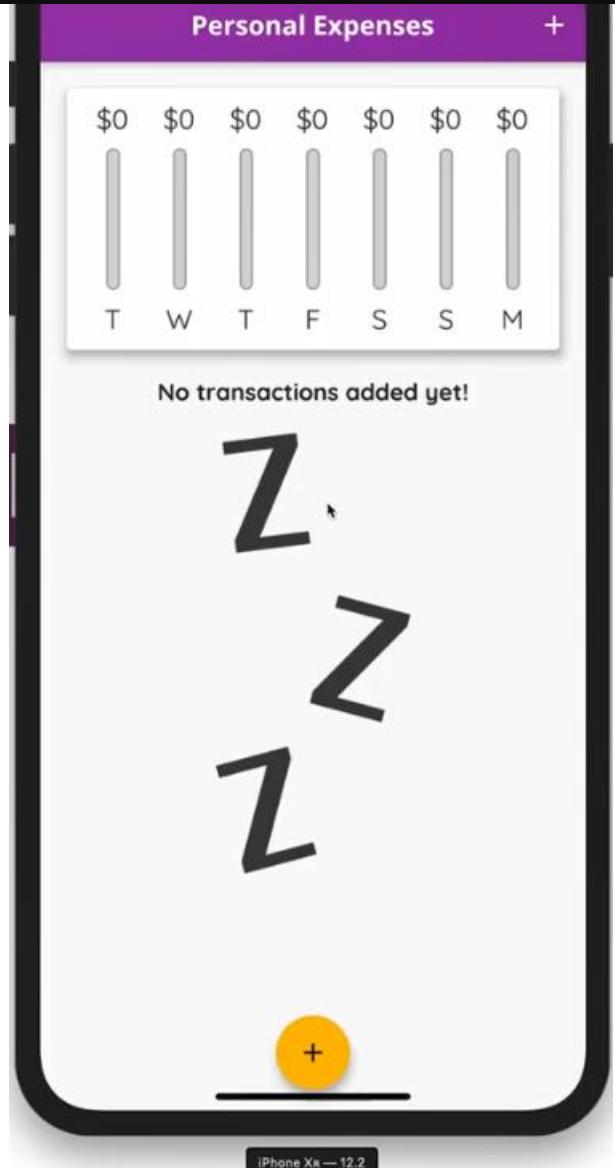
```
lib > main.dart > _MyHomePageState > build
158
159     ],
160   ),
161   if (!isLandscape)
162     Container(
163       height: MediaQuery.size.height -
164         appBar.preferredSize.height -
165         MediaQuery.padding.top) *
166       0.3,
167       child: Chart(_recentTransactions),
168     ),
169   if (!isLandscape) txListWidget,
170   if (isLandscape)
171     _showChart
172     ? Container(
173       height: MediaQuery.size.height -
174         appBar.preferredSize.height -
175         MediaQuery.padding.top) *
176       0.7,
177       child: Chart(_recentTransactions),
178     )
179   : txListWidget
180 ]

```

## main.dart

# **CHECKING THE DEVICE PLATFORM**

on Mac OS:  
open -a Simulator.app





transaction\_list.dart

main.dart

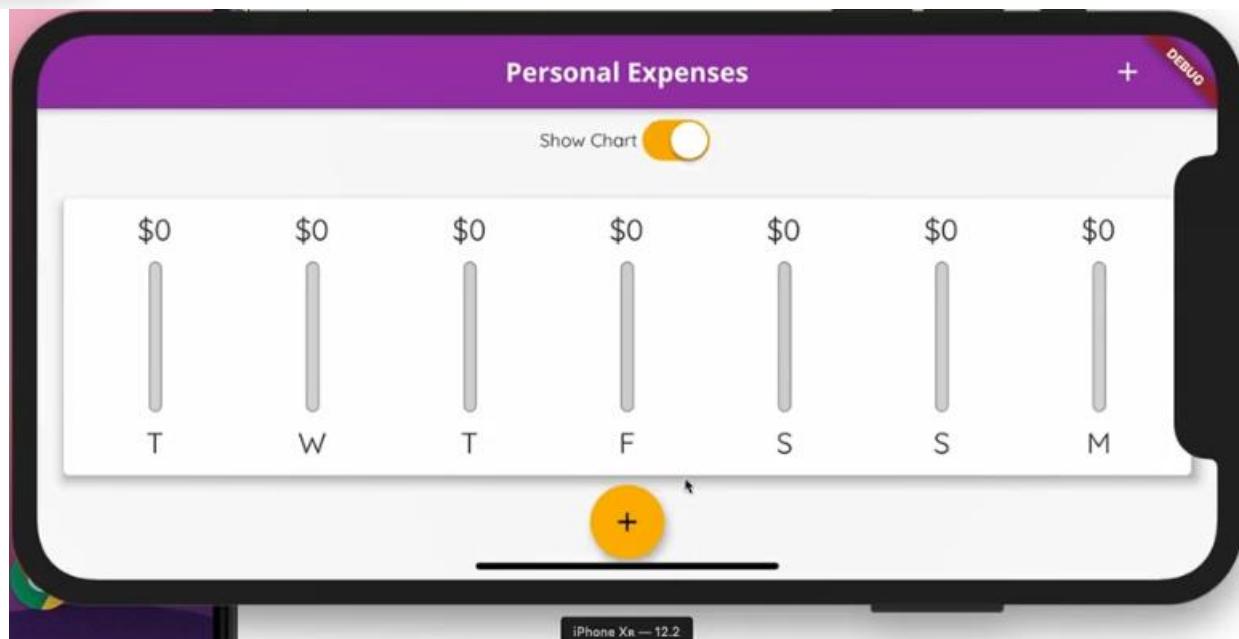
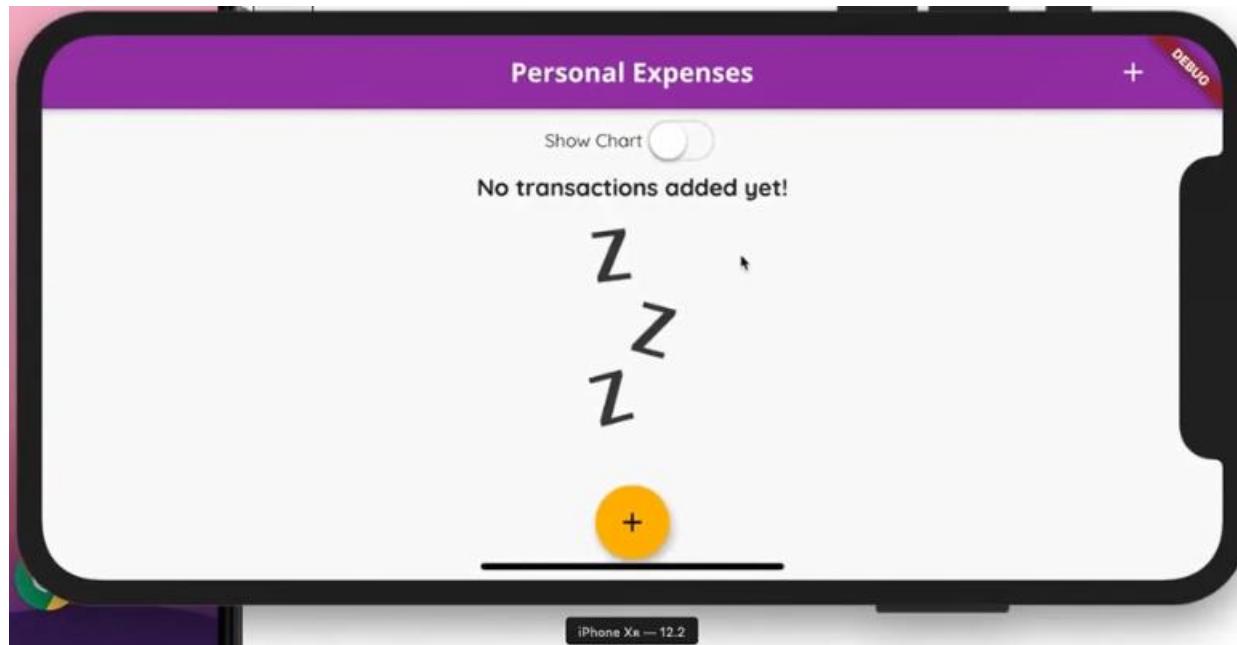
new\_transaction.dart

chart.dart



```
lib > main.dart > _MyHomePageState > build
141     appBar: appBar,
142     body: SingleChildScrollView(
143         child: Column(
144             mainAxisAlignment: MainAxisAlignment.spaceEvenly,
145             children: <Widget>[
146                 if (isLandscape)
147                     Row(
148                         mainAxisAlignment: MainAxisAlignment.spaceEvenly,
149                         children: <Widget>[
150                             Text('Show Chart'),
151                             Switch.adaptive(
152                                 value: _showChart,
153                                 onChanged: (val) {
154                                     setState(() {
155                                         _showChart = val;
156                                     });
157                                 },
158                             ), // Switch.adaptive
159                         ], // <Widget>[]
160                     ), // Row
161                 if (!isLandscape)
162                     Container(
```

main.dart



transaction\_list.dart

main.dart

new\_transaction.dart

chart.dart



lib &gt; main.dart &gt; ...

```
1 import 'dart:io';
2
3 import 'package:flutter/material.dart';
4 // import 'package:flutter/services.dart';
5
6 import './widgets/chart.dart';
7 import './widgets/transaction_list.dart';
8 import './widgets/new_transaction.dart';
9 import './models/transaction.dart';
10
11 void main() {
12     WidgetsFlutterBinding.ensureInitialized();
13     SystemChrome.setPreferredOrientations([
14         DeviceOrientation.portraitUp,
15         DeviceOrientation.portraitDown,
16     ]);
17     runApp(MyApp());
18 }
19
20 class MyApp extends StatelessWidget {
21     @override
```

main.dart

transaction\_list.dart

main.dart

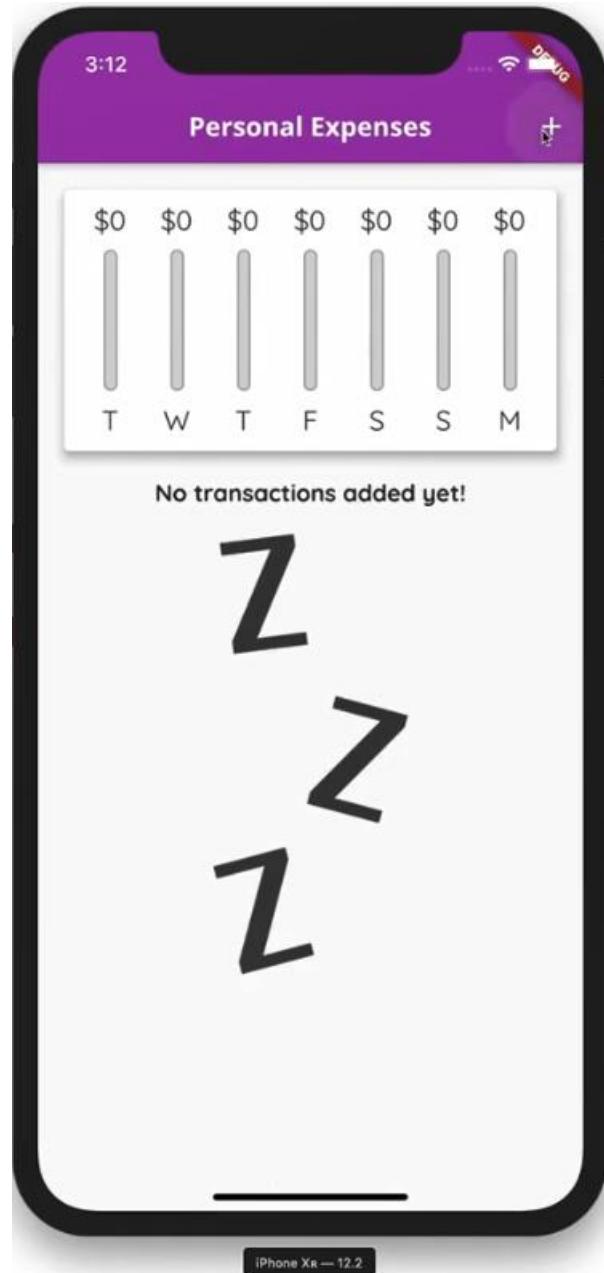
new\_transaction.dart

chart.dart

lib &gt; main.dart &gt; \_MyHomePageState &gt; build

```
178           mediaQuery.padding.top) ^
179           0.7,
180           child: Chart(_recentTransactions),
181           ) // Container
182           : txListWidget
183     ], // <Widget>[]
184   ), // Column
185   ), // SingleChildScrollView
186   floatingActionButtonLocation: FloatingActionButtonLocation.centerFloat,
187   .... floatingActionButton: Platform.isIOS
188   .... ? Container()
189   .... : FloatingActionButton(
+ 190   .... child: Icon(Icons.add),
191   .... onPressed: () => _startAddNewTransaction(context),
192   .... ), // FloatingActionButton
193   ); // Scaffold
194 }
195 }
196 }
```

## main.dart



# USING CUPERTINO (IOS) WIDGETS

Cupertino (iOS-style) widgets | 🔍 +

Flutter

Multi-Platform ▾ Development ▾ Ecosystem ▾ Showcase Docs ▾

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Development

User interface

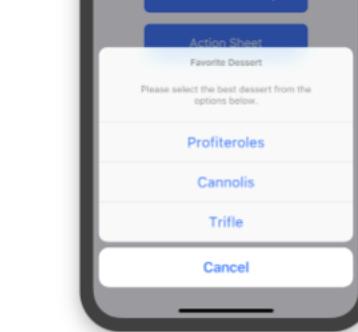
- Introduction to widgets
- Building layouts
- Adding interactivity
- Assets and images
- Navigation & routing
- Animations
- Advanced UI
- [Widget catalog](#)
- Data & backend
- Accessibility & internationalization

Development > UI > Widgets > Cupertino

# Cupertino (iOS-style) widgets

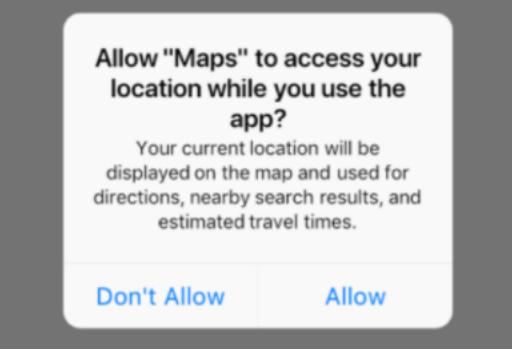
Beautiful and high-fidelity widgets for current iOS design language.

See more widgets in the [widget catalog](#).



CupertinoActionSheet





Allow "Maps" to access your location while you use the app?  
Your current location will be displayed on the map and used for directions, nearby search results, and estimated travel times.

Don't Allow      Allow

CupertinoAlertDialog

Flutter

Multi-Platform ▾ Development ▾ Ecosystem ▾ Showcase Docs ▾

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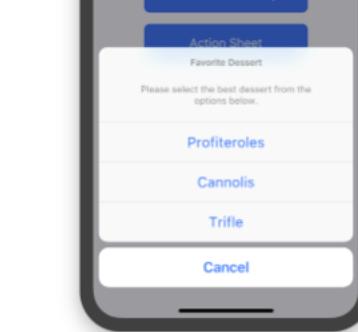
- Introduction to widgets
- Building layouts
- Adding interactivity
- Assets and images
- Navigation & routing
- Animations
- Advanced UI
- [Widget catalog](#)
- Data & backend
- Accessibility & internationalization

Development > UI > Widgets > Cupertino

# Cupertino (iOS-style) widgets

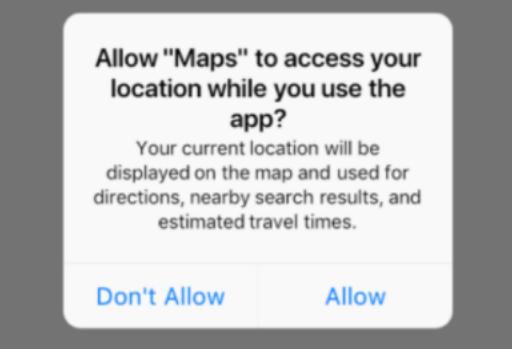
Beautiful and high-fidelity widgets for current iOS design language.

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CupertinoActionSheet





Allow "Maps" to access your location while you use the app?  
Your current location will be displayed on the map and used for directions, nearby search results, and estimated travel times.

Don't Allow      Allow

CupertinoAlertDialog

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

EXPLORER ...

OPEN EDITORS main.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 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

main.dart x

lib > main.dart > ...

```
1 import 'dart:io';
2
3 import 'package:flutter/cupertino.dart';
4 import 'package:flutter/material.dart';
5 // import 'package:flutter/services.dart';
6
7 import './widgets/chart.dart';
8 import './widgets/transaction_list.dart';
9 import './widgets/new_transaction.dart';
10 import './models/transaction.dart';
11
12 void main() {
13     // WidgetsFlutterBinding.ensureInitialized();
14     // SystemChrome.setPreferredOrientations([
15     //     DeviceOrientation.portraitUp,
16     //     DeviceOrientation.portraitDown,
17     // ]);
18     runApp(MyApp());
19 }
20
21 class MyApp extends StatelessWidget {
```

main.dart

Ln 4, Col 1 (42 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Chrome (web-javascript) Prettier

EXPLORER

OPEN EDITORS

- main.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

analysis\_options.yaml

personal\_expenses\_04.iml

pubspec.lock

pubspec.yaml

README.md

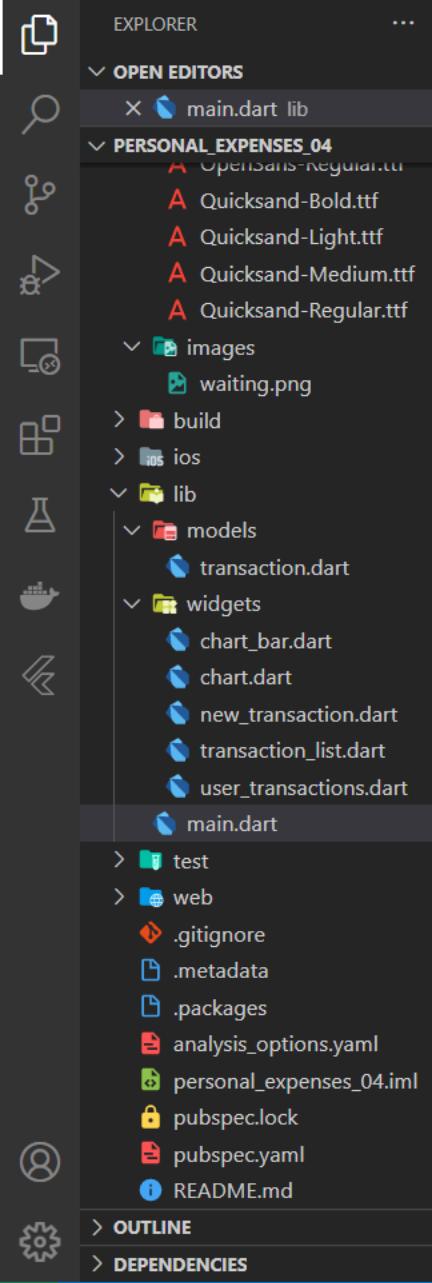
> OUTLINE

> DEPENDENCIES

## main.dart

```
lib > main.dart > _MyHomePageState > build  
120 @override  
121 Widget build(BuildContext context) {  
122   final mediaQuery = MediaQuery.of(context);  
123   final isLandscape = mediaQuery.orientation == Orientation.landscape;  
124  
125   final PreferredSizeWidget appBar = Platform.isIOS  
126   ? CupertinoNavigationBar(  
127     middle: Text(  
128       'Personal Expenses',  
129     ), // Text  
130     trailing: Row(  
131       mainAxisAlignment: MainAxisAlignment.end,  
132       children: <Widget>[  
133         GestureDetector(  
134           child: Icon(CupertinoIcons.add),  
135           onTap: () => _startAddNewTransaction(context),  
136         ), // GestureDetector  
137       ], // <Widget>[]  
138     ), // Row  
139   ) // CupertinoNavigationBar  
140   : AppBar(  
141     title: Text(
```

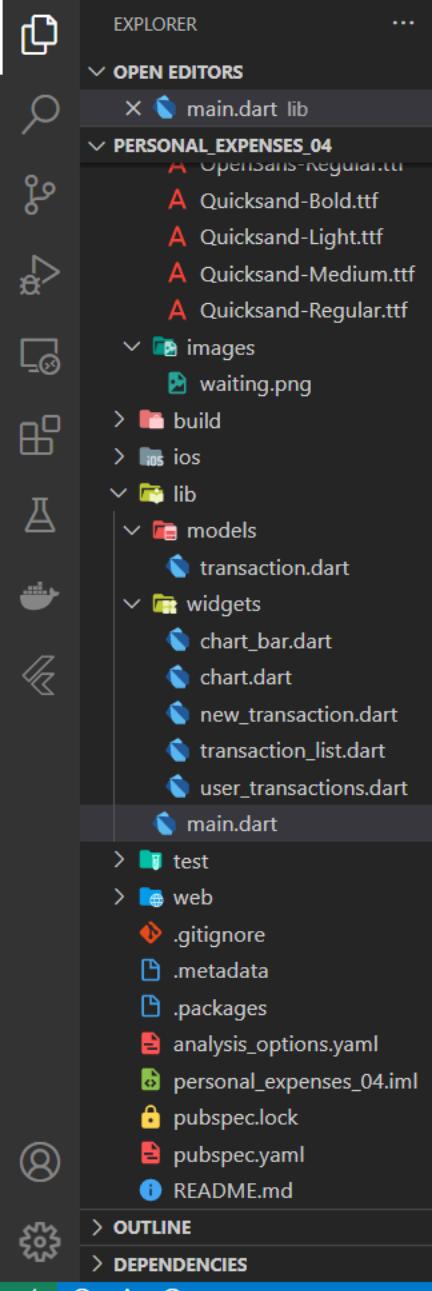
main.dart



```
main.dart X
lib/main.dart > _MyHomePageState > build
136     .... ), // GestureDetector
137     .... ], // <Widget>[]
138     .... ), // Row
139     .... ) // CupertinoNavigationBar
140     .... : AppBar(
141         .... title: Text(
142             .... 'Personal Expenses',
143             .... ), // Text
144             .... actions: <Widget>[
145                 .... IconButton(
146                     .... icon: Icon(Icons.add),
147                     .... onPressed: () => _startAddNewTransaction(context),
148                     .... ), // IconButton
149                     .... ], // <Widget>[]
150                     .... ); // AppBar

152 final txListWidget = Container(
153     height: (mediaQuery.size.height -
154         appBar.preferredSize.height -
155         mediaQuery.padding.top) *
156             0.7,
157     child: TransactionList(_userTransactions, _deleteTransaction),
```

main.dart

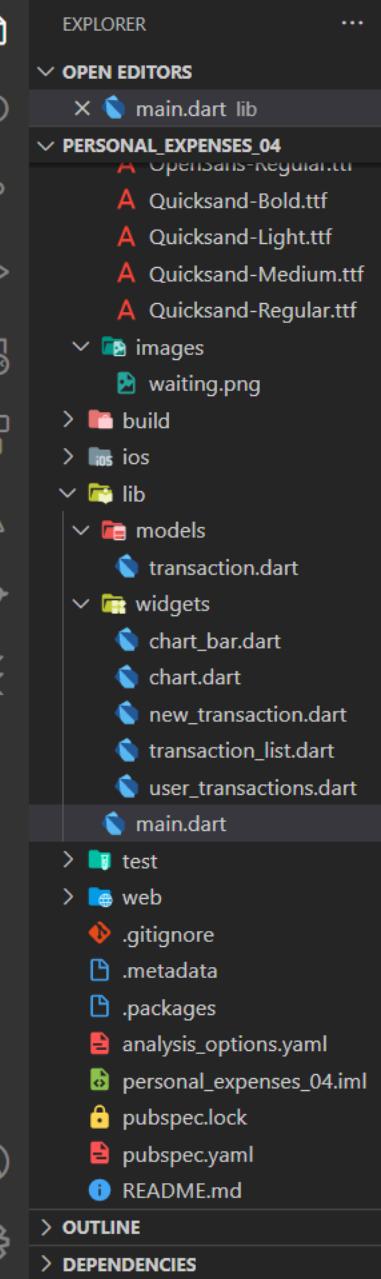


lib > main.dart > \_MyHomePageState > build

```
final txListWidget = Container(
  height: MediaQuery.size.height -
    appBar.preferredSize.height -
    MediaQuery.padding.top) *
  0.7,
  child: TransactionList(_userTransactions, _deleteTransaction),
); // Container

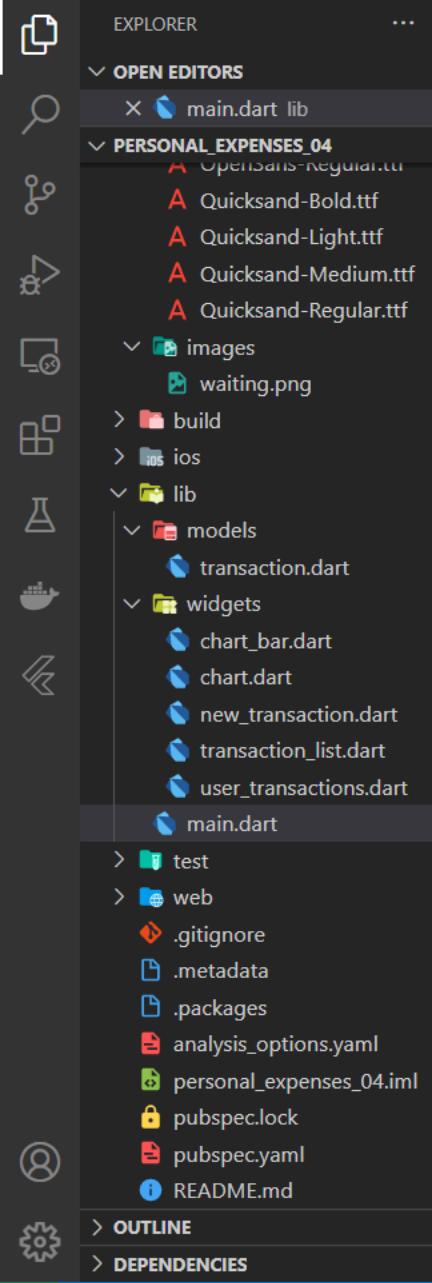
final pageBody = SingleChildScrollView(
  child: Column(
    crossAxisAlignment: CrossAxisAlignment.stretch,
    children: <Widget>[
      if (isLandscape)
        Row(
          mainAxisAlignment: MainAxisAlignment.center,
          children: <Widget>[
            Text('Show Chart'),
            Switch.adaptive(
              activeColor: Theme.of(context).accentColor,
              value: _showChart,
              onChanged: (val) {
                setState(() {
                  _showChart = val;
                });
              }
            )
          ],
        )
    ],
);
```

main.dart



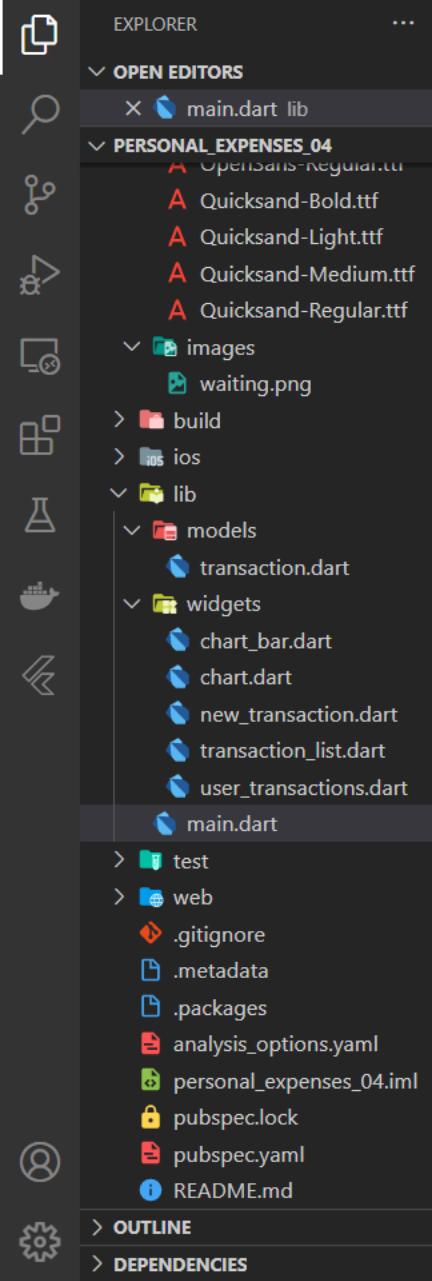
```
main.dart X
lib > main.dart > _MyHomePageState > build
170   activeColor: Theme.of(context).accentColor,
171   value: _showChart,
172   onChanged: (val) {
173     setState(() {
174       _showChart = val;
175     });
176   },
177   ),
178   ],
179   ),
180   if (!isLandscape)
181   Container(
182     height: (mediaQuery.size.height -
183       appBar.preferredSize.height -
184       mediaQuery.padding.top) *
185       0.3,
186     child: Chart(_recentTransactions),
187   ),
188   if (!isLandscape) txListWidget,
189   if (isLandscape)
190     _showChart
191     ? Container(
```

main.dart



```
lib > main.dart > _MyHomePageState > build
186     child: Chart(_recentTransactions),
187     ), // Container
188     if (!isLandscape) txListWidget,
189     if (isLandscape)
190         _showChart
191         ? Container(
192             height: (mediaQuery.size.height -
193                 appBar.preferredSize.height -
194                 mediaQuery.padding.top) *
195                 0.7,
196             child: Chart(_recentTransactions),
197             ) // Container
198             : txListWidget
199         ], // <Widget>[]
200         ), // Column
201     ); // SingleChildScrollView
202
203     return Platform.isIOS
204         ? CupertinoPageScaffold(
205             child: pageBody,
206             navigationBar: appBar,
207         )
```

main.dart

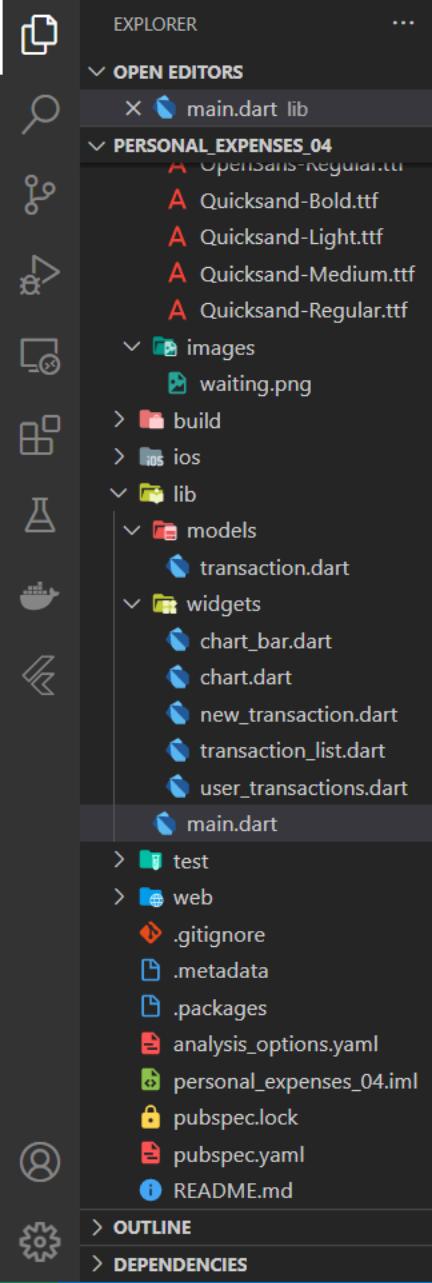


```
main.dart x
lib > main.dart > _MyHomePageState > build
200     ), // Column
201 ); // SingleChildScrollView
202
203     return Platform.isIOS
204         ? CupertinoPageScaffold(
205             child: pageBody,
206             navigationBar: appBar,
207         )
208         : Scaffold(
209             appBar: appBar,
210             body: pageBody,
211             floatingActionButtonLocation:
212                 FloatingActionButtonLocation.centerFloat,
213             floatingActionButton: Platform.isIOS
214                 ? Container()
215                 : FloatingActionButton(
216                     child: Icon(Icons.add),
217                     onPressed: () => _startAddNewTransaction(context),
218                 ), // FloatingActionButton
219             ); // Scaffold
220
221 }
```

main.dart

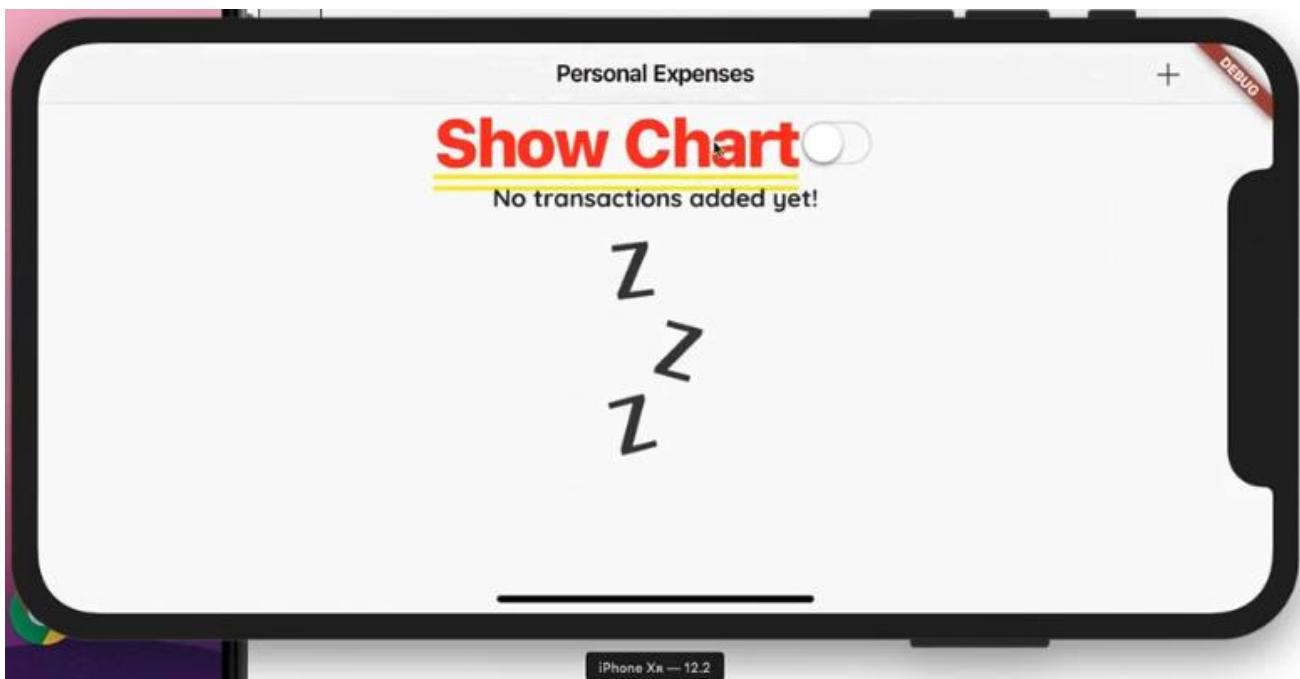
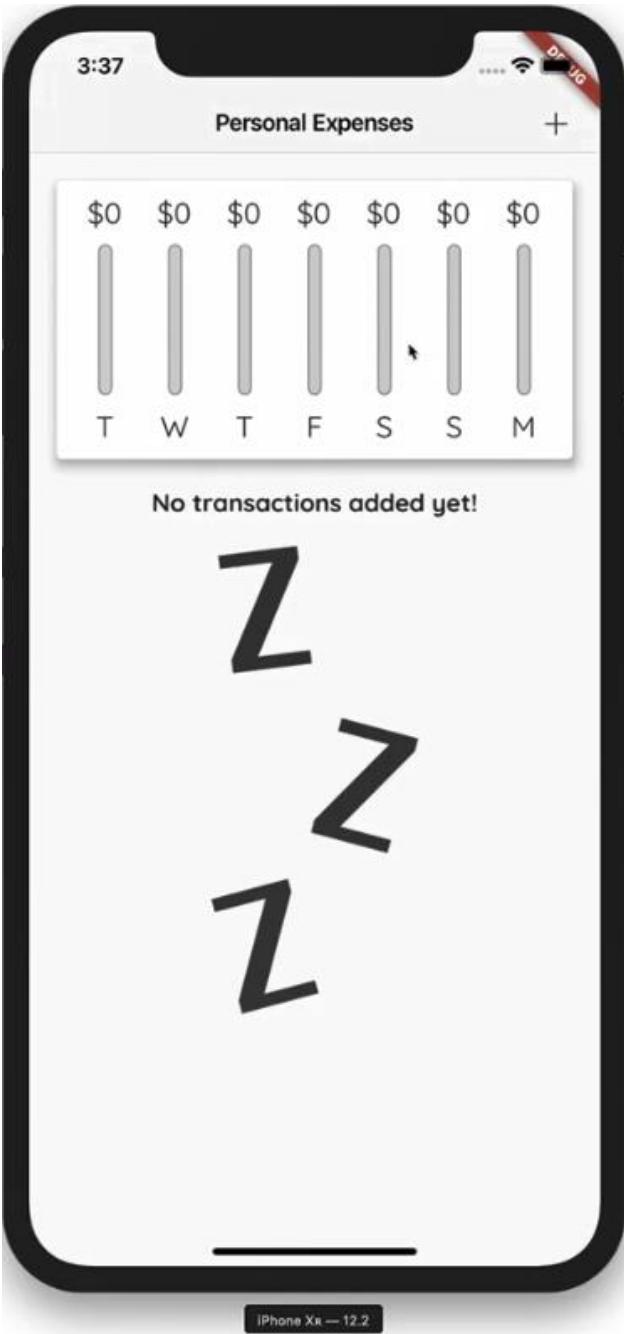


# **USING THE SAFEAREA CLASS**



```
main.dart X
lib > main.dart > _MyHomePageState > build
158     ); // Container
159
160     final pageBody = SafeArea(
161         child: SingleChildScrollView(
162             child: Column(
163                 mainAxisAlignment: MainAxisAlignment.start,
164                 children: <Widget>[
165                     if (isLandscape)
166                         Row(
167                             mainAxisAlignment: MainAxisAlignment.center,
168                             children: <Widget>[
169                                 Text('Show Chart'),
170                                 Switch.adaptive(
171                                     activeColor: Theme.of(context).accentColor,
172                                     value: _showChart,
173                                     onChanged: (val) {
174                                         setState(() {
175                                             _showChart = val;
176                                         });
177                                     },
178                                     ),
179                                 ],
180                             );
181                         ],
182                     ),
183                 ],
184             );
185         );
186     );
187
188     return Scaffold(
189         body: pageBody,
190     );
191 }
```

main.dart



**MORE CUPERTINO STYLES**

EXPLORER ...

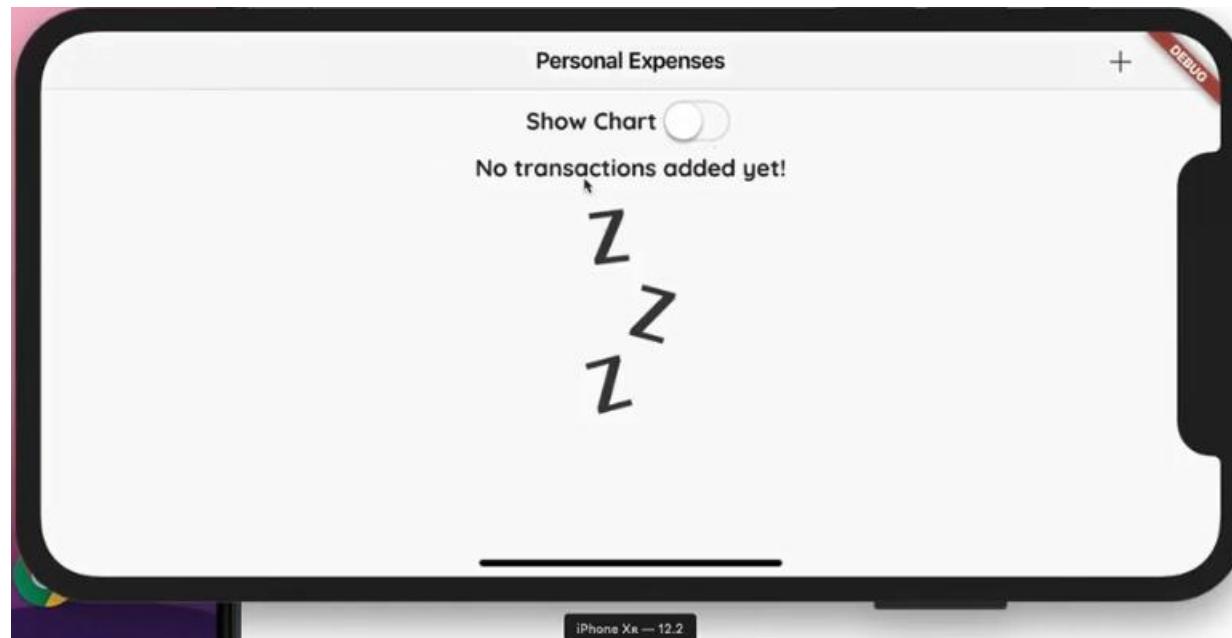
OPEN EDITORS

- main.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
- analysis\_options.yaml
- personal\_expenses\_04.iml
- pubspec.lock
- pubspec.yaml
- README.md

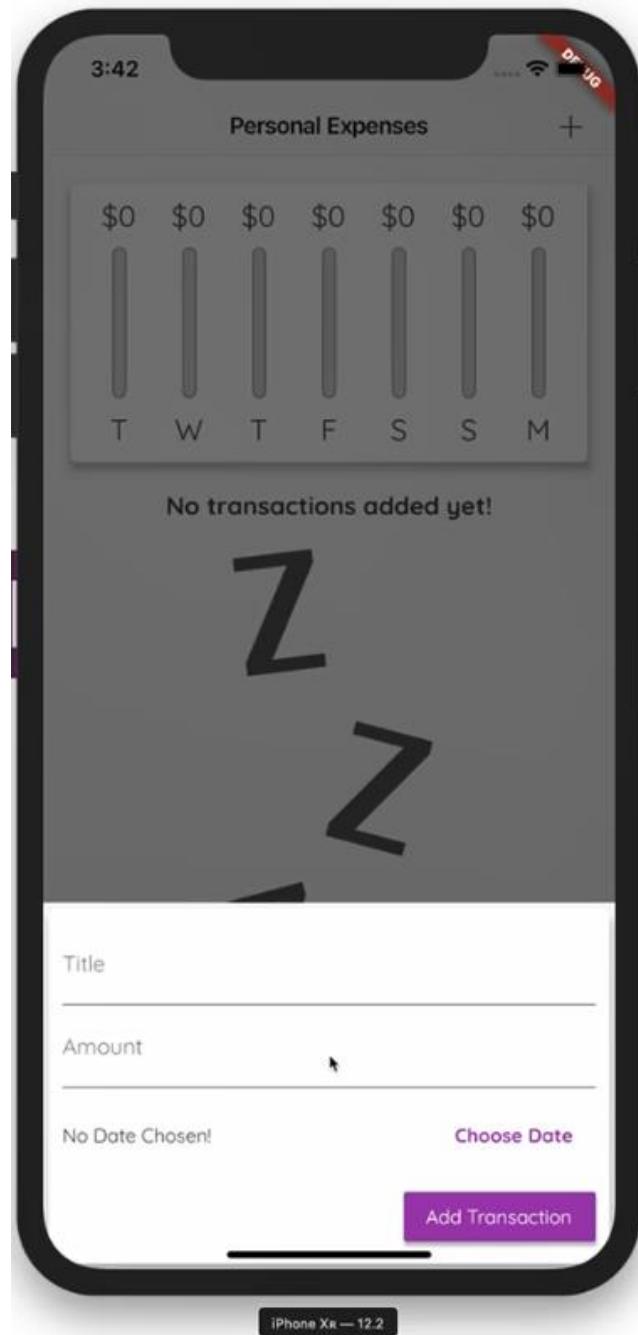
main.dart

```
lib > main.dart > _MyHomePageState > build
160     final pageBody = SafeArea(
161         child: SingleChildScrollView(
162             child: Column(
163                 mainAxisAlignment: MainAxisAlignment.start,
164                 children: <Widget>[
165                     if (isLandscape)
166                         Row(
167                             mainAxisAlignment: MainAxisAlignment.spaceEvenly,
168                             children: <Widget>[
169                             Text(
170                                 'Show Chart',
171                                 style: Theme.of(context).textTheme.headline1,
172                             ), // Text
173                             Switch.adaptive(
174                                 activeColor: Theme.of(context).accentColor,
175                                 value: _showChart,
176                                 onChanged: (val) {
177                                     setState(() {
178                                         _showChart = val;
179                                     });
180                                 },
181                             ), // Switch.adaptive
```

main.dart



# USING CUPERTINO BUTTONS



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

EXPLORER ... main.dart new\_transaction.dart 2

OPEN EDITORS main.dart lib new\_transaction.dart 2

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 2 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 > widgets > new\_transaction.dart > ...

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

wIDGETS\new\_transaction.dart

Ln 4, Col 1 (63 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Chrome (web-javascript) Prettier

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

EXPLORER ... main.dart new\_transaction.dart

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

PERSONAL\_EXPENSES\_04

- main.dart lib
- new\_transaction.dart lib...
- 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

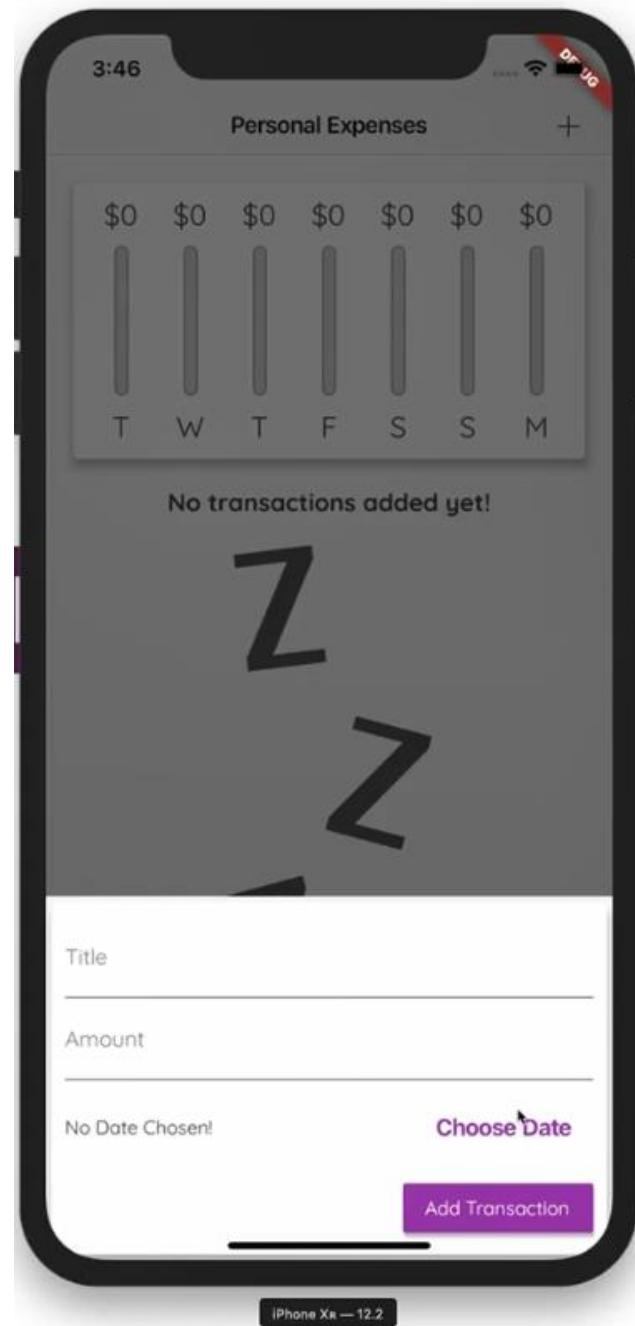
OUTLINE

DEPENDENCIES

94 ), // Expanded  
95 Platform.isIOS  
96 ? CupertinoButton(  
97 child: Text(  
98 'Choose Date',  
99 style: TextStyle(  
100 fontWeight: FontWeight.bold,  
101 ), // TextStyle  
102 ), // Text  
103 onPressed: \_presentDatePicker,  
104 ) // CupertinoButton  
105 : FlatButton(  
106 textColor: Theme.of(context).primaryColor,  
107 child: Text(  
108 'Choose Date',  
109 style: TextStyle(  
110 fontWeight: FontWeight.bold,  
111 ), // TextStyle  
112 ), // Text  
113 onPressed: \_presentDatePicker,  
114 ), // FlatButton  
115 ], // <Widget>[]

widgets\new\_transaction.dart

Ln 115, Col 1 (900 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Chrome (web-javascript) Prettier



# **CREATING CUSTOM ADAPTIVE WIDGETS**

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

EXPLORER ... main.dart adaptive\_flat\_button.dart

OPEN EDITORS lib > widgets > adaptive\_flat\_button.dart > AdaptiveFlatButton > build

PERSONAL\_EXPENSES\_04

- A OpenSans-Bold.ttf
- 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

adaptive\_flat\_button.dart

chart\_bar.dart

chart.dart

new\_transaction.dart

transaction\_list.dart

user\_transactions.dart

main.dart

test

web

.gitignore

.metadata

.packages

analysis\_options.yaml

OUTLINE

DEPENDENCIES

0 △ 0 ⚡ 61

```
1 import 'dart:io';
2
3 import 'package:flutter/material.dart';
4 import 'package:flutter/cupertino.dart';
5
6 class AdaptiveFlatButton extends StatelessWidget {
7   final String text;
8   final Function handler;
9
10 AdaptiveFlatButton(this.text, this.handler);
11
12 @override
13 Widget build(BuildContext context) {
14   return Platform.isIOS
15     ? CupertinoButton(
16       child: Text(
17         text,
18         style: TextStyle(
19           fontWeight: FontWeight.bold,
20         ), // TextStyle
21       ), // Text
22       onPressed: handler,
```

wIDGETS\adaptive\_flat\_button.dart

Ln 16, Col 25 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Chrome (web-javascript) Prettier

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

EXPLORER ... main.dart adaptive\_flat\_button.dart

OPEN EDITORS lib > widgets > adaptive\_flat\_button.dart > AdaptiveFlatButton > build

PERSONAL\_EXPENSES\_04

- OpenSans-Bold.ttf
- 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

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

> test

> web

- .gitignore
- .metadata
- .packages
- analysis\_options.yaml

> OUTLINE

> DEPENDENCIES

```
15     ? CupertinoButton( 16         child: Text( 17             text, 18             style: TextStyle( 19                 fontWeight: FontWeight.bold, 20             ), // TextStyle 21         ), // Text 22         onPressed: handler, 23     ) // CupertinoButton 24 : FlatButton( 25     textColor: Theme.of(context).primaryColor, 26     child: Text( 27         text, 28         style: TextStyle( 29             fontWeight: FontWeight.bold, 30         ), // TextStyle 31     ), // Text 32     onPressed: handler, 33 ); // FlatButton 34 } 35 }
```

widgets\adaptive\_flat\_button.dart

Ln 16, Col 25 Spaces: 2 UTF-8 CRLF Dart Dart DevTools Flutter: 2.5.3 Chrome (web-javascript) Prettier

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

EXPLORER ... main.dart adaptive\_flat\_button.dart new\_transaction.dart X lib > widgets > new\_transaction.dart > \_NewTransactionState > build

OPEN EDITORS main.dart lib adaptive\_flat\_button.dart... new\_transaction.dart lib\... PERSONAL\_EXPENSES\_04 OpenSans-Bold.ttf 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 adaptive\_flat\_button.dart chart\_bar.dart chart.dart new\_transaction.dart transaction\_list.dart user\_transactions.dart main.dart test web .gitignore .metadata .packages OUTLINE DEPENDENCIES

88 child: Row( 89 children: <Widget>[ 90 Expanded( 91 child: Text( 92 \_selectedDate == null 93 ? 'No Date Chosen!' 94 : 'Picked Date: \${DateFormat.yMd().format(\_selectedDate)}', 95 ), // Text 96 ), // Expanded 97 AdaptiveFlatButton('Choose Date', \_presentDatePicker), 98 ], // <Widget>[] 99 ), // Row 100 ), // Container 101 RaisedButton( 102 child: Text('Add Transaction'), 103 color: Theme.of(context).primaryColor, 104 textColor: Theme.of(context).textTheme.button.color, 105 onPressed: \_submitData, 106 ), // RaisedButton 107 ], // <Widget>[] 108 ), // Column 109 ), // Container 110 ) // Container

widgets\new\_transaction.dart

Ln 98, Col 1 (76 selected) Spaces: 2 CRLF Dart Dart DevTools Flutter: 2.5.3 Chrome (web-javascript) Prettier