Experiment 2

Tanmay Bhosale
D15A 08

Aim: To design Flutter UI by including common widgets.

Theory:

Widgets: Each element on a screen of the Flutter app is a widget. The view of the screen completely depends upon the choice and sequence of the widgets used to build the apps. And the structure of the code of an apps is a tree of widgets.

Category of Widgets:

There are mainly 14 categories in which the flutter widgets are divided. They are mainly segregated on the basis of the functionality they provide in a flutter application.

1. Accessibility: These are the set of widgets that make a flutter app more easily accessible.
2. Animation and Motion: These widgets add animation to other widgets.
3. Assets, Images, and Icons: These widgets take charge of assets such as display images and show icons.
4. Async: These provide async functionality in the flutter application.
5. Basics: These are the bundle of widgets that are absolutely necessary for the development of any flutter application.
6. Cupertino: These are the iOS designed widgets.
7. Input: This set of widgets provides input functionality in a flutter application.
8. Interaction Models: These widgets are here to manage touch events and route users to different views in the application.
9. Layout: This bundle of widgets helps in placing the other widgets on the screen as needed.
10. Material Components: This is a set of widgets that mainly follow material design by Google.
11. Painting and effects: This is the set of widgets that apply visual changes to their child widgets without changing their layout or shape.
12. Scrolling: This provides scrollability of to a set of other widgets that are not scrollable by default.
13. Styling: This deals with the theme, responsiveness, and sizing of the app.
14. Text: This displays text.

Description of few of the widgets are as follows:

- Scaffold – Implements the basic material design visual layout structure.
- App-Bar – To create a bar at the top of the screen.
- Text - To write anything on the screen.
- Container – To contain any widget.
- Center – To provide center alignment to other widgets.

The code in main.dart:

```
import 'package:flutter/material.dart';
import 'package:hp/landing.dart';
import 'package:window_manager/window_manager.dart';
import 'dart:io';


class MyApp extends StatelessWidget {
  const MyApp({Key? key}) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      home: Builder(
        builder: (BuildContext context) {
          final mediaQueryData = MediaQuery.of(context);
          const screenWidth = 250.0;
          const screenHeight = 400.0;
          return MediaQuery(
            data: mediaQueryData.copyWith(
              size: const Size(screenWidth, screenHeight),
              devicePixelRatio: mediaQueryData.devicePixelRatio,
            ),
            child: const SizedBox(
              width: screenWidth,
              height: screenHeight,
              child: LandingPage(),
            ),
          );
        },
      ),
    );
  }
}
```

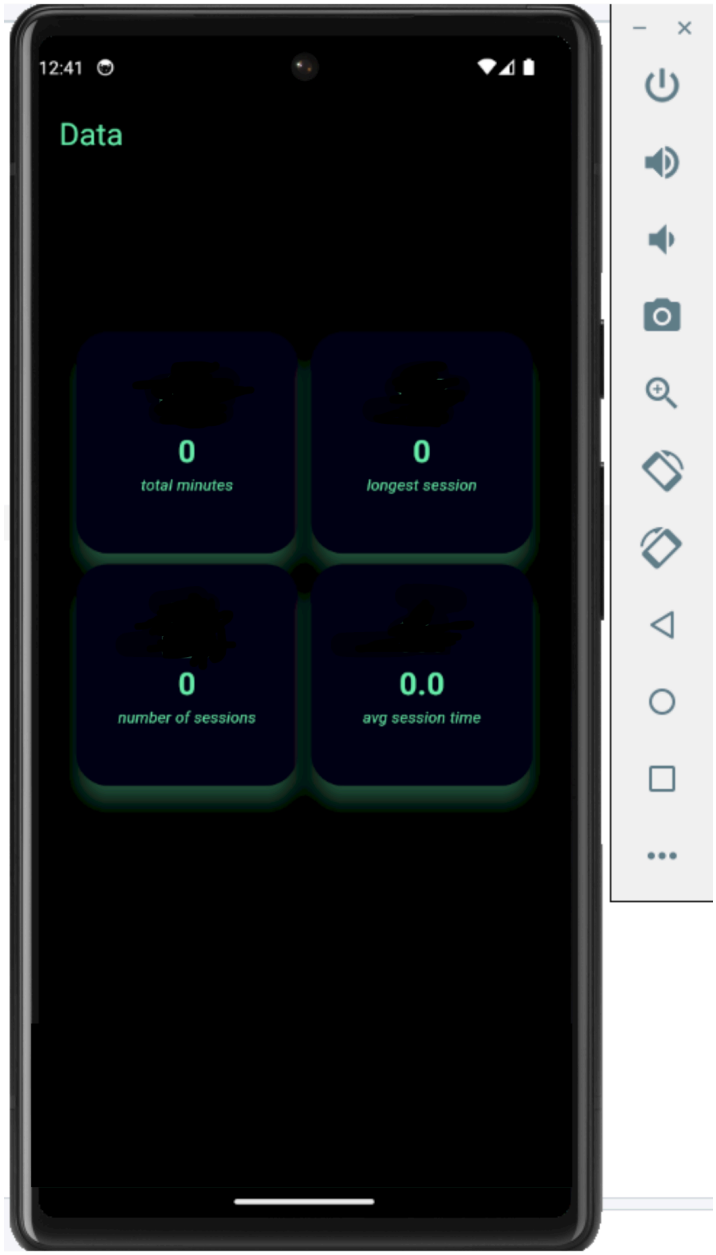
The code in data.dart:

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

class Data extends StatefulWidget {
  const Data({Key? key}) : super(key: key);

  @override
  State<StatefulWidget> createState() {
    return _DataState();
  }
}
@override
  Widget build(BuildContext context) {
    return Scaffold(
        backgroundColor: Colors.black,
        // padding: const EdgeInsets.all(20.0),
        appBar: AppBar(
            automaticallyImplyLeading: false,
            centerTitle: false,
            backgroundColor: Colors.black,
            title: const Text.rich(
              TextSpan(
                text: 'Data', // text for title
                style: TextStyle(
                  fontSize: 24,
                  color: Colors.greenAccent,
                  fontFamily: 'Arial',
                ),
              ),
            )),
        body: SizedBox(
            width: 600,
            height: 600,
            child: Column(
              mainAxisAlignment: MainAxisAlignment.center,
              children: [
                Padding(
                  padding: const EdgeInsets.all(25.0),
```

```
child: GridView(
  shrinkWrap: true,
  gridDelegate:
      const SliverGridDelegateWithFixedCrossAxisCount(
    crossAxisCount: 2,
    crossAxisSpacing: 2,
    mainAxisSpacing: 0,
  ),
  children: [
    Card(
      shape: RoundedRectangleBorder(
        borderRadius: BorderRadius.circular(25.0),
      ),
      clipBehavior: Clip.antiAlias,
      color: Colors.black,
      shadowColor: Colors.greenAccent,
      elevation: 15,
      child: Padding(
        padding: const EdgeInsets.all(26.0),
        child: Column(
          children: [
            const Icon(
              Icons.access_time_filled_outlined,
              color: Colors.greenAccent,
              size: 50,
            ),
            Text(_totalMin.toString(),
                style: const TextStyle(
                    color: Colors.greenAccent,
                    fontSize: 24,
                    fontWeight: FontWeight.bold,
                    fontFamily: 'Arial')),
            const Text('total minutes',
                style: TextStyle(
                    color: Colors.greenAccent,
                    fontSize: 12,
                    fontFamily: 'Arial',
                    fontStyle: FontStyle.italic)),
          ],
```

```
                ),
            ),
        ),
    ),
}
```

Output:


12:41
Data
0
total minutes
0
longest session
0
number of sessions
0.0
avg session time