Task Guide A05

Introduction and setup project

1. Objective
   Student learn how to make Instagram's Bottom Navigation bar
2. Requirement
   Hardware:
   - 4 GB RAM minimum, 8 GB RAM recommended
   - 15 GB of available disk space minimum (2 GB for Flutter SDK, 8 GB for Android Studio, 4 GB for AVD, and 1 GB for project's size)
   - 1280 x 800 minimum screen resolution
   - Intel processor with support for Intel VT-x, Intel EM64T (Intel 64), and Execute Disable (XD) Bit functionality

   Software:
   - Microsoft Windows 7/8/10/11 (64-bit)
   - JDK 8
   - Android Studio IDE
   - Git
3. Resource
   Starter project code : https://github.com/chrisdionisius/clone-instagram-login.git
4. Task Description
   In this task, student will be implementing a clone of Instagram's Bottom Navigation bar using Flutter and various widgets such as StatefulWidget, Scaffold, Column, Container, and more. This exercise will help student understand how to structure a Flutter application, utilize different widgets, and build a user interface resembling Instagram's Bottom Navigation bar.

Specification

1) Clone project from https://github.com/chrisdionisius/clone-instagram-login/tree/Starter-Code (make sure clone it from code-starter branch) or using the manual setup if you encounter error during cloning project, refer to Guide A.01
2) Run flutter pub get in the terminal or if you are using Microsoft Visual Studio Code you could click on **Get Package** button.
3) Using this specification make a list of some widgets below :
   1. Open bottom_navbar.dart under lib\app\widgets\bottom_navbar.dart directory make sure it is extended from StatelessWidget.

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

class BottomNavbar extends StatelessWidget {
  const BottomNavbar({
    super.key,
  });

  @override
  Widget build(BuildContext context) {
    throw UnimplementedError();
  }
}
```

   2. Add these import

```dart
import
'package:example_widget_testing/core/values/constant/navbarmenu_json.dart';
import 'package:flutter_svg/svg.dart';
```

   3. Add this parameters to BottomNavbar class

```dart
final int pageIndex;
  const BottomNavbar({
    super.key,
    required this.pageIndex,
});
```

```dart
class BottomNavbar extends StatelessWidget {
  final int pageIndex;
  const BottomNavbar({
    super.key,
    required this.pageIndex,
  });
```

   4. Add this function inside build method

```dart
void navigateToPage(int index) {
  Navigator.pushNamed(context, navbarMenuList[index].path!);
```

```
}
```

```dart
class BottomNavbar extends StatelessWidget {
  final int pageIndex;
  const BottomNavbar({
    super.key,
    required this.pageIndex,
  });

  @override
  Widget build(BuildContext context) {
    void navigateToPage(int index) {
      Navigator.pushNamed(context, navbarMenuList[index].path!);
    }

    throw UnimplementedError();
  }
}
```

5. Add Container widget as return following this specifications :

No	Widget	Property	Value
1	Container	key	Key("bottom_navigation_bar_container")
		width	double.infinity
		height	55
		color	Colors.black
		padding	EdgeInsets.only(left: 20, right: 20, bottom: 20, top: 15)
		child	Row(key: const Key("bottom_navigation_bar_row"))
Row(key: const Key("bottom_navigation_bar_row")) properties :			
2	Row	key	Key("bottom_navigation_bar_row")
		mainAxisAlignment	MainAxisAlignment.spaceBetween
		children	List.generate(navbarMenuList.length, (index) { return InkWell(key: Key("bottom_item_$index"), onTap: () => navigateToPage(index), child: SvgPicture.asset(pageIndex == index ? navbarMenuList[index].activeIcon! : navbarMenuList[index].inactiveIcon!, width: 27,),); })

```dart
return Container(
    key: const Key("bottom_navigation_bar_container"),
    width: double.infinity,
    height: 55,
    color: Colors.black,
```

```
      padding: const EdgeInsets.only(left: 20, right: 20, bottom: 20,
top: 15),
      child: Row(
        key: const Key("bottom_navigation_bar_row"),
        mainAxisAlignment: MainAxisAlignment.spaceBetween,
        children: List.generate(navbarMenuList.length, (index) {
          return InkWell(
            key: Key("bottom_item_$index"),
            onTap: () => navigateToPage(index),
            child: SvgPicture.asset(
              pageIndex == index
                    ? navbarMenuList[index].activeIcon!
                    : navbarMenuList[index].inactiveIcon!,
              width: 27,
            ),
          );
        }),
      ),
  );
```

6. Open home_page.dart file, add this import so BottomNavbar widget will be accessible from this page.

```
import '../../widgets/bottom_navbar.dart';
```

7. Find Scaffold widget with key home_page_scaffold, add bottomNavigationBar property
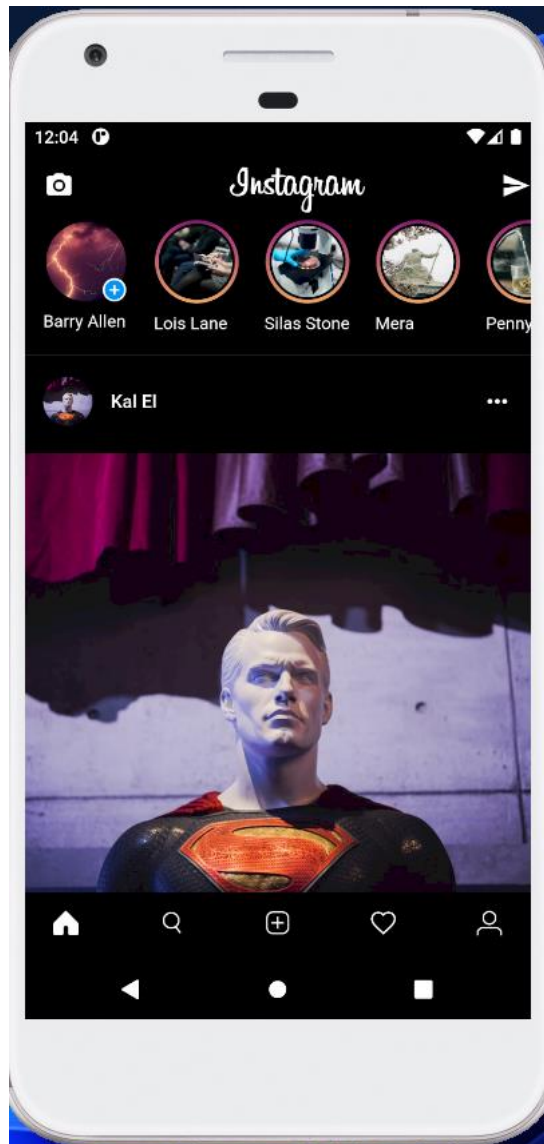
```
bottomNavigationBar: const BottomNavbar(
    key: Key('home_page_bottom_navbar'),
    pageIndex: 0),
```

```
class HomePageState extends State<HomePage> {
    @override
    Widget build(BuildContext context) {
      final Profile profile = Profile.fromJson(widget.profileData);
      return Scaffold(
        key: const Key('home_page_scaffold'),
        backgroundColor: ☐Colors.black,
        appBar: AppBar( // AppBar ...
        body: SingleChildScrollView( // SingleChildScrollView ...
        bottomNavigationBar: const BottomNavbar(
            key: Key('home_page_bottom_navbar'),
            pageIndex: 0,
        ), // BottomNavbar
      ); // Scaffold
    }
  }
```

8. Run the project and check if there's no error it will return home page similar like this.

Testing

1) Open home_page_test.dart file under test folder
2) Find main method it will look similar like this

```
24
       Run | Debug
25     void main() {
         Run | Debug
26       testWidgets('Check if home page is present', (WidgetTester tester) async {
27         FlutterError.onError = ignoreOverflowErrors;
28
29         await mockNetworkImagesFor(
30           () => tester.pumpWidget(
31             MaterialApp(
32               home: HomePage(
33                 posts: posts, profileData: profileJson, stories: stories), // HomePage
34             ), // MaterialApp
```

3) Click Run
4) Make sure these 8 test are passed

```
√ Check if home page is present
√ Check if Home page Appbar is present
√ Check if Story is present
√ Check if StoryItem rendered correctly
√ Check if divider is present
√ Check if Posts Column is present
Ignored Error
√ Check if PostItem rendered correctly
√ Check if Bottom Navbar is present
```

5) If there is an error try to check the message and fix the error usually It's because of wrong key name or missing property of specific widget

FULL CODE

BottomNavbar

```dart
import
'package:example_widget_testing/core/values/constant/navbarmenu_json.dart';
import 'package:flutter/material.dart';
import 'package:flutter_svg/svg.dart';

class BottomNavbar extends StatelessWidget {
  final int pageIndex;
  const BottomNavbar({super.key, required this.pageIndex});

  @override
  Widget build(BuildContext context) {
    void navigateToPage(int index) {
      Navigator.pushNamed(context, navbarMenuList[index].path!);
    }

    return Container(
      key: const Key("bottom_navigation_bar_container"),
      width: double.infinity,
      height: 55,
      color: Colors.black,
      padding: const EdgeInsets.only(left: 20, right: 20, bottom: 20, top:
15),
      child: Row(
        key: const Key("bottom_navigation_bar_row"),
        mainAxisAlignment: MainAxisAlignment.spaceBetween,
        children: List.generate(navbarMenuList.length, (index) {
          return InkWell(
            key: Key("bottom_item_$index"),
            onTap: () {
              navigateToPage(index);
            },
            child: SvgPicture.asset(
              pageIndex == index
                  ? navbarMenuList[index].activeIcon!
                  : navbarMenuList[index].inactiveIcon!,
              width: 27,
            ),
          );
        }),
      ),
    );
  }
}
```

HomePage

```dart
import
'package:example_widget_testing/app/modules/home/components/user_story.dart';
import 'package:example_widget_testing/app/widgets/post_item.dart';
import
'package:example_widget_testing/app/modules/home/components/story_item.dart';
import 'package:flutter/material.dart';

import '../../../core/theme/colors.dart';
import '../../data/models/profile.dart';
import '../../widgets/bottom_navbar.dart';

class HomePage extends StatefulWidget {
  const HomePage({
    super.key,
    required this.posts,
    required this.stories,
    required this.profileData,
  });
  final List posts;
  final List stories;
  final Map<String, dynamic> profileData;

  @override
  HomePageState createState() => HomePageState();
}

class HomePageState extends State<HomePage> {
  @override
  Widget build(BuildContext context) {
    final Profile profile = Profile.fromJson(widget.profileData);
    return Scaffold(
      key: const Key('home_page_scaffold'),
      backgroundColor: Colors.black,
      appBar: AppBar(
        key: const Key("home_page_appbar"),
        backgroundColor: Colors.black,
        leading: const Icon(
          key: Key('home_page_camera_icon'),
          Icons.camera_alt,
        ),
        title: const Center(
          key: Key('home_page_title_center'),
          child: Text(
            key: Key('home_page_title_text'),
            "Instagram",
            style: TextStyle(fontFamily: 'Billabong', fontSize: 35),
          ),
        ),
```

```dart
          ),
      actions: const <Widget>[
        Icon(key: Key('home_page_send_icon'), Icons.send),
      ],
    ),
    body: SingleChildScrollView(
      key: const Key('home_page_single_child_scroll_view'),
      child: Column(
        key: const Key('home_page_column'),
        children: <Widget>[
          SingleChildScrollView(
            key: const Key('stories_scroll_view'),
            scrollDirection: Axis.horizontal,
            child: Row(
              key: const Key('stories_row'),
              children: <Widget>[
                const UserStory(key: Key('user_story')),
                Row(
                  key: const Key('following_stories_row'),
                  children: List.generate(
                    widget.stories.length,
                    (index) {
                      return StoryItem(
                        key: Key('story_item_$index'),
                        img: widget.stories[index]['img'],
                        name: widget.stories[index]['name'],
                      );
                    },
                  ),
                ),
              ],
            ),
          ),
          Divider(
            key: const Key('home_page_divider'),
            color: white.withOpacity(0.3),
          ),
          Column(
            key: const Key('posts_column'),
            children: List.generate(
              widget.posts.length,
              (index) {
                return PostItem(
                  key: Key('post_item_$index'),
                  postImg: widget.posts[index]['postImg'],
                  profileImg: widget.posts[index]['profileImg'],
                  name: widget.posts[index]['name'],
                  caption: widget.posts[index]['caption'],
```

```dart
                    isLoved: widget.posts[index]['isLoved'],
                    viewCount: widget.posts[index]['commentCount'],
                    likedBy: widget.posts[index]['likedBy'],
                    dayAgo: widget.posts[index]['timeAgo'],
                    userPhoto: profile.profilePic!,
                  );
                },
              ),
            )
          ],
        ),
      ),
      bottomNavigationBar: const BottomNavbar(
        key: Key('home_page_bottom_navbar'),
        pageIndex: 0,
      ),
    );
  }
}
```