Health and Fitness Application

(Cross-Platform)

- Technical Report -

Project Type: Build

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1.0 Heath & Fitness Application

1.1 Introduction

This project would be focused on developing a mobile health and fitness application, based on flutter cross-platform development. The application backend would be based on flutter cloud-based real-time database system. Users would be able to record and track relevant health and fitness records. The requirements are;

- Create a health and fitness application.
- Use of suitable backend structure with database system.
- Use of mobile development and UI/UX best practices for development.
- Use of suitable application architecture and development methodologies.

1.2 Features

01. User Login

When the user opens the app, the user will be presented with a login page. In the login Page, User have to enter the Username and Password. After entering the valid credentials, the user would have to click the 'Login to Account' button to access the application, where it will be redirected to the home screen.

02. User Registration

If the user is new to the application, the user has to click the 'Register New Account' button to get redirected to registration page. Then the user needs to fill in, User Name, Email Address, Password, Height and Weight to register the account. After filling the fields, the user has to click 'Sign Up' button to complete the registration process. The application will send the relevant data to the database and store a new user.

03. Forgot Password

If the User forgot his/her password, the user has to click the forgot password button and it will redirect to another screen where the user will be asked to enter the email address, the password will be then sent to the email address.

04. Add Workout

When the user clicks the Workout in the tab bar, the user will be presented with several focus areas such as ABS, ARM, CHEST, SHOULDER. When the user clicks either of them, the user will be presented with list of workouts. The User can click the add workout button to add new workouts and sent them to database.

05. Update Workout

When the user clicks an existing workout, the user will be presented with a screen where the user can edit the workout name and workout description.

06. Delete Workout

When the user clicks an existing workout, the user will be presented with a screen where the user can click the delete button and delete the workout from the database.

07. Add Diet Plan

When the user clicks the Workout in the tab bar, the user will be presented with several focus areas such as ABS, ARM, CHEST, SHOULDER. When the user clicks either of them, the user will be presented with list of workouts. The User can click the add workout button to add new workouts and sent them to database.

08. Update Diet Plan

When the user clicks an existing workout, the user will be presented with a screen where the user can edit the workout name and workout description.

09. Delete Diet Plan

When the user clicks an existing workout, the user will be presented with a screen where the user can click the delete button and delete the workout from the database.

10. Review the Application

When the user clicks the review button in the tab bar, the user will be presented with a screen where the user can rate the application using five-star rating system and write a review about the application.

1.3 Architecture

The selected system architectures for the development of Health application are listed below.

Table 1: Selected tools and technologies

Application State	Cross-Platform (iOS and Android)
Front-End Language	Dart
Front- End Framework	Flutter
Database System	Firebase Realtime Database
Development Environment	Android Studio and Visual Studio Code

01. Language: Dart

Dart programming language has been selected to program the required Health and Fitness application. Dart is a free and open-source OOP (Object-Oriented Programming) language, consisted with C-based composition developed by Google LLC. Dart is majorly used to design the frontend user interfaces for mobile applications. Moreover, Dart is also a compiled language, the code requires to be compiled to machine code before being executed during development. [1]

02. Framework: Flutter

Flutter framework has been selected to assist the application development with Dart language. Flutter is an open-source and free mobile application user interface framework released by Google LLC company. Flutter is majorly popular among developers due to its ability to design a native mobile application using just one codebase. Eventually, this means that developers would find it simpler and more efficient to develop applications based on iOS and Android. Moreover, the Flutter framework is consisted of an SDK (Software Development Kit), which assists with tools used for development. It also consists a separate widget-based UI (User Interface) library, which contains a group of reusable UI elements. [2]

03. State Management: Cross-Platform

The Health and Fitness application will be implemented using cross-platform development technique. Cross-platform is a development methodology procedure that allows application implementation to be able work on multiple mobile operating systems concurrently, mainly including iOS, Android and Microsoft Windows. These applications are programmed with native codes along with independent codes supporting multiple platforms, which increases the development efficiency and effectiveness. [3]

04. Database: Firebase Realtime Database

Firebase is a cloud-based real-time database system developed by Google, for the development of web and mobile applications. Firebase stores data in JSON file format and synchronizes them in real-time with the specified application. Moreover, firebase also supports to store data from cross-platform applications, where users would be able to access the databases using multiple device platforms. Data would also be saved locally, in order to allow offline functionalities. [4]
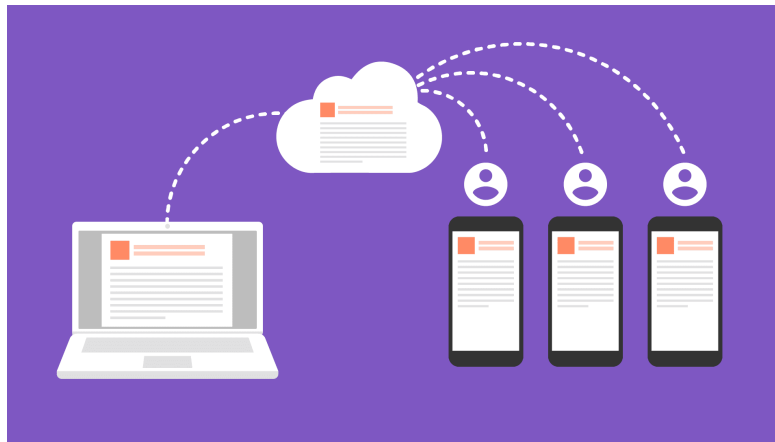
Figure 1: Firebase cloud-based real-time database

05. Offline Capabilities:

Apart from the major online-based functionalities, the current application would also be able to support certain offline functionalities, including view workout information, view diet plan information and review application functions. The data from these mentioned functionalities would be stored locally on devices.

1.4 Application Techniques

The health and fitness mobile application would be developed using Dart language, with the assistance of Flutter framework. Moreover, the final application would be cross-platform based, with the capability to run on different devices among operating systems like Android and iOS. The backend development of the application would be based on Firebase real-time database management system.

Database Integration:

A cloud-based real-time database system called 'Firebase' has been selected as the database integration system for the current application. Firebase also provides essential analytics and testing tools, to assist the developers on increasing the effectiveness and efficiency of the application.

The snippet below shows the creation and overview of the database.
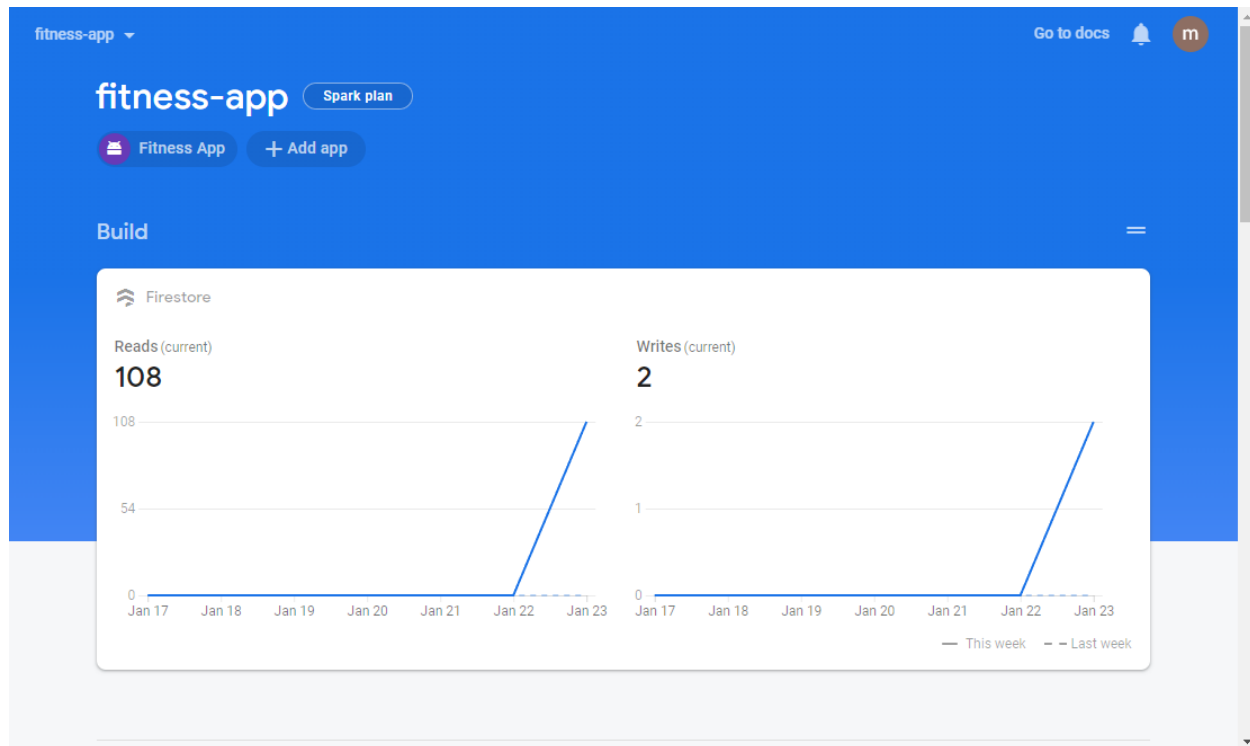
Figure 2: Firebase database integration overview

Considering the connection integration of the database system with the developed application, the connection would be established using Firebase system's console system. In the current project, the basic

database integration would be to register new users in the fitness application. The snippet below shows the creation of the user database;
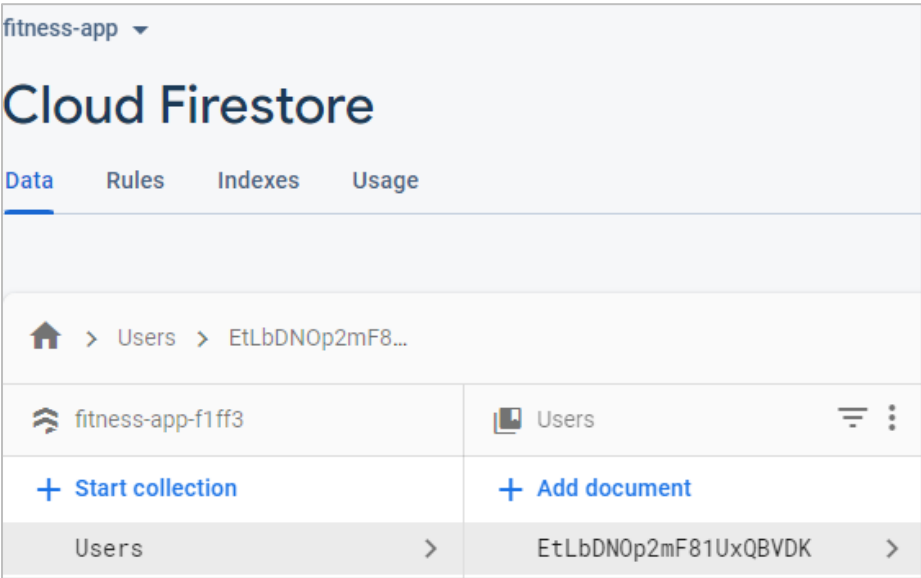
Figure 3: User database integration

Eventually, the records in the database created using forms in the mobile application. The snippet below shows how the field entered in the application would be stored in the database;

Figure 4: User database integration with application

Figure 5: User database form entering

1.5 UI/UX Design

Wireframe:

Figure 6: Wireframe - Loading screen
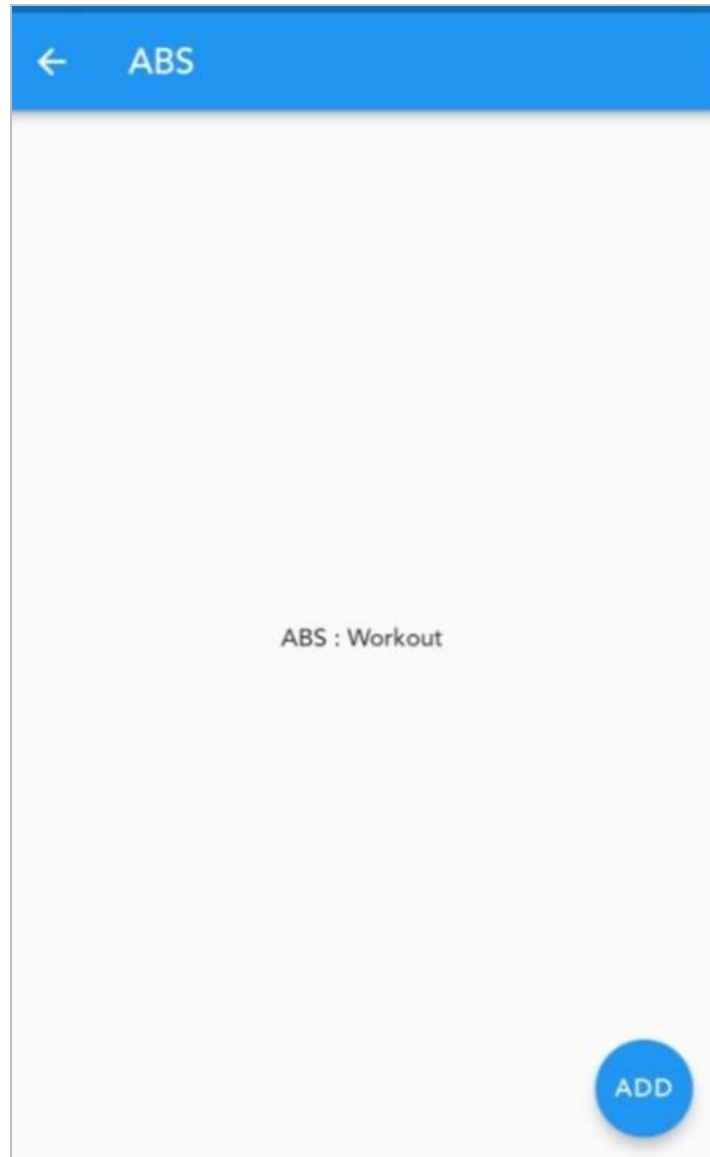
Figure 7: Wireframe - Add Workout
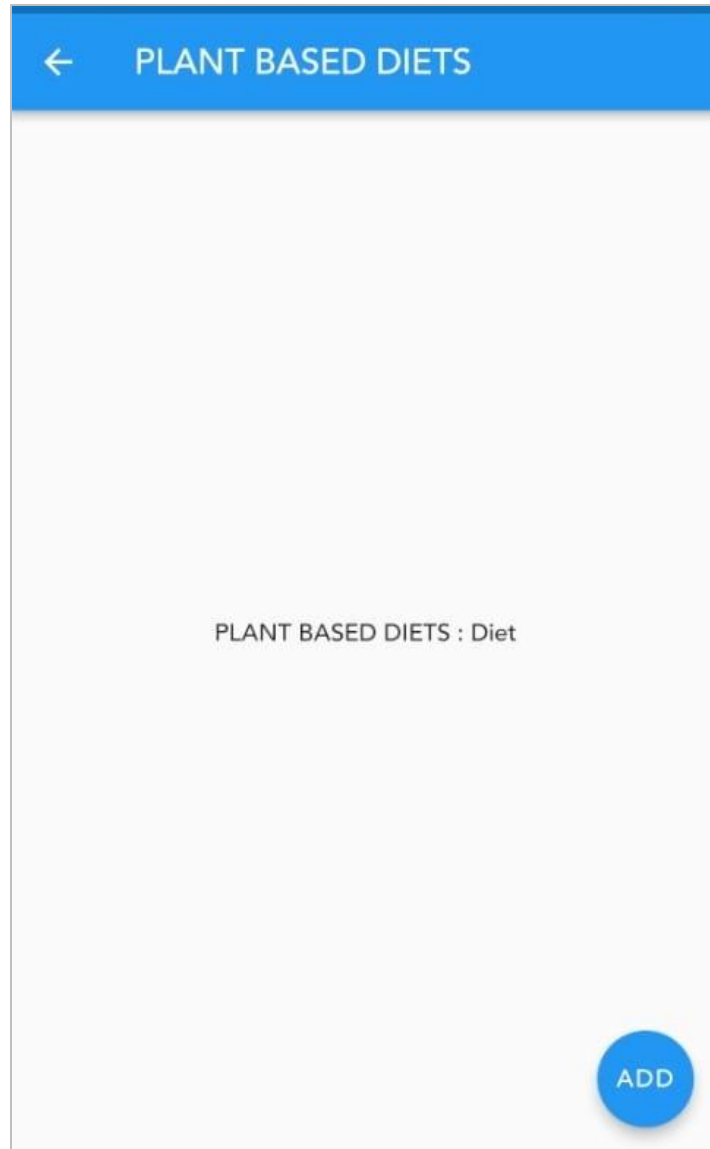
Figure 8: Wireframe - Add diet plan

UI Design:

Figure 9: UI Design - Loading Screen

Figure 10: UI Design - User registration

Figure 11: UI Design - User login

Forgot Password

Please enter your mail ID to receive your password and reset information

Mail ID

john@example.com

Send
Request

Figure 12: UI Design - Forgot Password

Figure 13:UI Design - View workout and diet plan information

1.6 Implementation

Loading screen:

Figure 14: Function: Loading screen

User registration function:
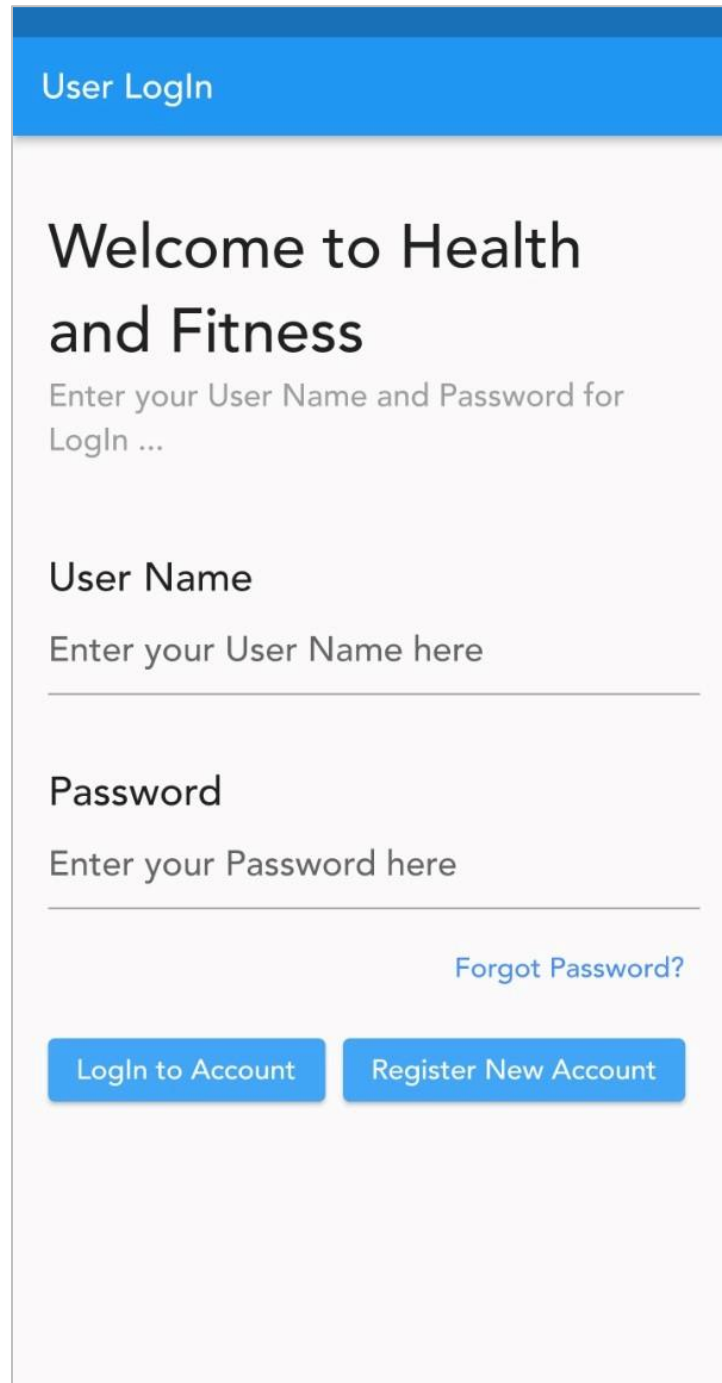
Figure 15: Function - User registration

User login function:

Figure 16: Function - User login

Forgot password function:

Figure 17: Function - Forgot password

Workout view function:
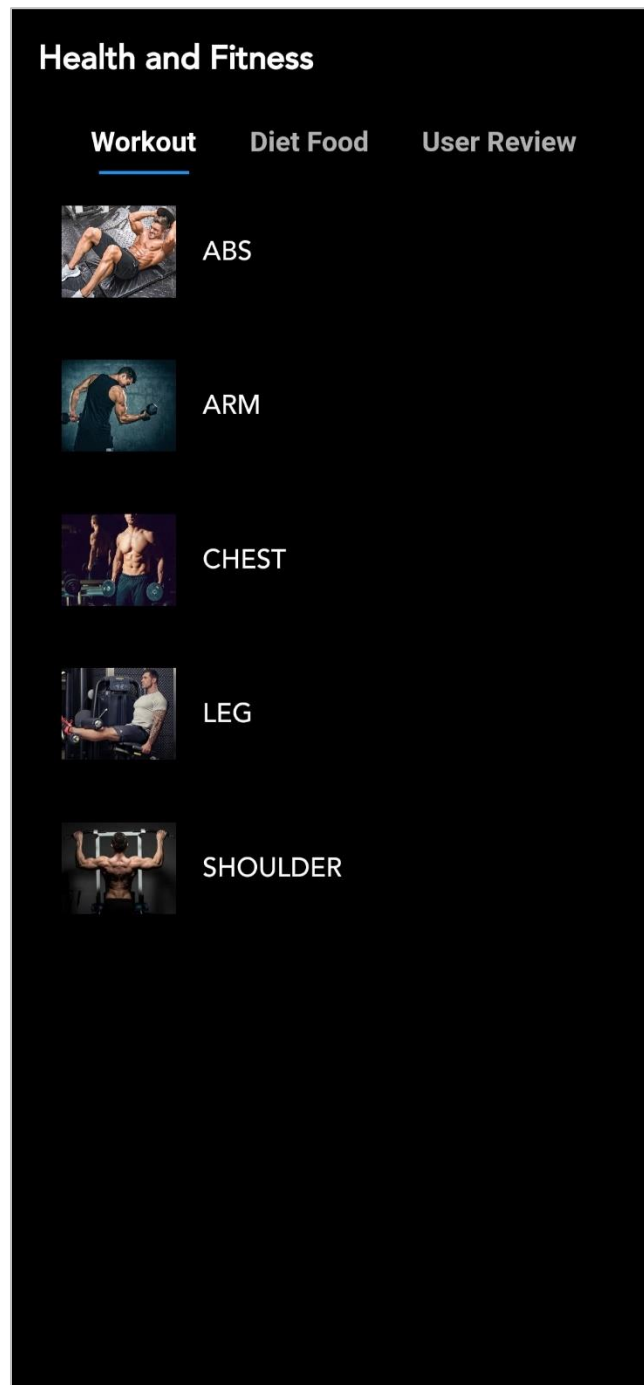
Figure 18: Function – Workout view

Workout information function:
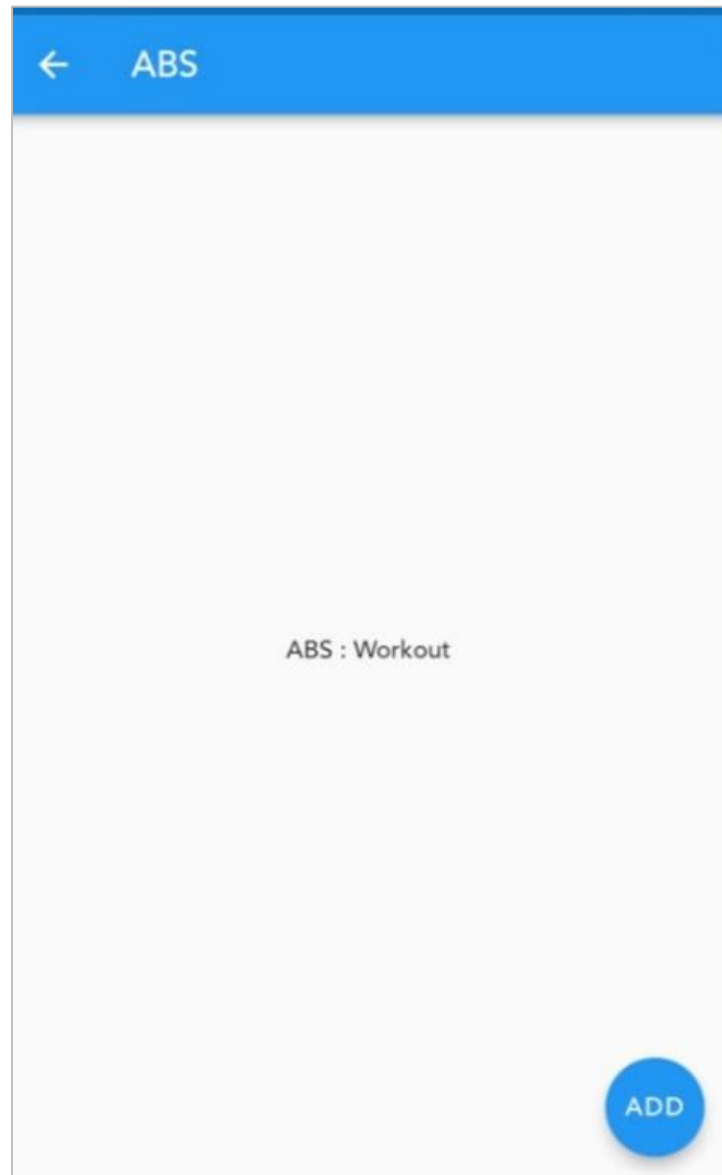
Figure 19: Function - Workout information

Diet food view function:
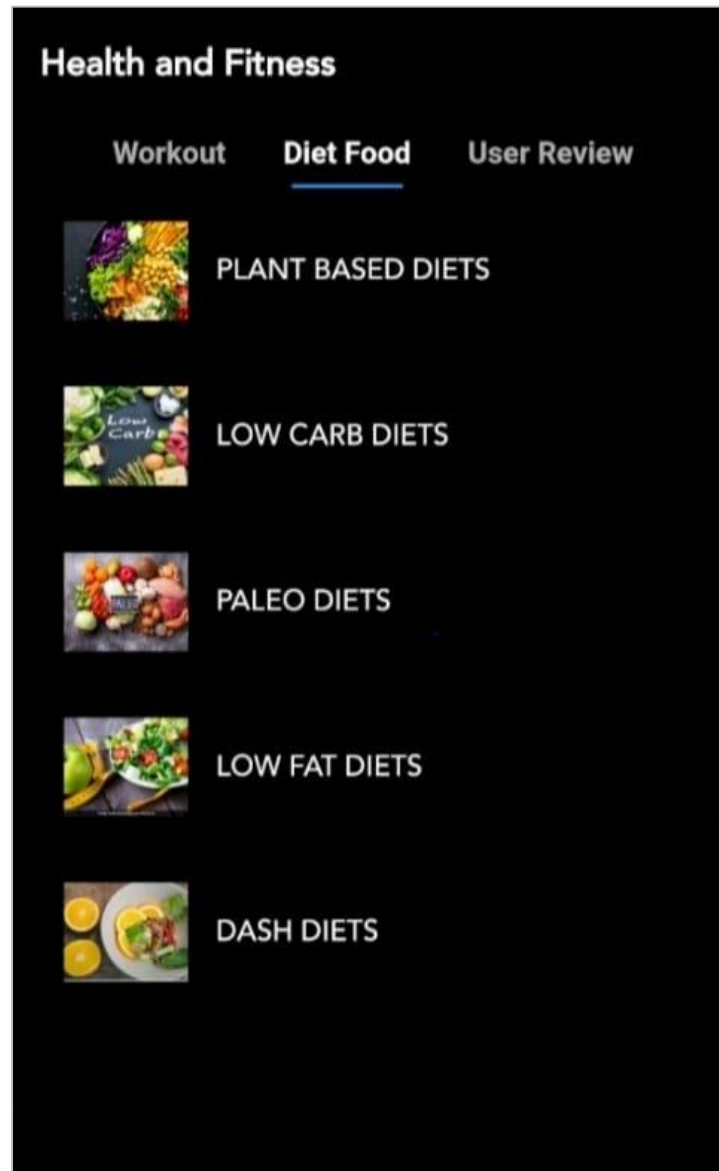
Figure 20: Function - Diet food view

Diet food information function:
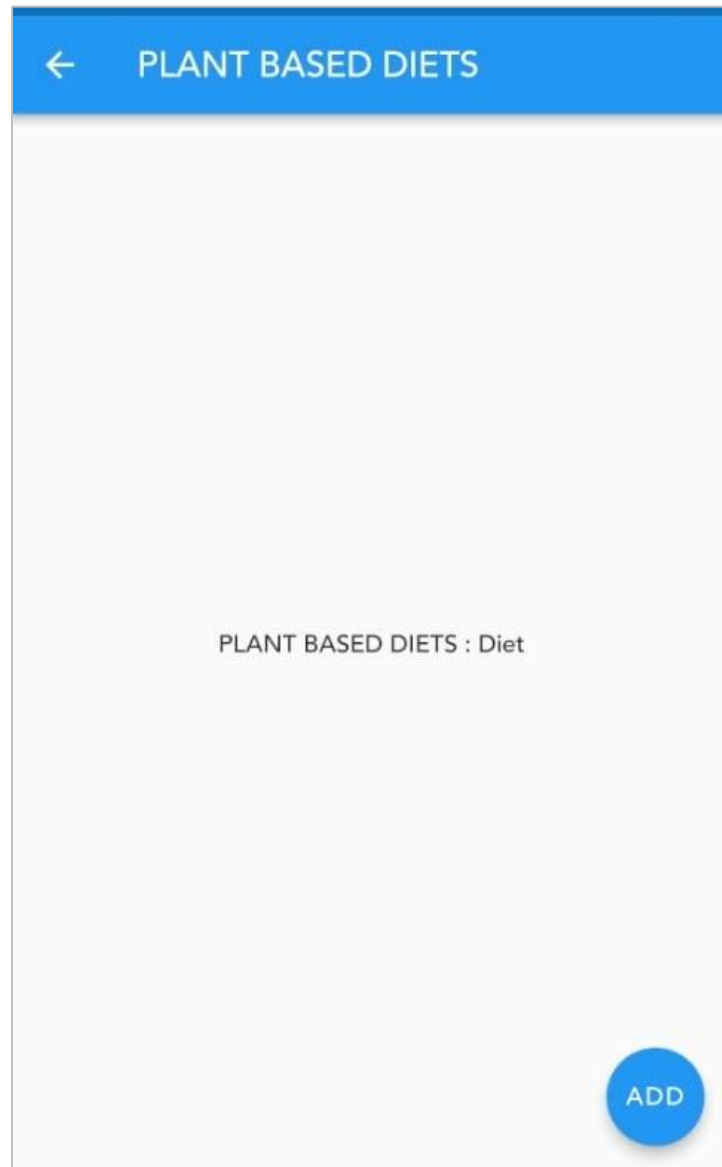
Figure 21: Function - Diet food information

User review function:
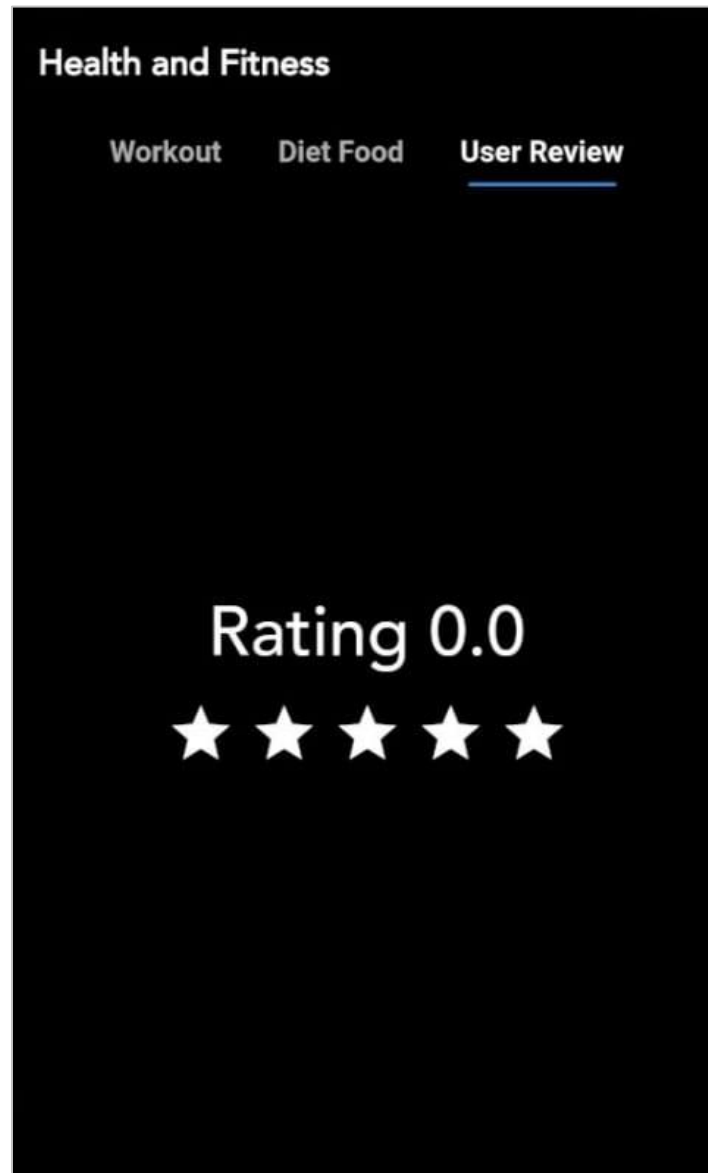
Figure 22: Function - User review

Folder structure:
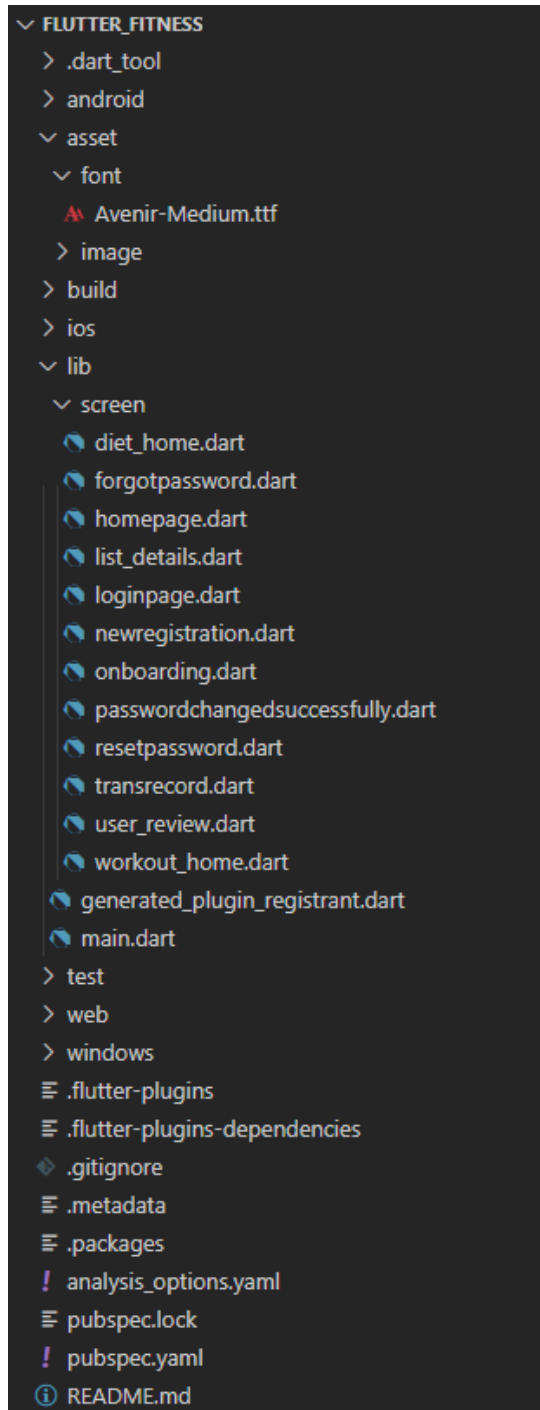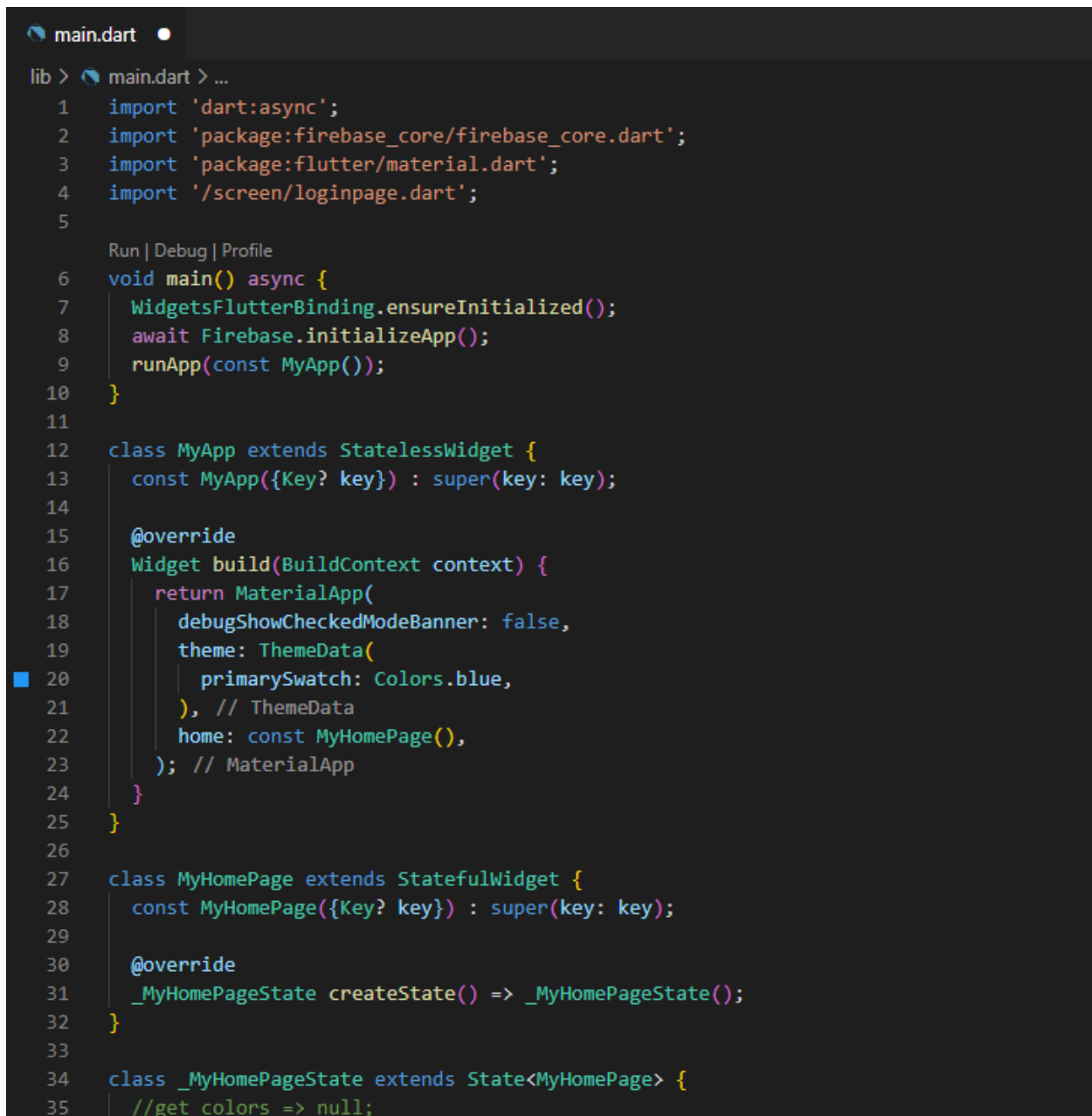
Figure 23: Implementation folder structure

Code snippets:

- lib > main.dart:

```dart
main.dart ●

lib > main.dart > ...
   1   import 'dart:async';
   2   import 'package:firebase_core/firebase_core.dart';
   3   import 'package:flutter/material.dart';
   4   import '/screen/loginpage.dart';
   5
       Run | Debug | Profile
   6   void main() async {
   7     WidgetsFlutterBinding.ensureInitialized();
   8     await Firebase.initializeApp();
   9     runApp(const MyApp());
  10   }
  11
  12   class MyApp extends StatelessWidget {
  13     const MyApp({Key? key}) : super(key: key);
  14
  15     @override
  16     Widget build(BuildContext context) {
  17       return MaterialApp(
  18         debugShowCheckedModeBanner: false,
  19         theme: ThemeData(
  20           primarySwatch: Colors.blue,
  21         ), // ThemeData
  22         home: const MyHomePage(),
  23       ); // MaterialApp
  24     }
  25   }
  26
  27   class MyHomePage extends StatefulWidget {
  28     const MyHomePage({Key? key}) : super(key: key);
  29
  30     @override
  31     _MyHomePageState createState() => _MyHomePageState();
  32   }
  33
  34   class _MyHomePageState extends State<MyHomePage> {
  35     //get colors => null;
```

Figure 24: Code Snippet - main.dart #01

```dart
37      @override
38      void initState() {
39        Timer(const Duration(seconds: 3), openLoginPage);
40        super.initState();
41      }
42
43      @override
44      Widget build(BuildContext context) {
45        return Scaffold(
46          body: Stack(
47            children: [
48              const Image(
49                image: AssetImage('asset/image/img01.jpg'),
50                fit: BoxFit.cover,
51                width: double.infinity,
52                height: double.infinity,
53              ), // Image
54              Positioned(
55                bottom: 4,
56                left: 140,
57                top: 580,
58                child: Center(
59                  child: Container(
60                    padding: const EdgeInsets.all(24),
61                    color: Colors.white.withOpacity(0.1),
62                    child: const Text(
63                      'Health and Fitness',
64                      style: TextStyle(
65                          fontSize: 28,
66                          fontWeight: FontWeight.bold,
67                          color: Colors.white), // TextStyle
68                    ), // Text
69                  ), // Container
70                ), // Center
71              ) // Positioned
72            ],
73          ), // Stack
74        ); // Scaffold
75      }
76
77      void openLoginPage() {
78        Navigator.push(
79            context, MaterialPageRoute(builder: (context) => const LoginPage()));
80      }
81    }
```

Figure 25: Code Snippet - main.dart #02

- lib > generated_plugin.dart:

```
generated_plugin_registrant.dart  ●

lib >  generated_plugin_registrant.dart > ...
  1  //
  2  // Generated file. Do not edit.
  3  //
  4
  5  // ignore_for_file: directives_ordering
  6  // ignore_for_file: lines_longer_than_80_chars
  7
  8  import 'package:cloud_firestore_web/cloud_firestore_web.dart';
  9  import 'package:firebase_core_web/firebase_core_web.dart';
 10  import 'package:firebase_database_web/firebase_database_web.dart';
 11
 12  import 'package:flutter_web_plugins/flutter_web_plugins.dart';
 13
 14  // ignore: public_member_api_docs
 15  void registerPlugins(Registrar registrar) {
 16    FirebaseFirestoreWeb.registerWith(registrar);
 17    FirebaseCoreWeb.registerWith(registrar);
 18    FirebaseDatabaseWeb.registerWith(registrar);
 19    registrar.registerMessageHandler();
 20  }
```

Figure 26: Code Snippet - generated_plugin.dart

- lib >screen > diet_home.dart:

```dart
diet_home.dart ●
lib > screen > ● diet_home.dart > ...
 1    import 'package:flutter/material.dart';
 2    import 'list_details.dart';
 3
 4    class DietHome extends StatelessWidget {
 5      const DietHome({Key? key}) : super(key: key);
 6
 7      @override
 8      Widget build(BuildContext context) {
 9        return const DietHomeScreen();
10      }
11    }
12
13    class DietHomeScreen extends StatefulWidget {
14      const DietHomeScreen({Key? key}) : super(key: key);
15
16      @override
17      _DietHomeScreenState createState() => _DietHomeScreenState();
18    }
19
20    class _DietHomeScreenState extends State<DietHomeScreen> {
21      @override
22      Widget build(BuildContext context) {
23        return Scaffold(
24          backgroundColor: Colors.black,
25          body: ListView(
26            children: [
27              Card(
28                color: Colors.black,
29                child: ListTile(
30                  title: const Text(
31                    "PLANT BASED DIETS",
32                    style: TextStyle(color: Colors.white),
33                  ), // Text
34                  leading: SizedBox(
35                    height: 80,
36                    width: 70,
37                    //child: Image.asset('asset/image/img01.jpg')
38                    child: Container(
39                      decoration: const BoxDecoration(
40                          image: DecorationImage(
41                              image: AssetImage(
42                                  'asset/image/plant based diets.jpg'), // AssetImage
43                              fit: BoxFit.fitHeight)), // DecorationImage // BoxDecoration
44                    ), // Container
45                  ), // SizedBox
46                  onTap: () => openListPage('PLANT BASED DIETS'))), // ListTile // Card
47              const SizedBox(height: 30),
```

Figure 27: Code Snippet - diet_home.dart #01

```dart
Card(
    color: Colors.black,
    child: ListTile(
        title: const Text("LOW CARB DIETS",
            style: TextStyle(color: Colors.white)), // Text
        leading: SizedBox(
          height: 80,
          width: 70,
          //child: Image.asset('asset/image/img02.png')
          child: Container(
            decoration: const BoxDecoration(
                image: DecorationImage(
                    image: AssetImage(
                        'asset/image/low carb diets.jpg'), // AssetImage
                    fit: BoxFit.fitHeight)), // DecorationImage // BoxDecoration
          ), // Container
        ), // SizedBox
        onTap: () => openListPage('LOW CARB DIETS'))), // ListTile // Card
const SizedBox(height: 30),
Card(
    color: Colors.black,
    child: ListTile(
        title: const Text("PALEO DIETS",
            style: TextStyle(color: Colors.white)), // Text
        leading: SizedBox(
          height: 80,
          width: 70,
          //child: Image.asset('asset/image/img02.png')
          child: Container(
            decoration: const BoxDecoration(
                image: DecorationImage(
                    image: AssetImage('asset/image/paleo diet.jpg'),
                    fit: BoxFit.fitHeight)), // DecorationImage // BoxDecoration
          ), // Container
        ), // SizedBox
        onTap: () => openListPage('PALEO DIETS'))), // ListTile // Card
const SizedBox(height: 30),
```

Figure 28: Code Snippet - diet_home.dart #02

```dart
                    Card(
                        color: Colors.black,
                        child: ListTile(
                            title: const Text("LOW FAT DIETS",
                                style: TextStyle(color: Colors.white)), // Text
                            leading: SizedBox(
                              height: 80,
                              width: 70,
                              //child: Image.asset('asset/image/img02.png')
                              child: Container(
                                decoration: const BoxDecoration(
                                    image: DecorationImage(
                                        image:
                                            AssetImage('asset/image/low fat diets.jpg'),
                                        fit: BoxFit.fitHeight)), // DecorationImage // BoxDecoration
                              ), // Container
                            ), // SizedBox
                            onTap: () => openListPage('LOW FAT DIETS'))), // ListTile // Card
                const SizedBox(height: 30),
                Card(
                    color: Colors.black,
                    child: ListTile(
                        title: const Text("DASH DIETS",
                            style: TextStyle(color: Colors.white)), // Text
                        leading: SizedBox(
                          height: 80,
                          width: 70,
                          //child: Image.asset('asset/image/img02.png')
                          child: Container(
                            decoration: const BoxDecoration(
                                image: DecorationImage(
                                    image: AssetImage('asset/image/dash diet.jpg'),
                                    fit: BoxFit.fitHeight)), // DecorationImage // BoxDecoration
                          ), // Container
                        ), // SizedBox
                        onTap: () => openListPage('DASH DIETS'))), // ListTile // Card
              ],
              padding: const EdgeInsets.all(10),
            )); // ListView // Scaffold
  }

  void openListPage(String stype) {
    Navigator.push(
        context,
        MaterialPageRoute(
            builder: (context) =>
                ListDetails(selectedCategory: 'Diet', selectedType: stype))); // MaterialPageRoute
  }
}
```

Figure 29: Code Snippet - diet_home.dart #03

- lib >screen > forgotpassword.dart:

```dart
forgotpassword.dart •

lib > screen > forgotpassword.dart > ...
1    import 'package:flutter/material.dart';
2    import 'resetpassword.dart';
3
4    class ForgotPassword extends StatelessWidget {
5      const ForgotPassword({Key? key}) : super(key: key);
6      @override
7      Widget build(BuildContext context) {
8        return MaterialApp(
9          debugShowCheckedModeBanner: false,
10         theme: ThemeData(
11           fontFamily: 'avenir',
12         ), // ThemeData
13         home: const ForgottonPassword(),
14       ); // MaterialApp
15     }
16   }
17
18   class ForgottonPassword extends StatefulWidget {
19     const ForgottonPassword({Key? key}) : super(key: key);
20
21     @override
22     _ForgottonPasswordState createState() => _ForgottonPasswordState();
23   }
24
25   class _ForgottonPasswordState extends State<ForgottonPassword> {
26     @override
27     Widget build(BuildContext context) {
28       return Scaffold(
29         appBar: AppBar(
30           elevation: 0,
31           backgroundColor: Colors.transparent,
32           leading: IconButton(
33             icon: const Icon(
34               Icons.arrow_back,
35               color: Colors.black,
36             ), // Icon
37             onPressed: () {
38               //openLoginPage();
39               //Navigator.pop(context);
40             },
41           ), // IconButton
42         ), // AppBar
```

Figure 30: Code Snippet - forgotpassword.dart #01

```dart
        body: Container(
          padding: const EdgeInsets.all(20),
          child: Column(
            crossAxisAlignment: CrossAxisAlignment.start,
            children: [
              const SizedBox(
                height: 20,
              ), // SizedBox
              const Text(
                "Forgot Password",
                style: TextStyle(fontSize: 35),
              ), // Text
              const Text(
                "Please enter your mail ID to receive your password and reset information",
                style: TextStyle(fontSize: 18, color: Colors.grey),
              ), // Text
              const SizedBox(
                height: 20,
              ), // SizedBox
              const Text(
                "Mail ID",
                style: TextStyle(
                  fontSize: 23,
                ), // TextStyle
              ), // Text
              const TextField(
                decoration: InputDecoration(hintText: "john@example.com"),
                style: TextStyle(fontSize: 20),
              ), // TextField
              const SizedBox(
                height: 40,
              ), // SizedBox
              Center(
                child: InkWell(
                  onTap: openResetPassword,
                  child: Container(
                    padding:
                        const EdgeInsets.symmetric(horizontal: 130, vertical: 20),
                    decoration: const BoxDecoration(
                        borderRadius: BorderRadius.all(Radius.circular(7)),
                        color: Color(0xfff96060)), // BoxDecoration
                    child: const Text(
                      "Send Request",
                      style: TextStyle(fontSize: 18, color: Colors.white),
                    ), // Text
                  ), // Container
                ), // InkWell
              ) // Center
            ],
          ), // Column
        ), // Container
      ); // Scaffold
  }

  void openResetPassword() {
    Navigator.push(context,
        MaterialPageRoute(builder: (context) => const ResetPassword()));
  }
}
```

Figure 31: Code Snippet - forgotpassword.dart #02

- lib >screen > homepage.dart:

```dart
homepage.dart ●

lib > screen > homepage.dart > ...
1   import 'package:flutter/material.dart';
2   import '/screen/workout_home.dart';
3   import '/screen/diet_home.dart';
4   import 'user_review.dart';
5
6   class HomePage extends StatelessWidget {
7     const HomePage({Key? key}) : super(key: key);
8     @override
9     Widget build(BuildContext context) {
10      return MaterialApp(
11        debugShowCheckedModeBanner: false,
12        theme: ThemeData(fontFamily: 'avenir'),
13        home: const HomeScreen(),
14      ); // MaterialApp
15    }
16  }
17
18  class HomeScreen extends StatefulWidget {
19    const HomeScreen({Key? key}) : super(key: key);
20
21    @override
22    _HomeScreenState createState() => _HomeScreenState();
23  }
24
25  class _HomeScreenState extends State<HomeScreen>
26        with SingleTickerProviderStateMixin {
27    //final colorstheme = Color(0xff2ac3ff); //Color(0xff4b4b87);
28
29    late TabController _tabController;
30
31    @override
32    void initState() {
33      _tabController = TabController(length: 3, vsync: this, initialIndex: 0)
34        ..addListener(() {});
35      super.initState();
36    }
37
38    Widget build(BuildContext context) {
39      return Scaffold(
40        appBar: AppBar(
41          backgroundColor: Colors.black,
42          title: const Text(
43            'Health and Fitness',
44            style: TextStyle(fontSize: 20, fontWeight: FontWeight.bold),
45          ), // Text
```

Figure 32: Code Snippet - homepage.dart #01

```dart
          bottom: TabBar(
            controller: _tabController,
            isScrollable: true,
            labelStyle:
                const TextStyle(fontSize: 17, fontWeight: FontWeight.bold),
            indicatorPadding: const EdgeInsets.all(5),
            indicatorSize: TabBarIndicatorSize.label,
            tabs: const <Widget>[
              Tab(
                //icon: Icon(Icons.work_off_rounded),
                text: 'Workout',
              ), // Tab
              Tab(
                //icon: Icon(Icons.food_bank_rounded, color: Colors.white),
                text: 'Diet Food',
              ), // Tab
              Tab(
                //icon: Icon(Icons.food_bank_rounded, color: Colors.white),
                text: 'User Review',
              ), // Tab
              // Tab(
              //   //icon: Icon(Icons.food_bank_rounded, color: Colors.white),
              //   text: 'COMPARIISON',
              // ),
            ], // <Widget>[]
          ), // TabBar
        ), // AppBar
        body: TabBarView(
          controller: _tabController,
          children: const [
            WorkOutHome(),
            DietHome(),
            UserReview(),
          ],
        ), // TabBarView
      ); // Scaffold
  }
}
```

Figure 33: Code Snippet - homepage.dart #02

- lib >screen > list_details.dart:

```dart
list_details.dart ●

lib > screen > list_details.dart > ...
1   import 'package:flutter/material.dart';
2
3   class ListDetails extends StatefulWidget {
4     final String selectedCategory;
5     final String selectedType;
6     const ListDetails(
7         {Key? key, required this.selectedCategory, required this.selectedType})
8         : super(key: key);
9
10    @override
11    State<ListDetails> createState() => _ListDetailsState();
12  }
13
14  class _ListDetailsState extends State<ListDetails> {
15    @override
16    Widget build(BuildContext context) {
17      return Scaffold(
18        appBar: AppBar(title: Text(widget.selectedType)),
19        body: Center(
20            child: Text(widget.selectedType + ' : ' + widget.selectedCategory)), // Center
21        floatingActionButton: FloatingActionButton(
22          child: const Text('ADD'),
23          onPressed: () {},
24        ), // FloatingActionButton
25      ); // Scaffold
26    }
27  }
```

Figure 34: Code Snippet - list_details.dart

- lib >screen > loginpage.dart:

```
loginpage.dart

lib > screen > loginpage.dart > ...
1    import 'package:fitness_flutter/screen/newregistration.dart';
2    import 'package:flutter/material.dart';
3    import '/screen/forgotpassword.dart';
4
5    class LoginPage extends StatelessWidget {
6      const LoginPage({Key? key}) : super(key: key);
7      @override
8      Widget build(BuildContext context) {
9        return MaterialApp(
10         debugShowCheckedModeBanner: false,
11         theme: ThemeData(fontFamily: 'avenir'),
12         home: const LogInPage(),
13       ); // MaterialApp
14     }
15   }
16
17   class LogInPage extends StatefulWidget {
18     const LogInPage({Key? key}) : super(key: key);
19
20     @override
21     _LogInPageState createState() => _LogInPageState();
22   }
```

Figure 35: Code Snippet - loginpage.dart #01

```dart
class _LogInPageState extends State<LogInPage> {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(title: const Text('User LogIn')),
      body: Container(
        padding: const EdgeInsets.all(20),
        child: SingleChildScrollView(
          child: Column(
            crossAxisAlignment: CrossAxisAlignment.start,
            children: [
              const SizedBox(
                height: 20,
              ), // SizedBox
              const Text(
                "Welcome to Health and Fitness",
                style: TextStyle(fontSize: 35),
              ), // Text
              const Text(
                "Enter your User Name and Password for LogIn ...",
                style: TextStyle(fontSize: 18, color: Colors.grey),
              ), // Text
              const SizedBox(
                height: 50,
              ), // SizedBox
              const Text(
                "User Name",
                style: TextStyle(fontSize: 23),
              ), // Text
              const TextField(
                decoration:
                    InputDecoration(hintText: "Enter your User Name here"),
                style: TextStyle(fontSize: 20),
              ), // TextField
              const SizedBox(
                height: 40,
              ), // SizedBox
              const Text(
                "Password",
                style: TextStyle(
                  fontSize: 23,
                ), // TextStyle
              ), // Text
              const TextField(
                decoration:
                    InputDecoration(hintText: "Enter your Password here"),
                obscureText: true,
                style: TextStyle(fontSize: 20),
              ), // TextField
              const SizedBox(
                height: 10,
              ), // SizedBox
```

Figure 36: Code Snippet - loginpage.dart #02

```dart
Row(
  mainAxisAlignment: MainAxisAlignment.end,
  children: [
    TextButton(
      onPressed: () {
        openForgotPassword(context);
      },
      child: const Text('Forgot Password?',
          style: TextStyle(
              fontSize: 16, color: Colors.blueAccent))) // TextStyle // Text // TextButton
  ],
), // Row
const SizedBox(
  height: 10,
), // SizedBox
Row(
  children: [
    ElevatedButton(
      style: ElevatedButton.styleFrom(primary: Colors.blue[400]),
      onPressed: () {
        showSnackBar();
      },
      child: const Text('LogIn to Account',
          style: TextStyle(
            fontSize: 16,
            color: Colors.white,
          )), // TextStyle // Text
    ), // ElevatedButton
    const SizedBox(
      width: 10,
    ), // SizedBox
    ElevatedButton(
      style: ElevatedButton.styleFrom(primary: Colors.blue[400]),
      onPressed: () {
        openNewRegistration(context);
      },
      child: const Text('Register New Account',
          style: TextStyle(
            fontSize: 16,
            color: Colors.white,
          )), // TextStyle // Text
    ), // ElevatedButton
  ],
) // Row
],
), // Column
), // SingleChildScrollView
), // Container
); // Scaffold
}
```

Figure 37: Code Snippet - loginpage.dart #03

```dart
127    void openForgotPassword(context) {
128      Navigator.push(context,
129          MaterialPageRoute(builder: (context) => const ForgotPassword()));
130    }
131
132    void openNewRegistration(context) {
133      Navigator.push(context,
134          MaterialPageRoute(builder: (context) => const OpenNewRegistration()));
135    }
136
137    void showSnackBar() {
138      final snackbar = SnackBar(
139        content: Row(children: const [
140          Icon(Icons.error_outline_sharp, size: 32, color: Colors.white),
141          SizedBox(width: 20),
142          Expanded(
143              child: Text('LogIn details are invalid..',
144                  style: TextStyle(fontSize: 20))) // Text // Expanded
145        ]), // Row
146        duration: const Duration(seconds: 2),
147        backgroundColor: Colors.indigo.shade700,
148        padding: const EdgeInsets.symmetric(horizontal: 16.0, vertical: 12.0),
149        behavior: SnackBarBehavior.floating,
150        //width: 350,
151        shape: const StadiumBorder(),
152      ); // SnackBar
153      ScaffoldMessenger.of(context)
154        ..removeCurrentSnackBar()
155        ..showSnackBar(snackbar);
156    }
157  }
```

Figure 38: Code Snippet - loginpage.dart #04

- lib >screen > newregistration.dart:

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

class OpenNewRegistration extends StatelessWidget {
  const OpenNewRegistration({Key? key}) : super(key: key);
  @override
  Widget build(BuildContext context) {
    return const NewRegistration();
  }
}

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

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

// class User {
//   String Id ;
//   final String name ;
//   final String email ;
//   final String pwd;

//   User ({
//     this.Id = '',
//     required this.name,
//     required this.email,
//     required this.pwd,

//   });
// }

class _NewRegistrationState extends State<NewRegistration> {
  // adddata(valName) async {
  //   await FirebaseFirestore.instance.collection("Users").add({
  //     UserName = valName,
  //   });
  // }

  // String name = '';
```

Figure 39: Code Snippet - newregistration.dart #01

```dart
    @override
    Widget build(BuildContext context) {
      return Scaffold(
        backgroundColor: Colors.white,
        appBar: AppBar(
          title: const Text('New Registration'),
          //backgroundColor: Colors.black,
        ), // AppBar
        body: Container(
            padding: const EdgeInsets.all(20),
            child: SingleChildScrollView(
                child: Column(
                crossAxisAlignment: CrossAxisAlignment.start,
                children: [
                  const Text(
                    "Create Account",
                    style: TextStyle(fontSize: 35),
                  ), // Text
                  const Text(
                    "Enter your Name,Email and Password for Signup ...",
                    style: TextStyle(fontSize: 18, color: Colors.grey),
                  ), // Text
                  const SizedBox(
                    height: 30,
                  ), // SizedBox
                  const Text(
                    "User Name",
                    style: TextStyle(fontSize: 23),
                  ), // Text
                  const TextField(
                    //controller: ControllerUserName,

                    // onChanged: (valName) {
                    //   setState(() {
                    //     name = valName;
                    //   });
                    // },
```

Figure 40: Code Snippet - newregistration.dart #02

```
81            decoration:  InputDecoration(
82                hintText: "Enter your User Name here"), // InputDecoration
83            style:  TextStyle(fontSize: 20),
84         ), // TextField
85         const SizedBox(
86           height: 30,
87         ), // SizedBox
88         const Text(
89           "Email Address",
90           style: TextStyle(fontSize: 23),
91         ), // Text
92         const TextField(
93           //controller: ControllerEmail,
94           decoration: const InputDecoration(
95               hintText: "Enter your Email Address here"), // InputDecoration
96           style: const TextStyle(fontSize: 20),
97         ), // TextField
98         const SizedBox(
99           height: 30,
100        ), // SizedBox
101        const Text(
102          "Password",
103          style: TextStyle(fontSize: 23),
104        ), // Text
105        TextField(
106          //controller: ControllerPwd,
107          decoration:
108              const InputDecoration(hintText: "Enter your Password here"),
109          obscureText: true,
110          style: const TextStyle(fontSize: 20),
111        ), // TextField
112        const SizedBox(
113          height: 20,
114        ), // SizedBox
```

Figure 41: Code Snippet - newregistration.dart #03

```dart
                    Row(
                      children: [
                        const SizedBox(
                          width: 80,
                        ), // SizedBox
                        ElevatedButton(
                          style: ElevatedButton.styleFrom(primary: Colors.blue[400]),
                          onPressed: () {
                            //adddata(name);
                          },
                          child: const Text('SignUp',
                              style: TextStyle(
                                fontSize: 16,
                                color: Colors.white,
                              )), // TextStyle // Text
                        ), // ElevatedButton
                        const SizedBox(
                          width: 40,
                        ), // SizedBox
                        ElevatedButton(
                          style: ElevatedButton.styleFrom(primary: Colors.blue[400]),
                          onPressed: () {},
                          child: const Text('Cancel',
                              style: TextStyle(
                                fontSize: 16,
                                color: Colors.white,
                              )), // TextStyle // Text
                        ), // ElevatedButton
                      ],
                    ), // Row
                  ],
            ))), // Column // SingleChildScrollView // Container
    ); // Scaffold

    // Future createUser({required String name}) async {
    //   final docUser = FirebaseFirestore.instance.collection('Users').doc();

    //   final user = User {
    //     'Id' =docUser.id,
    //     'UserName' = name,
    //     'Email' = email ,
    //     'Password' = pwd
    //   };

    //   await docUser.set(json);
    // }
  }
}
```

Figure 42: Code Snippet - newregistration.dart #04

- lib >screen > onboarding.dart:

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

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

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      theme: ThemeData(fontFamily: 'avenir'),
      home: const OnBoarding(),
    ); // MaterialApp
  }
}

class OnBoarding extends StatefulWidget {
  const OnBoarding({Key? key}) : super(key: key);
  @override
  _OnBoardingState createState() => _OnBoardingState();
}

class _OnBoardingState extends State<OnBoarding> {
  int currentPage = 0;
  final PageController _pageController =
      PageController(initialPage: 0, keepPage: true);
```

Figure 43: Code Snippet - onboarding.dart #01

```dart
@override
Widget build(BuildContext context) {
  return Scaffold(
    body: Stack(
      children: [
        Column(
          mainAxisAlignment: MainAxisAlignment.start,
          children: [
            Container(
              height: MediaQuery.of(context).size.height * 0.6,
              child: PageView(
                controller: _pageController,
                children: [
                  onBoardPage("onboard1", "Workout anywhere",
                      "You can do your workout at home without any equipment, outside or at the gym."),
                  onBoardPage("onboard2", "Learn techniques",
                      "Our workout programs are made by professionals."),
                  onBoardPage("onboard3", "Stay strong & healthy",
                      "We want you to fully enjoy the program and stay healthy and positive."),
                ],
                onPageChanged: (value) => {setCurrentPage(value)},
              ), // PageView
            ), // Container
            Row(
              mainAxisAlignment: MainAxisAlignment.center,
              children: List.generate(3, (index) => getIndicator(index)),
            ) // Row
          ],
        ), // Column
        Positioned(
          bottom: 0,
          left: 0,
          right: 0,
          child: Container(
            margin: const EdgeInsets.only(top: 20),
            height: 300,
            width: MediaQuery.of(context).size.width,
            decoration: const BoxDecoration(
                image: DecorationImage(
                    image: AssetImage('asset/image/path.png'),
                    fit: BoxFit.fill) // DecorationImage
                ), // BoxDecoration
            child: Column(
              mainAxisAlignment: MainAxisAlignment.center,
              children: [
                InkWell(
                  //onTap: openLoginPage,
                  child: Container(
                    padding: const EdgeInsets.symmetric(
                        vertical: 20, horizontal: 100), // EdgeInsets.symmetric
                    decoration:
                        BoxDecoration(color: Colors.white, boxShadow: [
                      BoxShadow(
                          color: Colors.black.withOpacity(0.2),
                          offset: const Offset(0, 9),
                          blurRadius: 20,
                          spreadRadius: 3) // BoxShadow
                    ]), // BoxDecoration
```

Figure 44: Code Snippet - onboarding.dart #02

```dart
                            child: const Text(
                              "Get Started",
                              style: TextStyle(fontSize: 16),
                            ), // Text
                          ), // Container
                        ), // InkWell
                        const SizedBox(
                          height: 30,
                        ), // SizedBox
                        const Text(
                          "Login",
                          style: TextStyle(
                              color: Colors.white,
                              fontSize: 18,
                              fontWeight: FontWeight.bold), // TextStyle
                        ) // Text
                      ],
                    ), // Column
                  ), // Container
                ) // Positioned
              ],
            ), // Stack
      ); // Scaffold
  }

  AnimatedContainer getIndicator(int pageNo) {
    return AnimatedContainer(
      duration: const Duration(milliseconds: 100),
      height: 10,
      width: (currentPage == pageNo) ? 20 : 10,
      margin: const EdgeInsets.symmetric(horizontal: 5),
      decoration: BoxDecoration(
          borderRadius: const BorderRadius.all(Radius.circular(5)),
          color: (currentPage == pageNo) ? Colors.black : Colors.grey), // BoxDecoration
    ); // AnimatedContainer
  }

  Column onBoardPage(String img, String title, String detail) {
    return Column(
      mainAxisAlignment: MainAxisAlignment.center,
```

Figure 45: Code Snippet - onboarding.dart #03

```dart
        children: [
          const SizedBox(
            height: 20,
          ), // SizedBox
          Container(
            height: 200,
            width: MediaQuery.of(context).size.width,
            padding: const EdgeInsets.all(50),
            decoration: BoxDecoration(
                image:
                    DecorationImage(image: AssetImage('asset/image/$img.png'))), // BoxDecoration
          ), // Container
          const SizedBox(
            height: 50,
          ), // SizedBox
          Container(
            padding: const EdgeInsets.symmetric(vertical: 10),
            child: Text(
              title,
              style: const TextStyle(fontSize: 30, fontWeight: FontWeight.bold),
            ), // Text
          ), // Container
          Container(
            padding: const EdgeInsets.symmetric(vertical: 10, horizontal: 40),
            child: Text(
              detail,
              style: const TextStyle(
                  fontSize: 18, color: Colors.black, fontWeight: FontWeight.w500), // TextStyle
              textAlign: TextAlign.center,
            ), // Text
          ) // Container
        ],
    ); // Column
  }

  setCurrentPage(int value) {
    currentPage = value;
    setState(() {});
  }

  openLoginPage() {
    Navigator.push(
        context, MaterialPageRoute(builder: (context) => const LoginPage()));
  }
}
```

Figure 46: Code Snippet - onboarding.dart #04

- lib >screen > passwordchangedsuccessfully.dart:

```dart
passwordchangedsuccessfully.dart ●
lib > screen > passwordchangedsuccessfully.dart > ...
1    import 'package:flutter/material.dart';
2    import '/screen/homepage.dart';
3
4    class PasswordChangedSuccessfully extends StatelessWidget {
5      const PasswordChangedSuccessfully({Key? key}) : super(key: key);
6      @override
7      Widget build(BuildContext context) {
8        return MaterialApp(
9          debugShowCheckedModeBanner: false,
10         theme: ThemeData(
11           fontFamily: 'avenir'
12         ), // ThemeData
13         home: const PasswordChanged(),
14       ); // MaterialApp
15     }
16   }
17
18   class PasswordChanged extends StatefulWidget {
19     const PasswordChanged({Key? key}) : super(key: key);
20
21     @override
22     _PasswordChangedState createState() => _PasswordChangedState();
23   }
24
25   class _PasswordChangedState extends State<PasswordChanged> {
26     @override
27     Widget build(BuildContext context) {
28       return Scaffold(
29         body: Column(
30           mainAxisAlignment: MainAxisAlignment.center,
31           crossAxisAlignment: CrossAxisAlignment.center,
```

Figure 47: Code Snippet - passwordchangedsuccessfully.dart #01

```dart
32            children: [
33              Container(
34                height: 300,
35                width: 300,
36                decoration: const BoxDecoration(
37                  image: DecorationImage(
38                    image: AssetImage("asset/image/success.png")
39                  ) // DecorationImage
40                ), // BoxDecoration
41              ), // Container
42              const Text("Successful!", style: TextStyle(
43                fontSize: 35
44              ),), // TextStyle // Text
45              const Text("You have successfully changed our password. Please use your new password to login!"
46                fontSize: 18,
47              ),textAlign: TextAlign.center,), // TextStyle // Text
48              const SizedBox(height: 70,),
49              Center(
50                child: InkWell(
51                  onTap: openHomePage,
52                  child: Container(
53                    padding: const EdgeInsets.symmetric(horizontal: 100, vertical: 20),
54                    decoration: const BoxDecoration(
55                      borderRadius: BorderRadius.all(Radius.circular(7)),
56                      color: Color(0xfff96060)
57                    ), // BoxDecoration
58                    child: const Text("Continue", style: TextStyle(
59                      fontSize: 18,
60                      color: Colors.white
61                    ),), // TextStyle // Text
62                  ), // Container
63                ), // InkWell
64              ), // Center
65            ],
66          ), // Column
67        ); // Scaffold
68      }
69      void openHomePage()
70      {
71        Navigator.push(context, MaterialPageRoute(builder: (context)=> const HomePage()));
72      }
73    }
```

Figure 48: Code Snippet - passwordchangedsuccessfully.dart #02

- lib >screen > resetpassword.dart:

```dart
resetpassword.dart ●

lib > screen > resetpassword.dart > ...
1    import 'package:flutter/material.dart';
2    import 'passwordchangedsuccessfully.dart';
3
4    class ResetPassword extends StatelessWidget {
5      const ResetPassword({Key? key}) : super(key: key);
6      @override
7      Widget build(BuildContext context) {
8        return MaterialApp(
9          debugShowCheckedModeBanner: false,
10         theme: ThemeData(fontFamily: 'avenir'),
11         home: const ResetNewPassword(),
12       ); // MaterialApp
13     }
14   }
15
16   class ResetNewPassword extends StatefulWidget {
17     const ResetNewPassword({Key? key}) : super(key: key);
18
19     @override
20     _ResetNewPasswordState createState() => _ResetNewPasswordState();
21   }
22
23   class _ResetNewPasswordState extends State<ResetNewPassword> {
24     @override
25     Widget build(BuildContext context) {
26       return Scaffold(
27         appBar: AppBar(
28           elevation: 0,
29           backgroundColor: Colors.transparent,
30           leading: IconButton(
31             icon: const Icon(
32               Icons.arrow_back,
33               color: Colors.black,
34             ), // Icon
35             onPressed: () {}), // IconButton
36         ), // AppBar
```

Figure 49: Code Snippet - resetpassword.dart #01

```dart
      body: Container(
        padding: const EdgeInsets.all(20),
        child: Column(
          crossAxisAlignment: CrossAxisAlignment.start,
          children: [
            const SizedBox(
              height: 20,
            ), // SizedBox
            const Text(
              "Reset Password",
              style: TextStyle(fontSize: 35),
            ), // Text
            const Text(
              "Reset code was sent to your mail Id. Please enter the code and create a new password",
              style: TextStyle(fontSize: 18, color: Colors.grey),
            ), // Text
            const SizedBox(
              height: 20,
            ), // SizedBox
            const Text(
              "Reset code",
              style: TextStyle(
                fontSize: 23,
              ), // TextStyle
            ), // Text
            const TextField(
              decoration: InputDecoration(hintText: "****"),
              style: TextStyle(fontSize: 20),
            ), // TextField
            const SizedBox(
              height: 40,
            ), // SizedBox
            const Text(
              "Password",
              style: TextStyle(
                fontSize: 23,
              ), // TextStyle
            ), // Text
            const TextField(
              decoration: InputDecoration(hintText: "Enter your password here"),
              style: TextStyle(fontSize: 20),
            ), // TextField
            const SizedBox(
              height: 40,
            ), // SizedBox
```

Figure 50: Code Snippet - resetpassword.dart #02

```dart
 82                const Text(
 83                  "Confirm Password",
 84                  style: TextStyle(
 85                    fontSize: 23,
 86                  ), // TextStyle
 87                ), // Text
 88                const TextField(
 89                  decoration:
 90                      InputDecoration(hintText: "Re-Enter your password here"),
 91                  style: TextStyle(fontSize: 20),
 92                ), // TextField
 93                Expanded(
 94                  child: Center(
 95                    child: InkWell(
 96                      onTap: openSuccessPage,
 97                      child: Container(
 98                        padding:
 99                            const EdgeInsets.symmetric(horizontal: 100, vertical: 20),
100                        decoration: const BoxDecoration(
101                            borderRadius: BorderRadius.all(Radius.circular(7)),
102                            color: Color(0xfff96060)), // BoxDecoration
103                        child: const Text(
104                          "Change Password",
105                          style: TextStyle(fontSize: 18, color: Colors.white),
106                        ), // Text
107                      ), // Container
108                    ), // InkWell
109                  ), // Center
110                ) // Expanded
111              ],
112            ), // Column
113          ), // Container
114        ); // Scaffold
115      }
116
117      void openSuccessPage() {
118        Navigator.push(context,
119            MaterialPageRoute(builder: (context) => const PasswordChangedSuccessfully()));
120      }
121    }
```

Figure 51: Code Snippet - resetpassword.dart #03

- lib >screen > user_review.dart:

```dart
user_review.dart ●
lib > screen > user_review.dart > ...
1    import 'package:flutter_rating_bar/flutter_rating_bar.dart';
2    import 'package:flutter/material.dart';
3
4    class UserReview extends StatefulWidget {
5      const UserReview({Key? key}) : super(key: key);
6
7      @override
8      _UserReviewState createState() => _UserReviewState();
9    }
10
11   class _UserReviewState extends State<UserReview> {
12     double rating = 0;
13     @override
14     Widget build(BuildContext context) {
15       return Scaffold(
16         backgroundColor: Colors.black,
17         //appBar: AppBar(title: const Text('User Review')),
18         body: Center(
19           child: Column(
20             mainAxisAlignment: MainAxisAlignment.center,
21             children: [
22               Text(
23                 'Rating $rating',
24                 style: const TextStyle(fontSize: 40, color: Colors.white),
25               ), // Text
26               const SizedBox(
27                 height: 10,
28               ), // SizedBox
29               RatingBar.builder(
30                 minRating: 1,
31                 itemSize: 40,
32                 unratedColor: Colors.white,
33                 itemPadding: const EdgeInsets.symmetric(horizontal: 4),
34                 itemBuilder: (context, _) =>
35                     const Icon(Icons.star, color: Colors.amber),
36                 updateOnDrag: true,
37                 onRatingUpdate: (rating) => setState(() {
38                   this.rating = rating;
39                 }),
40               ), // RatingBar.builder
41               // const SizedBox(
42               //   height: 10,
43               // ),
44               // Container(
45               //   height: MediaQuery.of(context).size.height - 550,
46               //   width: MediaQuery.of(context).size.width,
47               //   color: Colors.grey.withOpacity(0.1),
48               //   child: const Text(
49               //     "User Name",
50               //     style: TextStyle(fontSize: 23),
51               //   ),
52               // )
53             ],
54           ), // Column
55         ), // Center
56       ); // Scaffold
57     }
58   }
```

Figure 52: Code Snippet - user_review.dart

- lib >screen > workout_home.dart:

```dart
workout_home.dart

lib > screen > workout_home.dart > ...
1    import 'package:flutter/material.dart';
2
3    import 'list_details.dart';
4
5    class WorkOutHome extends StatelessWidget {
6      const WorkOutHome({Key? key}) : super(key: key);
7
8      @override
9      Widget build(BuildContext context) {
10       return const WorkOutHomeScreen();
11     }
12   }
13
14   class WorkOutHomeScreen extends StatefulWidget {
15     const WorkOutHomeScreen({Key? key}) : super(key: key);
16
17     @override
18     _WorkOutHomeScreenState createState() => _WorkOutHomeScreenState();
19   }
20
21   class _WorkOutHomeScreenState extends State<WorkOutHomeScreen> {
22     @override
23     Widget build(BuildContext context) {
24       return Scaffold(
25         backgroundColor: Colors.black,
26         body: ListView(
27           children: [
28             Card(
29               color: Colors.black,
30               child: ListTile(
31                 title: const Text(
32                   "ABS",
33                   style: TextStyle(color: Colors.white),
34                 ), // Text
35                 leading: SizedBox(
36                   height: 80,
37                   width: 70,
38                   //child: Image.asset('asset/image/img01.jpg')
```

Figure 53: Code Snippet - workout_home.dart #01

```dart
39              child: Container(
40                decoration: const BoxDecoration(
41                    image: DecorationImage(
42                        image: AssetImage('asset/image/abs.jpg'),
43                        fit: BoxFit.fitHeight)), // DecorationImage // BoxDecoration
44              ), // Container
45            ), // SizedBox
46            onTap: () => openListPage('ABS'))), // ListTile // Card
47      const SizedBox(height: 30),
48      Card(
49          color: Colors.black,
50          child: ListTile(
51              title: const Text("ARM",
52                  style: TextStyle(color: Colors.white)), // Text
53              leading: SizedBox(
54                height: 80,
55                width: 70,
56                //child: Image.asset('asset/image/img02.png')
57                child: Container(
58                  decoration: const BoxDecoration(
59                      image: DecorationImage(
60                          image: AssetImage('asset/image/img01.jpg'),
61                          fit: BoxFit.fitHeight)), // DecorationImage // BoxDecoration
62              ), // Container
63            ), // SizedBox
64            onTap: () => openListPage('ARM'))), // ListTile // Card
65      const SizedBox(height: 30),
66      Card(
67          color: Colors.black,
68          child: ListTile(
69              title: const Text("CHEST",
70                  style: TextStyle(color: Colors.white)), // Text
71              leading: SizedBox(
72                height: 80,
73                width: 70,
74                //child: Image.asset('asset/image/img02.png')
75                child: Container(
76                  decoration: const BoxDecoration(
77                      image: DecorationImage(
78                          image: AssetImage('asset/image/chest.jpg'),
79                          fit: BoxFit.fitHeight)), // DecorationImage // BoxDecoration
80              ), // Container
81            ), // SizedBox
82            onTap: () => openListPage('CHEST'))), // ListTile // Card
83      const SizedBox(height: 30),
```

Figure 54: Code Snippet - workout_home.dart #02

```dart
84                Card(
85                    color: Colors.black,
86                    child: ListTile(
87                        title: const Text("LEG",
88                            style: TextStyle(color: Colors.white)), // Text
89                        leading: SizedBox(
90                          height: 80,
91                          width: 70,
92                          //child: Image.asset('asset/image/img02.png')
93                          child: Container(
94                            decoration: const BoxDecoration(
95                                image: DecorationImage(
96                                    image: AssetImage('asset/image/leg.jpg'),
97                                    fit: BoxFit.fitHeight)), // DecorationImage // BoxDecoration
98                          ), // Container
99                        ), // SizedBox
100                       onTap: () => openListPage('LEG'))), // ListTile // Card
101             const SizedBox(height: 30),
102             Card(
103                   color: Colors.black,
104                   child: ListTile(
105                       title: const Text("SHOULDER",
106                           style: TextStyle(color: Colors.white)), // Text
107                       leading: SizedBox(
108                         height: 80,
109                         width: 70,
110                         //child: Image.asset('asset/image/img02.png')
111                         child: Container(
112                           decoration: const BoxDecoration(
113                               image: DecorationImage(
114                                   image: AssetImage('asset/image/shoulder.jpg'),
115                                   fit: BoxFit.fitHeight)), // DecorationImage // BoxDecoration
116                         ), // Container
117                       ), // SizedBox
118                       onTap: () => openListPage('SHOULDER'))), // ListTile // Card
119           ],
120           padding: const EdgeInsets.all(10),
121        )); // ListView // Scaffold
122    }
123
124    void openListPage(String stype) {
125      Navigator.push(
126          context,
127          MaterialPageRoute(
128              builder: (context) =>
129                  ListDetails(selectedCategory: 'Workout', selectedType: stype))); // MaterialPageRoute
130    }
131 }
```

Figure 55: Code Snippet - workout_home.dart #03

1.7 Test Case

Test Scope:

The major scope of the current testing design is to make sure that the health application meets the proper requirements.

Test Objectives:

- Test basic components of the application for relevant functionalities.
- Ensure if the initial requirements correspond with the final application.
- Check the effectiveness and efficiency of the application.

Test Approach:

The current testing design for the health application;

1. Uses a common test case template for each test case.
2. Test basic functions of the application.
3. Test one section of every essential task in the system.

Test Case Template:

Table 2: Test case template

Test Description				
Test Case	Input Data	Expected Outcome	Actual Outcome	Outcome Result (Pass/Fail)

Testing Targets:
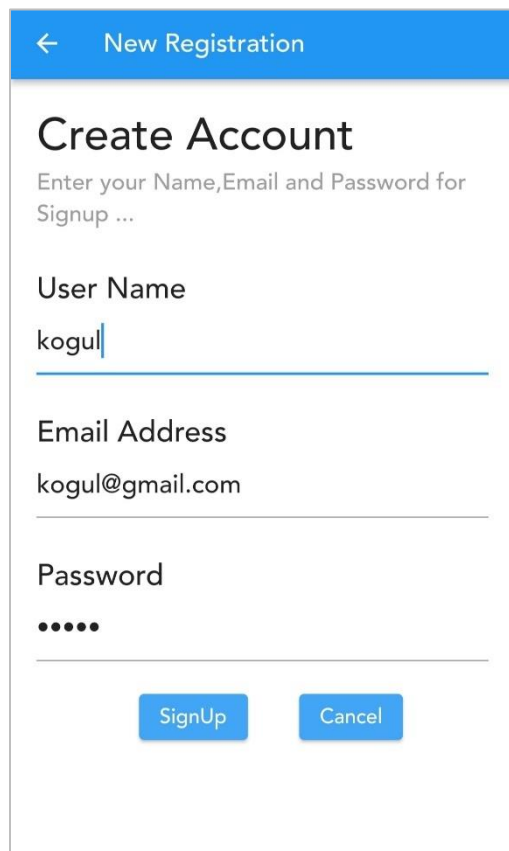
Test Explanation for Mobile Health and Fitness Application		
Test Case ID	**Test Description**	**Test Date**
01	Register new application user.	23/01/2022
02	Login to the application.	23/01/2022
03	View list of workout types.	23/01/2022
04	View list of diet food types.	23/01/2022
05	Add user review.	23/01/2022

Test Implementation:

Table 4: Test Case 01 - Register new application user

Test Description	Register new application user.			
Test Case	**Input Data**	**Expected Outcome**	**Actual Outcome**	**Outcome Result (Pass/Fail)**
01	**Username**: "kogul" **Email**: kogul@gmail.com **Password**: "kogul"	User record successfully created in the database.	User record successfully created in the database.	PASS

Evidence:

Figure 57: Test Case 01 - Evidence #01

Figure 56: Test Case 01 - Evidence #02

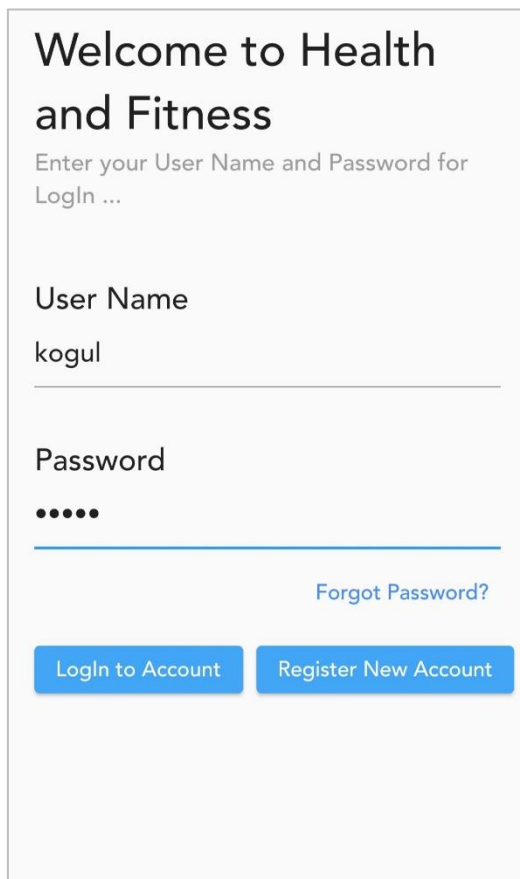| Test Description	Login to the application.			
Test Case	**Input Data**	**Expected Outcome**	**Actual Outcome**	**Outcome Result (Pass/Fail)**
02	**Username**: "kogul" **Password**: "kogul"	Login successful, and redirects to application home page.	Login successful, and redirects to application home page.	PASS

Evidence:
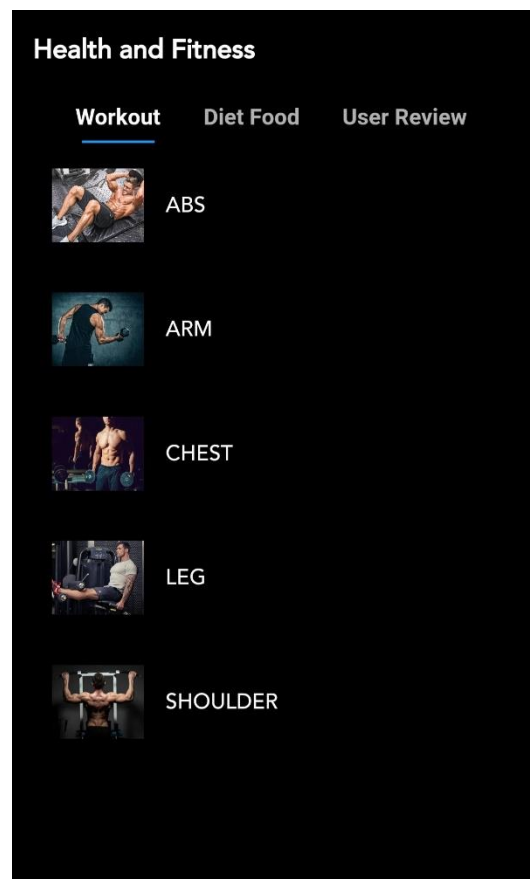

Figure 59: Test Case 02 - Evidence #01

Figure 58: Test Case 02 - Evidence #02

Table 6: Test Case 03 - View list of workout types

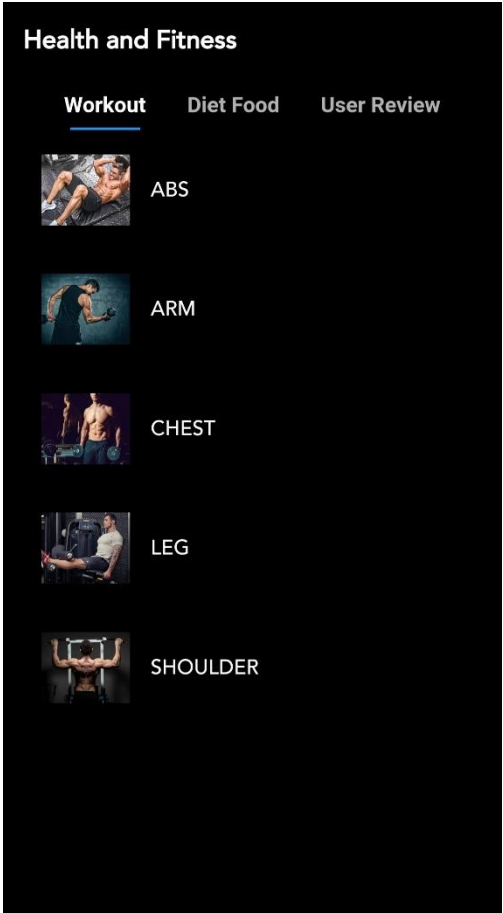| Test Description	View list of workout types.			
Test Case	**Input Data**	**Expected Outcome**	**Actual Outcome**	**Outcome Result (Pass/Fail)**
03	-	List of workout types displayed successfully.	List of workout types displayed successfully.	PASS

Evidence:

Figure 60: Test Case 03 - Evidence

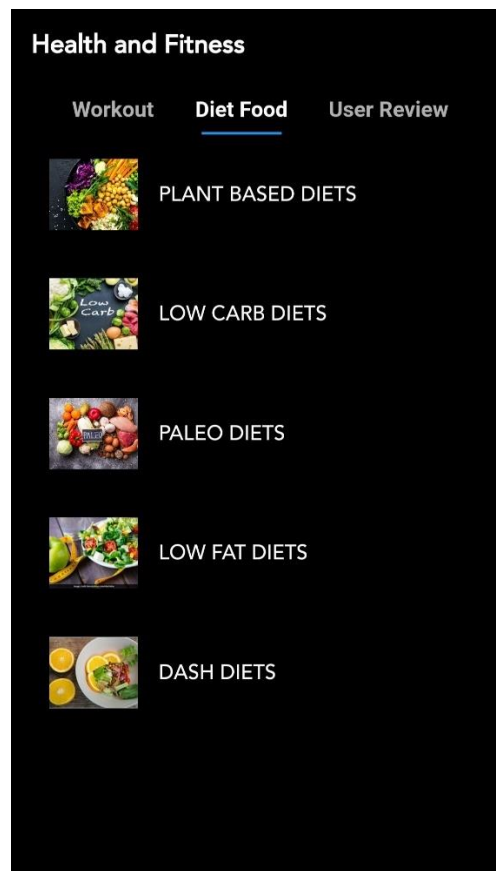| Test Description	View list of diet food types.			
Test Case	**Input Data**	**Expected Outcome**	**Actual Outcome**	**Outcome Result (Pass/Fail)**
04	-	List of diet food types displayed successfully.	List of diet food types displayed successfully.	PASS

Evidence:

Figure 61: Test Case 04 - Evidence

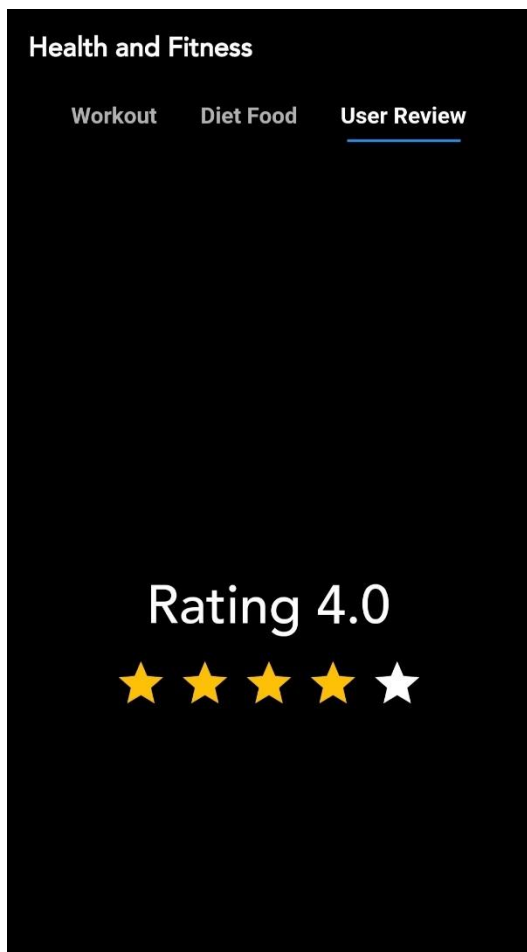| Test Description	Add user review.			
Test Case	Input Data	Expected Outcome	Actual Outcome	Outcome Result (Pass/Fail)
05	-	Review app based on five-star rating system.	Review app based on five-star rating system.	PASS

Evidence:

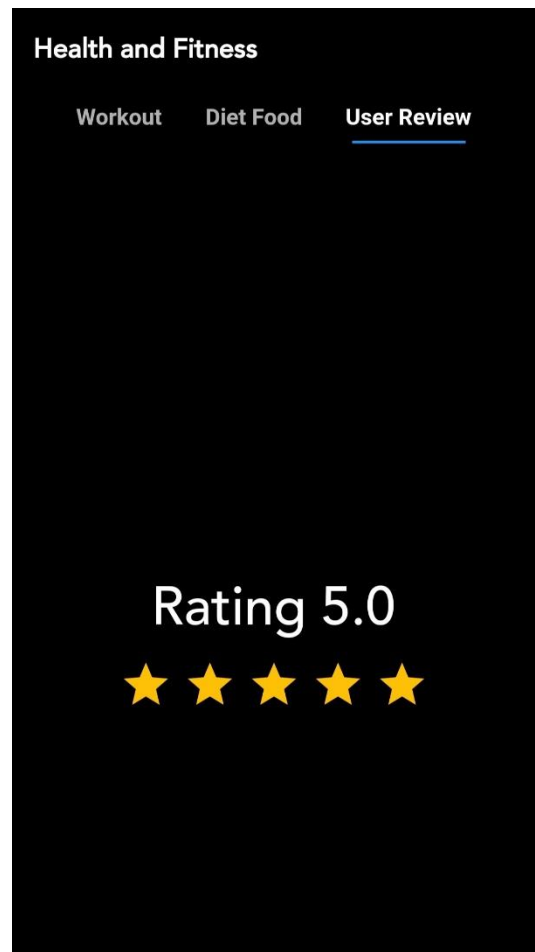*Figure 63: Test Case 05 - Evidence #01*

Figure 62: Test Case 05 - Evidence #02

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