

Nama : Fikri Maulana
Kelas : IF4410
NIM : 1301200239

MODUL 12

12.1 Pengenalan Packages

Secara singkat, dart package terdapat pada direktori yang didalamnya terdapat file pubspec. Contoh penggunaan packages adalah membuat request ke server menggunakan protokol http, custom navigation/route handling menggunakan fluro, dsb.

12.1.1. Pengenalan Model

Model dalam aplikasi mobile merupakan struktur data dan logika bisnis yang digunakan untuk membangun aplikasi tersebut. Fungsinya adalah untuk menyimpan, memanipulasi, dan mengatur data dalam aplikasi, serta mengatur cara pengambilan, penyimpanan, dan pembaruan data dari berbagai sumber seperti database atau API. Model bekerja sama dengan Controller atau Presenter dan View dalam pola desain MVC atau MVP untuk membangun aplikasi mobile yang efisien. Model memastikan aplikasi dapat diatur dengan konsisten dan efisien dalam mengelola data aplikasi.

12.1.2 Membuat Model Class

Model yang terbentuk dari Model Class Dart akan berbentuk response json. Berikut tampilan kode program model.

```
1 //Fikri Maulana 1301200239
2 class User {
3   String nim;
4   String nama;
5   String kelas;
6
7   User({
8     required this.nim,
9     required this.nama,
10    required this.kelas,
11  });
12 }
13
```

12.2 Navigation

12.2.1 Navigation Pindah Halaman

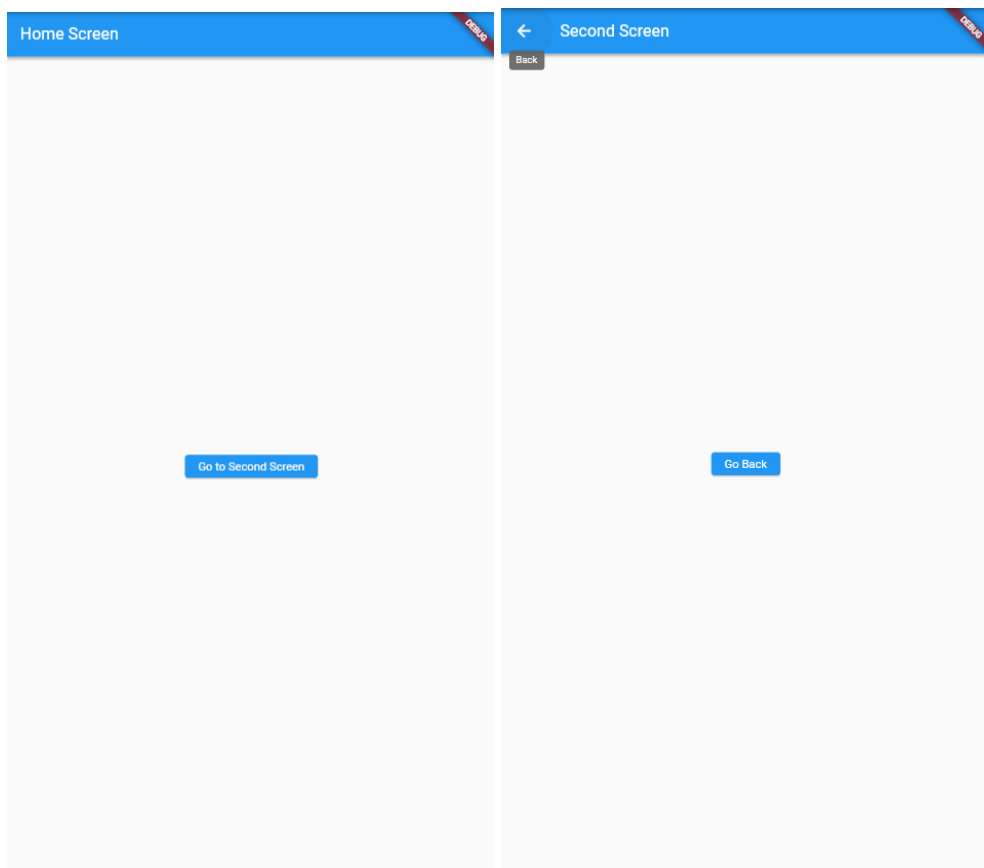
Untuk melakukan navigasi ke halaman lain pada Flutter, dapat gunakan code seperti di bawah ini:

```
1 import 'package:flutter/material.dart';
2 //Fikri Maulana - 1301200239
3 void main() {
4   runApp(MyApp());
5 }
6
7 class MyApp extends StatelessWidget {
8   @override
9   Widget build(BuildContext context) {
10    return MaterialApp(
11      title: 'Navigation Example',
12      initialRoute: '/',
13      routes: {
14        '/': (context) => HomeScreen(),
15        '/second': (context) => SecondScreen(),
16      },
17    );
18  }
19 }
20 //Fikri Maulana - 1301200239
21 class HomeScreen extends StatelessWidget {
22   @override
23   Widget build(BuildContext context) {
24     return Scaffold(
25       appBar: AppBar(
26         title: Text('Home Screen'),
27       ),
28       body: Center(
29         child: ElevatedButton(
30           child: Text('Go to Second Screen'),
31           onPressed: () {
32             Navigator.pushNamed(context, '/second');
33           },
34         ),
35       ),
36     );
37   }
38 }
```

```

39 //Fikri Maulana - 1301200239
40 class SecondScreen extends StatelessWidget {
41   @override
42   Widget build(BuildContext context) {
43     return Scaffold(
44       appBar: AppBar(
45         title: Text('Second Screen'),
46       ),
47       body: Center(
48         child: ElevatedButton(
49           child: Text('Go Back'),
50           onPressed: () {
51             Navigator.pop(context);
52           },
53         ),
54       ),
55     );
56   }
57 }
58

```



12.2.2 Navigation Mengirim Data

Navigation Mengirim Data merupakan salah satu fitur Navigator yang dimana setiap perpindahan page maka juga akan dilakukan perpindahan data. Berikut tampilan kode program dan output.

```
1 import 'package:flutter/material.dart';
2 //Fikri Maulana - 1301200239
3 class Todo {
4   final String title;
5   final String description;
6
7   const Todo(this.title, this.description);
8 }
9
10 void main() {
11   runApp(
12     MaterialApp(
13       title: 'Passing Data',
14       home: TodosScreen(
15         todos: List.generate(
16           3,
17           (i) => Todo(
18             'project $i',
19             'Your $i project description Fikri Maulana - 1301200239',
20           ),
21         ),
22       ),
23     ),
24   );
25 }
```

```

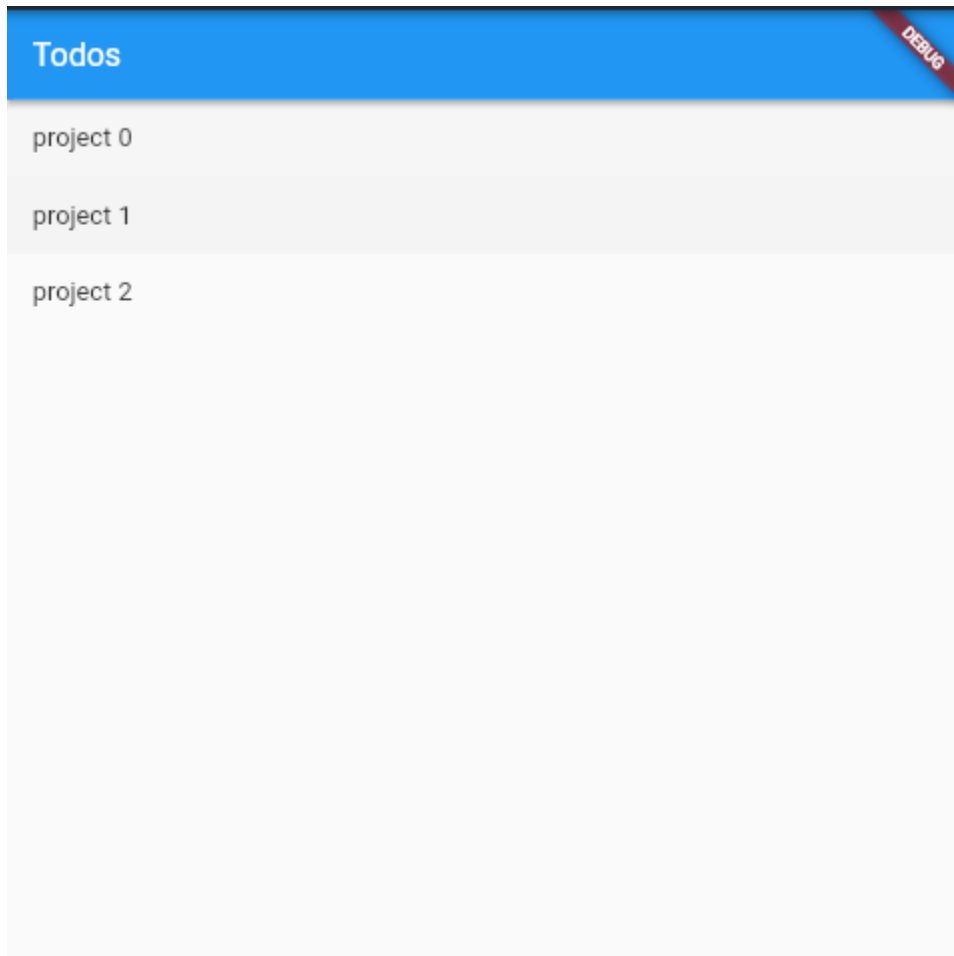
26 //Fikri Maulana - 1301200239
27 class TodosScreen extends StatelessWidget {
28   const TodosScreen({Key? key, required this.todos}) : super(key:
29
30   final List<Todo> todos;
31
32   @override
33   Widget build(BuildContext context) {
34     return Scaffold(
35       appBar: AppBar(
36         title: const Text('Todos'),
37       ),
38       body: ListView.builder(
39         itemCount: todos.length,
40         itemBuilder: (context, index) {
41           return ListTile(
42             title: Text(todos[index].title),
43             onTap: () {
44               Navigator.push(
45                 context,
46                 MaterialPageRoute(
47                   builder: (context) => DetailScreen(todo: todos[
48               ),
49             );
50           },
51         );
52       },
53     ),
54   );
55 }
56 }

```

```

57 //Fikri Maulana - 1301200239
58 class DetailScreen extends StatelessWidget {
59   const DetailScreen({Key? key, required this.todo}) : super(key:
60
61   final Todo todo;
62
63   @override
64   Widget build(BuildContext context) {
65     return Scaffold(
66       appBar: AppBar(
67         title: Text(todo.title),
68       ),
69       body: Padding(
70         padding: const EdgeInsets.all(16.0),
71         child: Text(todo.description),
72       ),
73     );
74   }
75 }
76 }

```





12.2.3 Notification

Notification dapat digunakan dengan menggunakan package flutter local notifications. Berikut tampilan kode program dan output.

```
1 import 'package:flutter_local_notifications/flutter_local_notifications.dart';
2 //Fikri Maulana-1301200239
3 class Noti {
4   static Future<void> initialize(
5     FlutterLocalNotificationsPlugin flutterLocalNotificationsPlugin) async {
6     var androidInitialize = AndroidInitializationSettings('mipmap/ic_launcher');
7     var iOSInitialize = IOSInitializationSettings();
8     var initializationSettings = InitializationSettings(
9       android: androidInitialize,
10      iOS: iOSInitialize,
11    );
12    await flutterLocalNotificationsPlugin.initialize(initializationSettings);
13  }
14
15  static Future<void> showBigTextNotification({
16    int id = 0,
17    required String title,
18    required String body,
19    String? payload,
20    required FlutterLocalNotificationsPlugin fln,
21  }) async {
22    var androidPlatformChannelSpecifics = AndroidNotificationDetails(
23      '10160',
24      'channel_name',
25      playSound: true,
26      importance: Importance.max,
27      priority: Priority.high,
28    );
29    var notificationDetails = NotificationDetails(
30      android: androidPlatformChannelSpecifics,
31      iOS: IOSNotificationDetails(),
32    );
33    await fln.show(id, title, body, notificationDetails);
34  }
35 }
```

```
37 // main.dart
38 //Fikri Maulana-1301200239
39
40 import 'notification.dart';
41 import 'package:flutter/material.dart';
42 import 'package:flutter_local_notifications/flutter_local_notifications.dart';
43
44 final FlutterLocalNotificationsPlugin flutterLocalNotificationsPlugin =
45     FlutterLocalNotificationsPlugin();
46
47 void main() {
48     runApp(const MyApp());
49 }
50 //Fikri Maulana-1301200239
51 class MyApp extends StatelessWidget {
52     const MyApp({Key? key}) : super(key: key);
53
54     @override
55     Widget build(BuildContext context) {
56         return const MaterialApp(
57             debugShowCheckedModeBanner: false,
58             home: HomePage(),
59         );
60     }
61 }
```



```

62 //Fikri Maulana-1301200239
63 class HomePage extends StatefulWidget {
64   const HomePage({Key? key}) : super(key: key);
65
66   @override
67   State<HomePage> createState() => _HomePageState();
68 }
69 //Fikri Maulana-1301200239
70 class _HomePageState extends State<HomePage> {
71   @override
72   void initState() {
73     super.initState();
74     Noti.initialize(flutterLocalNotificationsPlugin);
75   }
76
77   @override
78   Widget build(BuildContext context) {
79     return Container(
80       decoration: const BoxDecoration(
81         gradient: LinearGradient(
82           begin: Alignment.topLeft,
83           end: Alignment.bottomRight,
84           colors: [
85             Color.fromARGB(255, 54, 169, 61),
86             Color.fromARGB(255, 62, 122, 182),
87           ],
88       ),
89     ),
90     child: Scaffold(
91       backgroundColor: Colors.transparent,
92       appBar: AppBar(
93         backgroundColor: Color.fromARGB(255, 16, 73, 172).withOpacity(0.5),
94       ),
95       body: Center(
96         child: Container(
97           decoration: BoxDecoration(
98             color: Colors.white,
99             borderRadius: BorderRadius.circular(20),
100         ),
101         width: 200,
102         height: 200,
103         child: ElevatedButton(
104           onPressed: () {
105             Noti.showBigTextNotification(
106               title: "New Notification",
107               body: "Fikri Maulana - 1301200239",
108               fn: flutterLocalNotificationsPlugin,
109             );
110           },
111           child: const Text("Show Notification"),
112         ),
113       ),
114     ),
115   ),
116 );
117 }
118 }
119

```

