LAPORAN PRAKTIKUM PEMROGRAMAN PERANGKAT BERGERAK

MODUL 14

DATA STORAGE BAGIAN 3



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SE06-02

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PROGRAM STUDI S1 SOFTWARE ENGINEERING FAKULTAS INFORMATIKA TELKOM UNIVERSITY PURWOKERTO

A. GUIDED

• Homepage_screen.dart

Code

```
_showSnackBar('Error: $e');
    setState(() {
      _isLoading = false;
@override
Widget build(BuildContext context) {
  return Scaffold(
  ├appBar: AppBar(
      centerTitle: true,
  └─body: Padding(
    padding: const EdgeInsets.all(12),
    └child: Column(
      crossAxisAlignment: CrossAxisAlignment.start,
       children: [
            -? const Center(child: CircularProgressIndicator())
             : _posts.isEmpty
                -? const Text(
                     "Tekan tombol GET untuk mengambil data",
                     style: TextStyle(fontSize: 12),
                 : Expanded(
                    -child: ListView.builder(
                     itemCount: _posts.length,
                       itemBuilder: (context, index) {
                       --return Padding(
                          padding: const EdgeInsets.only(bottom: 12.0),
                          └child: Card(
                           └child: ListTile(
                              title: Text(
                                 _posts[index]['title'],
                                 style: const TextStyle(
                                     fontWeight: FontWeight.bold,
                               ), // Text
                              subtitle: Text(
                                 _posts[index]['body'],
                                 style: const TextStyle(fontSize: 12),
         Row(
          children: [
            —ElevatedButton(
               onPressed: () => _handleApiOperation(
                    _apiService.fetchPosts(), 'Data berhasil diambil!'),
```

```
ElevatedButton.styleFrom(backgroundColor: ■Colors.orange),
-const SizedBox(
  width: 10,
-ElevatedButton(
onPressed: () => _handleApiOperation(
      _apiService.createPost(), 'Data berhasil ditambahkan!'),
  style:
      ElevatedButton.styleFrom(backgroundColor: ■Colors.green),
-const SizedBox(
ElevatedButton(
onPressed: () => _handleApiOperation(
        _apiService.updatePost(), 'Data berhasil diperbarui!'),
    style: ElevatedButton.styleFrom(backgroundColor: ☐ Colors.blue),
  child: const Text('UPDATE'),
  ), // ElevatedButton
 -const SizedBox(
    width: 10,
 -ElevatedButton(
   onPressed: () => _handleApiOperation(
        _apiService.deletePost(), 'Data berhasil dihapus!'),
   style: ElevatedButton.styleFrom(backgroundColor: ■Colors.red),
```

• Api_service.dart

• Main.dart

```
import 'package:flutter/material.dart';
import 'package:get/get.dart';
import 'package:praktikum/screen/homepage_screen.dart';
Run | Debug | Profile

void main() {

runApp(const MyApp());
}

class MyApp extends StatelessWidget {

const MyApp({super.key});

@override

Widget build(BuildContext context) {

return const GetMaterialApp(

debugShowCheckedModeBanner: false,

title: 'Aplikasi Catatan Sederhana',

home: HomepageScreen(),

''''; // GetMaterialApp

}
}
```

Output

REST API - praktikum 14

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Updated Body

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Data berhasil diperbarui!

REST API - praktikum 14

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Data berhasil dihapus!

REST API - praktikum 14

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Flutter Post

Ini contoh POST.

Data berhasil ditambahkan!

REST API - praktikum 14

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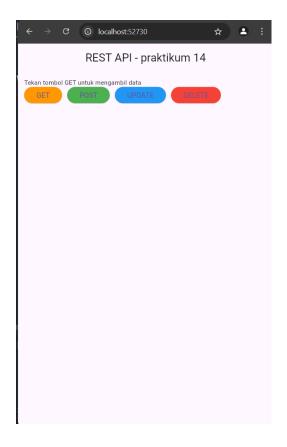
ullam et saepe reiciendis voluptatem adipisci sit amet autem assumenda provident rerum culpa quis hic commodi nesciunt rem tenetur doloremque ipsam iure quis sunt voluptatem rerum illo velit

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Data berhasil diambil!



Deskripsi Program

Kode pada ApiService, bertugas menangani komunikasi dengan API, dan kode di HomepageScreen merupakan antarmuka pengguna (UI) untuk berinteraksi dengan data dari API. Di dalam ApiService, terdapat fungsi untuk mengambil data (GET), menambah data (POST), memperbarui data (PUT), dan menghapus data (DELETE) dari sebuah REST API menggunakan paket http. Data yang diterima dari API disimpan di dalam sebuah variabel posts sebagai list. Pada sisi UI, HomepageScreen menampilkan data yang disimpan dalam posts menggunakan widget seperti ListView untuk menampilkan daftar, dan ElevatedButton untuk memicu operasi API. Ketika tombol ditekan, fungsi _handleApiOperation dijalankan untuk memanggil metode API terkait, menangani proses loading, dan menampilkan pesan keberhasilan atau kesalahan menggunakan SnackBar. Dengan pendekatan ini, kode memastikan data dari API dapat diambil, diperbarui, atau dihapus secara efisien, sekaligus menyinkronkan tampilan dengan data terbaru.

B. Unguided

• Main.dart

• Api_controller.dart

```
import 'package:get/get.dart';
import 'package:http/http.dart' as http;
import 'dart:convert';
class PostController extends GetxController {
 final String baseUrl = "https://jsonplaceholder.typicode.com";
 var posts = <dynamic>[].obs;
 var isLoading = false.obs;
 Future<void> fetchPosts() async {
   isLoading.value = true;
   try {
      final response = await http.get(Uri.parse('$baseUrl/posts'));
     if (response.statusCode == 200) {
       posts.value = json.decode(response.body);
       Get.snackbar("Sukses", "Data berhasil diambil",
            snackPosition: SnackPosition.BOTTOM);
        throw Exception('Failed to load posts');
    } catch (e) {
```

```
Get.snackbar("Error", e.toString(), snackPosition: SnackPosition.BOTTOM);
   isLoading.value = false;
Future<void> createPost() async {
   final response = await http.post(
     Uri.parse('$baseUrl/posts'),
     headers: {'Content-Type': 'application/json'},
   if (response.statusCode == 201) {
      posts.add({
        'body': 'Ini contoh POST.',
        'id': posts.length + 1,
      Get.snackbar("Sukses", "Data berhasil ditambahkan",
          snackPosition: SnackPosition.BOTTOM);
      throw Exception('Failed to create post');
    Get.snackbar("Error", e.toString(), snackPosition: SnackPosition.BOTTOM);
Future<void> updatePost() async {
  try {
    final response = await http.put(
      Uri.parse('$baseUrl/posts/1'),
      headers: {'Content-Type': 'application/json'},
      body: json.encode({
         'title': 'Updated Title',
         'body': 'Updated Body',
         'userId': 1,
    if (response.statusCode == 200) {
      var index = posts.indexWhere((post) => post['id'] == 1);
        posts[index] = {
           'title': 'Updated Title',
           'body': 'Updated Body',
          'id': 1,
         Get.snackbar("Sukses", "Data berhasil diperbarui",
            snackPosition: SnackPosition.BOTTOM);
```

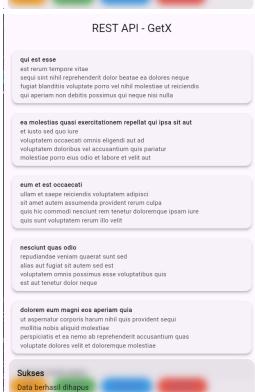
Homepage.dart

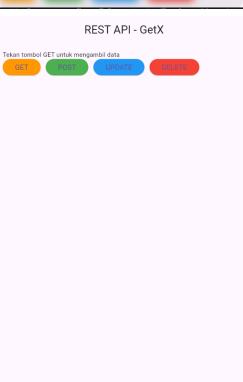
```
import 'package:flutter/material.dart';
import 'package:get/get.dart';
import 'package:praktikum/services/api controller.dart';
class HomepageScreen extends StatelessWidget {
 const HomepageScreen({super.key});
 @override
 Widget build(BuildContext context) {
    final PostController controller = Get.put(PostController());
    return Scaffold(
    -appBar: AppBar(
     Litle: const Text("REST API - GetX"),
       centerTitle: true,
    └─body: Padding(
       padding: const EdgeInsets.all(12),
      └─child: Column(
         crossAxisAlignment: CrossAxisAlignment.start,
         children: [
          --Obx(() => controller.isLoading.value
```

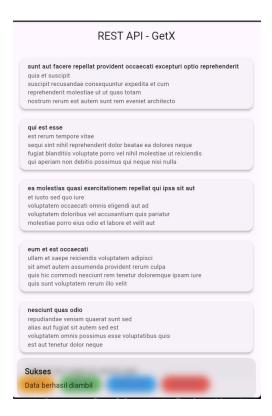
```
const Center(child: CircularProgressIndicator())
    : controller.posts.isEmpty
             "Tekan tombol GET untuk mengambil data",
             style: TextStyle(fontSize: 12),
        : Expanded(
        child: ListView.builder(
              itemCount: controller.posts.length,
               itemBuilder: (context, index) {
                -return Padding(
                  padding: const EdgeInsets.only(bottom: 12.0),
                 └child: Card(
                    elevation: 4,
                   └─child: ListTile(
                     ├title: Text(
                         controller.posts[index]['title'],
                         style: const TextStyle(
                             fontWeight: FontWeight.bold,
                             fontSize: 12), // TextStyle
                      subtitle: Text(
                         controller.posts[index]['body'],
                         style: const TextStyle(fontSize: 12),
Row(
  —ElevatedButton(
     onPressed: () => controller.fetchPosts(),
          ElevatedButton.styleFrom(backgroundColor: ☐ Colors.orange),
    const SizedBox(width: 10),
    ElevatedButton(
     onPressed: () => controller.createPost(),
         ElevatedButton.styleFrom(backgroundColor: ■Colors.green),
    const SizedBox(width: 10),
   -ElevatedButton(
     onPressed: () => controller.updatePost(),
      style: ElevatedButton.styleFrom(backgroundColor: Colors.blue),
      child: const Text('UPDATE'),
```

Output

REST API - GetX REST API - GetX quas fugiat ut perspiciatis vero provident eum non blanditiis soluta porro quibusdam voluptas Updated Title vel voluptatem qui placeat dolores qui velit aut vel inventore aut cumque culpa explicabo aliquid at perspiciatis est et voluptatem dignissimos dolor itaque sit nam Updated Body qui est esse laboriosam dolor voluptates sequi sint nihil reprehenderit dolor beatae ea dolores neque fugiat blanditiis voluptate porro vel nihil molestiae ut reiciendis qui aperiam non debitis possimus qui neque nisi nulla doloremque ex facilis sit sint culpa soluta assumenda eligendi non ut eius segui ducimus vel quasi veritatis est dolores ea molestias quasi exercitationem repellat qui ipsa sit aut temporibus sit alias delectus eligendi possimus magni voluptatem occaecati omnis eligendi aut ad quo deleniti praesentium dicta non quod aut est molestias molestias et officia quis nihil voluptatem doloribus vel accusantium quis pariatur molestiae porro eius odio et labore et velit aut itaque dolorem quia ullam et saepe reiciendis voluptatem adipisci sit amet autem assumenda provident rerum culpa quis hic commodi nesciunt rem tenetur doloremque ipsam iure at nam consequatur ea labore ea harum cupiditate quo est a modi nesciunt soluta ipsa voluptas error itaque dicta in autem qui minus magnam et distinctio eum accusamus ratione error aut quis sunt voluptatem rerum illo velit nesciunt quas odio repudiandae veniam quaerat sunt sed Flutter Post Ini contoh POST. alias aut fugiat sit autem sed est voluptatem omnis possimus esse voluptatibus quis est aut tenetur dolor neque Flutter Post dolorem eum magni eos aperiam quia Sukses Data berhasil diperbarui Data berhasil ditambahkan REST API - GetX REST API - GetX Tekan tombol GET untuk mengambil data qui est esse est rerum tempore vitae sequi sint nihil reprehenderit dolor beatae ea dolores neque fugiat blanditiis voluptate porro vel nihil molestiae ut reiciendis qui aperiam non debitis possimus qui neque nisi nulla ea molestias quasi exercitationem repellat qui ipsa sit aut







Deskripsi Program

Pada kode unguided ini kode diimprovisasi menggunakan state management GetX untuk mengelola data dan state dengan lebih efisien saat berinteraksi dengan API. PostController bertanggung jawab atas operasi API seperti GET, POST, UPDATE, dan DELETE. Data yang diterima dari API disimpan dalam variabel posts yang dikelola dengan RxList, sehingga perubahan data secara otomatis memperbarui UI tanpa memerlukan pengelolaan state manual. Pada UI, widget Obx memastikan tampilan ter-update saat ada perubahan state seperti loading atau perubahan data. Saat tombol aksi ditekan, fungsi di dalam PostController dipanggil untuk memodifikasi data, dan Get.snackbar digunakan untuk menampilkan notifikasi interaktif yang memberikan umpan balik tentang hasil operasi kepada pengguna. Pendekatan ini membuat pengelolaan data dan sinkronisasi UI lebih sederhana, responsif, dan terstruktur.