9 a) Fetch data from a REST API.

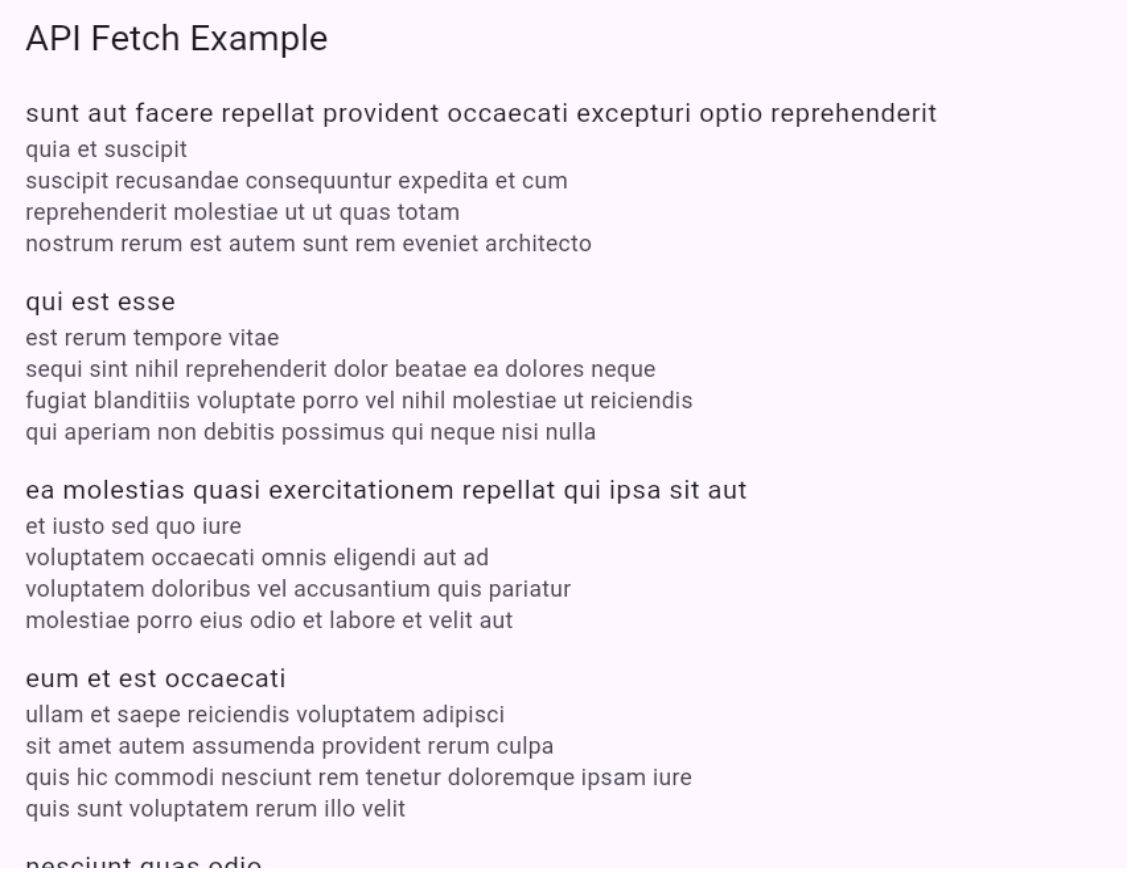
```
import 'package:flutter/material.dart';
import 'package:http/http.dart' as http;
import 'dart:convert';
void main() {
runApp(MyApp());
}
class MyApp extends StatelessWidget {
@override
Widget build(BuildContext context) {
return MaterialApp(
title: 'API Fetch Example',
theme: ThemeData(
primarySwatch: Colors.blue,
),
home: MyApiFetchWidget(),
);
}
}
class MyApiFetchWidget extends StatefulWidget {
@override
_MyApiFetchWidgetState createState() => _MyApiFetchWidgetState();
}
class _MyApiFetchWidgetState extends State<MyApiFetchWidget> {
late Future<List<Post>> _posts;
@override
void initState() {
super.initState();
_posts = fetchPosts();
}
Future<List<Post>> fetchPosts() async {
```

```
final response =
await http.get(Uri.parse('https://jsonplaceholder.typicode.com/posts'));
if (response.statusCode == 200) {
// If the server returns a 200 OK response,
// parse the JSON and return a list of posts.
List<dynamic> data = json.decode(response.body);
List<Post> posts = data.map((post) => Post.fromJson(post)).toList();
return posts;
} else {
// If the server did not return a 200 OK response,
// throw an exception.
throw Exception('Failed to load posts');
}
}
@override
Widget build(BuildContext context) {
return Scaffold(
appBar: AppBar(
title: Text('API Fetch Example'),
),
body: FutureBuilder<List<Post>>(
future: _posts,
builder: (context, snapshot) {
if (snapshot.connectionState == ConnectionState.waiting) {
return CircularProgressIndicator();
} else if (snapshot.hasError) {
return Text('Error: ${snapshot.error}');
} else {
return ListView.builder(
itemCount: snapshot.data!.length,
itemBuilder: (context, index) {
```

```
return ListTile(
title: Text(snapshot.data![index].title),
subtitle: Text(snapshot.data![index].body),
);
},
);
}
},
),
);
}
}
class Post {
final int userId;
final int id;
final String title;
final String body;
Post({
required this.userId,
required this.id,
required this.title,
required this.body,
});
factory Post.fromJson(Map<String, dynamic> json) {
return Post(
userId: json['userId'],
id: json['id'],
title: json['title'],
body: json['body'],
);
}
```

}

Output:



9 b) Display the fetched data in a meaningful way in the UI.

```
import 'package:flutter/material.dart';
import 'package:http/http.dart' as http;
import 'dart:convert';
void main() {
runApp(MyApp());
}
class MyApp extends StatelessWidget {
@override
Widget build(BuildContext context) {
return MaterialApp(
title: 'API Fetch Example',
```

```
theme: ThemeData(
primarySwatch: Colors.blue,
),
home: MyApiFetchWidget(),
);
}
}
class MyApiFetchWidget extends StatefulWidget {
@override
_MyApiFetchWidgetState createState() => _MyApiFetchWidgetState();
}
class _MyApiFetchWidgetState extends State<MyApiFetchWidget> {
late Future<List<Post>> _posts;
@override
void initState() {
super.initState();
_posts = fetchPosts();
}
Future<List<Post>> fetchPosts() async {
final response =
await http.get(Uri.parse('https://jsonplaceholder.typicode.com/posts'));
if (response.statusCode == 200) {
List<dynamic> data = json.decode(response.body);
List<Post> posts = data.map((post) => Post.fromJson(post)).toList();
return posts;
} else {
throw Exception('Failed to load posts');
}
}
@override
Widget build(BuildContext context) {
```

```
return Scaffold(
appBar: AppBar(
title: Text('API Fetch Example'),
),
body: FutureBuilder<List<Post>>(
future: _posts,
builder: (context, snapshot) {
if (snapshot.connectionState == ConnectionState.waiting) {
return Center(child: CircularProgressIndicator());
} else if (snapshot.hasError) {
return Center(child: Text('Error: ${snapshot.error}'));
} else {
return PostList(posts: snapshot.data!);
}
},
),
);
}
}
class PostList extends StatelessWidget {
final List<Post> posts;
PostList({required this.posts});
@override
Widget build(BuildContext context) {
return ListView.builder(
itemCount: posts.length,
itemBuilder: (context, index) {
return PostItem(post: posts[index]);
},
);
}
```

```
}
class PostItem extends StatelessWidget {
final Post post;
PostItem({required this.post});
@override
Widget build(BuildContext context) {
return Card(
margin: EdgeInsets.all(10),
elevation: 3,
child: Padding(
padding: EdgeInsets.all(15),
child: Column(
crossAxisAlignment: CrossAxisAlignment.start,
children: [
Text(
post.title,
style: TextStyle(
fontSize: 18,
fontWeight: FontWeight.bold,
),
),
SizedBox(height: 10),
Text(
post.body,
style: TextStyle(fontSize: 16),
),
],
),
),
);
}
```

```
}
class Post {
final int userId;
final int id;
final String title;
final String body;
Post({
required this.userId,
required this.id,
required this.title,
required this.body,
});
factory Post.fromJson(Map<String, dynamic> json) {
return Post(
userId: json['userId'],
id: json['id'],
title: json['title'],
body: json['body'],
);
}
}
```

Output:

API Fetch Example

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