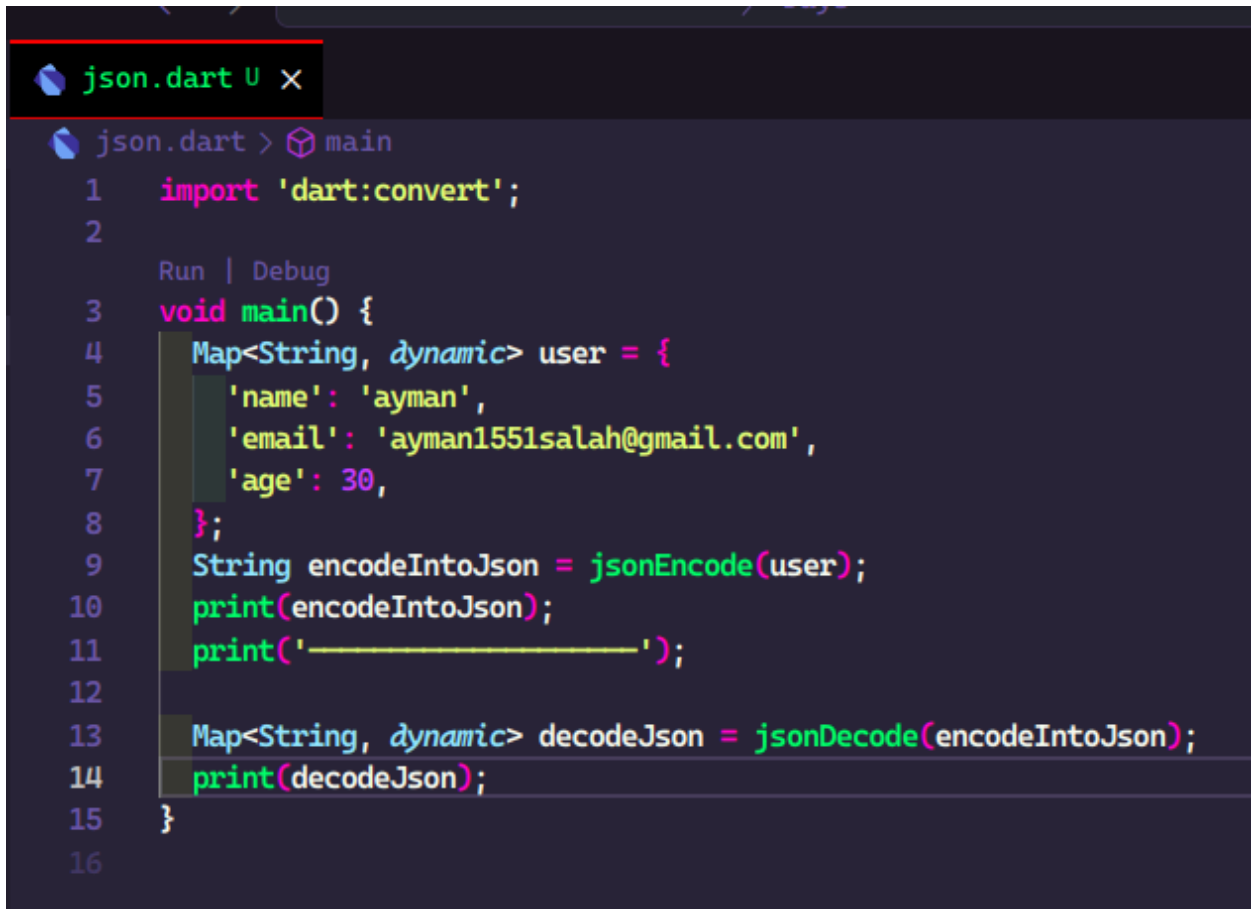


Q1. Explain the difference between `jsonDecode` and `jsonEncode` in Dart.
Provide a clear example showing how to use both.

Answer : Json encode will (encode or convert) an object (the map) into json , while decoding json means to convert json to object that we can use in Dart (like getting json from api and convert it to access its data)

A screenshot of an IDE window titled 'json.dart U x'. The code is in Dart and demonstrates the use of `jsonEncode` and `jsonDecode`. It starts with an import for 'dart:convert', followed by a `main` function. Inside `main`, a `Map<String, dynamic>` named `user` is created with fields for 'name', 'email', and 'age'. This map is then converted to a JSON string using `jsonEncode`. The resulting string is printed, followed by a separator line. The JSON string is then converted back to a `Map<String, dynamic>` using `jsonDecode` and printed again.

```
1 import 'dart:convert';
2
3 void main() {
4   Map<String, dynamic> user = {
5     'name': 'ayman',
6     'email': 'ayman1551salah@gmail.com',
7     'age': 30,
8   };
9   String encodeIntoJson = jsonEncode(user);
10  print(encodeIntoJson);
11  print('-----');
12
13  Map<String, dynamic> decodeJson = jsonDecode(encodeIntoJson);
14  print(decodeJson);
15 }
16
```

Q2. Create a class `Book` with `fromJson` and `toJson` methods.
In the `main()` function, demonstrate how to create a `Book` object from JSON and how to convert it back to JSON.

ANSWER : Book,dart File

Q3. Research and explain, in your own words, the advantages and disadvantages of using Flutter as a cross-platform development framework.

Advantages

- Write one codebase (for both ios and android)
- flutter in general is easy to learn
- It is popular , so the “community” makes difference if you need help
- Open source (and free) no license like some frameworks
-

Disadvantages

- Slow than native languages
- Also in case something is too advanced it might not work
- The liquid glass update (I dont get this issues to be honest but i think it is bad thing)
- Community idea , considered good and bad (specially if you depend on others who will not support what you use)
-

Q4. In Flutter, what is the purpose of BuildContext? Explain in your own words.

ok , here is what I understand (although not fully grasping) context as the name says is the (things around), this is even in real life , in flutter it is nearly same , and since it is UI framework of widgets , a widget has others around him (context) ,, and somehow in the operation of building screens we might need this element to know its context or send it to another one to keep the UI fine without issues , Buildcontext and the idea of context comes to place for this