MOBILE DEVELOPMENT

SESSION 9

#create_share_innovate

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API in Flutter
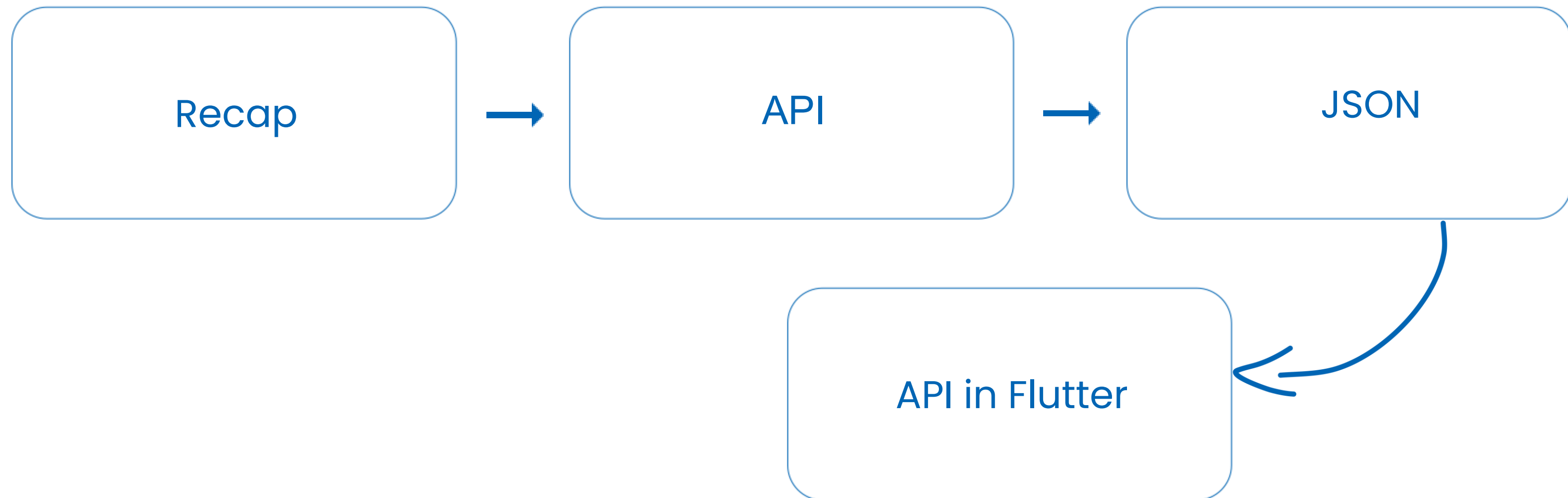
Recap

1.Basic Widgets

Scaffold, AppBar, Text , Buttons , Icons, TextField
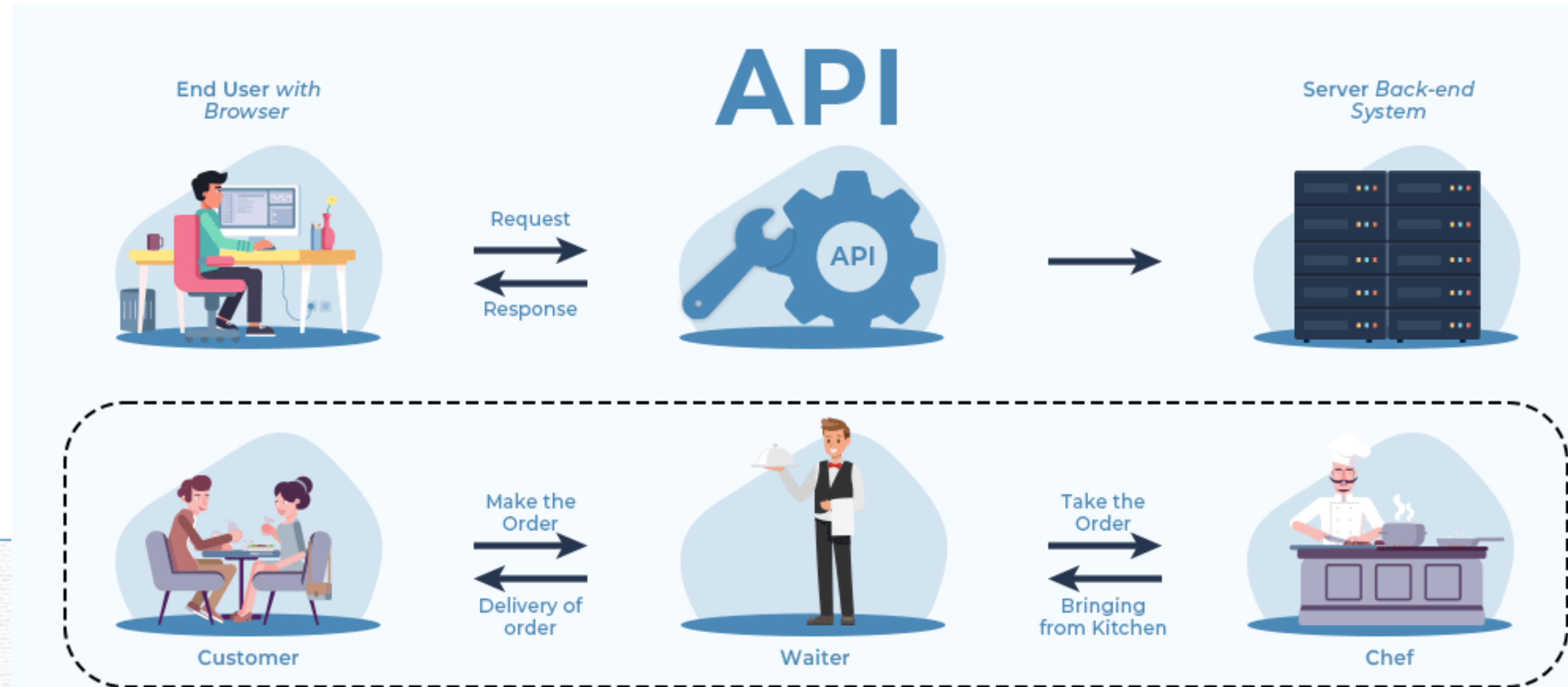
2.Layout Widgets

Column, Row, Container, SizedBox, Center

3.Assets

Images, Fonts, Video, Audio

api

Application Programming Interface

api methods

- GET (retrieve a record)
- PUT (update a record)
- POST (create a record)
- DELETE (delete the record)

api HTTP Codes

- **200** – OK
- **201** – Created
- **204** – No Content
- **400** – Bad Request
- **401** – Unauthorized
- **403** – Forbidden
- **404** – Not Found
- **409** – Conflict
- **422** – Unprocessable Entity *(especially in FastAPI)*
- **500** – Internal Server Error

JSON

Stands for JavaScript Object Notation.

A way to store and exchange data — like sending information between a server and an app

```
1  v {
2      "name": "Pepperoni Pizza",
3      "size": "Large",
4      "price": 12.99,
5      "toppings": ["cheese", "pepperoni", "olives"],
6      "available": true,
7      "address": {"city": "Cairo"}
8  }
```

JSON Structure

JSON Type	Example	Meaning
String	`"name": "John"`	Text
Number	`"age": 20`	Numbers
Boolean	`"isStudent": true`	True or False
Array (list)	`"skills": ["Flutter", "Dart"]`	List of values
Object	`"address": {"city": "Cairo"}`	Nested information
Null	`"job": null`	Means empty or missing info

Api In flutter

http/dio package used for APIs

http 1.4.0

dio 5.8.0+1

Api In flutter

```
Run | Debug | Profile | Qodo Gen: Options | Test this function
void main() async {
  final response = await http.get(Uri.parse('http://127.0.0.1:8000/users/'));
  // ignore: avoid_print
  print(json.decode(response.body));
}
```

Api In flutter

Future

A Future means:

"I will return a value later."

It represents a value that's not available yet, but it will be in the future.

Api In flutter

```
1   Future<String> getData() {
2     return Future.delayed(Duration(seconds: 2), ()
3   {   return "Data loaded";
4     });
5   }
```

This means: "Wait 2 seconds, and then return the string Data loaded."

Api In flutter

async

You add async to a function to mark it as asynchronous (meaning it might take time and will return a Future).

```
1  Future<void> fetchData() async {
2    print("Loading...");
3    String result = await getData
4  ()print(result);
5  }
```

Api In flutter

await

You use await to pause the function and wait for the result of a Future, without freezing the whole app.

It waits for the getData()

function to finish and stores the

result in result.

```
1   String result = await getData
2   ();
```

Api In flutter

Model are classes that are made to help decoding the json response to a map so it can easily be used in our app

```dart
class User {
  final int id;
  final String name;
  final String email;

  User({required this.id, required this.name, required this.email});

  factory User.fromJson(Map<String, dynamic> json) {
    return User(
      id: json['id'],
      name: json['name'],
      email: json['email'],
    );
  }
}
```

Task

Weather App

tHANK YOU

SEE YOU NEXT TIME