

Object-Oriented Programming (OOP) in Dart

Object-Oriented Programming (OOP) is a programming paradigm based on the concept of "objects". It helps in writing cleaner, reusable, and more maintainable code.

1. Class

A class is a blueprint for creating objects. It contains properties (variables) and methods (functions).

2. Object

An object is an instance of a class. It is created using the class blueprint and can access all public members (properties and methods) of the class.

3. Constructor

A constructor is a special method called automatically when an object is created. It initializes object properties.

- Default Constructor
- Parameterized Constructor
- Named Constructor

4. Encapsulation

Encapsulation means hiding internal details of an object and only exposing selected information via getters and setters.

In Dart:

- Use '_' to make fields private.
- Use 'get' and 'set' to create getters and setters.

Code Examples

Class and Object:

```
class Person {  
  String name;  
  int age;  
  void greet() {  
    print("Hello, my name is \"$name\");  
  }  
}
```

```
}
```

```
void main() {  
    Person p = Person();  
    p.name = "Ali";  
    p.age = 22;  
    p.greet();  
}  
  
.0Encapsulation Example:  
class BankAccount {  
    double _balance = 0;  
  
    void deposit(double amount) {  
        if (amount > 0) _balance += amount;  
    }  
  
    double get balance => _balance;  
    set balance(double newBalance) {  
        if (newBalance >= 0) _balance = newBalance;  
    }  
}
```

