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Mastering Code Generation in Dart to Write Repetitive Code Automatically

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Overview

- What is code generation in Dart?
- Advantages of code generation
- Annotate classes for code generation
- Inspect classes using a visitor
- Write a custom serialisation generator
- Learn to configure the builder
- Use the generator in a Flutter project
- Code challenge

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What is code generation in Dart?

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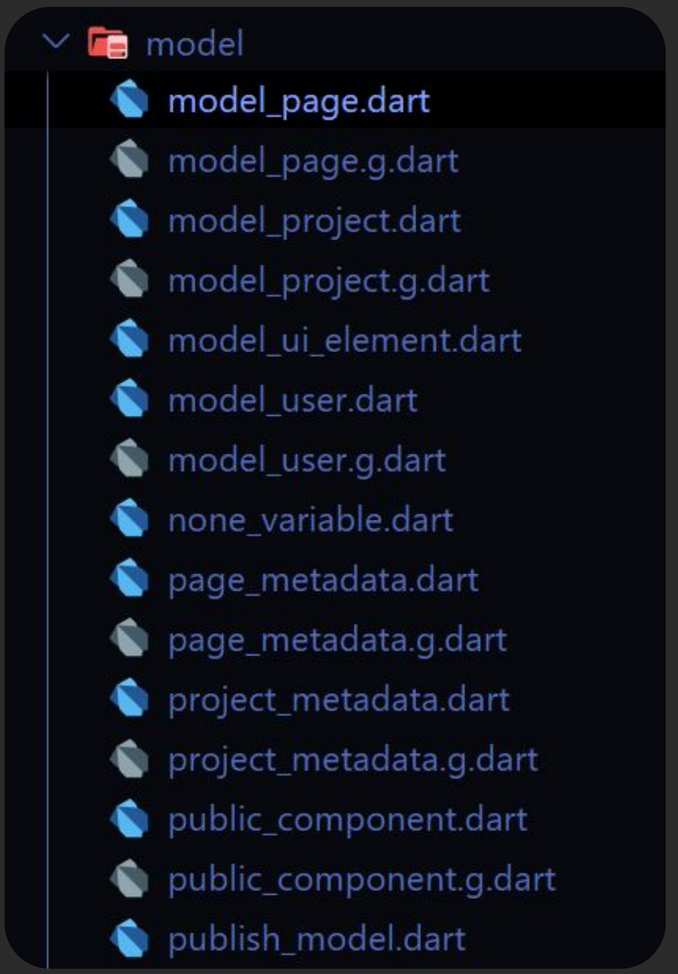
Repetitive Code Example

```
Person copyWith({
  String? name,
  int? age,
  bool? codes,
}) =>
    Person(
      name: name ?? this.name,
      age: age ?? this.age,
      codes: codes ?? this.codes,
    );
```



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Use Code Generation

Step 1: Annotate the class

```dart
@clone
class Person {
  final String name;
  final int age;
  final bool codes;
}
```

Step 2: Run the ***build*** command

```
dart run build_runner build
```

Advantages of Code Generation

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Advantages of Code Generation

1. Saves time and effort
2. Prevents human errors
3. Clean, consistent and readable code

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Project Demonstration

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Annotate Class for Code Generation

Write Custom Generators

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Dependencies

- **build**: Exposes classes, such as ***`Builder`***, that enable templating the code and generate new files from existing ones.

- **source_gen**: Wrapper around the ***build*** package that provides high level API to write custom code generators.

- **analyzer**: Enables class inspection, i.e., extracting metadata from the classes. No need for explicit import as the ***build*** package uses ***analyzer*** under the hood and exposes it.

- **build_runner**: Enables the ***build*** command. It traverses through the entire codebase in search of annotations and generates the code accordingly.

Class Inspection

Configure the Builder

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Example Usage

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Code Challenge

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Code Challenge Solution

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Summary

- The concept of code generation
- Advantages of code generation
- Annotate classes for code generation
- Class inspection
- How to write custom generators
- Builder configuration
- Usage in a Flutter project

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Thank You!

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