Builder Pattern

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Concepts

Handles complex constructors

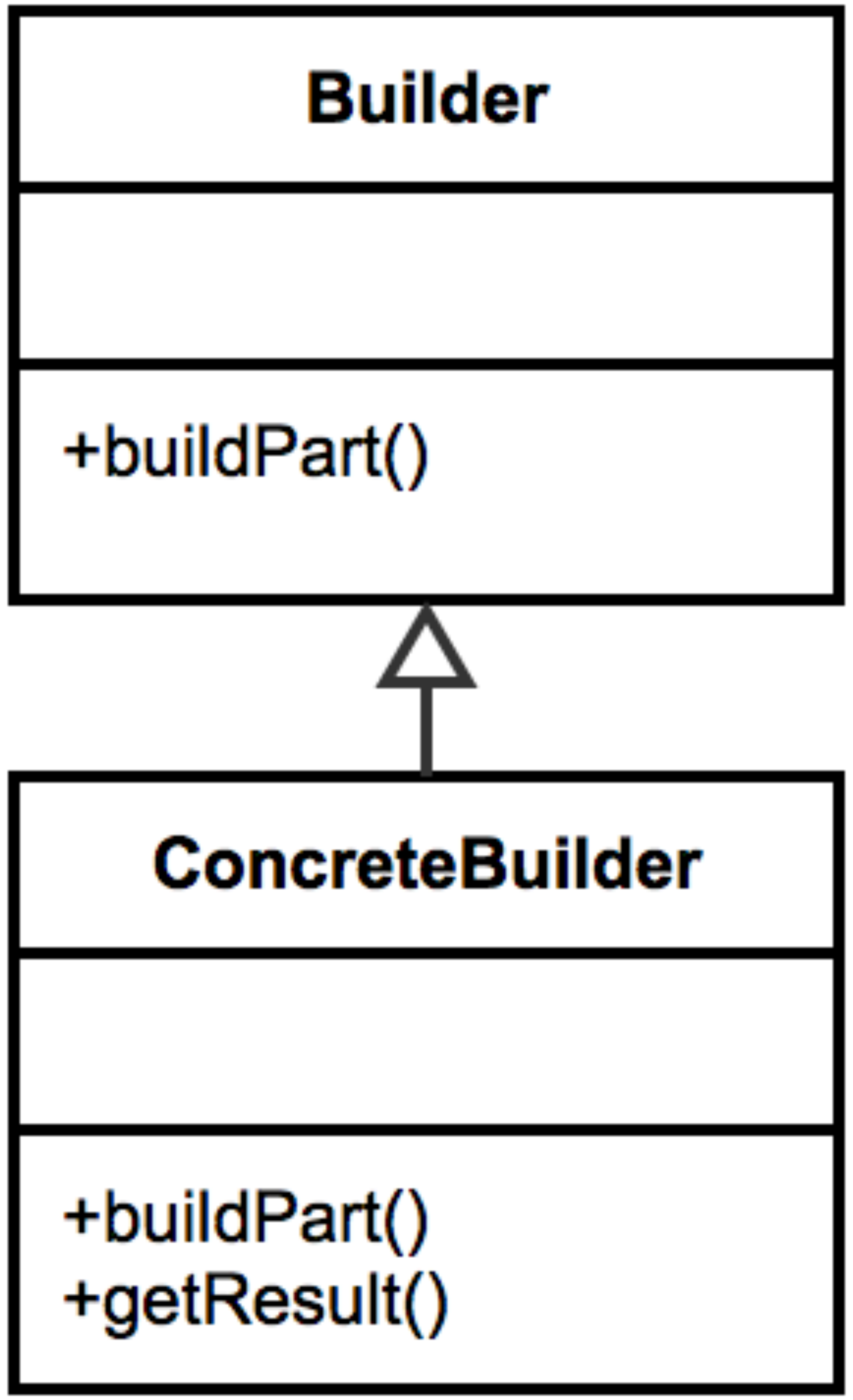
Large number of parameters

Immutability

Examples:

- StringBuilder
- DocumentBuilder
- Locale.Builder

Design



Flexibility over telescoping constructors

Static inner class

Call appropriate constructor

Negates the need for exposed setters

Java 1.5+ can take advantage of Generics

Everyday Example - StringBuilder

```java
StringBuilder builder = new StringBuilder();

builder.append("This is an example ");

builder.append("of the builder pattern. ");

builder.append("It has methods to append ");

builder.append("almost anything we want to a String. ");

builder.append(42);
```

Demo

Demonstrate Exposed Setters

Demonstrate Telescoping Constructors

Create Builder

Build Out Example

Pitfalls

Immutable

Static Inner class

Designed first

Complexity

Method returns object

Contrast

Builder	Prototype
Handles complex constructors	Implemented around a clone
No interface required	Avoids calling complex constructors
Can be a separate class	Difficult to implement in legacy code
Works with legacy cody	

Summary

Creative way to deal with complexity

Easy to implement

Few drawbacks

Can refactor in with separate class