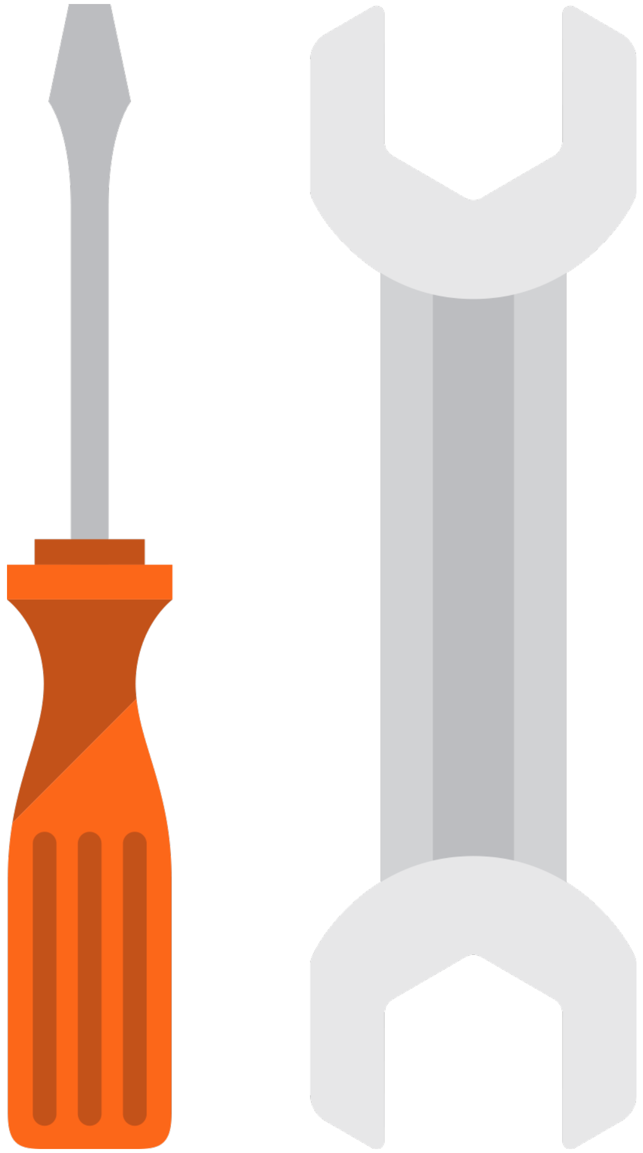
Builder Pattern

Bryan Hansen

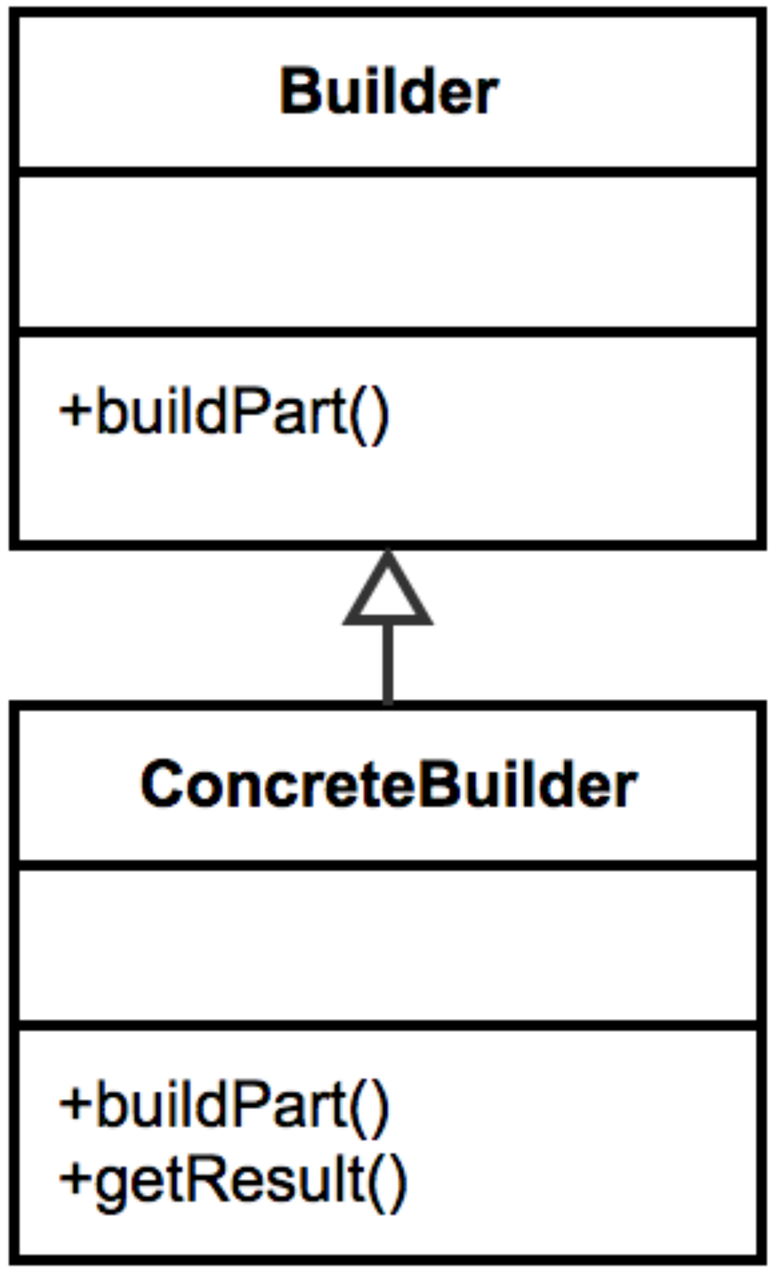
twitter: bh5k | http://www.linkedin.com/in/hansenbryan

Concepts

- Handles complex constructors
- Large number of parameters
- Immutability
- Examples:
  - StringBuilder
  - DocumentBuilder
  - Locale.Builder



Design



Flexibility over telescoping constructors

Static inner class

Calls appropriate constructor

Negates the need for exposed setters

Java 1.5+ can take advantage of Generics

Everyday Example - StringBuilder

```
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);
```

Exercise Builder

Demonstrate Exposed Setters

Demonstrate Telescoping Constructors

Create Builder

Build Out Example

Pitfalls

- Immutable
- Inner static class
- Designed first
- Complexity
- Method returns object

Contrast

Builder

- Handles complex constructors
- No interface required
- Can be a separate class
- Works with legacy code

Prototype

- Implemented around a clone
- Avoids calling complex constructors
- Difficult to implement in legacy code

Builder Summary

- Creative way to deal with complexity
- Easy to implement
- Few drawbacks
- Can refactor in with separate class