

# AbstractFactory Pattern



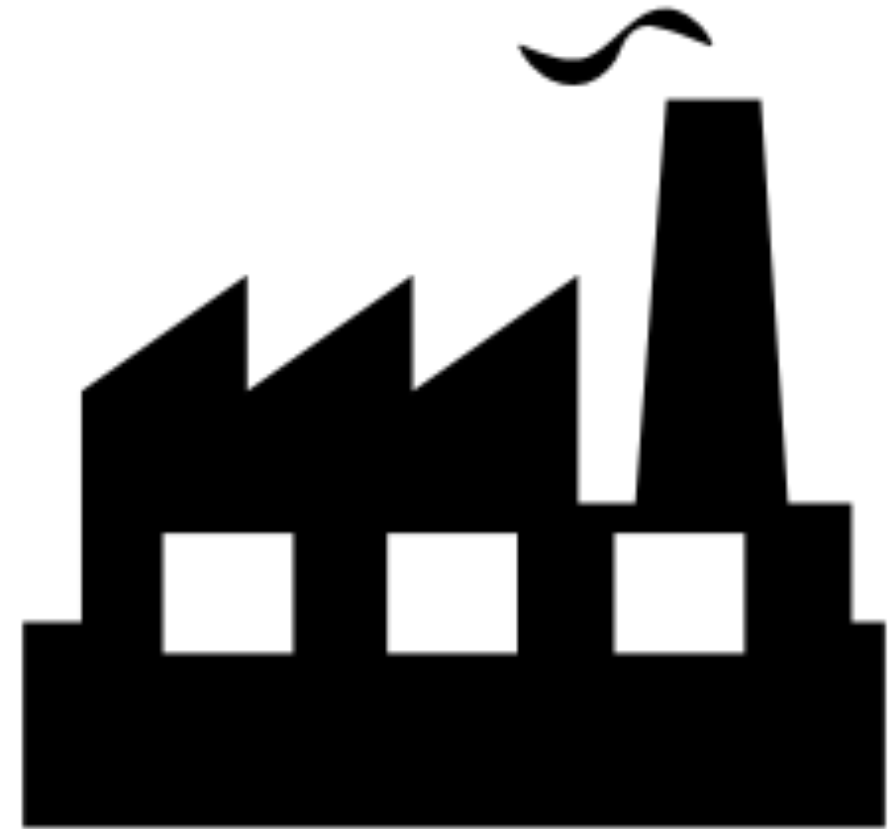
Bryan Hansen

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

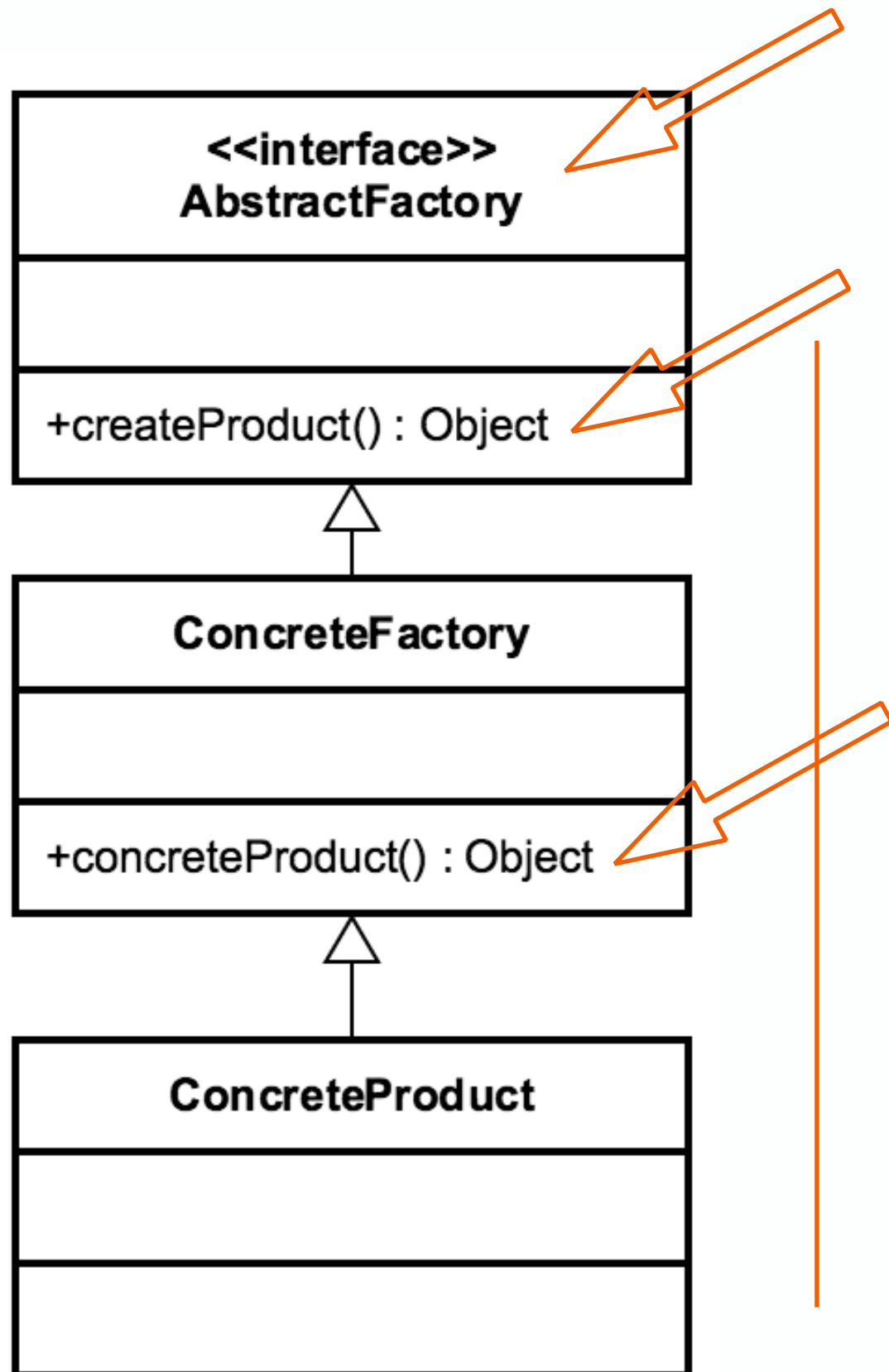
---

# Concepts

- Factory of Factories
- Factory of related objects
- Common Interface
- Defer to Subclasses
- Examples:
  - DocumentBuilder
  - Frameworks



# Design



Groups Factories together

Factory is responsible for lifecycle

Common Interface

Concrete Classes

Parameterized create method

Composition

# Everyday Example - DocumentBuilderFactory

```
DocumentBuilderFactory abstractFactory =  
DocumentBuilderFactory.newInstance();
```

```
DocumentBuilder factory = abstractFactory.newDocumentBuilder();
```

```
Document doc = factory.parse(bais);
```

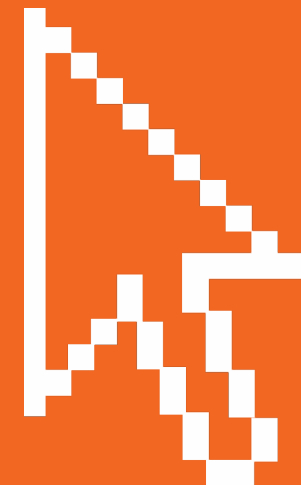
# Exercise AbstractFactory

Code Walkthrough

AbstractFactory

Factory

Product



# Pitfalls

- Complexity
- Runtime switch
- Pattern within a pattern
- Problem specific
- Starts as a Factory



# Contrast

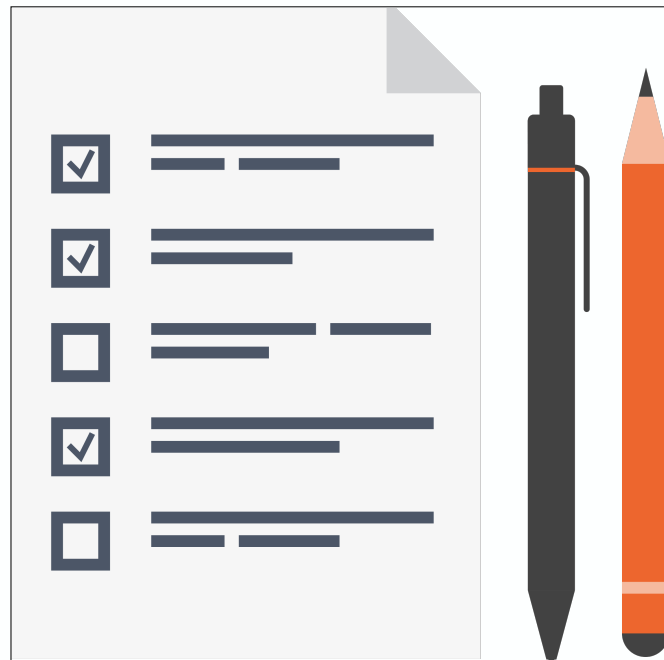
## Factory

- Returns various instances
  - Multiple constructors
- Interface driven
- Adaptable to environment more easily

## AbstractFactory

- Implemented with a Factory
- Hides the Factory
- Abstracts Environment
- Built through Composition

# AbstractFactory Summary



- Group of similar Factories
- Complex
- Heavy abstraction
- Framework pattern