Template Method Pattern

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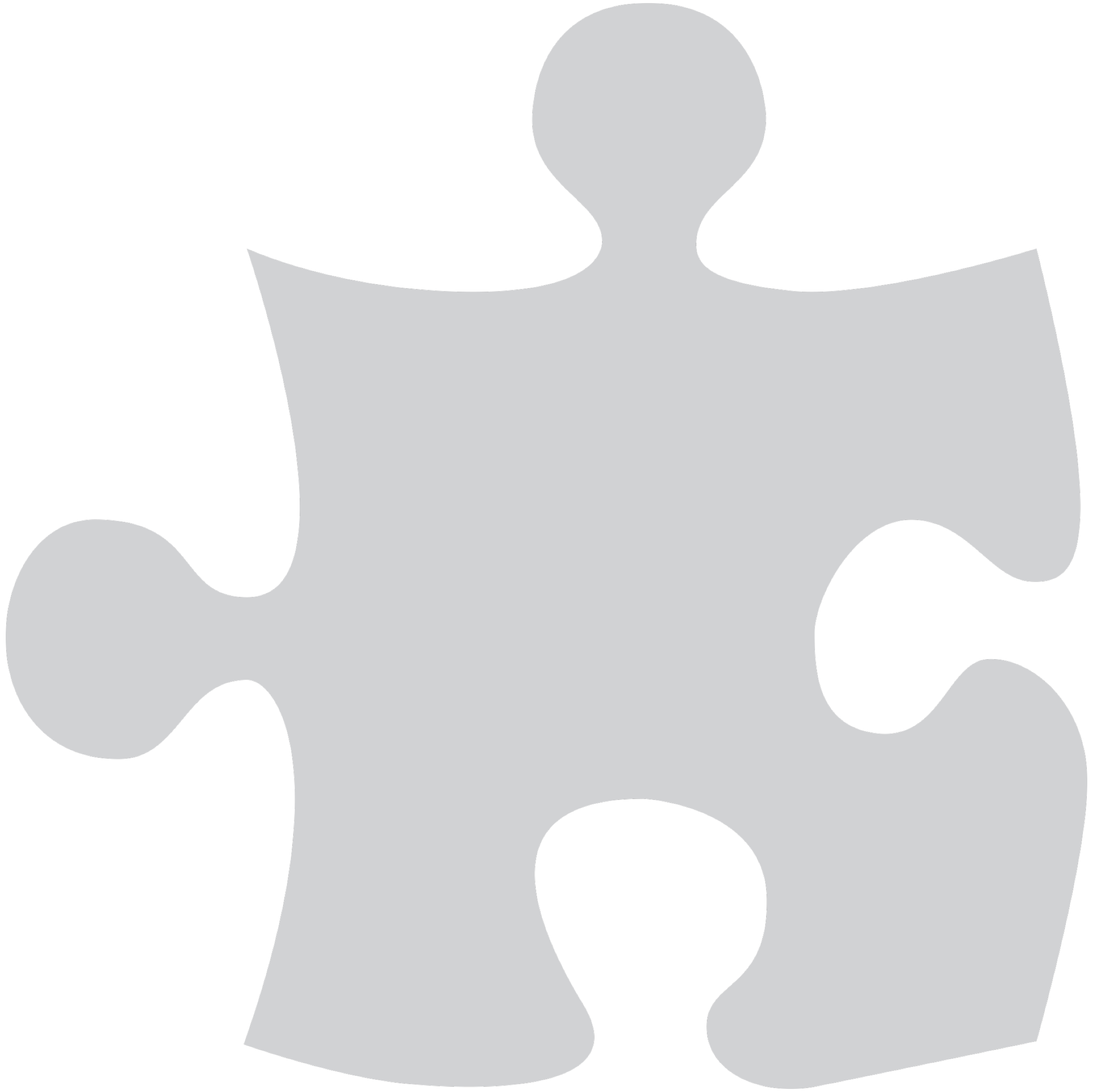
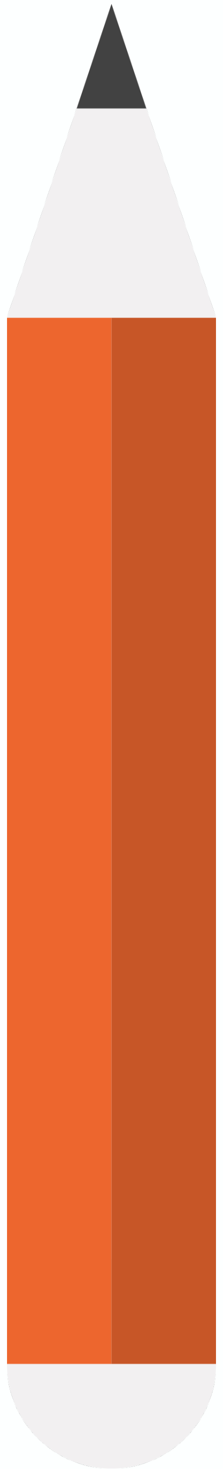
Concepts

- Code reuse
- Common in libraries/frameworks
- IoC
- Algorithm emphasis
- Examples:
  - java.util.Collections#sort()
  - java.util.AbstractList#indexOf()



Design



Abstract Base class

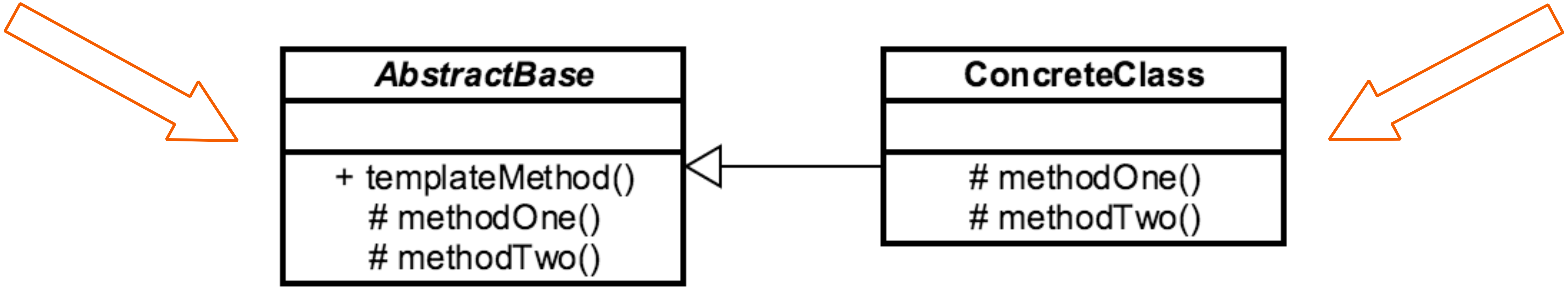
Base calls Child

Hooks

Operations

AbstractBase, ConcreteClass

UML



AbstractBase

+ templateMethod()
# methodOne()
# methodTwo()

ConcreteClass

methodOne()
methodTwo()

Everyday Example - Collections#sort

```
Collections.sort(people, new Comparator<Person>() {
  @Override
  public int compare(Person o1, Person o2) {
    if(o1.getAge() > o2.getAge()) {
      return 1;
    }

    if(o1.getAge() < o2.getAge()) {
      return -1;
    }

    return 0;
  }
});
```

Exercise Template Method

OrderTemplate, WebOrder, StoreOrder

Create Template Method

Pitfalls

- Restrict access
- Confusing hierarchy
- Difficult Program flow

Contrast

Template Method

- Same algorithm
- Class based
- Compile time

Strategy

- Algorithm per Strategy
- Interface based
- Run time

Template Method Summary

- Guarantees Algorithm adherence
- IoC
- Easier implementation