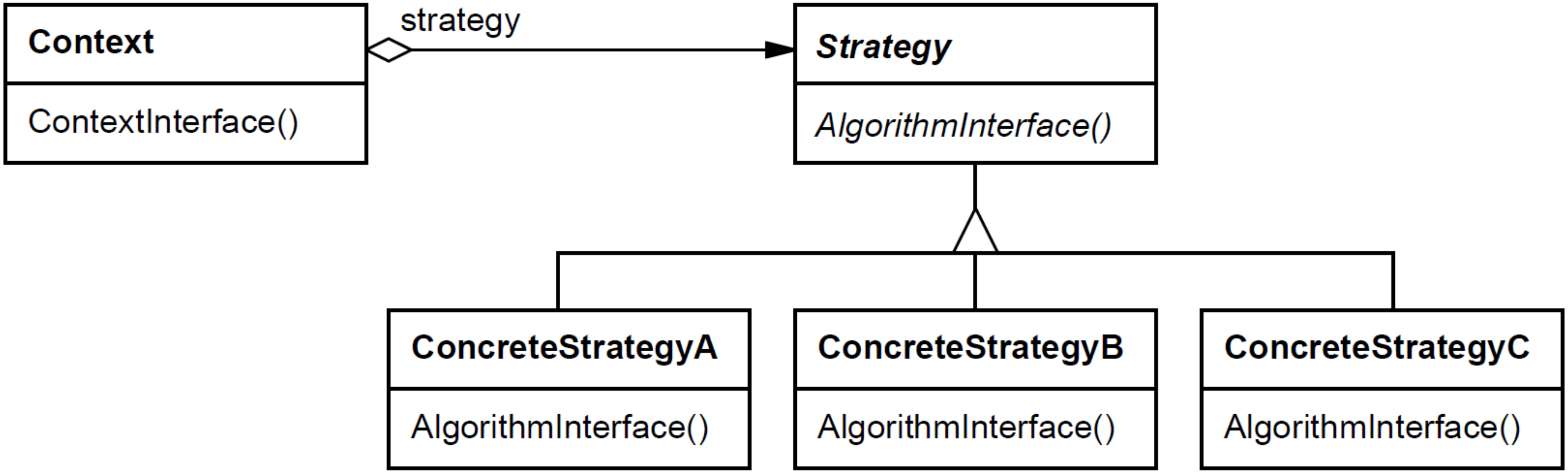
The Strategy Pattern

Structure & Functionality

Douglas C. Schmidt

Learning Objectives in This Lesson

- Recognize how the *Strategy* pattern can be applied in the expression tree processing app to encapsulate variability of algorithm & platform behaviors via common APIs.
- Understand the structure & functionality of the *Strategy* pattern.



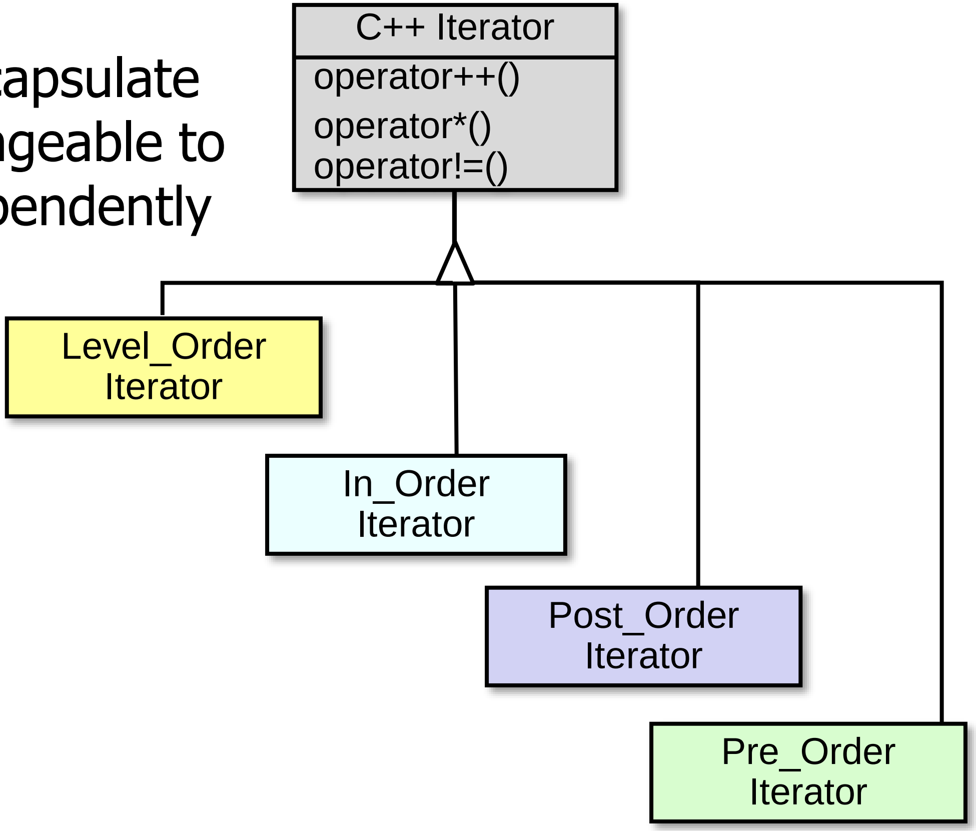
Douglas C. Schmidt

Structure & Functionality of the Strategy Pattern

Strategy GoF Object Behavioral

Intent

- Define a family of algorithms, encapsulate each one, & make them interchangeable to let clients & algorithms vary independently

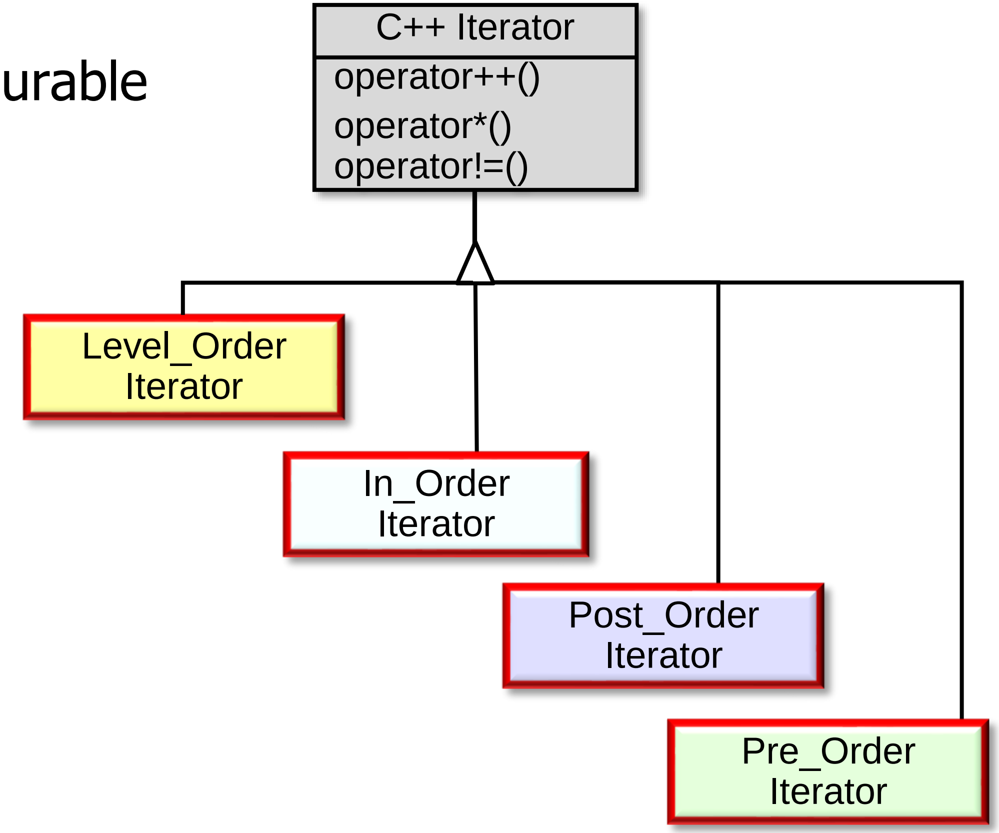


See en.wikipedia.org/wiki/Strategy_pattern

Strategy GoF Object Behavioral

Applicability

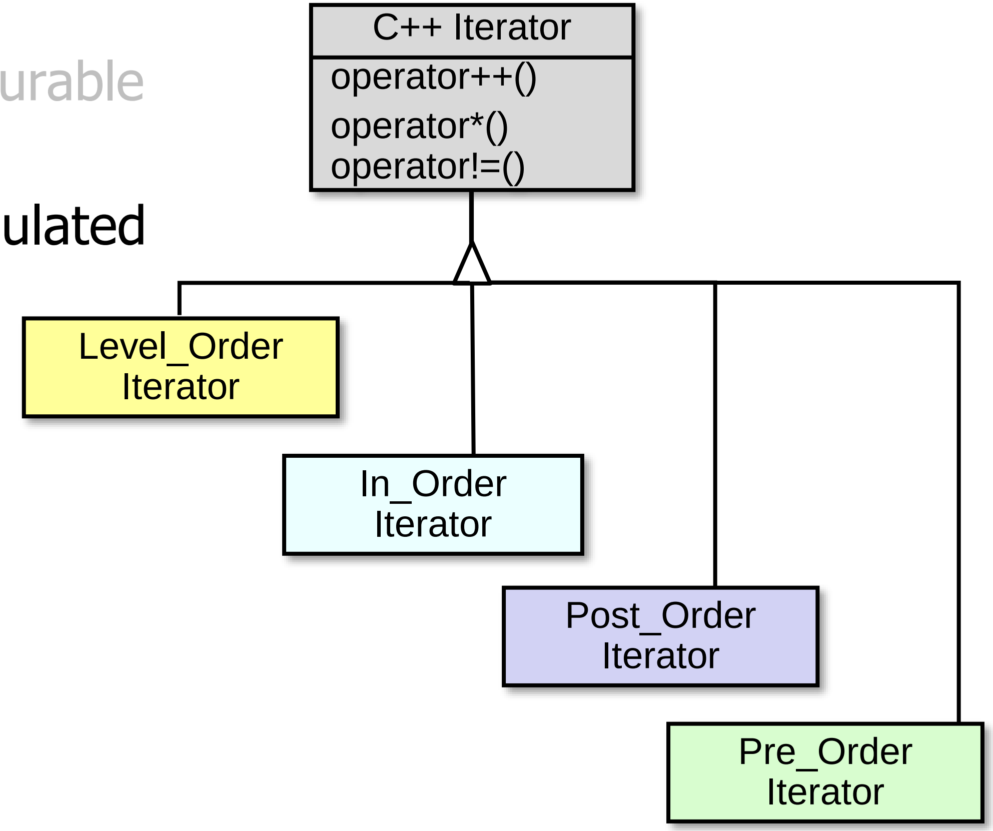
- When an object should be configurable with one of many algorithms



Strategy GoF Object Behavioral

Applicability

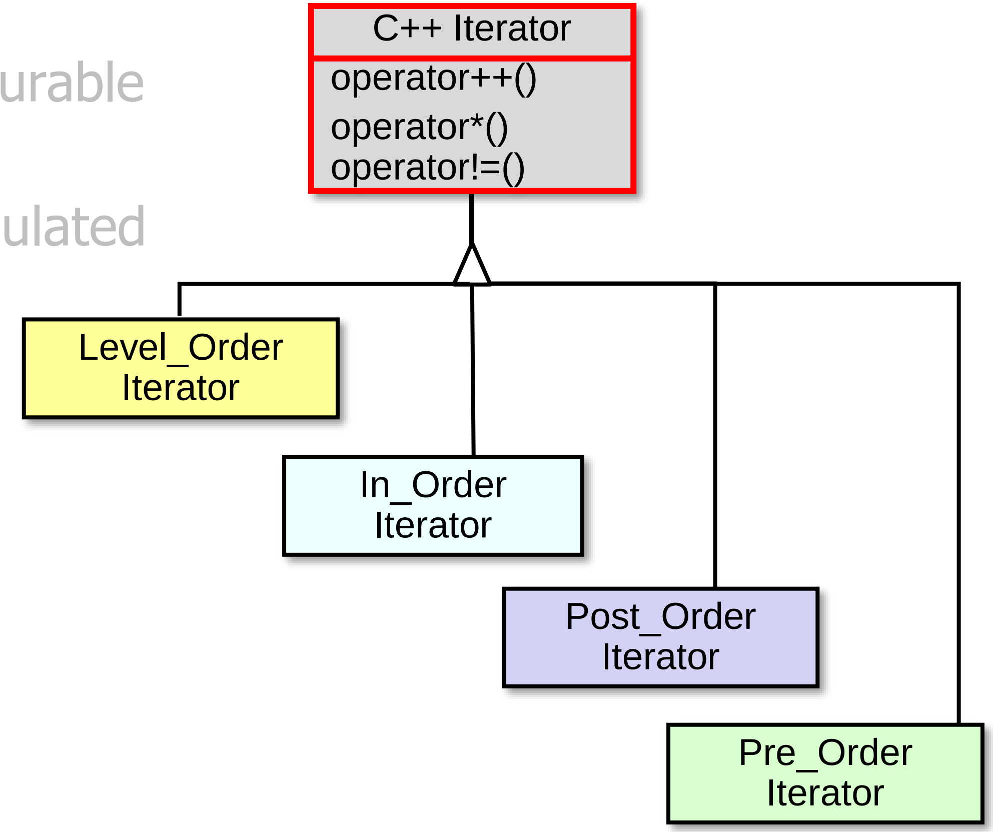
- When an object should be configurable with one of many algorithms
- *And* all algorithms can be encapsulated



Strategy GoF Object Behavioral

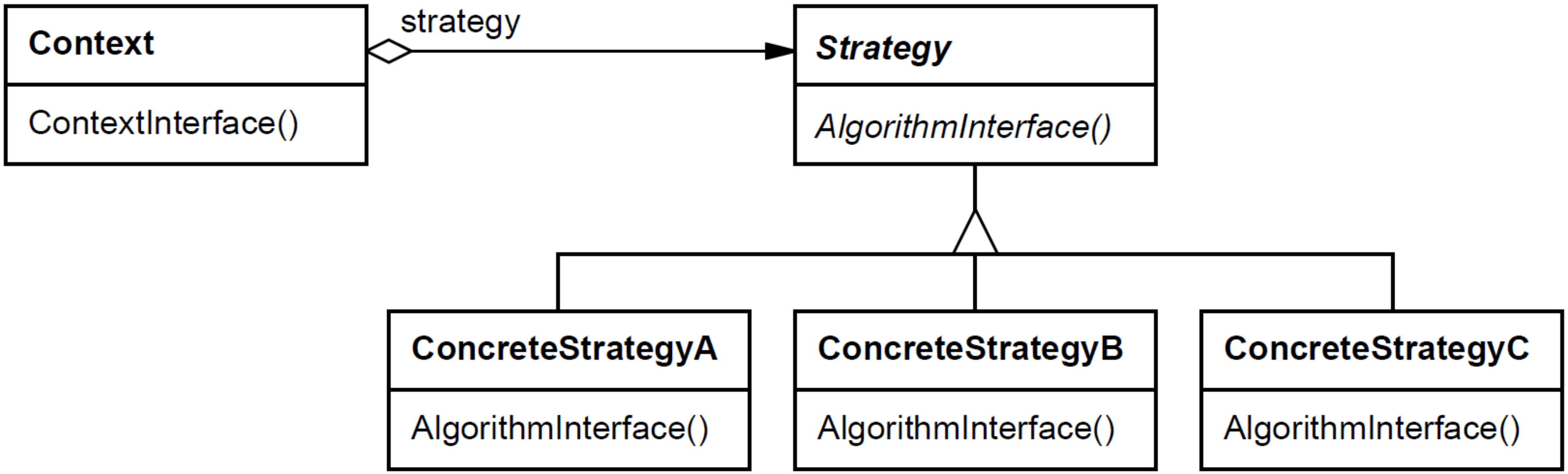
Applicability

- When an object should be configurable with one of many algorithms
- *And* all algorithms can be encapsulated
- *And* one interface covers all encapsulations



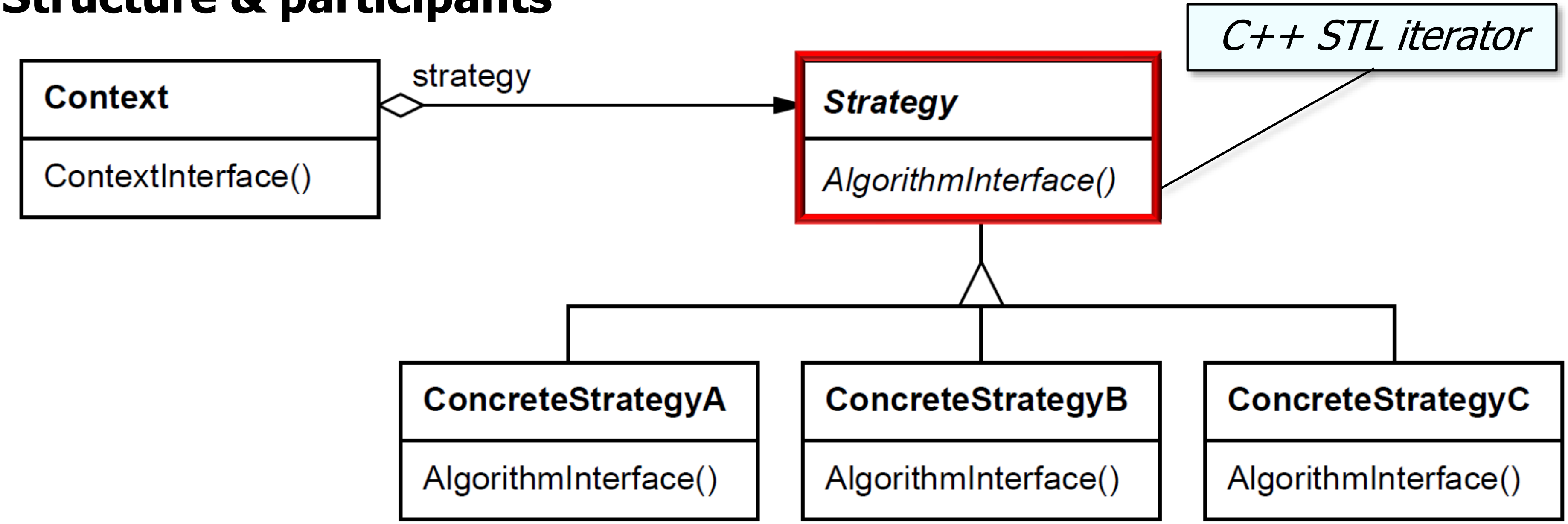
Strategy GoF Object Behavioral

Structure & participants



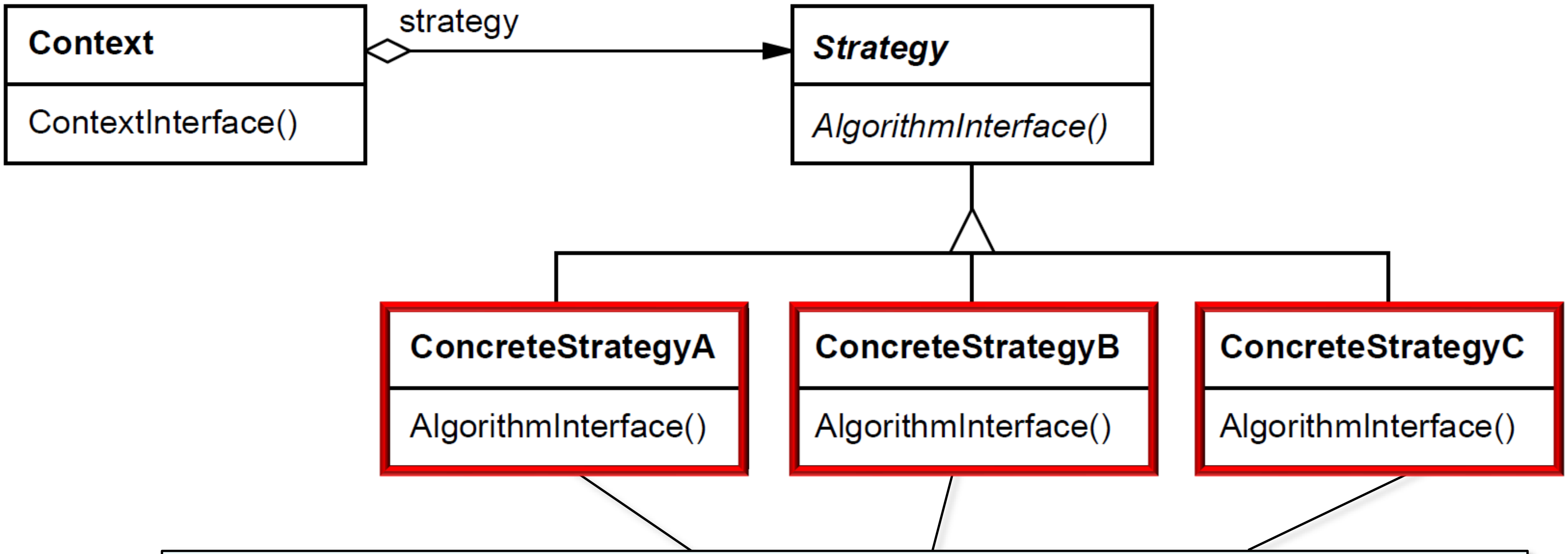
Strategy GoF Object Behavioral

Structure & participants



Strategy GoF Object Behavioral

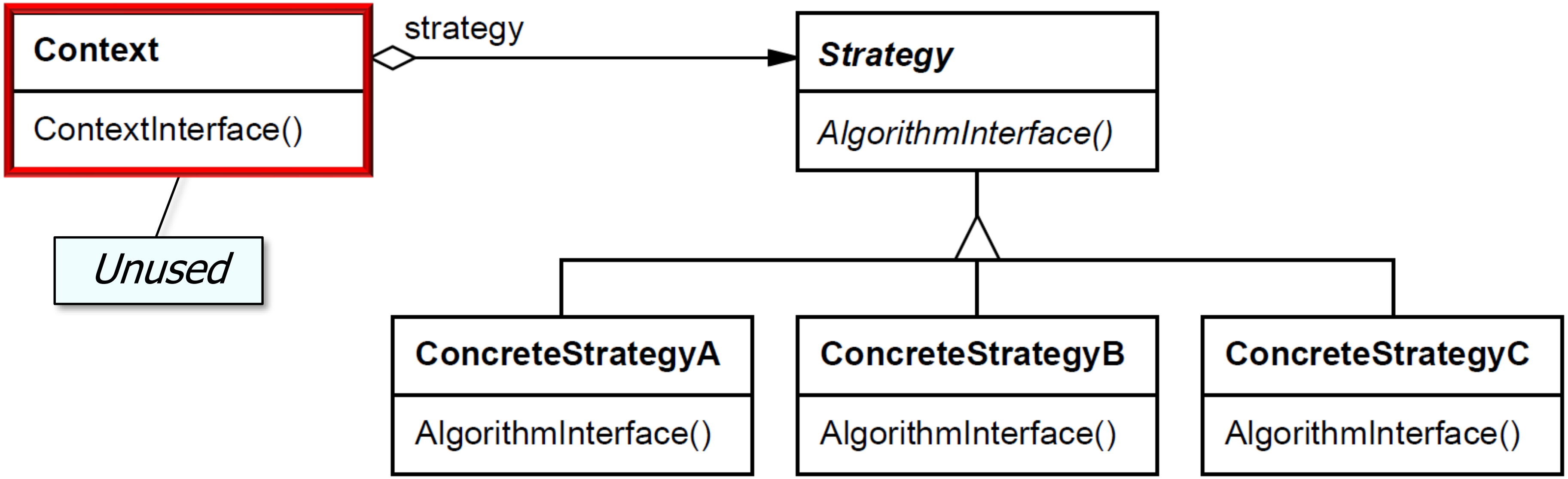
Structure & participants



Pre_Order_ET_Iter_Impl, Post_Order_ET_Iter_Impl, Level_Order_ET_Iterator_Impl, In_Order_ET_Iter_Impl, etc.

Strategy GoF Object Behavioral

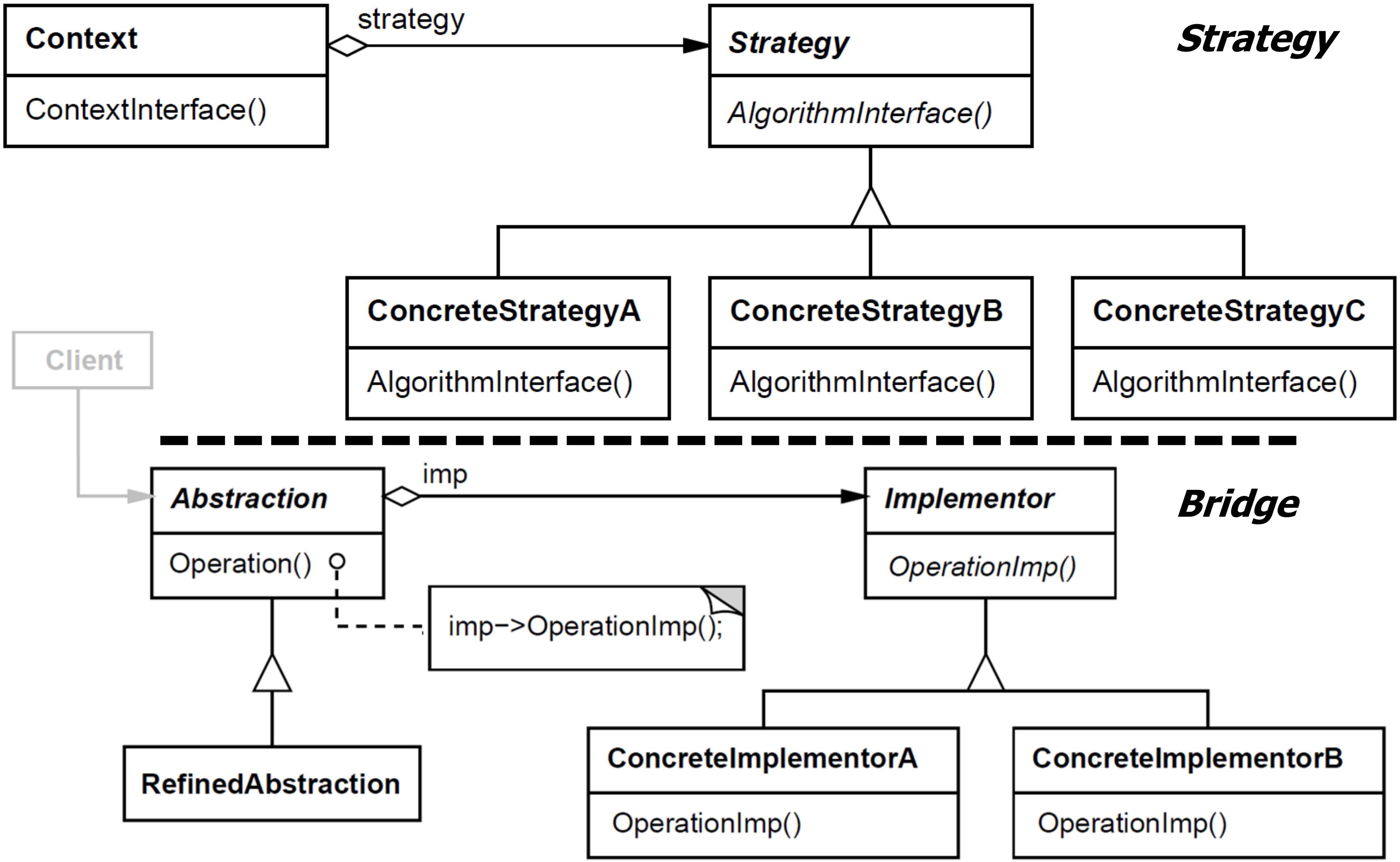
Structure & participants



Context is primarily useful if some strategies need more than the common API.

Strategy GoF Object Behavioral

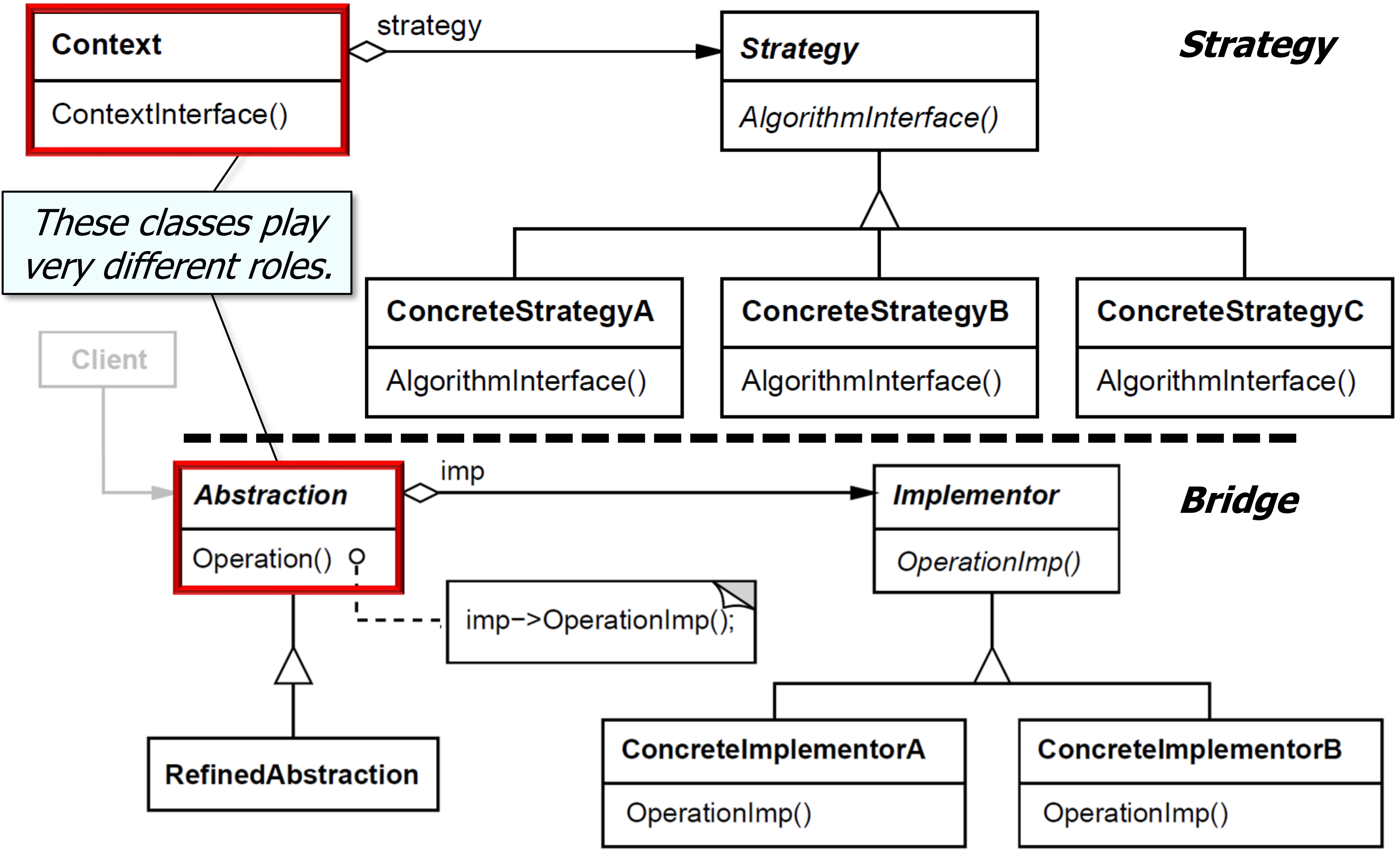
Structure & participants



Strategy (object behavioral) closely resembles *Bridge* (object structural).

Strategy GoF Object Behavioral

Structure & participants



These classes play very different roles.

Strategy (object behavioral) closely resembles *Bridge* (object structural).