Cascading Factories to Eliminate Dependencies

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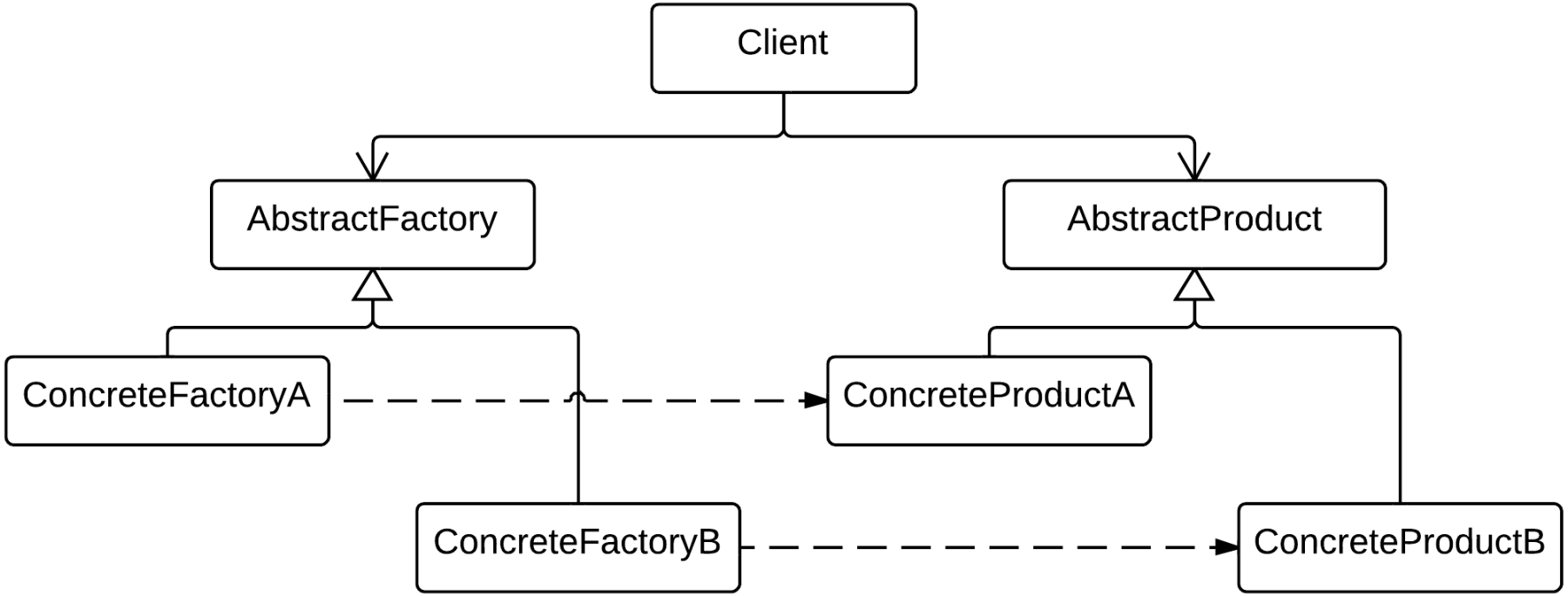
Definition of Abstract Factory

"Provide an interface for creating families of related or dependent objects without specifying their concrete classes."

Gama et al., Design Patterns: Elements of Reusable Object-Oriented Software



Example: Booking Application

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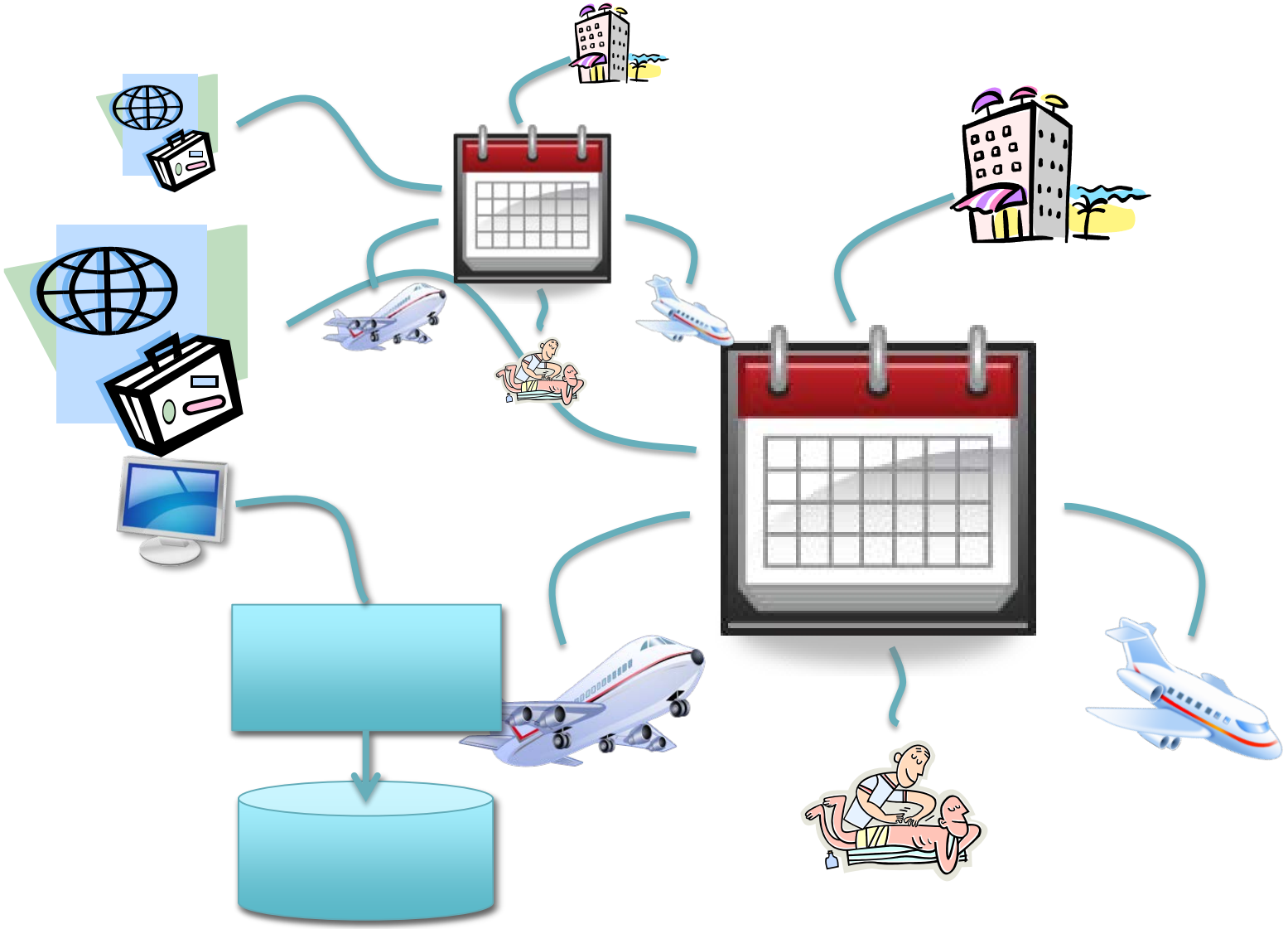

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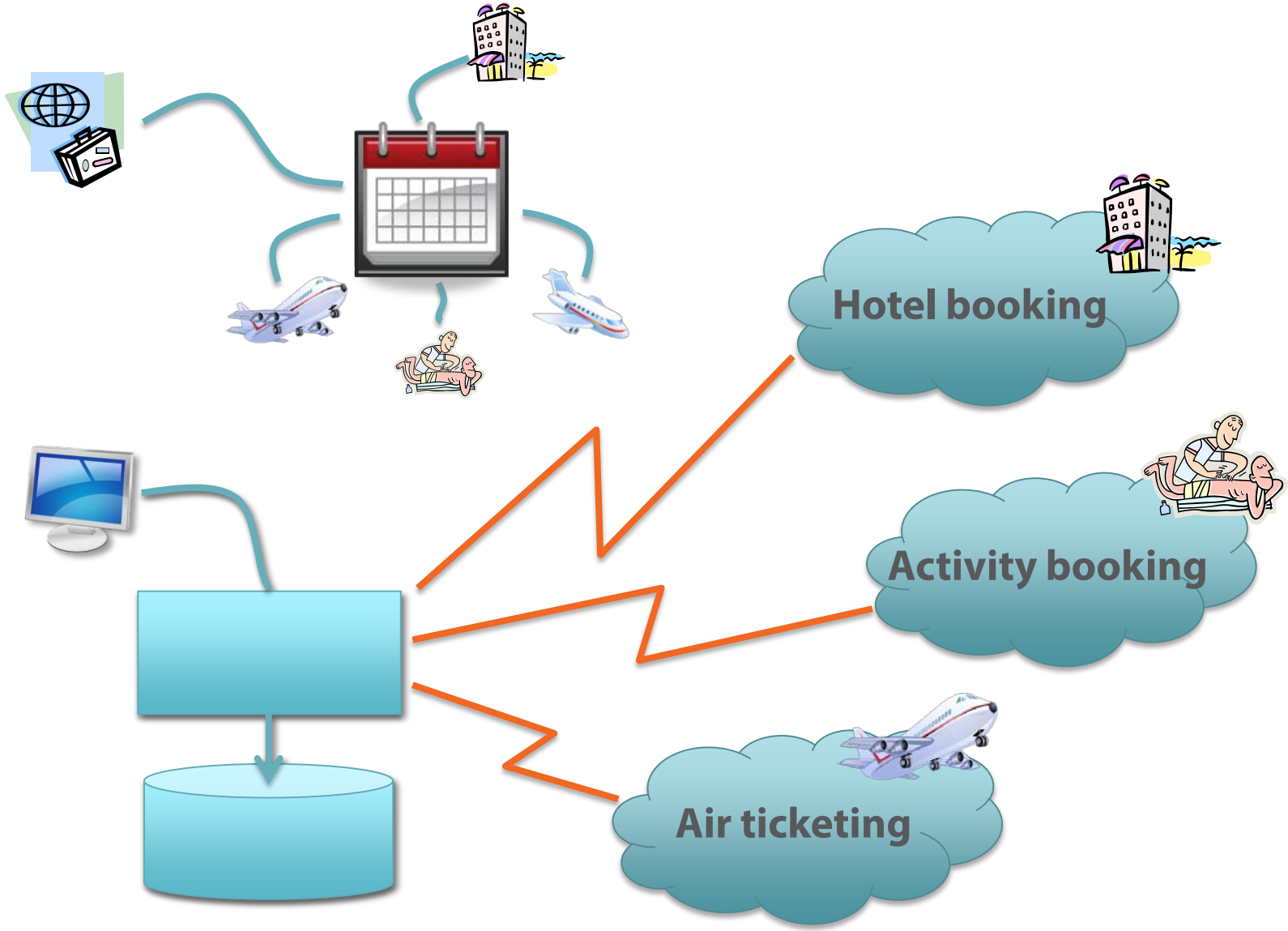
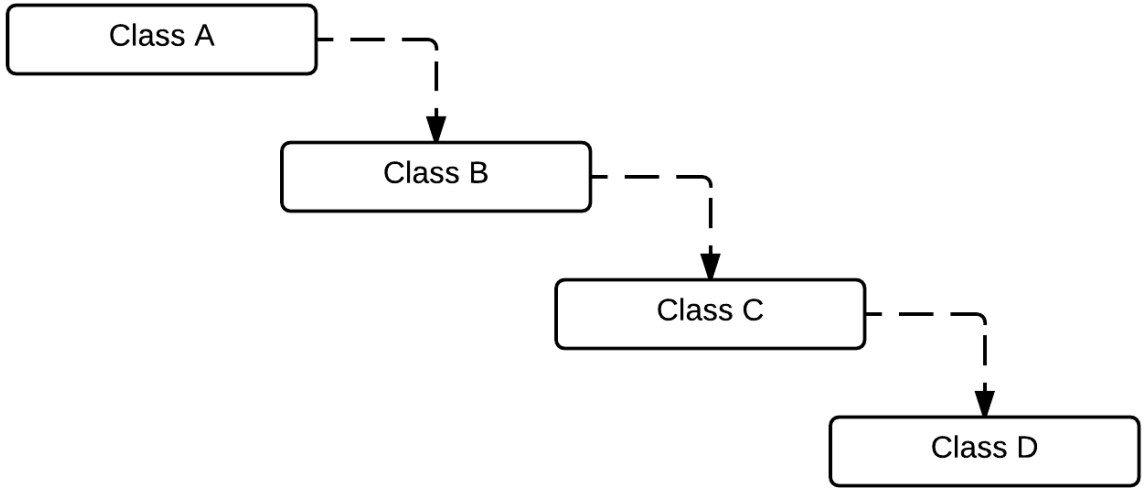


Classes With Dependencies



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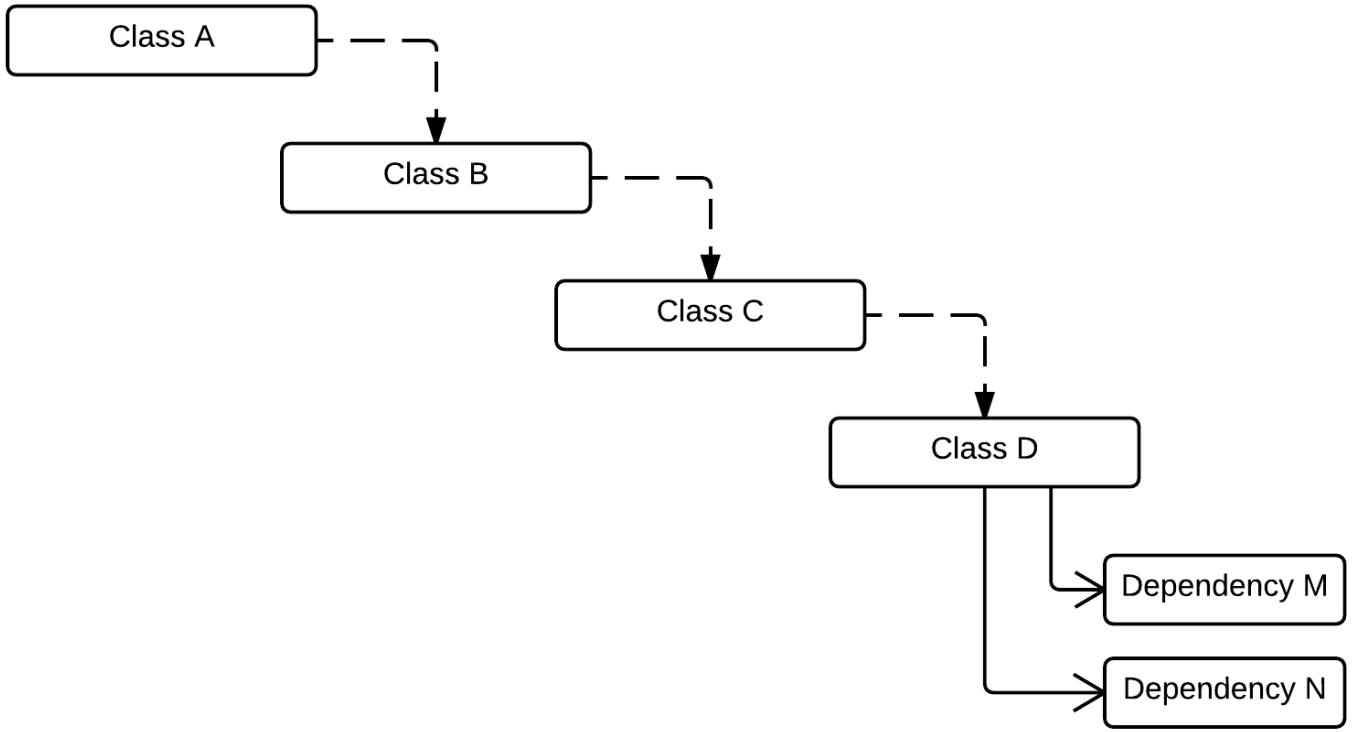

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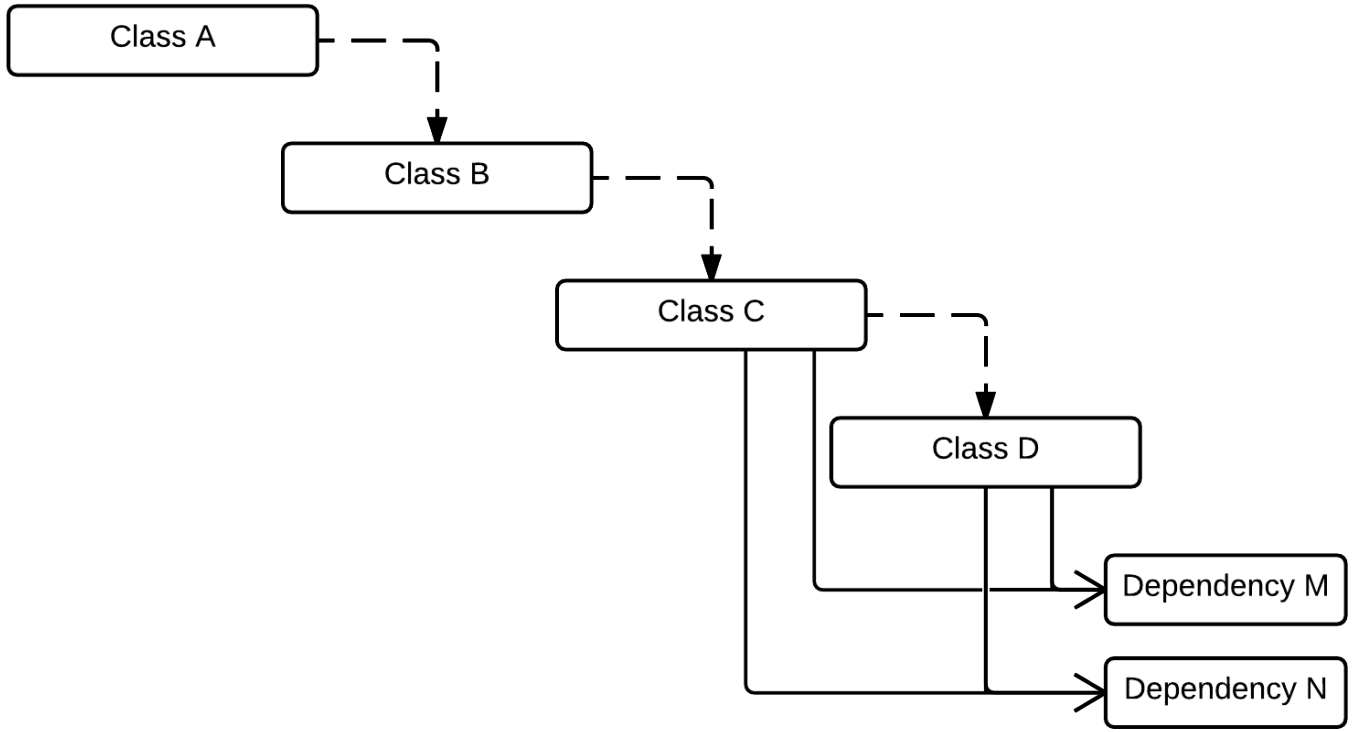

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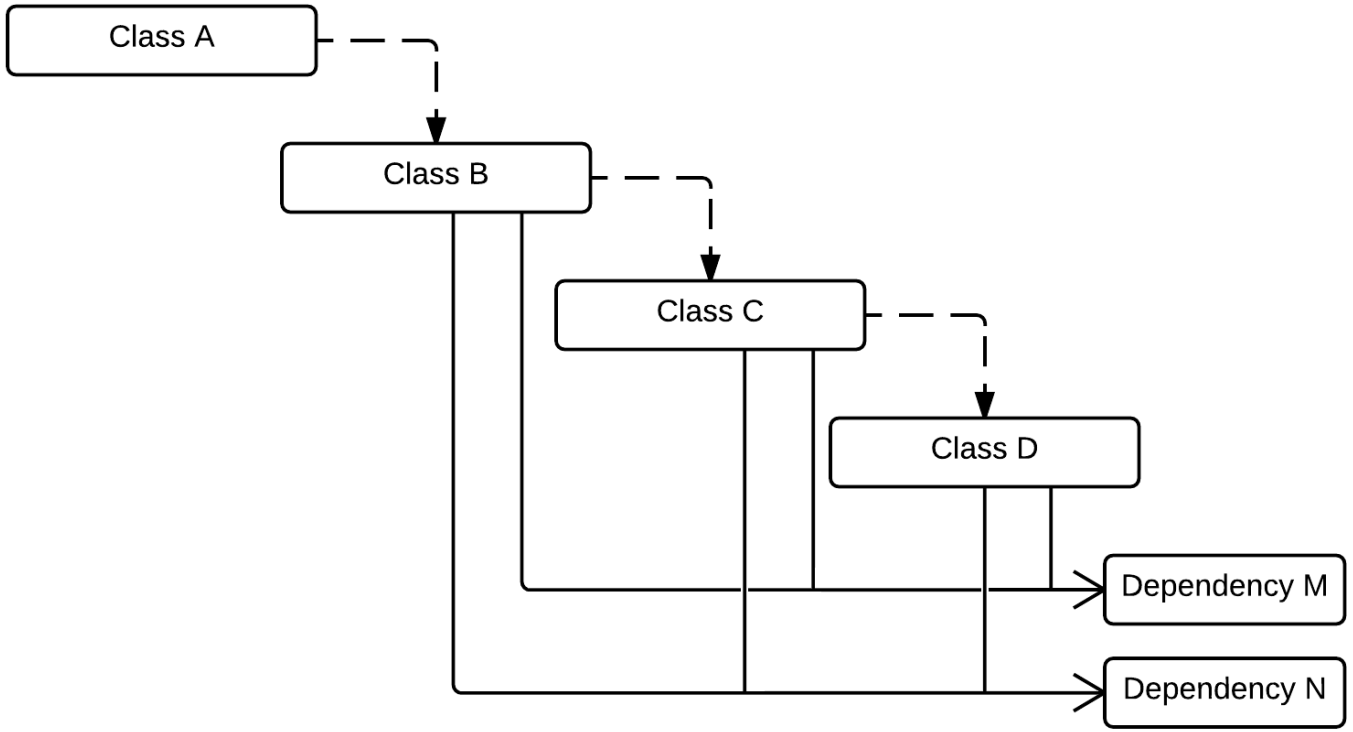

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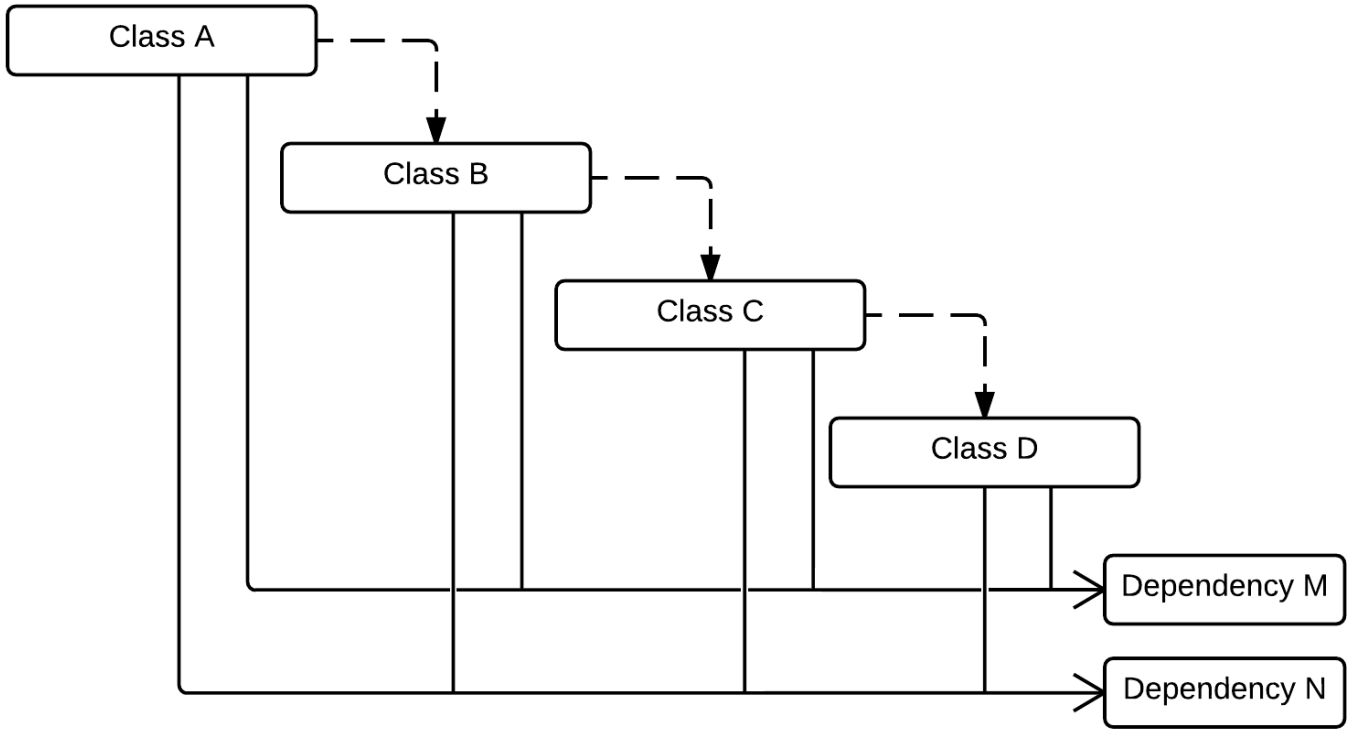

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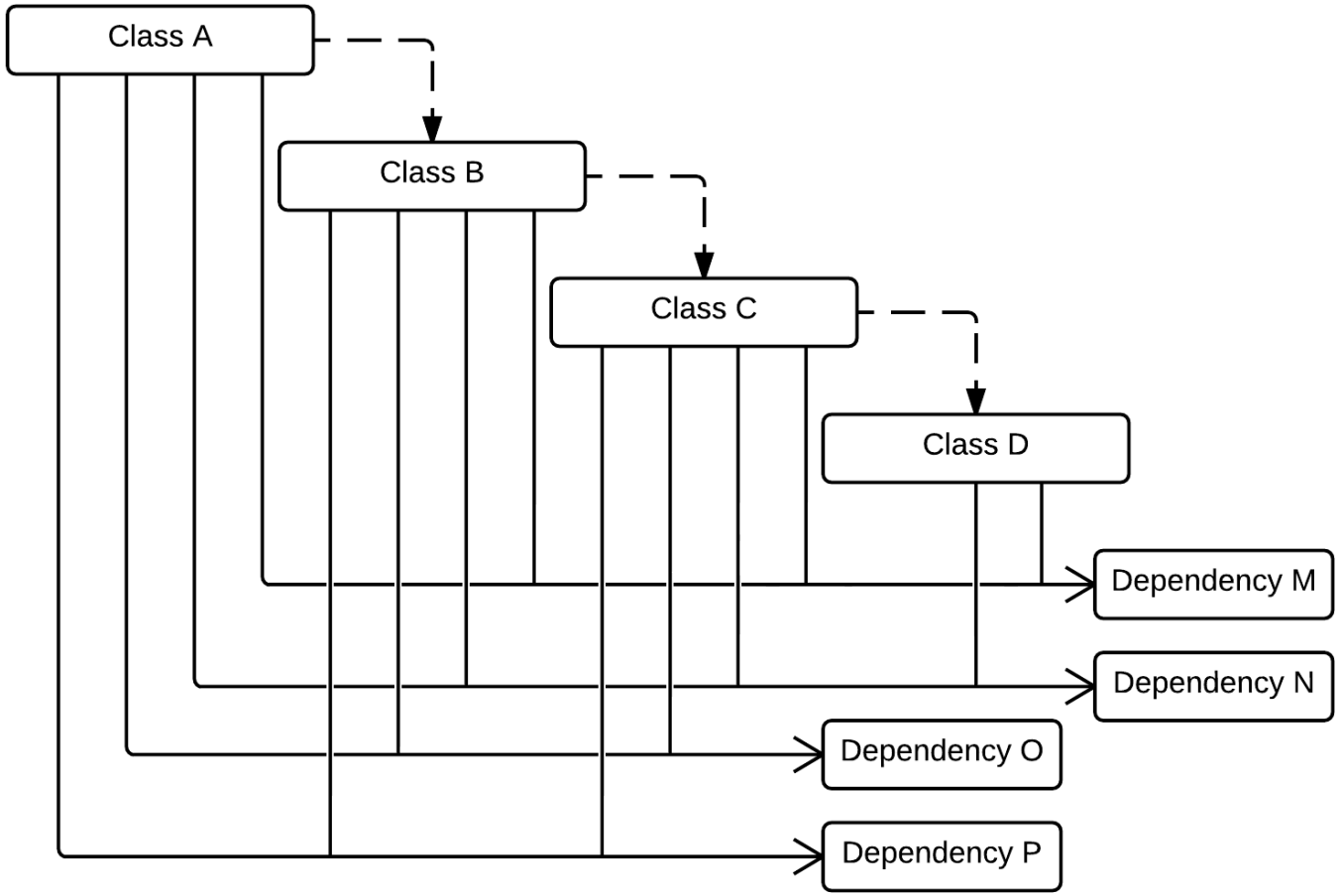

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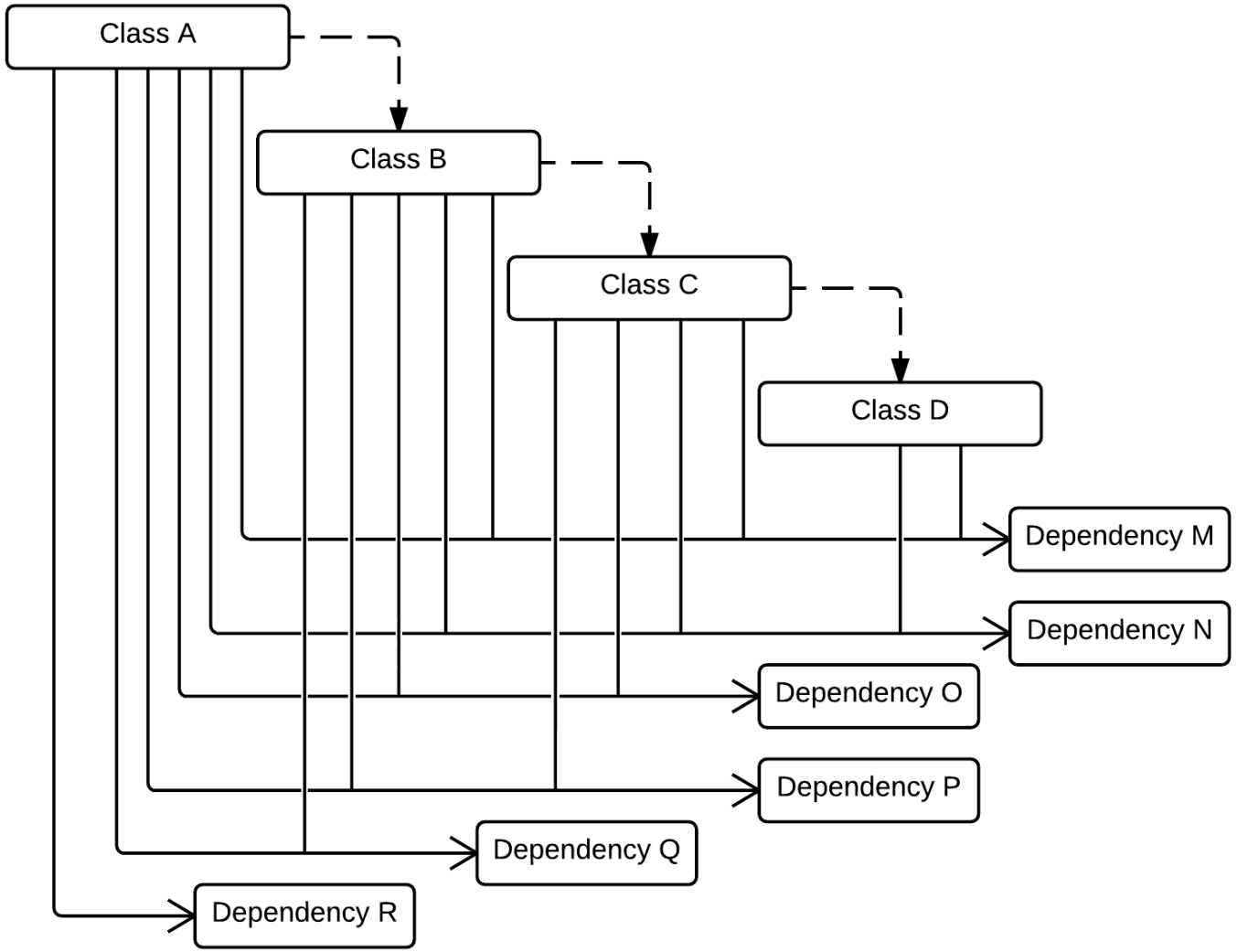

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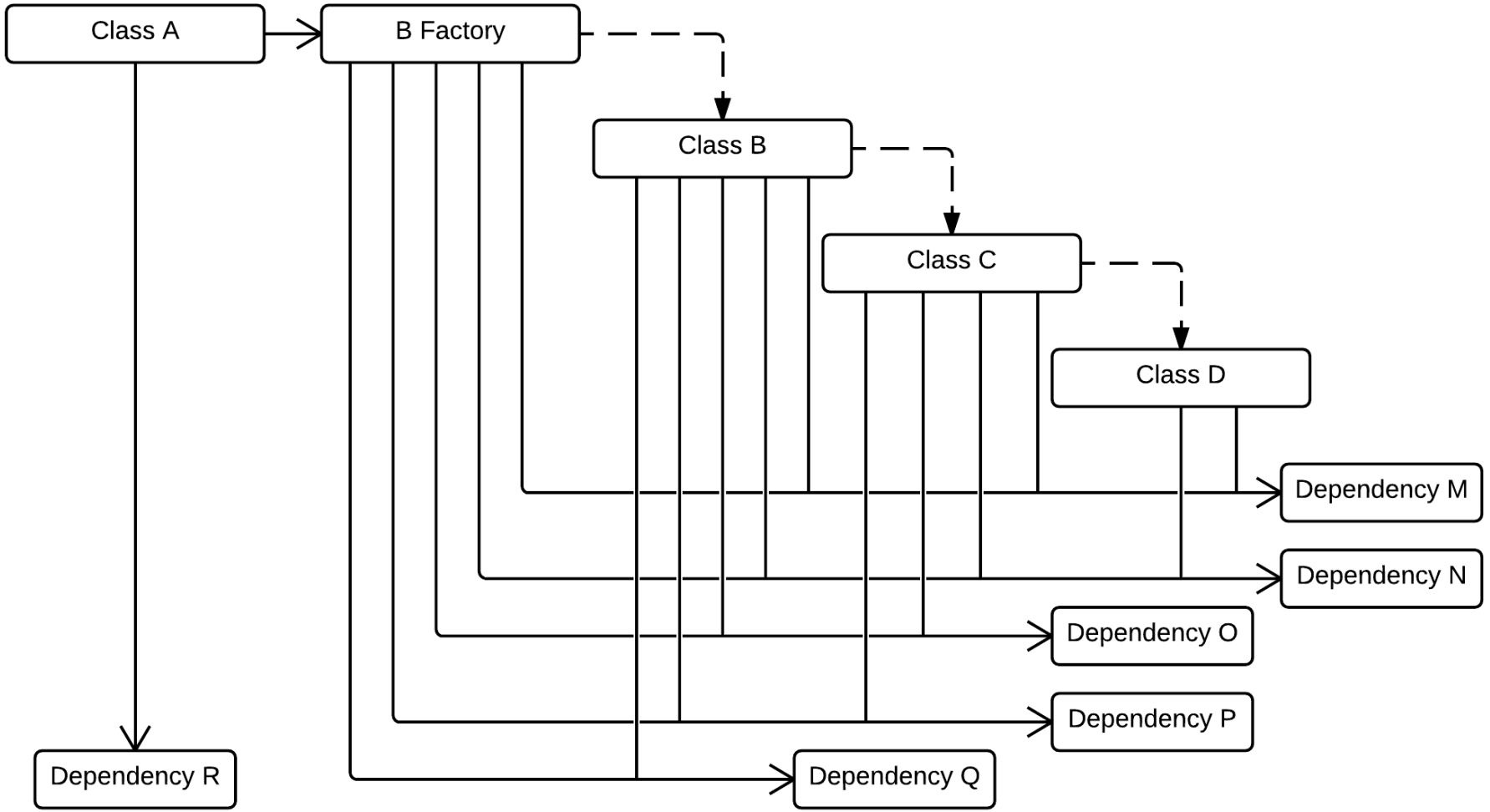

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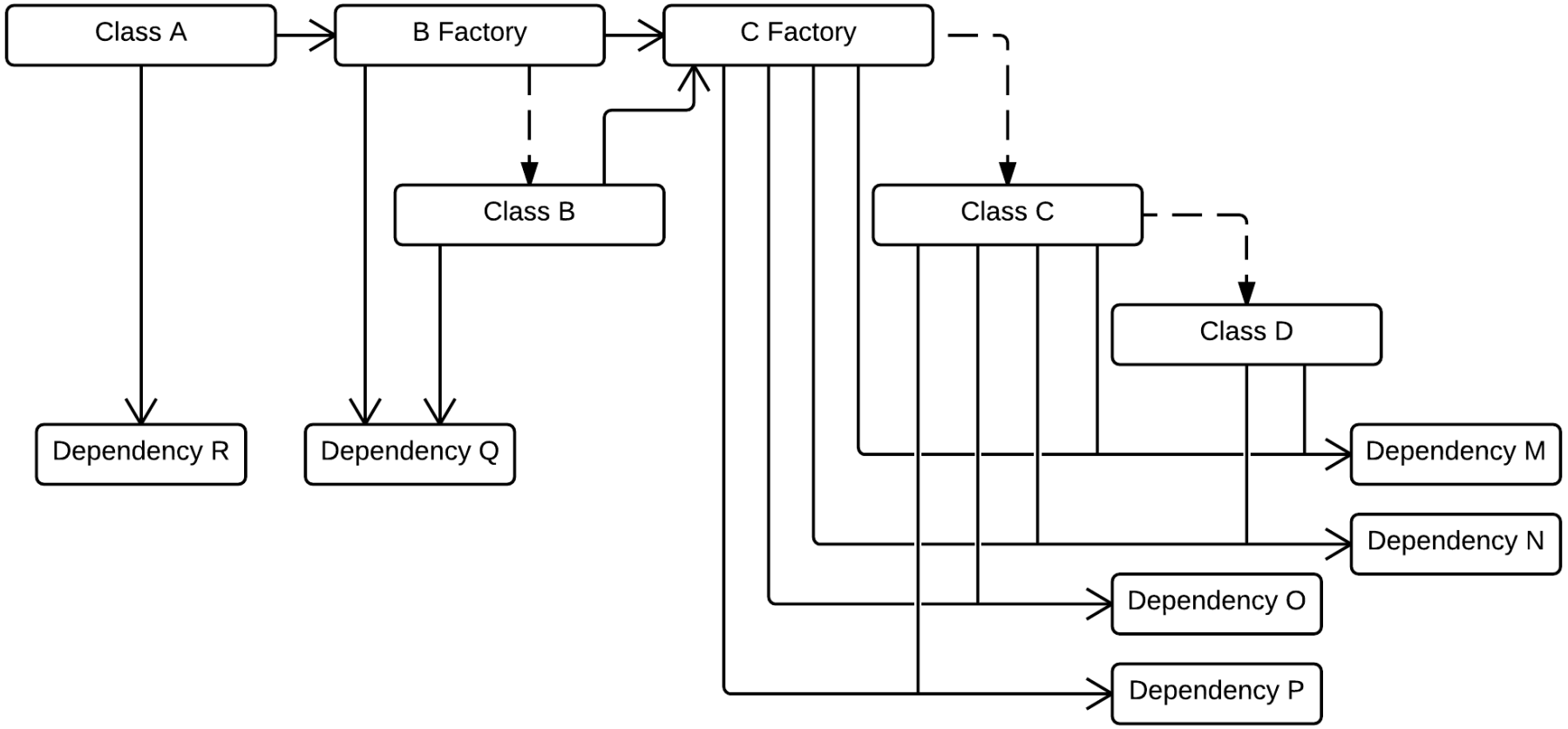

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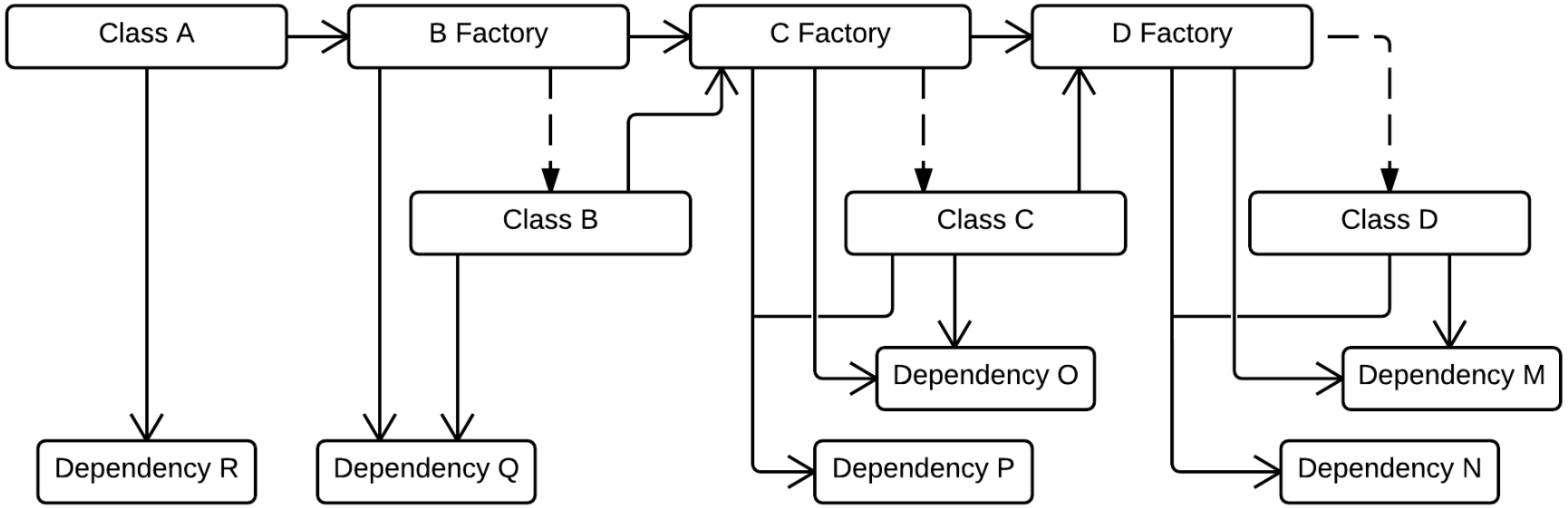

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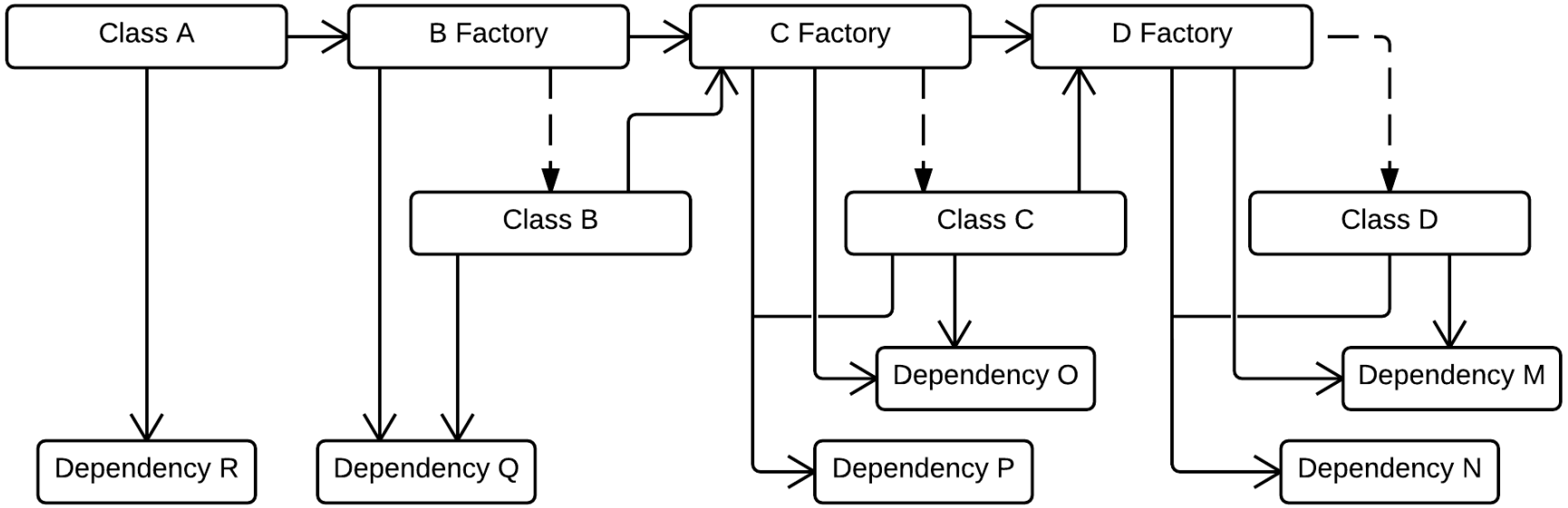
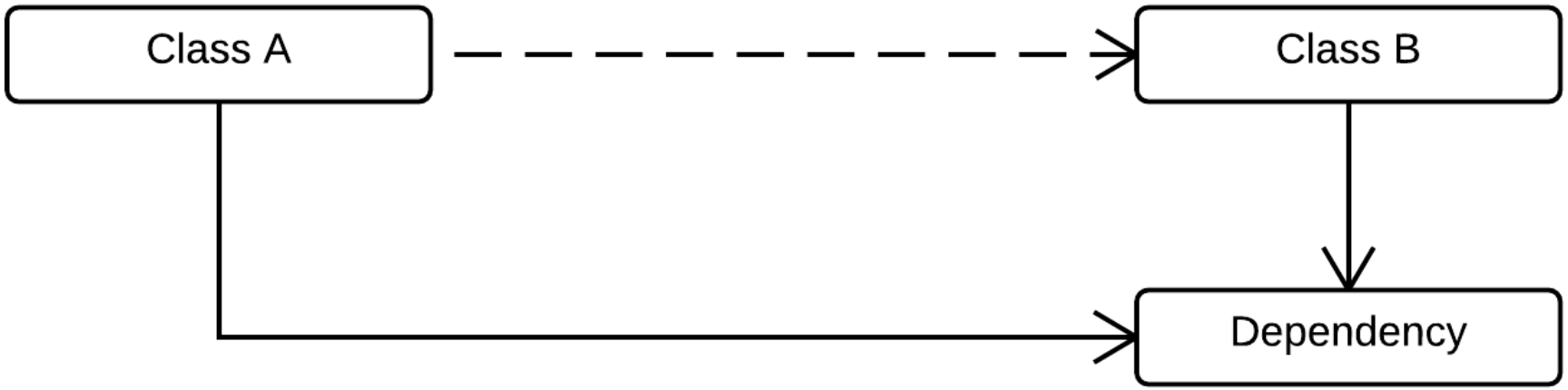


Removing Dependencies



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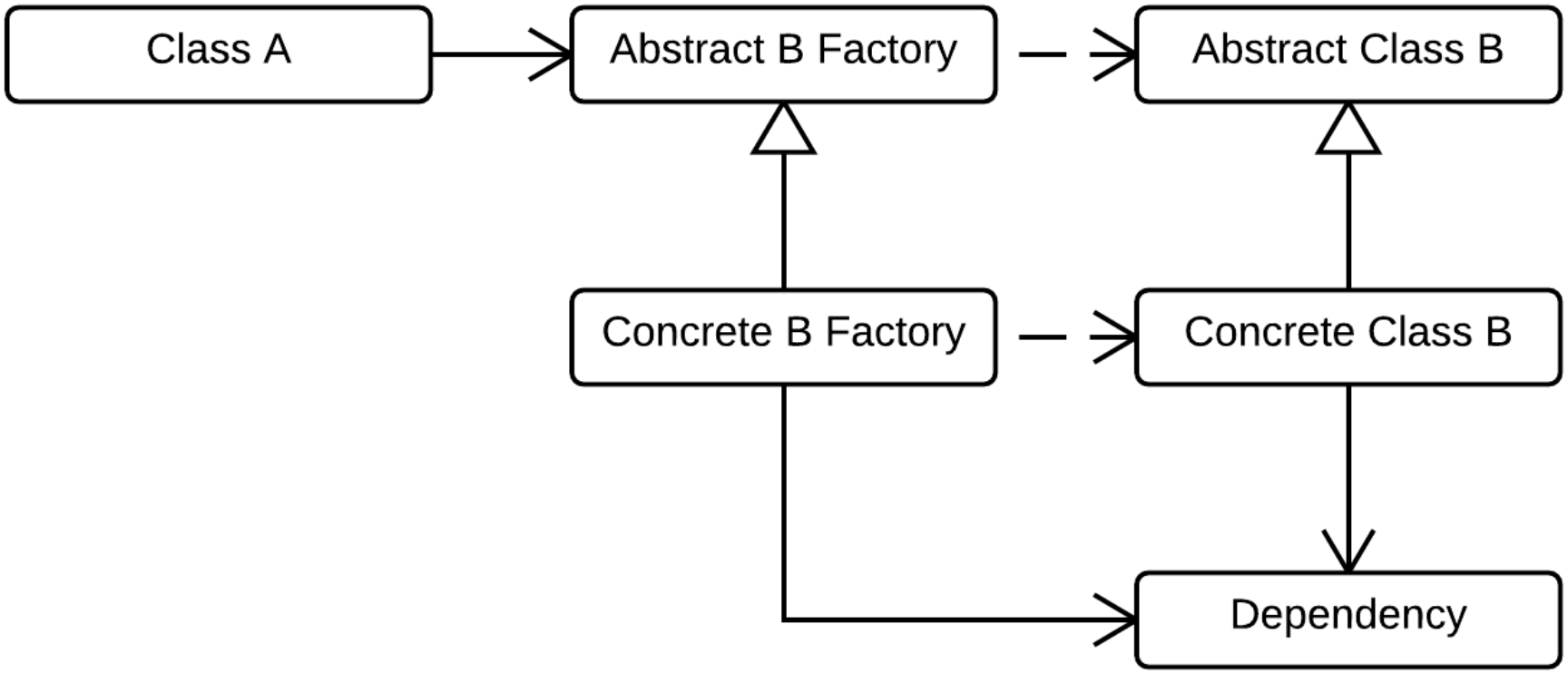

Summary

- Abstract Factory pattern
  - Decouples the client from concrete product
    - Client is not aware which product will be instantiated by the concrete factory
  - Test double can be the alternative concrete product
    - Abstract Factory may be applied if dependency is going to be faked in testing
- Alternative application of the Abstract Factory pattern
  - Concrete product leaks out dependencies into the client
  - Abstract factory hides dependencies
  - Dependencies are provided by the Inversion of Control (IoC) container