PEMROGRAMAN LANJUT

Code Smells: Coupler

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2021

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Coupler

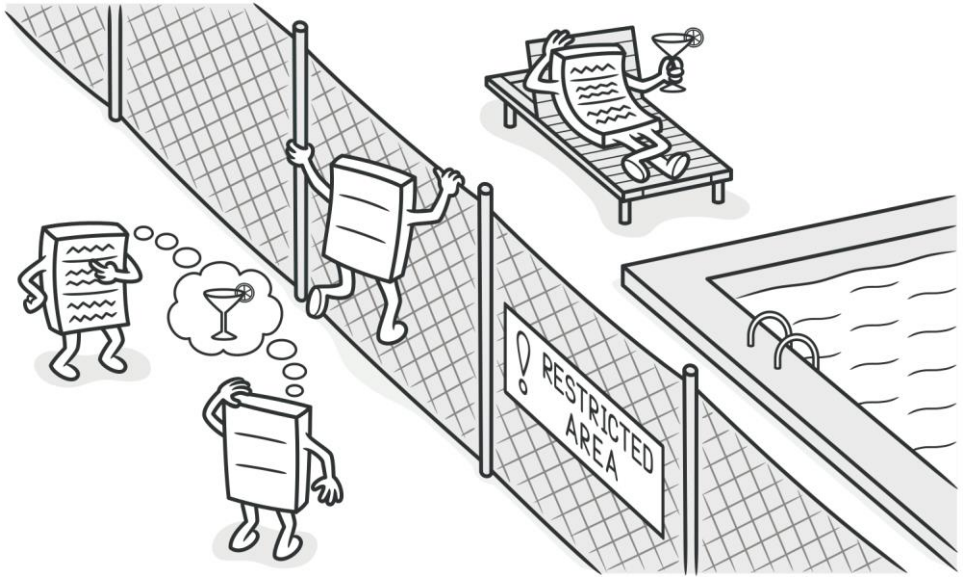
All the smells in this group contribute to excessive coupling between classes or show what happens if coupling is replaced by excessive delegation

Coupler

- Feature Envy
- Inappropriate Intimacy
- Message Chains
- Middle Man

Feature Envy

- A method accesses the data of another object more than its own data.

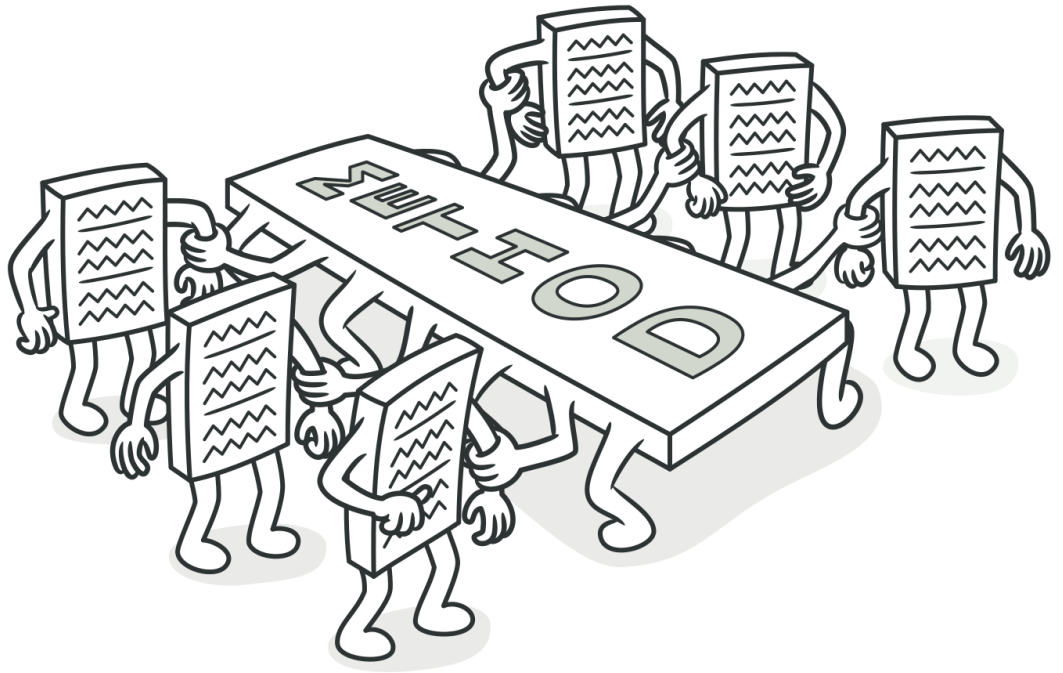


Feature Envy: Refactoring

- **Move Method:** If a method clearly should be moved to another place.
- **Extract Method:** to move the part of a method which accesses the data of another object.
- If a method uses functions from several other classes:
  - Determine which class contains most of the data used.
  - Place the method in this class along with the other data.
  - Alternatively, use **Extract Method** to split the method into several parts that can be placed in different places in different classes.

Inappropriate Intimacy

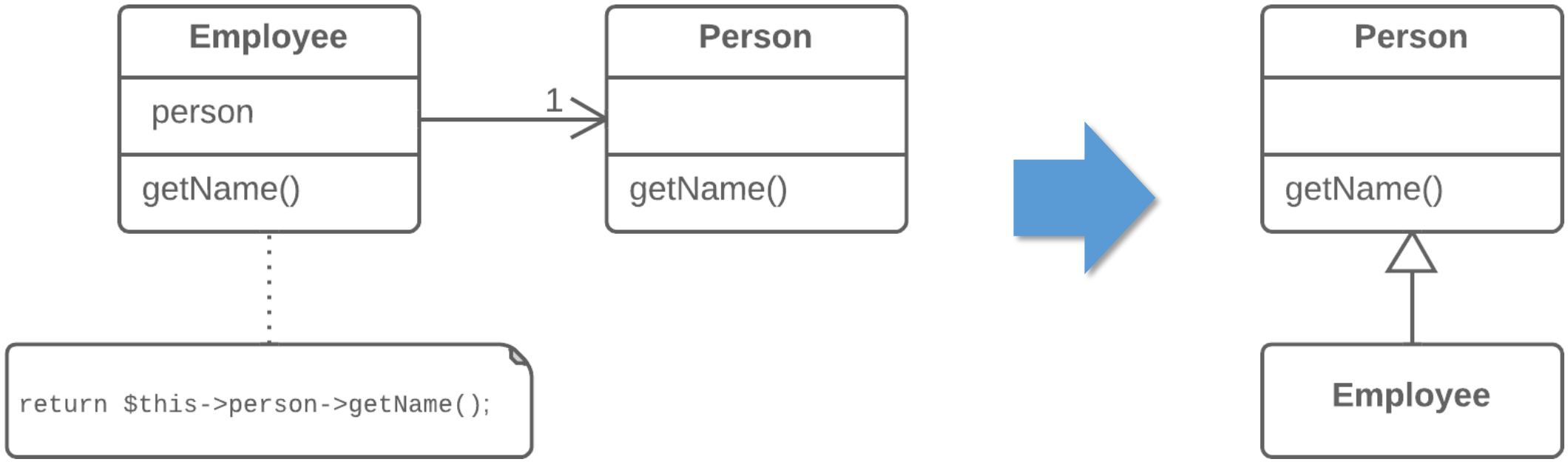
- One class uses the internal fields and methods of another class



Inappropriate Intimacy: Refactoring

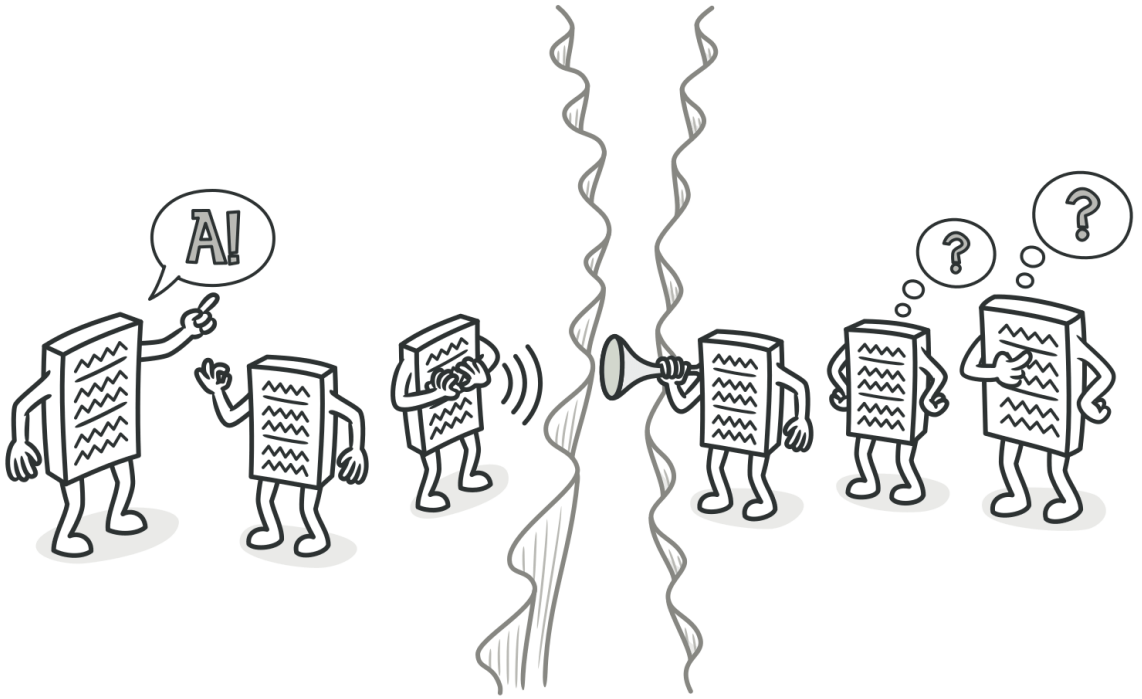
- **Move Method** and **Move Field:** If the original class doesn't need these method and field, move those parts of original class to the class in which those parts are used.
- **Replace Delegation with Inheritance:** If those classes can be turned into subclass and superclass.

Case Study: Replace Delegation with Inheritance



Message Chains

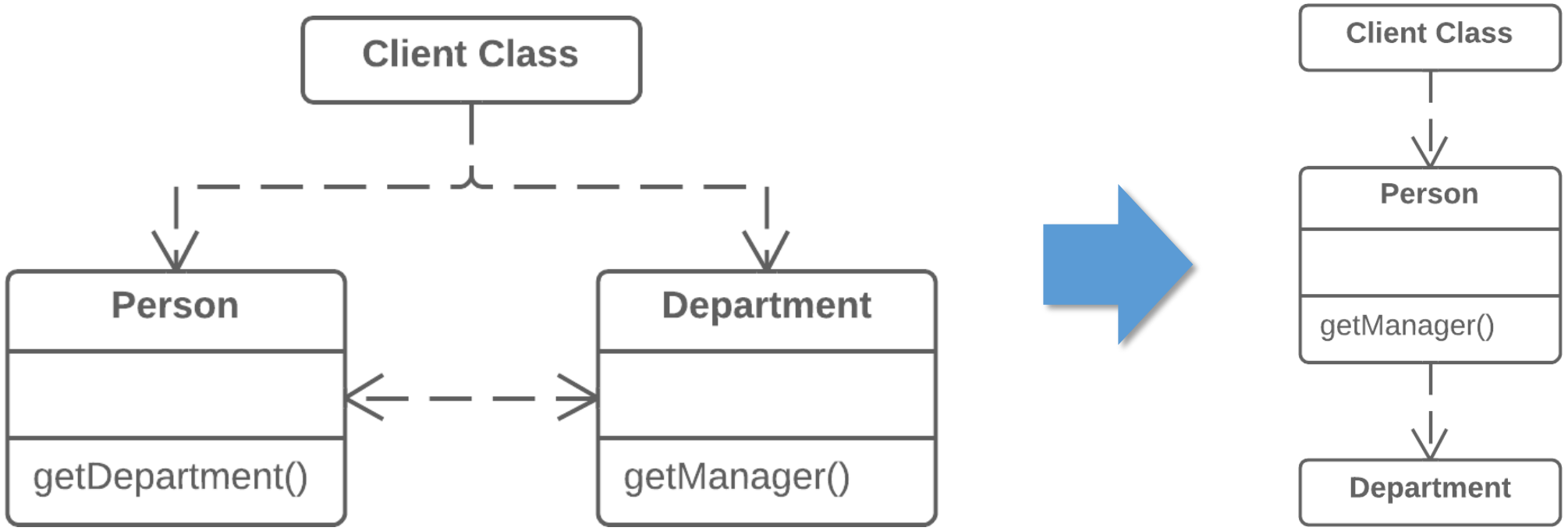
- In code you see a series of calls resembling $a->b()->c()->d()
- These chains mean that the client is dependent on navigation along the class structure.
- Any changes in these relationship require modifying the client



Message Chains: Refactoring

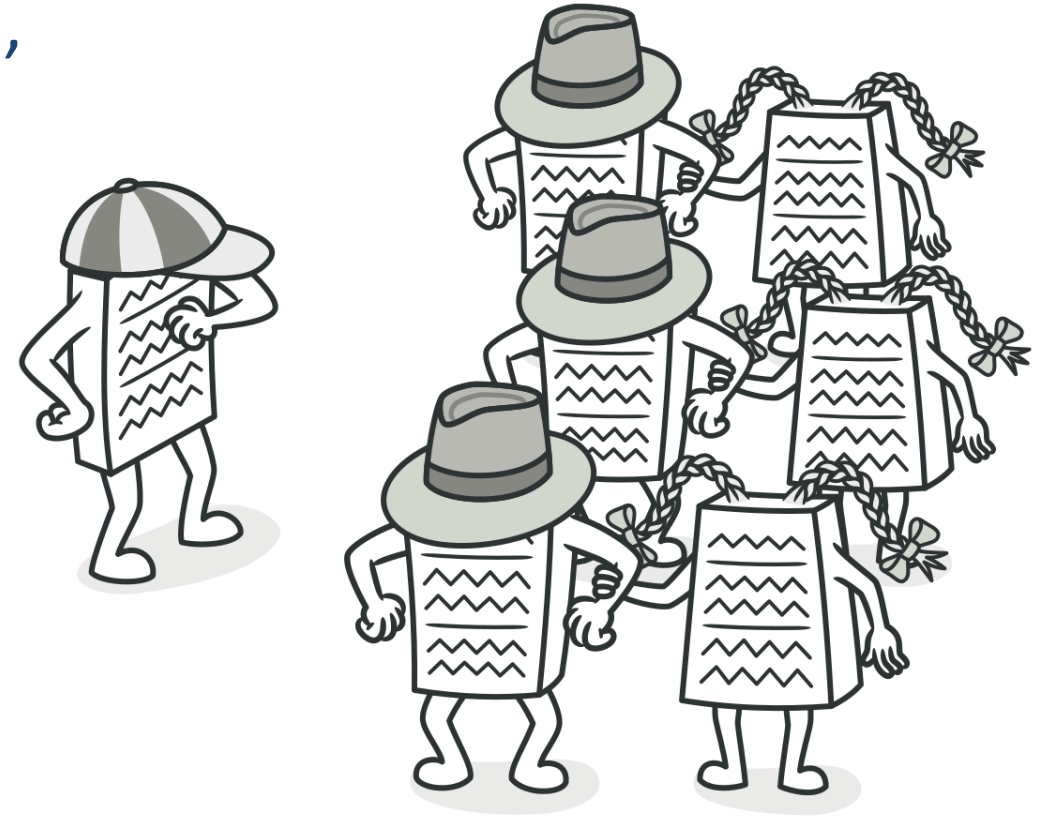
- **Hide Delegate:** To delete a message chain. Use cautiously, excessive usage of this refactoring method may cause other code smell (Middle Man).
- **Extract Method** and **Move Method:** If it makes more sense to move the functionality to the beginning of the chain.

Case Study: Hide Delegate



Middle Man

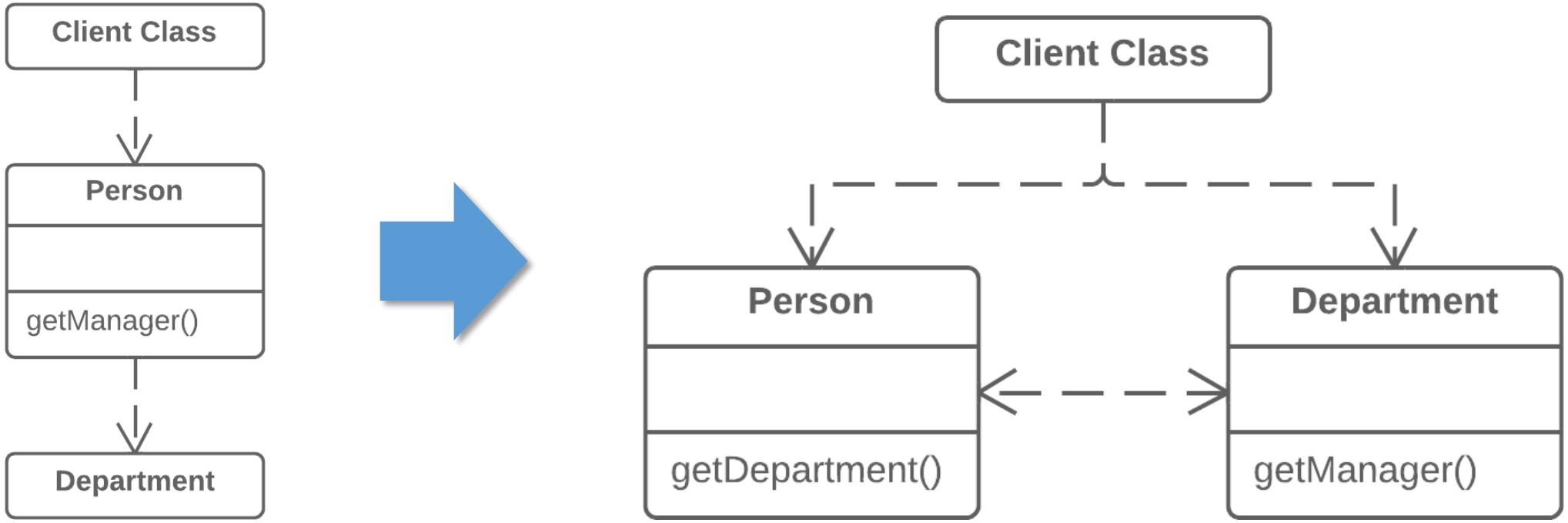
- If a class performs only one action, delegating work to another class, why does it exist at all?



Middle Man: Refactoring

- **Remove Middle Man:** Reverse the delegate hiding

Case Study: Remove Middle Man



References

- Fowler, Martin. Refactoring: Improving the Design of Existing Code. Addison-Wesley Professional, 1999.
- https://refactoring.guru/

bridge to the future

http://www.eepis-its.edu