

What's that smell?

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Code Smells

What are Code Smells?

- Indicators of problems that can be addressed during refactoring
- easy to spot and fix
- may be symptoms of a deeper problem with code

Why do we Care?

Code smells make our code hard to maintain, and difficult to understand

The problem isn't change, per se, because change is going to happen; the problem, rather, is the inability to cope with change when it comes.

Kent Beck

Any fool can write code that a computer can understand. Good programmers write code that humans can understand.

Martin Fowler



Types of Code Smell



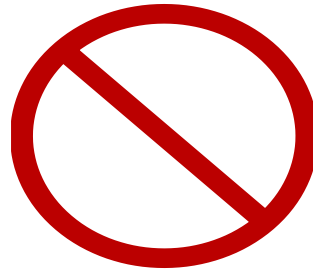
Bloaters

Methods and classes that have grown so large that they are hard to maintain



OO Abusers

Incomplete or incorrect application of object-oriented programming principles



Change Preventers

Changing one piece of code means changes will be required in many other places



Dispensables

Pointless, duplicated, unnecessary or unused code



Couplers

Code that exhibits excessive coupling



What can we do?

How to get rid
of the smell...

Bloaters



- Long Method
- Large Class
- Primitive Obsession
- Long Parameter List
- Data Clumps

- Extract method
- Extract Class / Interface
- Replace Type Code with Class
- Introduce Parameter Object
- Extract Class

Object-Orientation Abusers



- Alternative Classes with different interfaces
 - Refused Bequest
 - Switch Statements
 - Temporary Field
- Unify/Rename methods
 - Replace Inheritance with Delegation
 - Introduce Strategy Pattern
 - Extract Class

Change Preventers



- Divergent Change
- Parallel Inheritance Hierarchies
- Shotgun Surgery

- Extract Class
- Move Method/Field
- Move Method/Field

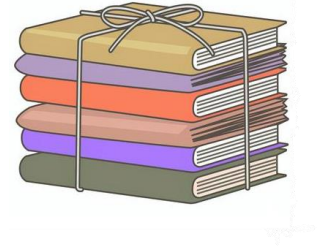
Dispensables



- Comments
- Duplicated Code
- Data Class
- Dead Code
- Lazy Class
- Speculative Generality

- Rename method
- Extract Method
- Encapsulate Field/Collection
- Delete
- Inline Class
- Inline/Remove

Couplers

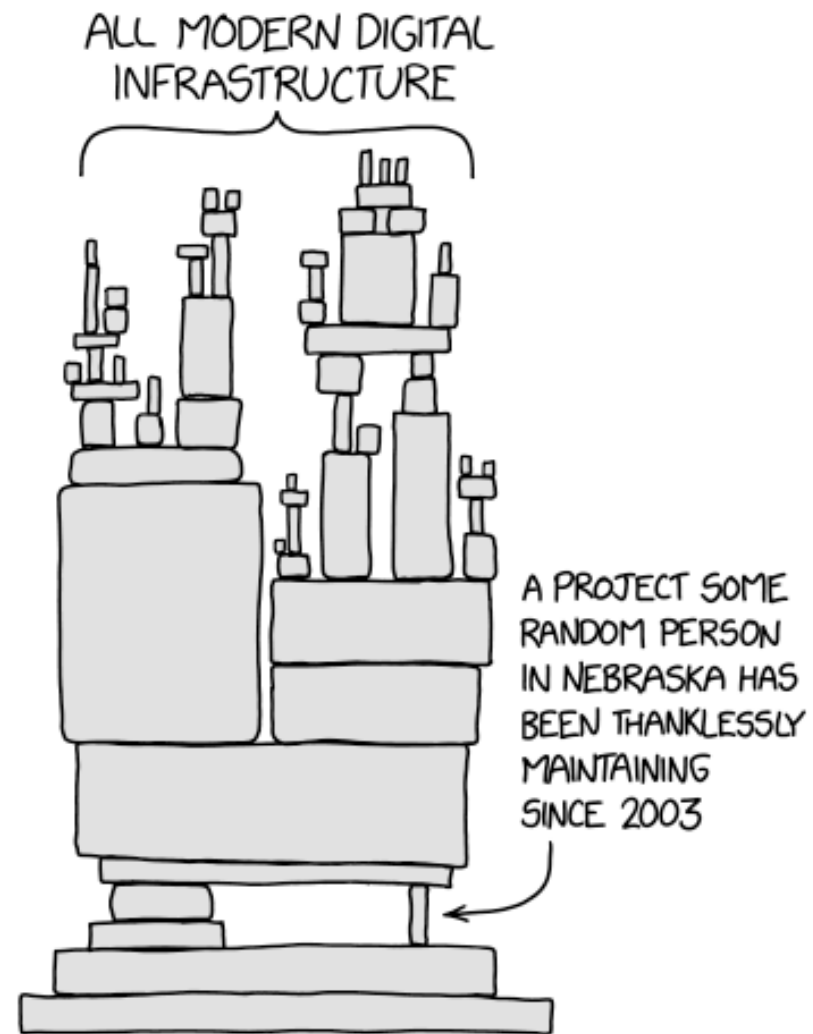


- Feature Envy
- Middle Man
- Inappropriate Intimacy
- Message Chains

- Move Method
- Remove Middle Man
- Move Method
- Hide Delegate

Summary

- We've seen that code smells are indicators of problems within our codebase.
- Code smells are implementation details that make code hard to maintain and difficult to understand
- Code smells can be addressed as part of refactoring



I will not write any more bad code
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Any Questions?

Thank you



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Links:

<https://alcor.academy/>

<https://refactoring.guru/refactoring/smells>

<https://xkcd.com/>