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Instructions

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How is it going?

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Do you have problems with practice?

Agenda

- Recall last session
- Discuss current topic
- Practice

Total Recall

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What do you remember most from the previous session?

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What is the purpose of the YAGNI principle?

0 ✓
To prevent over-engineering

0 ✗
To improve software performance

0 ✓
To reduce code complexity

0 ✗
To deliver software faster

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YAGNI helping-questions

- Is it 100% sure that the implementation is needed?
- What are the investment costs?
- How long does the implementation take?
- What are the opportunity costs?

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Advice

DEFINE requirements!!!

Start with abstractions

Design iteratively and incrementally

Add changes or perform refactoring according to the requirements

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KISS goals and benefits

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KISS goals

- Simplicity
- Clarity
- Efficiency
- Usability
- Flexibility
- Risk Reduction

Advice

Keeping everything as simple as possible is in 90% case the most important dev strategy

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DRY is about

0 not duplicating code

0 not duplicating logic

0 not duplicating constants

Discuss current topic

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Random fact

Two thirds of the inhabitants of our planet have never seen real snow in their lives.

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Code smells

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Have you looked through code smells materials?

0

yes

0

no

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Code smells is about

0

early bugs

0

smell of burning processor while your app is running

0

symptoms of a bad code

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Code smells forms:

- Duplicated code: Repeated code blocks performing the same functionality
- Long and complex functions: Functions that are difficult to understand and maintain
- Large classes : Classes that do too much and become overly complex
- Magic numbers: Using hardcoded values without explanation, making code less adaptable

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What are the symptoms of code smells in method level?

Methid level

- Naming convention (descriptive namings)
- Too big function, too many actions within it
- Excessive parameters (DTOs vs primitives)
- Excessive return data (DTO vs tupple or primitive)
- One line code, too much of functional programming (split logically to make it clear)

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What are the symptoms of code smells in class level?

Class level

- Class GOD
- Feature envy (excessively uses methods from not dependency class)
- Inappropriate intimacy (dependency on implementation or private members of another class)
- Literal usage (hardcoded values: difficult to maintain and modify)
- Data clumping (primitives not objects as fields)

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What are the symptoms of code smells in application level?

App level

- Shotgun surgery (duplicated code blocks)
- Contrived complexity (do not use design patterns just because they exist)

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Design smells.

what?!

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How to recognize software design "smell"? (improper abstractions, encapsulation mistakes, incorrect modularization, hierarchy mismanagement)

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Forms of smelling design

- Improper abstractions
- encapsulations misunderstanding
- incorrect modularization
- hierarchy mismanagement

Bad abstractions

- Details not abstract
- Multifaceted abstractions (SRP violation)
- Duplicated abstractions (same or close responsibilities)
- Incomplete abstraction (not fully support responsibility)

Encapsulations misunderstanding

- Deficient encapsulation (poorly encapsulated state)
- Unrestrained encapsulation (abstraction’s state is globally visible)
- Unexploited encapsulation (use endless if-else instead of exploiting existing type variation -> solve with polymorphism)

Incorrect modularization

- Insufficient decomposition (require further decomposition)
- Broken modulariation (closed methods and not withing one class)
- Cyclically dependent abstractions (too tight coupled)

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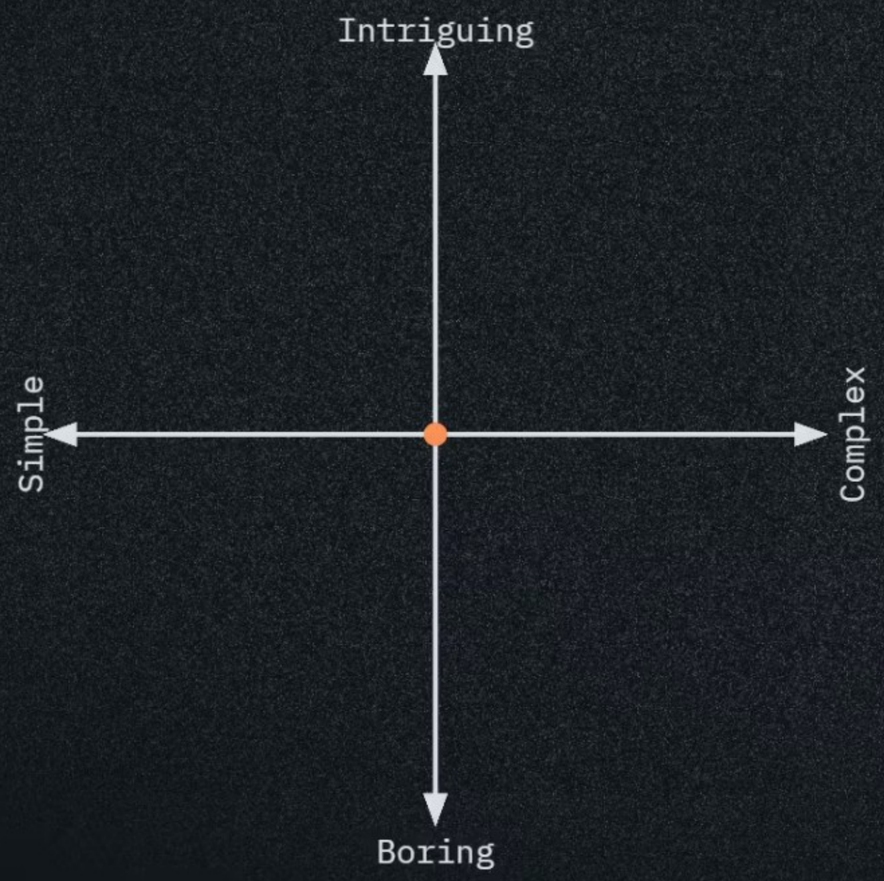
Hierarchy management

- Repeatedly inherited abstractions
- Broken hierarchy (no AS-A relation)
- Too complex
- Cyclic hierarchy (super depends on subtype)

Express your opinion



1 What do you think about current course

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10 minute break

Refactoring

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What is the purpose of the refactoring?

0 Improve code

0 Enhance code

0 Fix bugs

Refactoring aimed

- Maintainable code
- Optimized code

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What to do before refactoring?

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Check list before refactoring

- Functionality is well covered with tests
- You are not implementing a feature during refactoring
- Apply des-patterns only where necessary
- Research how to use design pattern rules and principles

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What antipatterns do you know??

What I remember

- Boat anchor - i will use it in future (opposite to yagni)
- Dead code (processed result never used)
- God object
- Golden hammer (one pattern\method\style for all cases) -> every problem has it's own solution
- Spaghetti code (no structure)

Few more

- MAGIC NUMBERS
- Yoda conditions (true==isProcessed or isProcessed==true)
- Excessive Interface Complexity (oppositte for ISP)
- Overuse of Singleton Pattern
- Overuse of Primitive Types
- Copy Paste Programming

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<wanna get deeper with antipatterns>?

https://sourcemaking.com/antipatterns/software-development-antipatterns

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Q&A part

0 questions
0 upvotes