System Design

Goals of a good programmer

- solving problems

Writing good code

1. maintainibility
2. simple
3. clean

Optimization

Why write clean/simple/maintainable code?

1. You are writing code for humans
   1) Either a team
   2) future self

Is there a standard for clean code?

Yes!!!

1. DRY principles
2. KISS principles
3. SOLID principles

(1) DRY Principles

D → Don't
R → Repeat
Y → Yourself

} No duplication of code

WHY DRY?

1. reduce lines of code (code length)
2. less lines ≈ clean / simple / maintainable

* Remove code duplications

* Reusability of code

Solves

code smell :

terminology that indicates some problem in your code

code duplication solution

↳ if code is repeated, use methods/functions

(called as refactoring)

Re-factoring

↳ changing the code without changing the behaviour

(functionality remains same)

KISS Principles

K - KEEP

I - IT

S - SIMPLE

S - STUPID

KISS solves

- Untangles complex code
- Easier to read code

code smell - KISS

1. complicated code
2. hard to follow
3. "what's going on?"
   "I can't follow this code"

→ breaking the KISS principle

Solution

1. Refactoring of code
   - ↳ easy to understand code
2. How to refactor complex code?
   - ↳ find alternative ways of writing code
   - ↳ less complex solutions