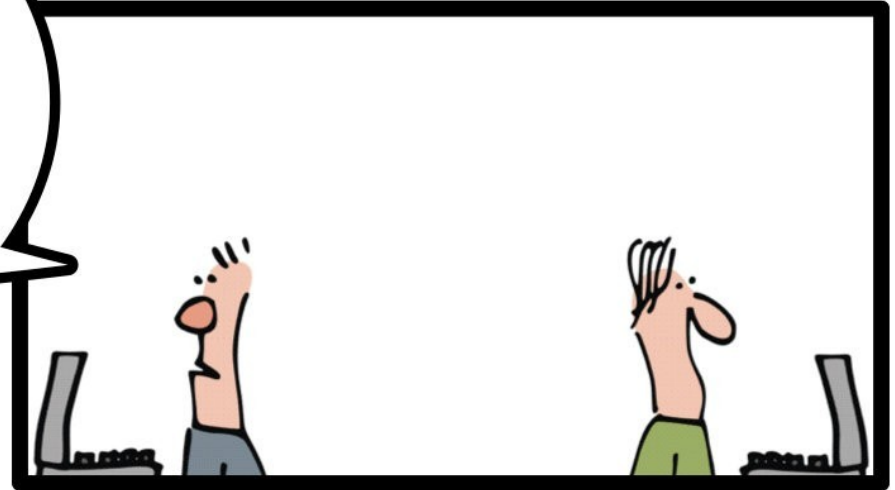


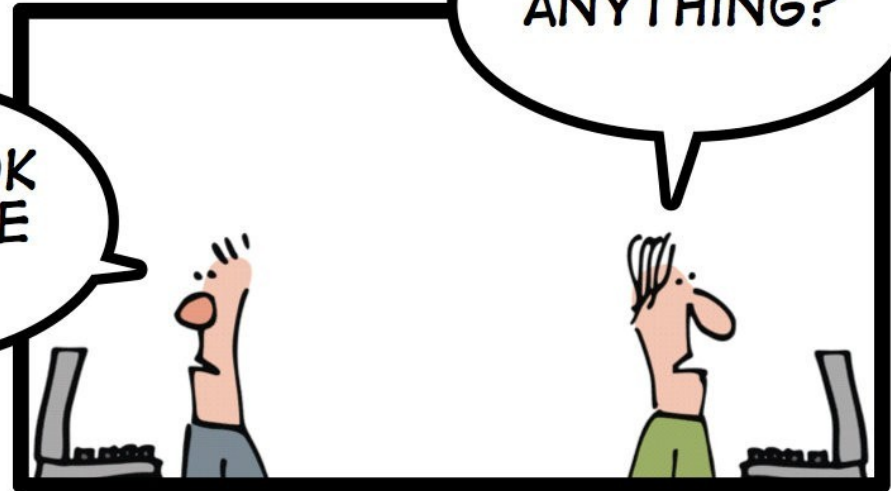
THERE'S A METHOD CALLED
`getSerialNumber()`
IT HAS THE COMMENT
`// get the serial number`

WHAT DO YOU THINK IT COULD
DO?



ANYTHING?

I'LL LOOK
INTO THE
CODE



"ONLY IN CODE WE TRUST"

Clean Code

This work by

Fredrik Wendt

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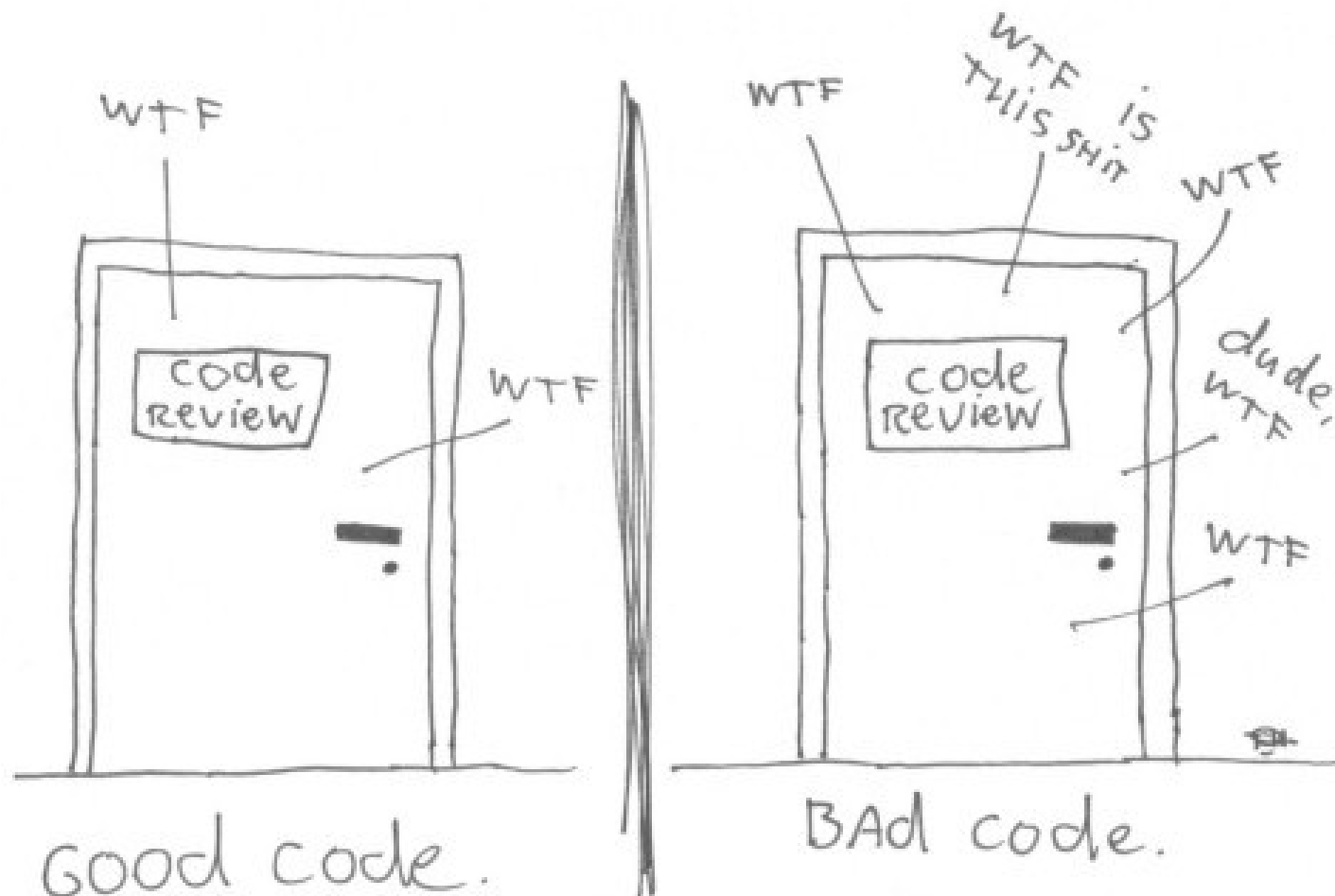
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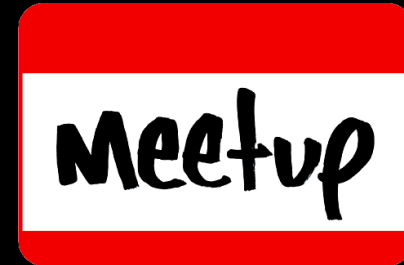
<http://creativecommons.org/licenses/by-nc-sa/3.0/>

The ONLY VALID MEASUREMENT
OF CODE QUALITY: WTFs/MINUTE

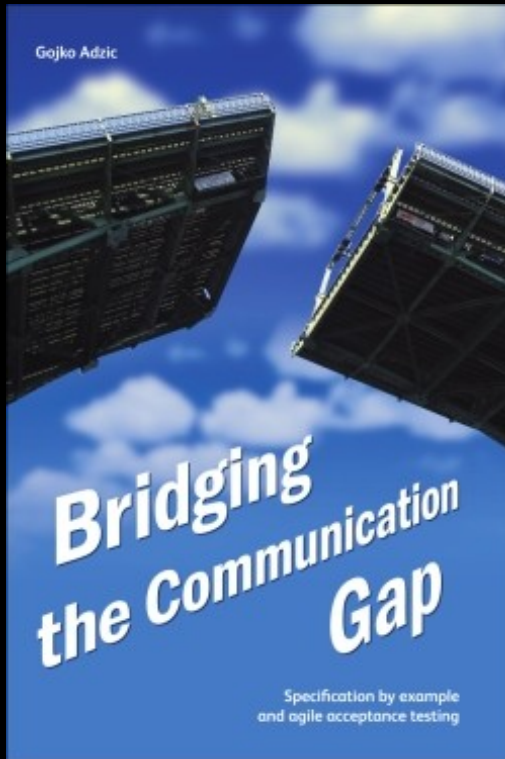


Coding Dojo / User Group

JDojo@Gbg



How is it even possible for code to be this bad?



Exhibits

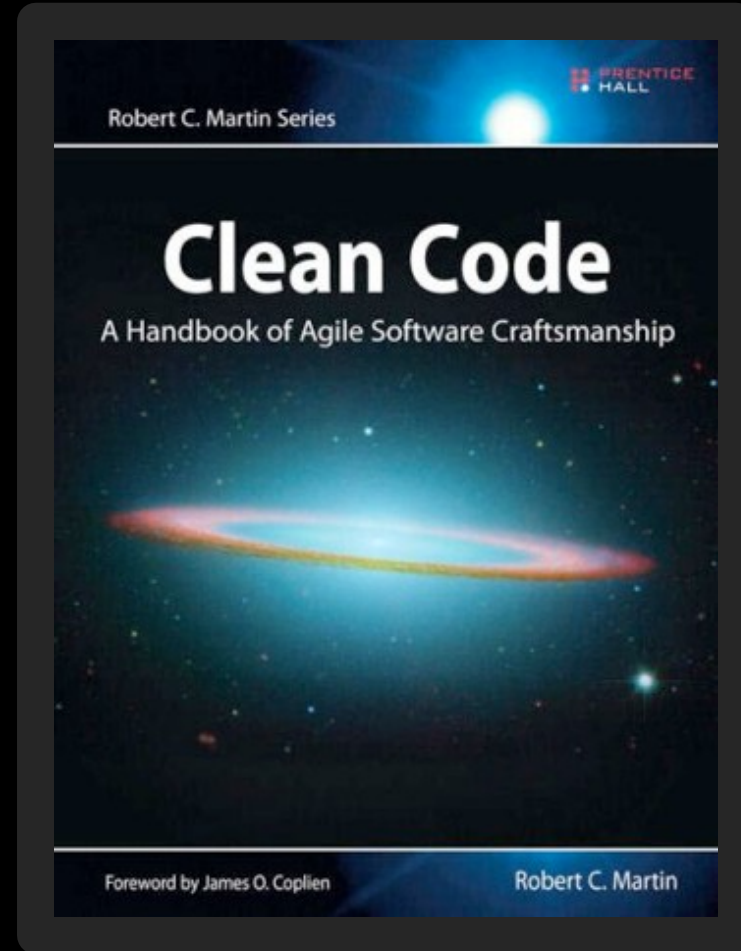
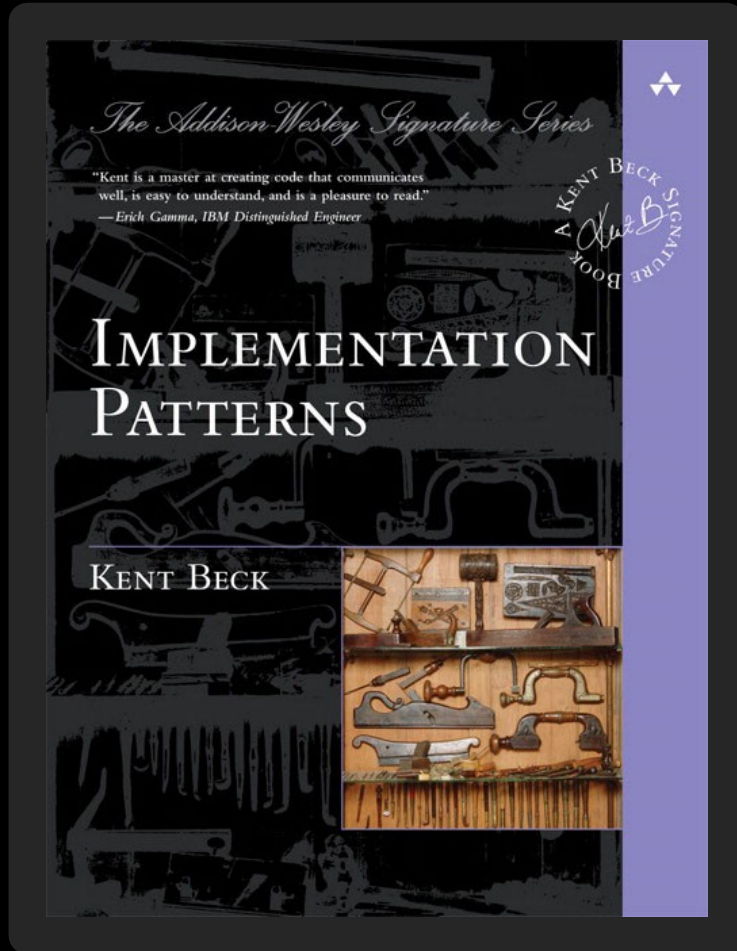


- Hudson class is 3900+ LOC
- Hudson class is untestable Singleton
- Konstruktorn anropar en metod som hämtar singleton-instansen och anropar en metod på den.
- Hudson extends Node, men Node använder instansmetoder på Hudson

”Smart” vs Professional

- Smart
 - Great coding skills
 - Writes advanced code
 - `String r; // lowercase url`
- Professional
 - Readable code
 - Maintainable code
 - 'Clarity is king'
 - `String lowerCaseUrl
OfCurrentPage
// lowercase url`

Clean Code Book Comparison



<http://blog.xebia.com/2009/01/clean-code-vs-implementation-patterns/>

Vad är Clean Code?

```
int d; // elapsed time in days
```

```
int d; // elapsed time in days  
int elapsedTimeInDays;
```

```
int d; // elapsed time in days
int elapsedTimeInDays;
int daysSinceCreation;
```

```
int d; // elapsed time in days
int elapsedTimeInDays;
int daysSinceCreation;
int fileAgeInDays;
```

```
public List<int[]> getThem() {  
    List<int[]> list1 = new ArrayList<int[]>();  
    for (int[] x : theList)  
        if (x[0] == 4)  
            list1.add(x);  
    return list1;  
}
```

```
public List<int[]> getThem() {  
    List<int[]> list1 = new ArrayList<int[]>();  
    for (int[] cell : gameBoard)  
        if (cell[STATUS_VALUE] == FLAGGED)  
            list1.add(cell);  
    return list1;  
}
```

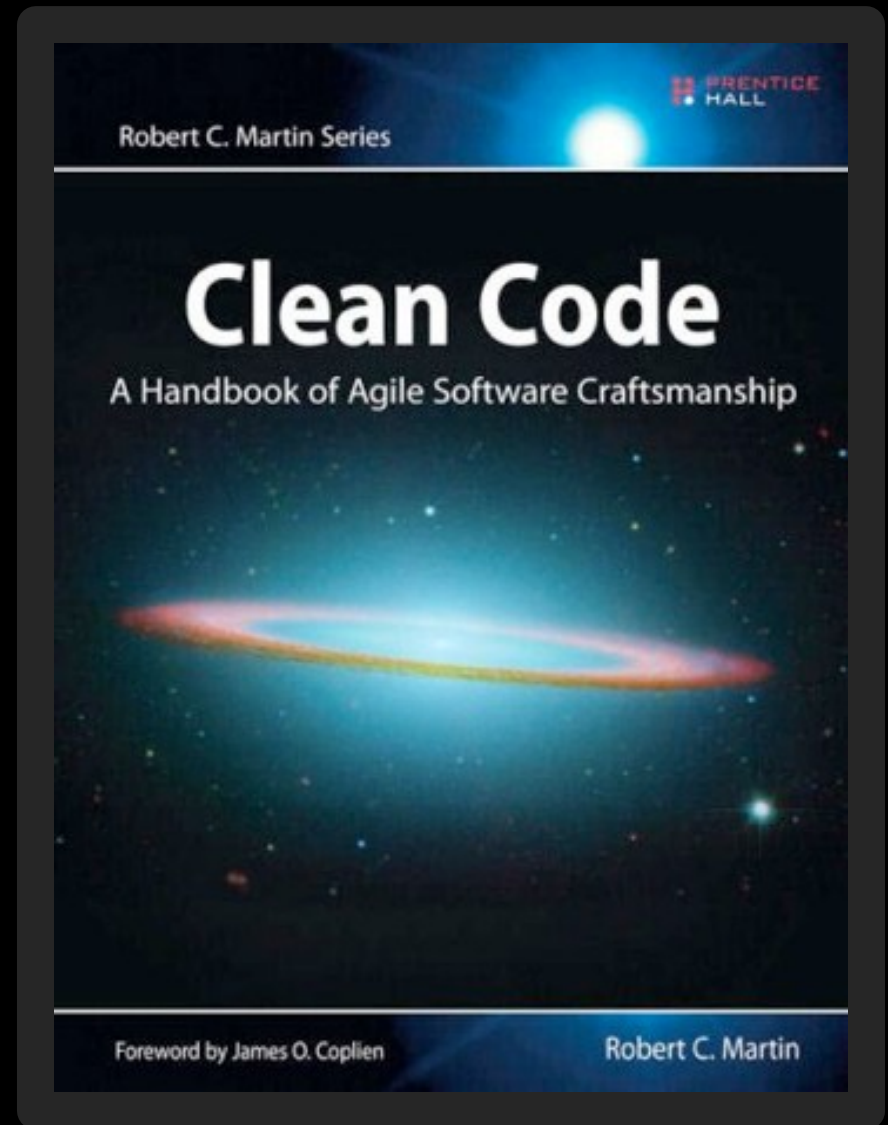
```
public List<int[]> getFlaggedCells() {  
    List<int[]> flaggedCells = new ArrayList<int[]>();  
    for (int[] cell : gameBoard)  
        if (cell[STATUS_VALUE] == FLAGGED)  
            flaggedCells.add(cell);  
    return flaggedCells;  
}
```

```
public List<Cell> getFlaggedCells() {  
    List<Cell> flaggedCells = new ArrayList<Cell>();  
    for (Cell cell : gameBoard)  
        if (cell.isFlagged())  
            flaggedCells.add(cell);  
    return flaggedCells;  
}
```

Clean code always
looks like it was written by
someone who cares

Clean code always
looks like it was wrtten by
somone who craes

Readable
Maintainable
Changeable





Agile Manifesto

Individuals and interactions
over processes and tools

Working software

over comprehensive documentation

Customer collaboration

over contract negotiation

Responding to change

over following a plan

Manifesto for Software Craftsmanship

Raising the bar.

As aspiring Software Craftsmen we are raising the bar of professional software development by practicing it and helping others learn the craft. Through this work we have come to value:

Not only working software,
but also **well-crafted software**

Not only responding to change,
but also **steadily adding value**

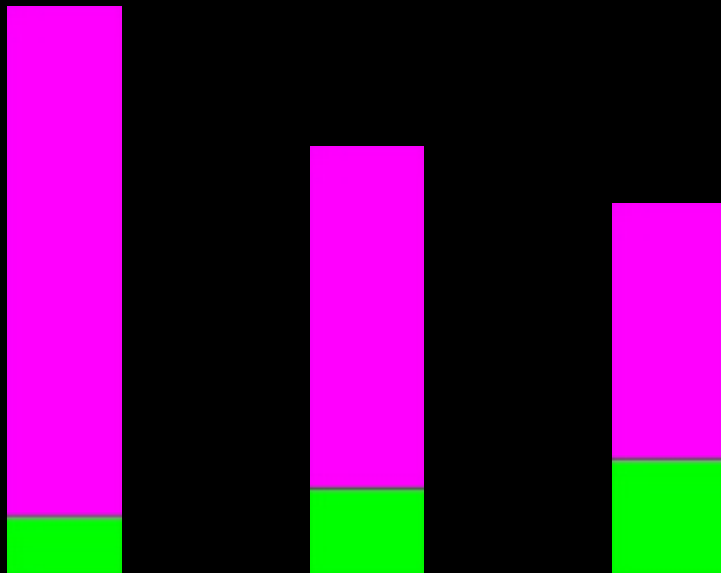
Not only individuals and interactions,
but also **a community of professionals**

Not only customer collaboration,
but also **productive partnerships**

That is, in pursuit of the items on the left we have found the items on the right to be indispensable.

Readable?

~90 % av din tid är läsning



Vad händer om du
dubblar skrivtiden,
och därmed
halverar lästiden?

```
public class Part {  
    private String m_dsc; // The textual description  
    void setName(String name) {  
        m_dsc = name;  
    }  
}
```

```
public class Part {  
    private String description;  
    void setDescription(String description) {  
        this.description = description;  
    }  
}
```

Varför bry dig?

Vem skrivs koden för – användaren eller programmeraren?

Den **primära användaren** av koden är en utvecklare, kanske

- Din kund
- Din kollega
- Du själv

someone who cares

Hur ska du skriva kod då?

Meaningful Names

- Intention-Revealing
- Pronounceable
- Avoid Encoding
- Klasser
- Metoder
- JobQueue
- Problemdomänens ord
- Kommentarer
- Kodformatering!

Don't talk to strangers

<http://www.ccs.neu.edu/research/demeter/demeter-method/LawOfDemeter/paper-boy/>

Law of Demeter

```
public class PaperBoy {  
    private Wallet myWallet;  
    ...  
    public void chargeCustomer(Customer customer) {  
        Collection<Bill> payment = customer.getPayment(5)  
        myWallet.add(payment);  
    }  
}
```

Law of Demeter

```
public class PaperBoy {  
    private Wallet myWallet;  
    ...  
    public void chargeCustomer(Customer customer) {  
        Wallet wallet = customer.getWallet();  
        Collection<Bill> bills = wallet.getBills();  
        Collection<Bill> payment = extract(5, bills);  
        myWallet.add(payment); // or bills?  
    }  
}
```

Dog's Legs

```
public class CareTaker {  
    private Dog dog;  
    ...  
    public void walkTheDog(){  
        dog.walk();  
  
        dog.stop(); // tree or grass etc  
  
        dog.doYourThing();  
        ...  
    }  
}
```

Dog's Legs

```
public class CareTaker {
    private Dog dog;
    ...
    public void walkTheDog(){
        for (Leg leg : dog.getLegs())
            leg.move();
        for (Leg leg : dog.getLegs())
            leg.stopMoving();
        dog.brain.urinationCenter.releaseUrge();
        ...
    }
}
```

Law of Demeter

More formally, the Law of Demeter for functions requires that a method M of an object O may only invoke the methods of the following kinds of objects:

1. O itself
2. M 's parameters
3. any objects created/instantiated within M
4. O 's direct component objects
5. a variable, accessible by O , in the scope of M

Boy Scout Rule



Leave the campground cleaner than you found it.

WTFs / minute

The only valid
measurement of
code quality

Obs?

Finns det någon
korrelation mellan
Clean code och framgång?

Diskussion

Kodkvalitet och retrospectives

Smart vs Professional

Skriva för mottagaren

swenug vs JavaForum

swejug?

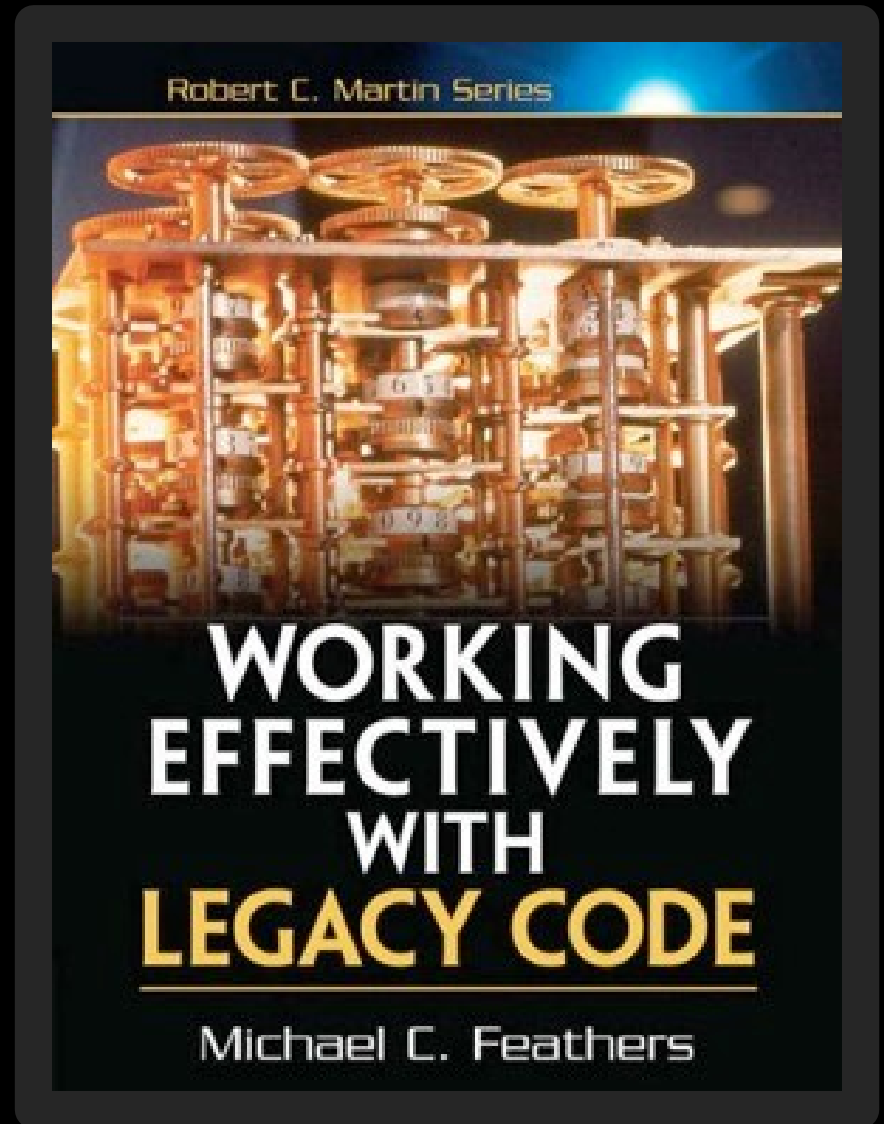
Legacy Code



Kod utan test

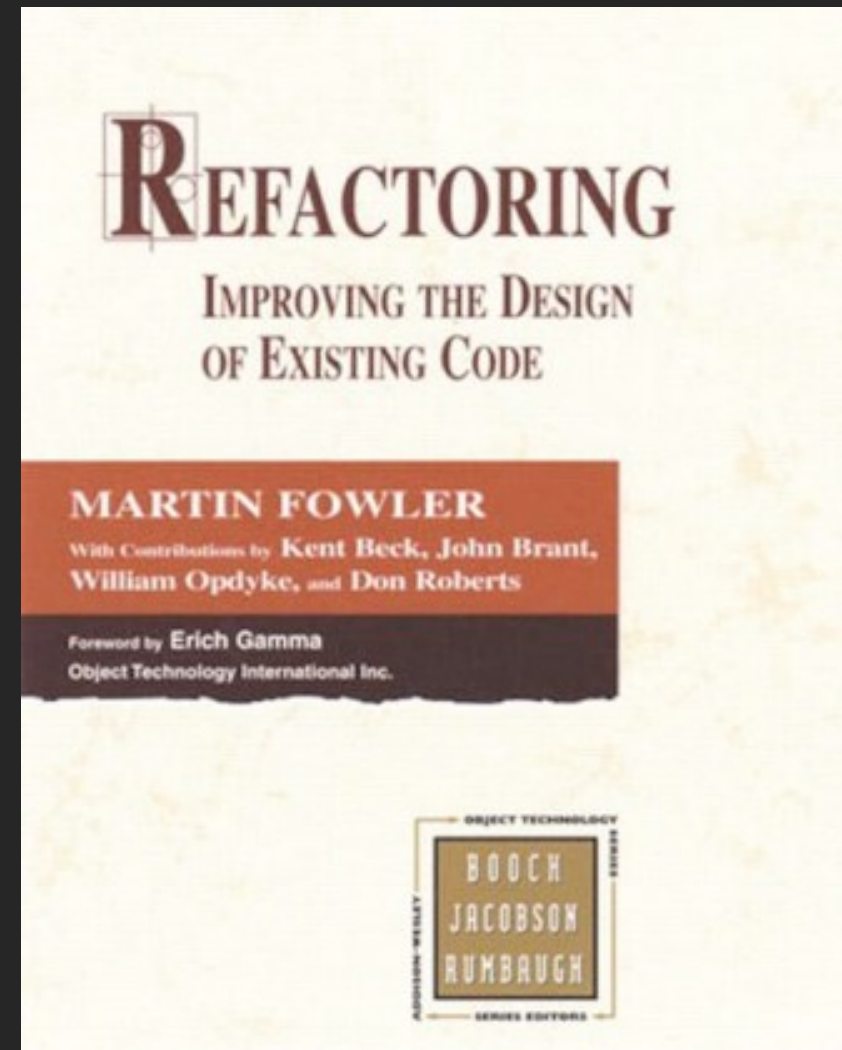
Vad gör jag med kod som redan ligger i ryggsäcken?

- Få upp gubben på banan – få koden testbar (och testad)
- Fixa ev buggar som testen plockar fram i ljuset
- ”Make it right”



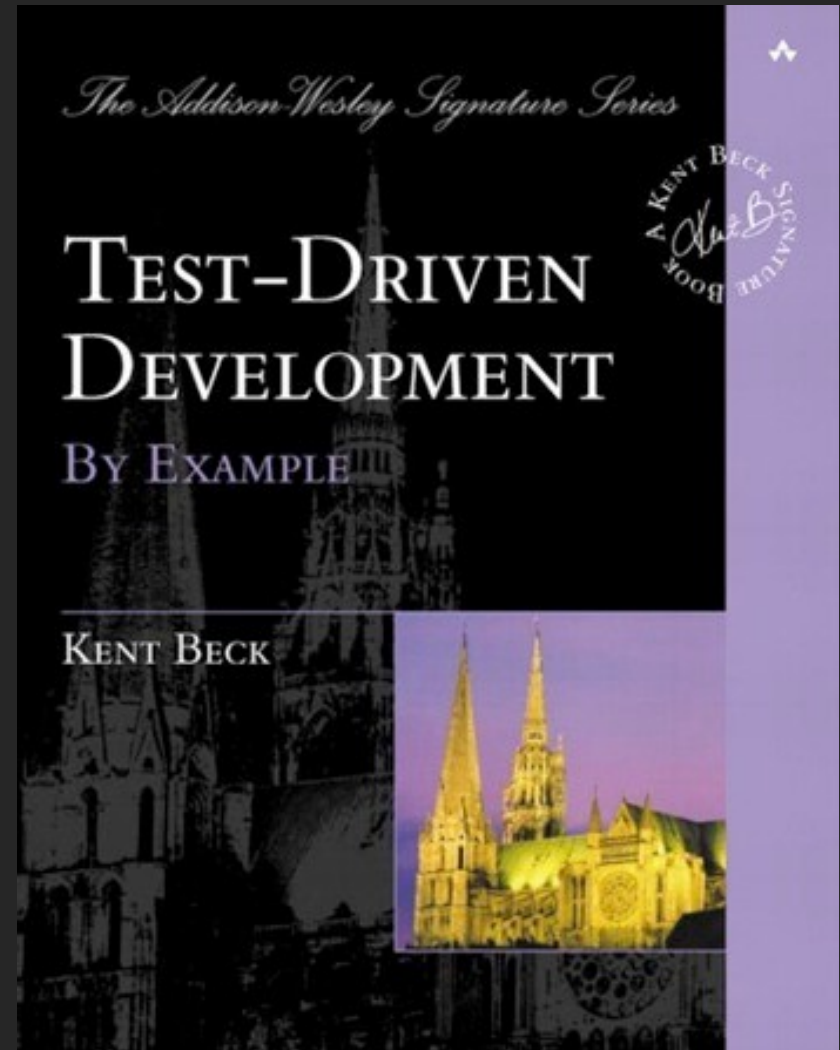
Vad gör jag med kod som redan ligger i ryggsäcken?

- Få upp gubben på banan – få koden testbar (och testad)
- Fixa ev buggar som testen plockar fram i ljuset
- ”Make it right” – refactor!



Kod utan test ...

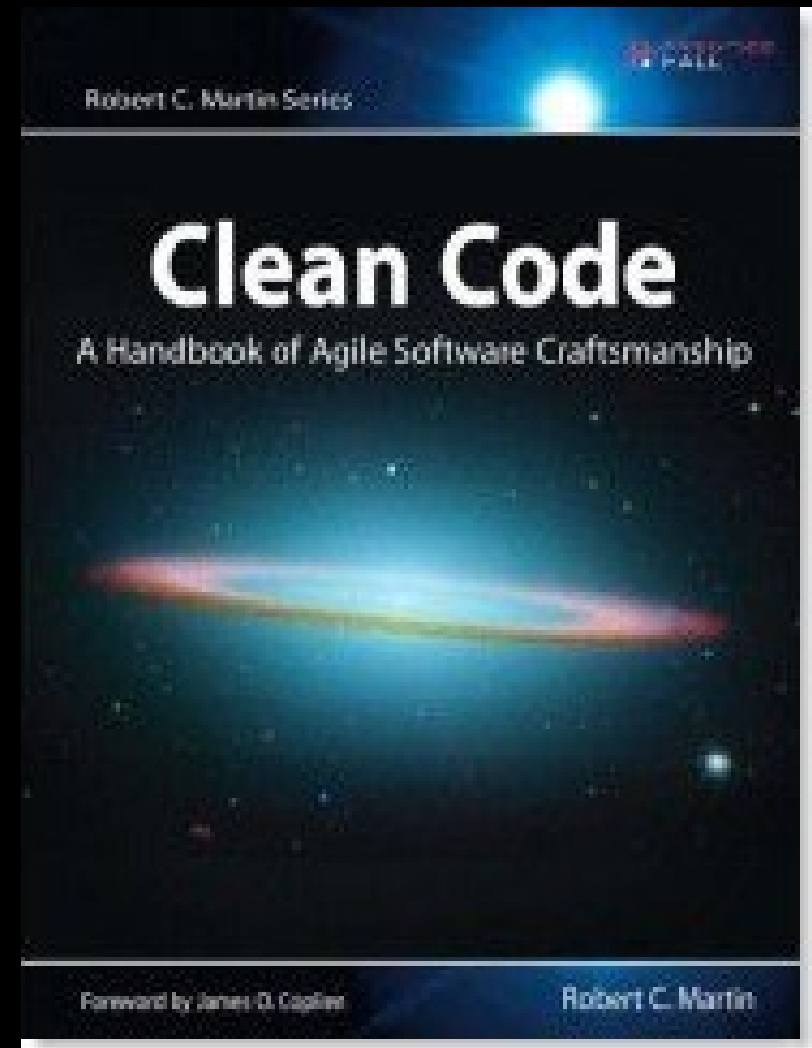
- är legacy-kod
- refaktoreras inte
- ändras gärna inte av någon annan än den som skrev koden senaste dygnet
- är en ryggsäck





Outline

- Vad är Clean Code?
- Varför är det intressant?
 - Problemet
 - Lösningen
- Diskussion



Outline2

- "Problemset"?
- "Lösungen"?
- Diskussion

