Refactoring

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03.09.2020

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Introduction

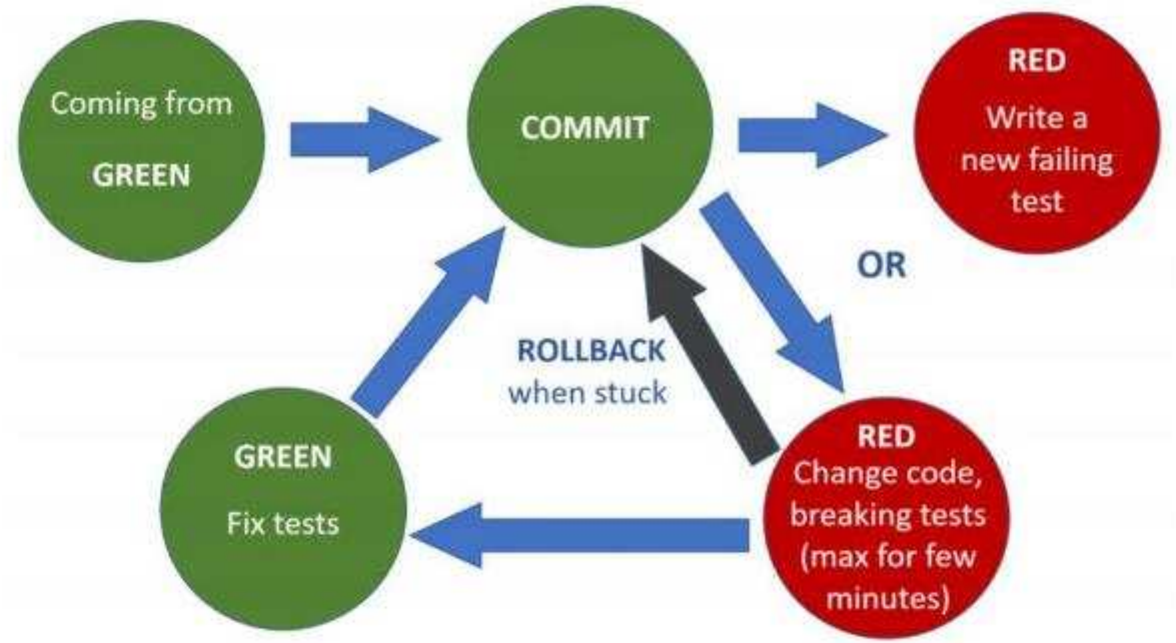
- Refactoring is the process of restructuring existing code without changing its external behavior.

- Refactoring is about making the code more readable, simpler, cleaner and turn it into a better architecture.

- 80% of the value in refactoring comes from improving readability. 20% of the remaining value comes from design change.

- Begin in green and stay in green while refactoring.

Refactor Cycle



Extended TDD cycle: the Refactor cycle

Parallel Change

- Refactor technique to implement breaking changes savely.
  expand -> migrate -> contract

- Expand
  Introduce new functionality by adding new code. Add a new test.

- Migrate
  Clients have to migrate to the new code.

- Contract
  Once all clients use the new code the old one can be deleted.

Refactor Example

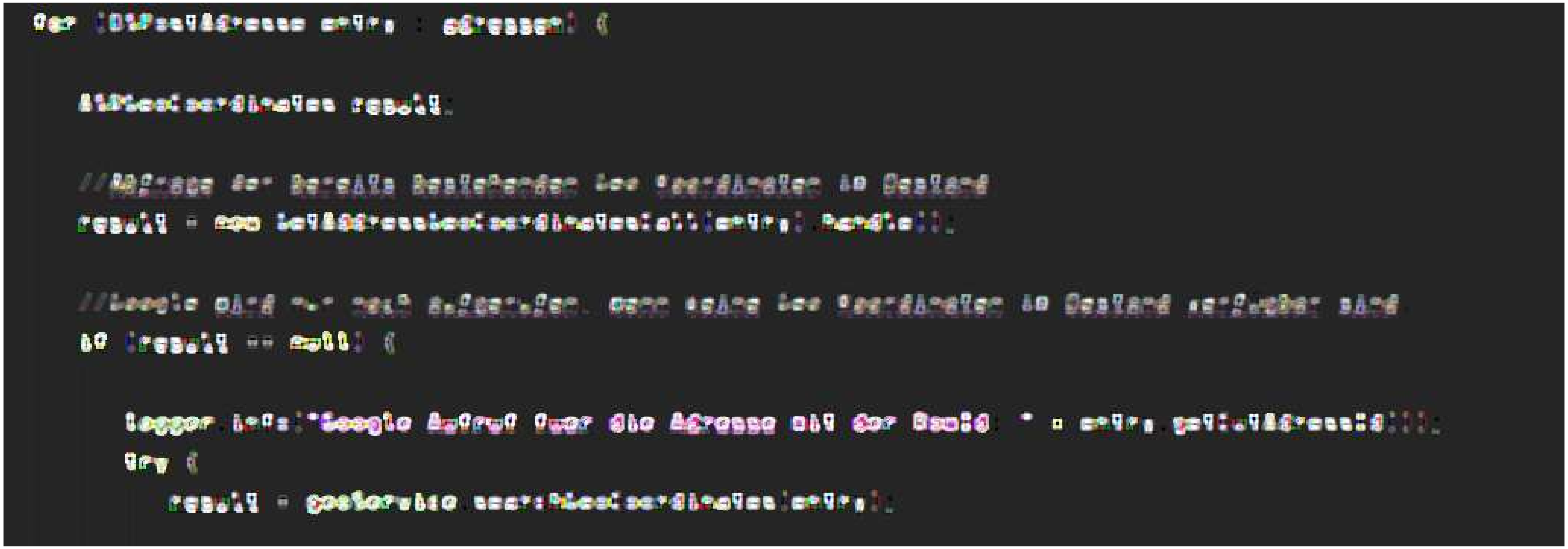
```
public void process[illegible](String [illegible]
```

-> Input variable controls the code. Split the method in two separate methods.

```
public void process[illegible](String [illegible]
```

```
public void process[illegible](String [illegible]
```

CSS Versicherung



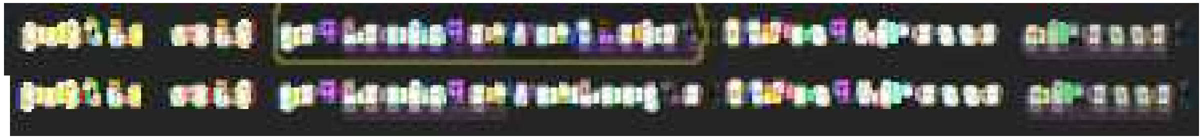
```
for ([illegible] entry : [illegible]) {

    [illegible] result;

    //[illegible]
    result = new [illegible](entry, [illegible]);

    //[illegible]
    if (result == null) {

        logger.info("[illegible]" + entry.[illegible]());
        try {
            result = [illegible](entry);
```

-> Too many commands. Method length about 100 Lines. Code is really hard to read.

How can you start refactoring, after understanding the code?

-> extract methods

The code does just do two main things.



Go on with the ‘Object Calistenics’ Rules
and change the architecture of the code.

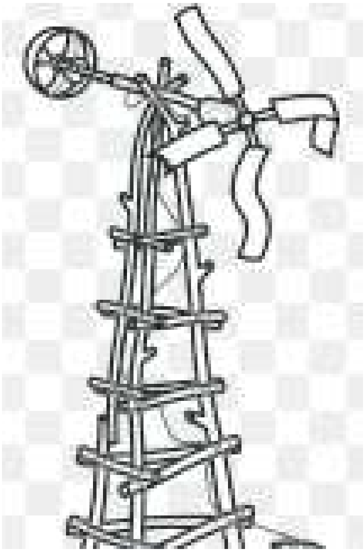
Review

- Most of the people are scared of refactoring.
- Even small refactorings turn into a big win.
- Master your IDE -> Shortcuts.
- Object calisthenics is a good guide for refactorings.
- How to handle with really bad code.

List of references

- https://en.wikipedia.org/wiki/Code_refactoring
- Alcor Academy

Refactoring



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