

Effective

Refactoring

Agenda

- What is Refactoring?

Agenda

- What is Refactoring?
- Refactoring Scope

Agenda

- What is Refactoring?
- Refactoring Scope
- How to refactor?

Agenda

- What is Refactoring?
- Refactoring Scope
- How to refactor?
- Conclusion

Refactoring

What is it?

What is Refactoring?

Code refactoring is the process of restructuring existing computer code...
...without changing its external behavior. – [Wikipedia](#)

Refactoring Transformations

- Rename variables/methods/classes

Refactoring Transformations

- Rename variables/methods/classes
- Change layout

Refactoring Transformations

- Rename variables/methods/classes
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- Delete dead code

Refactoring Transformations

- Rename variables/methods/classes
- Change layout
- Delete dead code
- Breake large components into few smaller ones

Refactoring Scope

Break large **components** into few smaller ones

Refactoring Scope

Break large **components** into few smaller ones

What type of component?

Refactoring Scope

Breake large **components** into few smaller ones



What type of component?

method

Refactoring Scope

Break large **components** into few smaller ones



What type of component?

method < class

Refactoring Scope

Break large **components** into few smaller ones



What type of component?

method < class < module

Refactoring Scope

Break large **components** into few smaller ones



What type of component?

method < class < module < release-unit

Refactoring Scope

Type

method

Effort

few minutes

Refactoring Scope

Type

method

class

Effort

few minutes

few hours

Refactoring Scope

Type

method

class

module

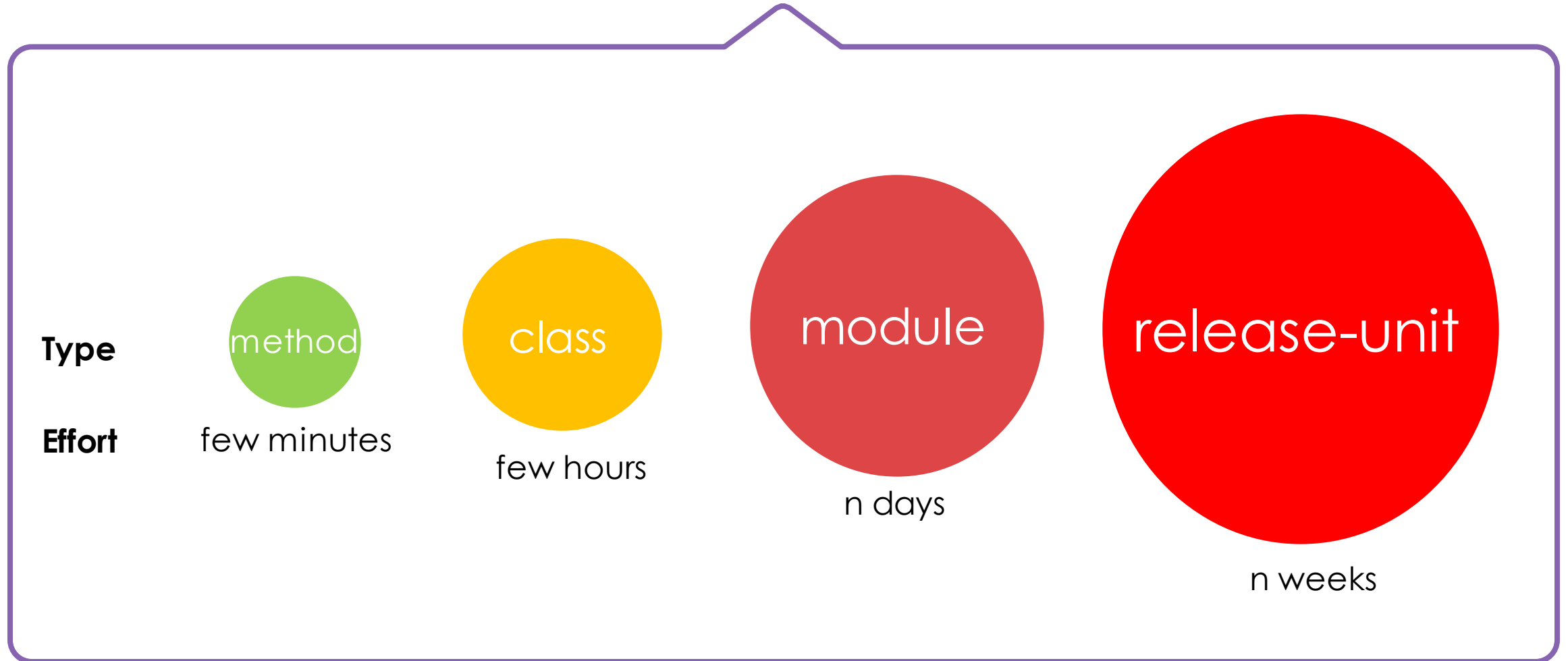
Effort

few minutes

few hours

n days

Refactoring Scope



Refactoring Scope

Type

method

class

module

release-unit

Effort

few minutes

few hours

n days

n weeks

the bigger – the more expensive!

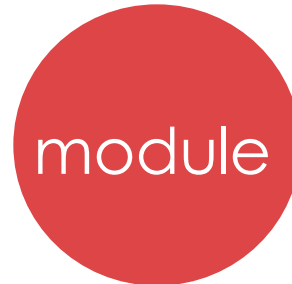
Refactoring Scope



minute/s



hour/s

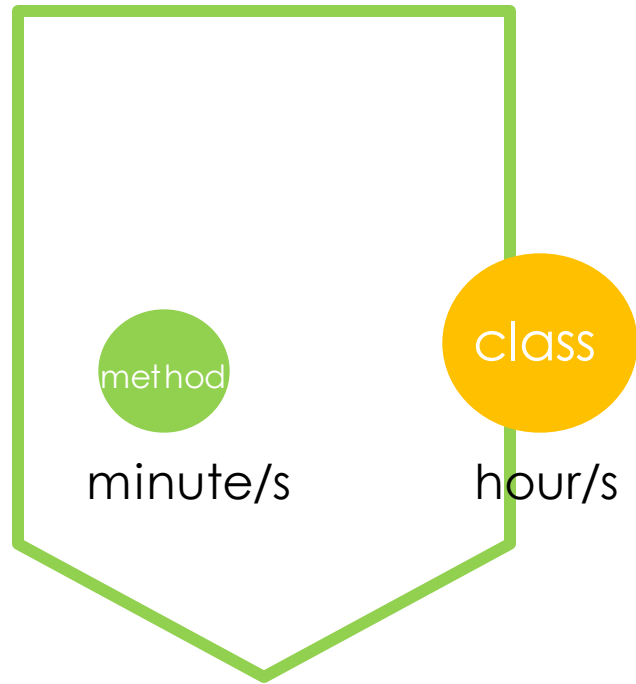


day/s



week/s

Refactoring Scope



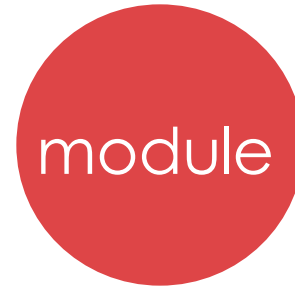
method

minute/s

class

hour/s

Refactoring



module

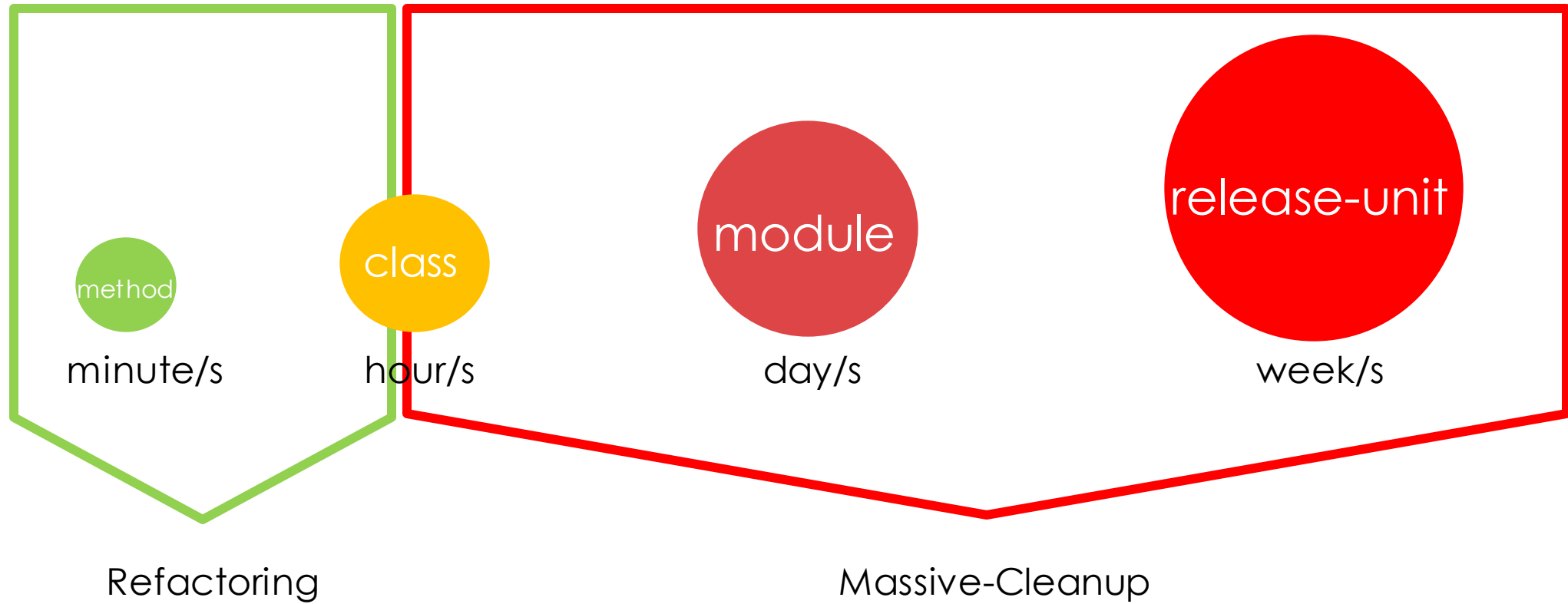
day/s



release-unit

week/s

Refactoring Scope



Refactoring vs Massive-Cleanup



Refactoring

Massive-Cleanup

Refactoring vs Massive-Cleanup



Refactoring

- tiny transformations

Massive-Cleanup

- huge changelists

Refactoring vs Massive-Cleanup

Refactoring

- tiny transformations
- low effort

Massive-Cleanup

- huge changelists
- high effort

Refactoring vs Massive-Cleanup

Refactoring

- tiny transformations
- low effort
- low risk

Massive-Cleanup

- huge changelists
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- high risk

Refactoring vs Massive-Cleanup

Refactoring

- tiny transformations
- low effort
- low risk
- do it immediatelly

Massive-Cleanup

- huge changelists
- high effort
- high risk
- needs planning

Refactoring vs Massive-Cleanup

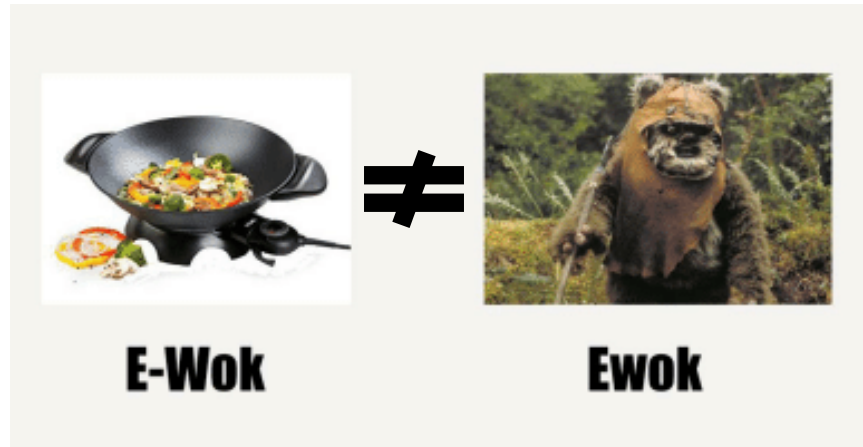
Refactoring

- tiny transformations
- low effort
- low risk
- do it immediatelly
- proactive approach

Massive-Cleanup

- huge changelists
- high effort
- high risk
- needs planning
- reactive approach

Risk of Confusion!



Don't confuse **refactoring** with **massive-cleanup**!

Refactoring

How to?

Refactoring in agile development



Bob
Developer

Refactoring in agile development



Bob
Developer



Chris
Product Owner

Refactoring in agile development



Bob
Developer



New Feature
Backlog Item



Chris
Product Owner

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We need this feature!



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What does it
cost?



Refactoring in agile development

This needs
refactoring...



Refactoring in agile development

Implementing
effort: **x**



Refactoring in agile development

Refactoring
effort: **y**



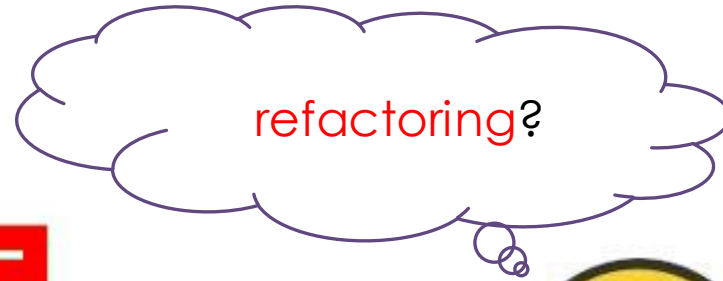
Refactoring in agile development

Total effort:

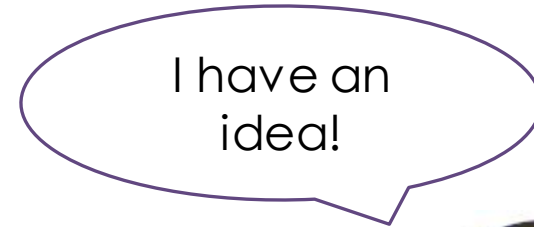
$$x + y$$



Refactoring in agile development



Refactoring in agile development



Refactoring in agile development



Let's do **feature** now
and **refactoring** next
week!



Refactoring in agile development



Refactoring in agile development



What went wrong?

Refactoring in agile development

- No feature without refactoring

Refactoring in agile development

- No feature without refactoring
- Refactoring is a technique (not a project)

Refactoring in agile development

- No feature without refactoring
- Refactoring is a technique (not a project)
- Refactor before adding feature

Refactoring in agile development

- No feature without refactoring
- Refactoring is a technique (not a project)
- Refactor before adding feature
- Unit Tests = safety net



Conclusion

Refactoring = House Cleaning



Refactoring = House Cleaning



Codebase **with** Refactoring

Refactoring = House Cleaning



Codebase **with** Refactoring



Codebase **without** Refactoring



Questions?

Thank you!

Contact

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<https://github.com/degeloper>

Links

https://en.wikipedia.org/wiki/Code_refactoring

<https://daedtech.com/refactoring-development-technique-not-project>

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

Images

<https://me.me/i/risk-of-confusion-ewok-e-wok-attention-323588caee314e4f8a504d48e72b597f>

<https://www.vectorstock.com/royalty-free-vector/siren-red-alarm-light-3d-vector-21662729>

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