

Why Cohesion?

Designing and Maintaining Software (DAMS)

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Habitable Software

Leaner

Avoids **Duplication**

Less **Complex**

Clearer

Loosely **Coupled**

More **Extensible**

More **Cohesive**

???

Cohesion

“A measure of the degree to which the elements of a module belong together.”

- Yourdon & Constantine
Structured Design, 1979

Low Cohesion



<http://www.housebyhoff.com/2013/01/organizing-our-home-junk-drawer/>

High Cohesion



<http://www.housebyhoff.com/2013/01/organizing-our-home-junk-drawer/>

Cohesion

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Modular Decomposition

“We have tried to demonstrate that it is almost always incorrect to begin the decomposition of a system into modules on the basis of a flowchart. We propose instead that one begins with a list of difficult design decisions or design decisions which are likely to change. Each module is then designed to hide such a decision from the others.”

- David L. Parnas

On the Criteria To Be Used in Decomposing Systems into Modules
Communications of the ACM, 15:12, 1972

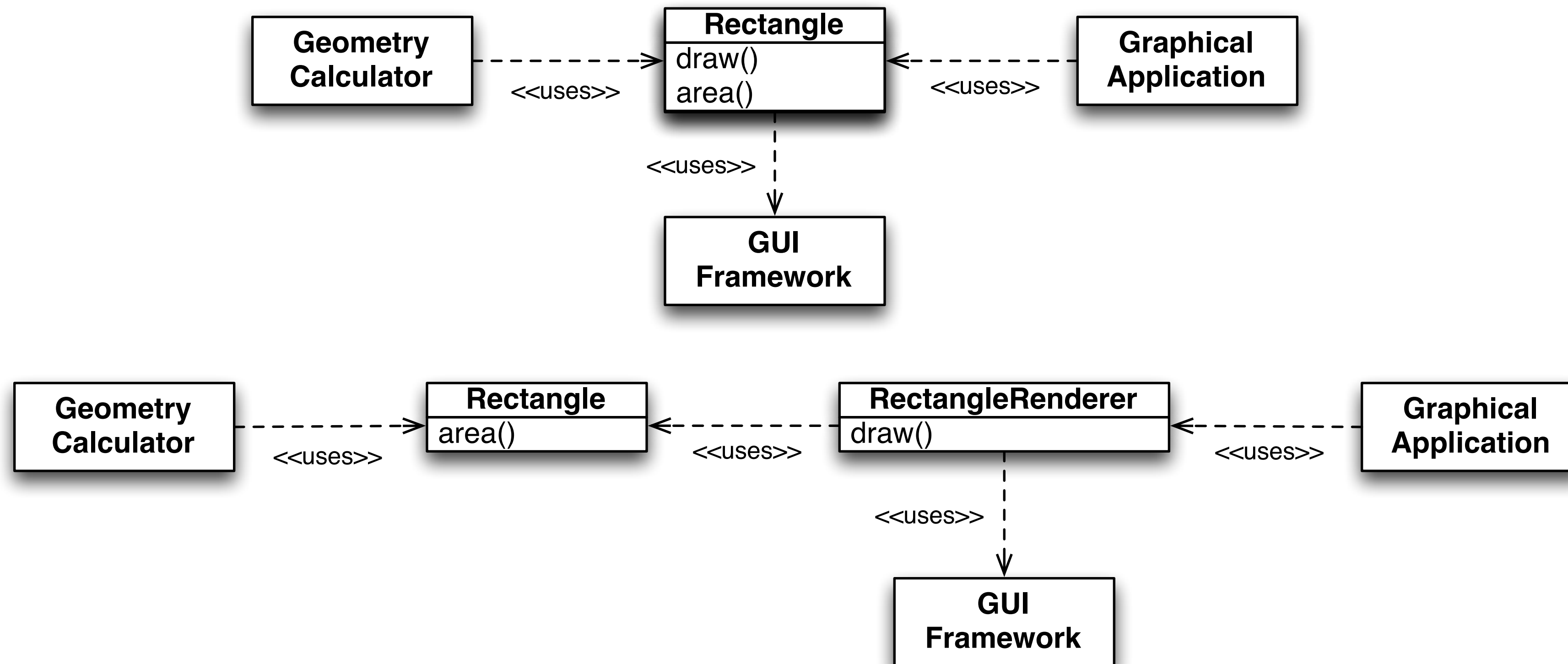
Single Responsibility Principle

A class should have only one reason to change.

- Martin and Martin

Chapter 8, Agile Principles, Patterns and Practices in C#, Prentice Hall, 2009

Responsibilities Example



Don't speculate

A reason for change is only important
if that change actually occurs.

Reworded SRP

Gather together the things that change for the same reasons. Separate those things that change for different reasons.

<http://blog.8thlight.com/uncle-bob/2014/05/08/SingleReponsibilityPrinciple.html>

Summary

Cohesion is a measure of the degree to which elements belong together.

Following Parnas (and later Martin), elements belong together only when they change together