

# Coupling and cohesion

Asked 16 years, 3 months ago   Modified 3 years, 2 months ago

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I'm trying to boil down the concepts of coupling and cohesion to a concise definition. Can someone give me a short and understandable explanation (shorter than the definitions on Wikipedia [here](#) and [here](#))? How do they interact?



Thanks.



Anybody have a good, short example?

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edited Oct 1, 2021 at 7:23



Mustafa Kemal

852 ● 1 ● 6 ● 11

asked Sep 2, 2008 at 16:24



Jonathan

7,401 ● 5 ● 32 ● 36

- 
- 3   One distinction that escaped me at first: `coupling` is *between* classes while `cohesion` is *within* a single class.  
– [Basil Bourque](#) Apr 19, 2016 at 4:54
-

6 Answers

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## Coupling

233



- Loose: You and the guy at the convenience store. You communicate through a well-defined protocol to achieve your respective goals - you pay money, he lets you walk out with the bag of Cheetos. Either one of you can be replaced without disrupting the system.
- Tight: You and your wife.



## Cohesion

- Low: The convenience store. You go there for everything from gas to milk to ATM banking. Products and services have little in common, and the convenience of having them all in one place may not be enough to offset the resulting increase in cost and decrease in quality.
- High: The cheese store. They sell cheese. Nothing else. Can't beat 'em when it comes to cheese though.

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answered Sep 2, 2008 at 16:37

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[Shog9](#)

159k ● 36 ● 235 ● 240

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28 Humm, I was anticipating a wife example for high cohesion, I have to say, I'm a bit disappointed :) – [ubiquibacon](#) Oct 26, 2011 at 6:07

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High: A jewelry store one may buy their wife's anniversary gift at - they deal only in items on the topic of jewelry & are specialized in it, so their items are higher quality & all gathered in one tidy, well-maintained store with nice style; those item traits help shoppers specifically wanting jewelry to complete their jewelry tasks (possibly including cleaning jewelry too) in a predictable/efficient experience. All pluses there are less-so at a jewelry counter in a department store with many unrelated departments as it's less specialized, & hard to find past other departments walking through – [cellepo](#) Dec 20, 2019 at 1:55

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btw - I guess this Answer may also assume monogamy. And maybe also no divorcing or re-marrying (even after widowed). – [cellepo](#) Dec 20, 2019 at 2:00

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71

Coupling - A measure of how much a module (package, class, method) relies on other modules. It is desirable to reduce coupling, or reduce the amount that a given module relies on the other modules of a system.



Cohesion - A measure of how closely related the members (classes, methods, functionality within a method) of a module are to the other members of the same module. It is desirable to increase cohesion as that indicates that a module has a very specific task and does only that task.

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Thomas Owens

116k ● 99 ● 317 ● 436



Coupling means dependency on others.  
Cohesion means completeness with itself.

30

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edited Dec 12, 2018 at 6:36



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Pang

10.1k ● 146 ● 85 ● 124



answered Feb 19, 2010 at 8:03



Mansoor Mehmood

469 ● 6 ● 11



27

One of the best comprehensive discussions of software design concepts related to OO (including these ones) is Bertrand Meyer's [Object Oriented Software Construction](#).



Regarding 'coupling', he gives his Weak Coupling / Small Interfaces rule as follows:



**If two modules communicate, they should exchange as little information as possible.**

Meyer's material related to cohesion isn't ever boiled down to a single pithy statement, but I think this sentence from Steve McConnell's [Code Complete](#) sums it up pretty well:

Cohesion refers to how closely all the routines in a class or all the code in a routine support a central purpose

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answered Sep 2, 2008 at 16:46

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McKenzieG1

14.2k ● 7 ● 38 ● 42



A quick-and-dirty way to measure coupling is to measure your `import` (or similar) statements.

4



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answered Sep 2, 2008 at 16:34

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Hank Gay

71.8k ● 36 ● 161 ● 222



2



"Coupling is a measure of interdependencies between modules, which should be minimized" "cohesion, a quality to be maximized, focuses on the relationships between the activities performed by each module."

quoted from this paper: [http://steve.vinoski.net/pdf/IEEE-Old\\_Measures\\_for\\_New\\_Services.pdf](http://steve.vinoski.net/pdf/IEEE-Old_Measures_for_New_Services.pdf)



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answered Sep 2, 2008 at 16:31

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Eduardo Diaz

241 ● 1 ● 3 ● 6

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