

SOLID (object-oriented design)

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In computer programming, **SOLID** (**S**ingle responsibility, **O**pen-closed, **L**iskov substitution, **I**nterface segregation and **D**ependency **i**nversion) is a mnemonic acronym introduced by Michael Feathers for the "first five principles" named by Robert C. Martin^{[1][2]} in the early 2000s^[3] that stands for five basic principles of object-oriented programming and design. The principles, when applied together, intend to make it more likely that a programmer will create a system that is easy to maintain and extend over time.^[3] The principles of SOLID are guidelines that can be applied while working on software to remove code smells by causing the programmer to refactor the software's source code until it is both legible and extensible. It is part of an overall strategy of agile and adaptive programming.^[3]

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Overview

| Initial | Stands for (acronym) | Concept |
|----------------|-----------------------------|---|
| S | SRP ^[4] | Single responsibility principle a class should have only a single responsibility (i.e. only one potential change in the software's specification should be able to affect the specification of the class) |
| O | OCP ^[5] | Open/closed principle “software entities ... should be open for extension, but closed for modification.” |
| L | LSP ^[6] | Liskov substitution principle “objects in a program should be replaceable with instances of their subtypes without altering the correctness of that program.” See also design by contract. |
| I | ISP ^[7] | Interface segregation principle “many client-specific interfaces are better than one general-purpose interface.” ^[8] |
| D | DIP ^[9] | Dependency inversion principle one should “Depend upon Abstractions. Do not depend upon concretions.” ^[8] |

See also

Basic concepts and related topics

- Adaptive Software Development
- Agile programming
- Code reuse
- Computer programming
- Object-oriented programming
 - Inheritance (object-oriented programming)

Design and development principles

- Package Principles
- DRY
- GRASP (object-oriented design)
- KISS
- YAGNI

References

1. "Principles Of OOD" (<http://butunclebob.com/ArticleS.UncleBob.PrinciplesOfOod>), Robert C. Martin ("Uncle BOB"), butunclebob.com, Last verified 2014-07-17. (Note the reference to "the first five principles", though the acronym is not used in this article.) Dates back to at least 2003.
2. "Getting a SOLID start." (<https://sites.google.com/site/unclebobconsultingllc/getting-a-solid-start>), Robert C. Martin ("Uncle Bob"), objectmentor.com. Last verified 2013-08-19.
3. "SOLID Object-Oriented Design" (<http://www.confreaks.com/videos/240-goruco2009-solid-object-oriented-design>), Sandi Metz (Duke University), Talk given at the 2009 Gotham Ruby Conference in May, 2009. Last verified 2009-01-15.
4. "Single Responsibility Principle" (<http://www.objectmentor.com/resources/articles/srp.pdf>) (PDF).
5. "Open/Closed Principle" (<http://www.objectmentor.com/resources/articles/ocp.pdf>) (PDF).
6. "Liskov Substitution Principle" (<http://www.objectmentor.com/resources/articles/lsp.pdf>) (PDF).
7. "Interface Segregation Principle" (<http://www.objectmentor.com/resources/articles/isp.pdf>) (PDF).
8. "Design Principles and Design Patterns" (http://www.objectmentor.com/resources/articles/Principles_and_Patterns.pdf), Robert C. Martin ("Uncle Bob"), objectmentor.com. Last verified 2009-01-14.
9. "Dependency Inversion Principle" (<http://www.objectmentor.com/resources/articles/dip.pdf>) (PDF).

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