

SOLID

In object-oriented computer programming, **SOLID** is a mnemonic acronym for five design principles intended to make software designs more understandable, flexible and maintainable. It is not related to the GRASP software design principles. The principles are a subset of many principles promoted by Robert C. Martin.^{[1][2][3]} Though they apply to any object-oriented design, the SOLID principles can also form a core philosophy for methodologies such as agile development or adaptive software development.^[3] The theory of SOLID principles was introduced by Martin in his 2000 paper *Design Principles and Design Patterns*,^{[2][4]} although the SOLID acronym itself was introduced later by Michael Feathers.^[5]

Concepts

Single responsibility principle^[6]

a class should have only a single responsibility (i.e. only changes to one part of the software's specification should be able to affect the specification of the class).

Open/closed principle^[7]

"software entities ... should be open for extension, but closed for modification."

Liskov substitution principle^[8]

"objects in a program should be replaceable with instances of their subtypes without altering the correctness of that program." See also design by contract.

Interface segregation principle^[9]

"many client-specific interfaces are better than one general-purpose interface."^[4]

Dependency inversion principle^[10]

one should "depend upon abstractions, [not] concretions."^[4]

See also

- Code reuse
- Inheritance (object-oriented programming)
- Package principles
- Don't repeat yourself
- GRASP (object-oriented design)
- KISS principle
- You aren't gonna need it

References

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