

Principles of Object Oriented Design

Object Orientation

- A description of a system using interacting and cooperating objects.
- An object is composed of
 - *attributes* (data)
 - *operations* (behavior)

Object Oriented Design

The activity of planning of a system using interacting and cooperating objects.

Prinicple = Best Practice

- *Principles*
 - are axiomatic laws based on observation
 - assume causality between
 - obidience of such law (cause)
 - and the final outcome of that obidience (effect)

Principles of OOD

Axiomatic laws for designing "good" object oriented software (elements), i.e. software (elements) with one or more *Software Qualities*.

An incomplete list of Software Qualities

Correctness, Robustness, Extendibility, Reusability,
Compatibility, Efficiency, Portability, Ease of use,
Functionality, Timeliness, Verifiability, Integrity,
Repairability, Economy, Maintainability,
Comprehensibility, ...

SOLID Principles

S	Single Responsibility Principle
O	Open/Closed Principle
L	Liskov Substitution Principle
I	Interface Segregation Principle
D	Dependency Inversion Principle

Single Responsibility Principle

Cause:

There should never be more than one reason for a class to change.

Effect:

Verifiability, Repairability, Maintainability

Misc Principles

Package Principles

References

1. Bertrand Meyer: Object Oriented Software Construction. Prentice Hall, 1988
2. Robert C. Martin: Agile Software Development: Principles, Patterns, and Practices. Prentice Hall, 2002

Thanks!