

# Metriche nel software

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## The Dependency Metrics<sup>[1]</sup>

- Responsibility, Independence and Stability of a Package
  - Ca: Afferent Couplings
    - # of dependent external classes
  - Ce: Efferent Couplings
    - # internal classes dependent on external
  - Instability:  $Ce / (Ca+Ce)$  [0,1]
    - 0 = maximally independent
    - 1 = dependent but with no dependents

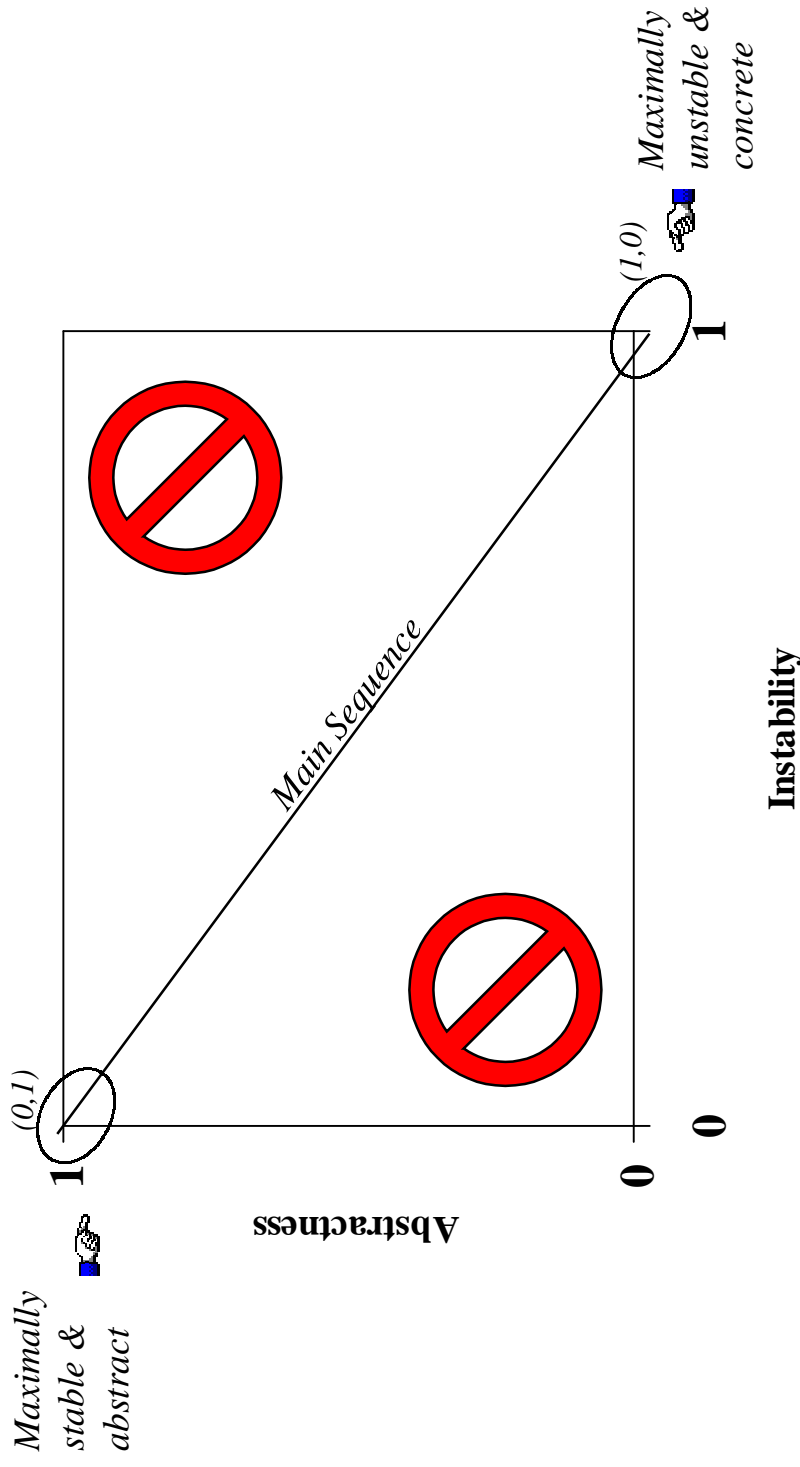
(1) R.Martin, [www.oma.com](http://www.oma.com)

## Stability vs. Flexibility

- **Open Closed Principle**
  - Stable (good) Package
    - Responsible independent abstract classes
  - Unstable (good) Package
    - Dependent irresponsible concrete classes
- **Abstractness**
  - # abstract classes / total # of classes [0,1]

# The Main Sequence

- Define Stability-Abstractness relationship



## [...and its statement](#)

- The MS textual definition
  - Packages that are maximally stable should be maximally abstract. Instable packages should be concrete. The abstraction of a package should be in proportion to its stability
- Combined with the Stable Dependencies
  - Dependency Inversion Principle for classes
    - dependencies toward abstractions

# Example of metrics

