

# **Engineering of Software II**

Spring 2003

# Why Design Patterns?

## *Problems*

- ◆ The hard part about object-oriented design is decomposing a system into objects
- ◆ The task is difficult because many factors influence the decomposition, often in conflicting ways:
  - encapsulation,
  - granularity,
  - dependency,
  - aggregation,
  - flexibility,
  - performance,
  - evolution,
  - reusability

# Why Design Patterns?

## *Solutions*

Expressing proven techniques as design patterns makes them more accessible to developers of new systems. Design patterns:

- Make it **easier to reuse** successful designs and architectures
- Can even **improve** the **documentation** and maintenance of existing systems
- Help you **identify** less-obvious **abstractions** and the objects that can capture them

*Put simply, design patterns help a designer get a design "right" faster.*