50) Summary
Design Patterns And Frameworks

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Summary of the Course

- ► Design patterns play an important role
    - In applications, within frameworks
    - At the border of frameworks (as framework hook patterns)
    - Between layers of layered frameworks (as mini-connectors)
- ► Essentially, role modelling explains design patterns and lays the basis for
    - Framework instantiation
    - Framework composition
    - Coupling of framework layers
    - Optimization of applications depends on the *degree* of role merging
- ► Future application families are build from layered frameworks
- ► OO Design Patterns and frameworks work with the object-oriented component model
    - Other component models exist; much of the variability and extensibility discussion of this course can be conveyed to these component models (see course CBSE in summer)

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The 1 Mio Line Barrier

- ► In this course, you have learned mechanisms to master code between 50kLOC and 1Mio kLOC
    - Framework hook patterns
        - · Composing frameworks builds up large applications
    - Layered frameworks
        - · With 6 layers, 100kLOC each, you end up with 600kLOC
- ► A single human can only understand applications less than 1Mio LOC
    - However, Windows has more than 24 MioLOC!
- ► More can only be understood if architectural description languages and metacomposition are employed
    - Component-based software engineering (CBSE), summer.

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Good Luck.

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