

# Software Architecture and UI Design

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# Outline

- 1 Software Architecture
- 2 UI Design
- 3 Functional and Non-Functional Requirements



# 1 Software Architecture

## 2 UI Design

## 3 Functional and Non-Functional Requirements



# Software Architecture:

- ① One-tier architecture
- ② Two-tier architecture
- ③ Three-tier architecture
- ④ Cloud computing
  - On-demand Self-service
  - Resource Pooling
  - Measured Service
  - Network Access
  - Elasticity/ Scalability



# Compare Two-tier and Three-tier Architecture:

- ① Scalability
- ② Performance
- ③ Network capacity required
- ④ Security
- ⑤ Difficulty of programming



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# Golden Rules of UI Design :

- ① Place users in control of the interface
  - Make actions reversible (undo option)
  - Create an easy-to-navigate interface (progress bar)
  - Provide informative feedback (icon interacts when clicked)
- ② Make it comfortable for a user to interact with a product
  - Use language that is easy to read and understand
  - Use real-world metaphors (recycle bin)
- ③ Reduce cognitive load
  - Chunking for sequences of information or actions (phone number)
  - Less is More (don't put too much information packed into too small a space with too little white space)
- ④ Make user interfaces consistent
  - Visual consistency (button on one page should look the same on any other page)
  - Functional consistency (same button does same thing)



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# Functional Requirements:

- 1 Software requirements specification
- 2 Technical details
- 3 Data manipulation
- 4 Data processing



# Non-Functional Requirements:

- ① Operational Requirements (portability, maintainability)
- ② Performance Requirements (speed, capacity, reliability)
- ③ Security Requirements (digital certificate, access control)
- ④ Cultural and Political Requirements (language, legal, unstated norms)



# THE END

