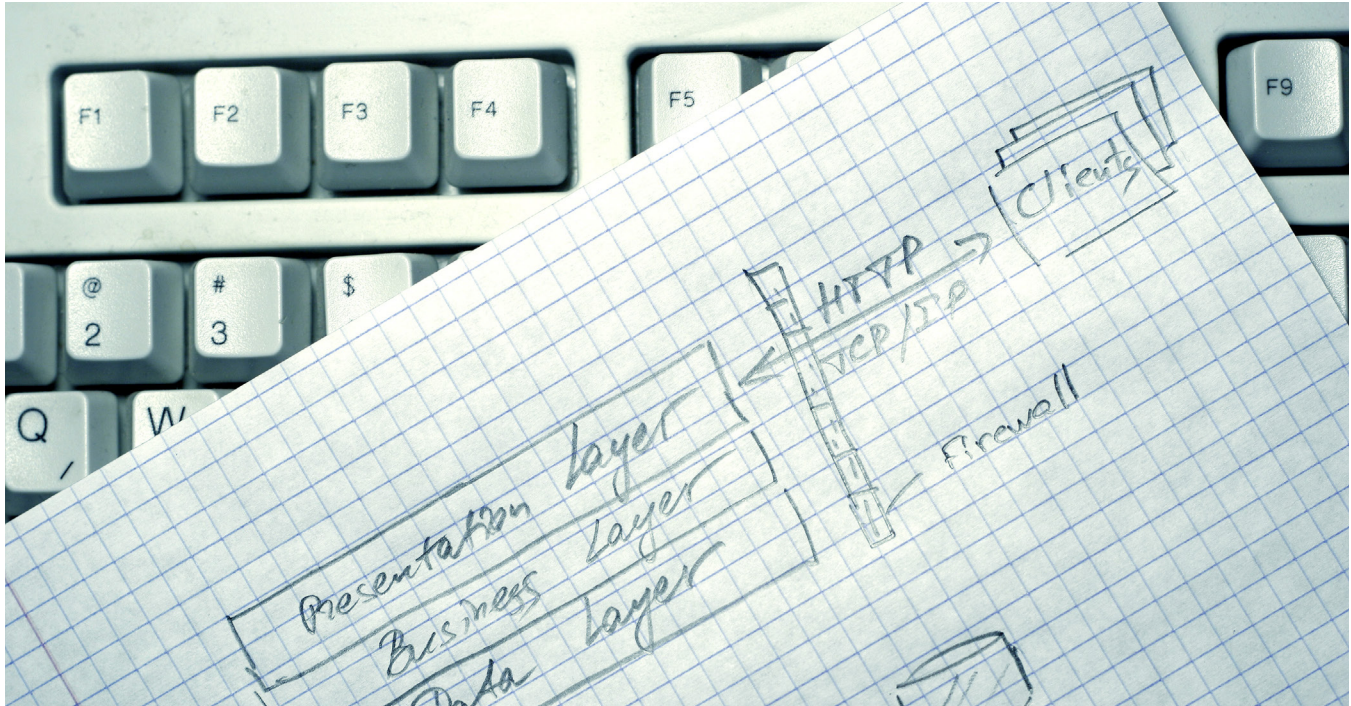


SEI Training

Software Architecture Design and Analysis



About the Course

A system's software architecture is widely regarded as one of the most important software artifacts. Software professionals routinely make decisions that impact that architecture, yet many times that impact is not fully considered or well understood.

- Which design decisions will lead to a software architecture that successfully addresses the desired system qualities?
- How do you know if a given software architecture is deficient or at risk relative to its target system qualities?

This two-day course provides in-depth coverage of the principles and practices needed to effectively design and analyze a software architecture. Through multiple exercises, participants study the application of these practices and get a chance to apply them to sample problems.

This course is based on the book *Designing Software Architectures: A Practical Approach*.

Objectives

This course provides attendees with in-depth coverage of the concepts needed to effectively design and analyze a software architecture. After attending this course, participants will have a better understanding of

- the essential considerations in any architectural design and analysis process
- the Quality Attributes Workshop (QAW) for eliciting critical quality attributes
- the Attribute-Driven Design (ADD) method for designing an architecture
- the Architecture Tradeoff Analysis Method (ATAM) and other methods for evaluating an architecture
- using these methods within a software development life cycle

This course is also a required course in the SEI's Software Architecture Professional certificate program.

Who Should Attend?

- practicing software architects
- designers and developers of software-reliant systems

“Excellent job communicating real-world examples and providing examples for the concepts”

“Well-balanced mix of hands-on practice, lecture, and discussion”

“The course introduced some new concepts as far as architectural approach. I think it was an eye opener.”

— Course Attendees

Topics

- software architecture analysis concepts
- the QAW, a method for eliciting critical quality attributes, such as availability, performance, security, interoperability, and modifiability
- software architecture design concepts
- the ADD method, a method for designing a software architecture
- lightweight architecture analysis
- the ATAM, a method for evaluating a software architecture based on a set of attribute-specific measures of the system such as performance, availability, modifiability, and security
- architecture design and analysis in the organization

Prerequisites

Before registering for this course, participants must complete the Software Architecture: Principles and Practices course, which is available as instructor-led classroom training and as eLearning

Materials

Participants will receive a copy of lecture slides, exercises, and the book *Designing Software Architectures: A Practical Approach*.

Two Ways to Attend

1. Public, instructor-led offering at an SEI office
2. Private, instructor-led training at customer sites

For More Information

To learn more and to register for the course, visit sei.cmu.edu/training/p34.cfm
sei.cmu.edu/training/certificates/architecture

For Course Registration

sei.cmu.edu/training/registration

Training courses provided by the SEI are not academic courses for academic credit toward a degree. Any certificates provided are evidence of the completion of the courses and are not official academic credentials.

About Us

For four decades, the Software Engineering Institute (SEI) has been helping government and industry organizations to acquire, develop, operate, and sustain software systems that are innovative, affordable, enduring, and trustworthy.

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