

€ TRAINING

High Level and Low Level System Design



13 - 17 October 2024
Cairo (Egypt)



High Level and Low Level System Design

REF: B2224 DATE: 13 - 17 October 2024 Venue: Cairo (Egypt) - Fee: 4095 Euro

Introduction:

This training program provides participants with essential knowledge and skills in System Design, covering both High-Level and Low-Level design approaches. It empowers them to understand the principles, methodologies, and practical applications of designing systems at different abstraction levels.

Program Objectives:

At the end of this program, participants will be able to:

- Understand the concepts and principles of High-Level and Low-Level System Design.
- Apply structured approaches to translate requirements into system architecture.
- Implement best practices in designing scalable, reliable, and efficient systems.
- Evaluate and optimize system designs based on performance, security, and maintainability criteria.

Targeted Audience:

- System Architects.
- Software Engineers involved in system design.
- Technical Leads and Project Managers.
- IT Professionals aspiring to enhance their system design skills.

Program Outline:

Unit 1:

Introduction to System Design:

- Overview of System Design principles.
- Importance of system architecture in software development.
- Differences between High-Level and Low-Level design.
- Design considerations: scalability, reliability, performance.
- Integration of system design with development lifecycle.

Unit 2:

High-Level System Design:

- Requirements gathering and analysis.
- Architectural patterns and design paradigms.
- Designing system components and interactions.
- Designing for modularity and reusability.
- Case studies on scalable system architectures.

Unit 3:

Low-Level System Design:

- Detailed design of system components.
- Class and sequence diagrams.
- Data modeling and database design considerations.
- API design and integration points.
- Designing for security and data privacy.

Unit 4:

Performance and Optimization in System Design:

- Performance metrics and benchmarks.
- Techniques for optimizing system performance.
- Load balancing and scalability strategies.
- Caching mechanisms and database performance tuning.
- Continuous improvement and optimization frameworks.

Unit 5:

Evaluating and Documenting System Designs:

- Design review processes and methodologies.



- Documentation standards for High-Level and Low-Level designs.
- Tools for documenting system architectures UML tools.
- Communicating designs to stakeholders and development teams.
- Best practices for maintaining design documentation.