

# € TRAINING

Software Architecture

A group of four smiling professionals (three men and one woman) in a meeting setting. The woman in the foreground is wearing a black top and a multi-strand necklace. The others are wearing white shirts. They are sitting around a table with a laptop and papers. The background is a bright, modern office.

4 - 8 August 2024  
Cairo (Egypt)



# Software Architecture

REF: B2223 DATE: 4 - 8 August 2024 Venue: Cairo (Egypt) - Fee: 4095 Euro

## Introduction:

This training program provides participants with essential knowledge and skills in Software Architecture. Through it, participants will have a clear understanding of software architecture and be able to apply it in your software development projects.

## Program Objectives:

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

- Understand the fundamentals of software architecture.
- Apply architectural patterns and design principles to create scalable, reliable, and maintainable software systems.
- Evaluate trade-offs and make design decisions based on architectural considerations.
- Implement best practices in documenting and communicating software architectures.

## Targeted Audience:

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

## Program Outline:

### Unit 1:

#### Introduction to Software Architecture:

- Definition and importance of software architecture.
- Role of the software architect.
- Software architecture vs. design patterns.
- Architectural styles and patterns overview.

- Evolution of software architecture practices.

## Unit 2:

### Architectural Styles and Patterns:

- Layered architecture.
- Client-server architecture.
- Microservices architecture.
- Event-driven architecture.
- Service-Oriented Architecture SOA.

## Unit 3:

### Designing for Quality Attributes:

- Scalability and performance considerations.
- Security and privacy in software architecture.
- Maintainability and extensibility.
- Availability and reliability.
- Usability and user experience considerations.

## Unit 4:

### Architectural Decision Making:

- Analyzing and defining architectural requirements.
- Identifying and evaluating architectural trade-offs.
- Designing for change and evolution.
- Refactoring and improving existing architectures.
- Case studies on successful architectural decisions.

## Unit 5:

### Documenting and Communicating Architectures:



- Importance of architectural documentation.
- Standards and best practices for documenting architectures.
- Tools and techniques for architectural visualization UML.
- Communicating architectures to stakeholders.
- Using architecture documentation in Agile and DevOps environments.