

€ TRAINING

Software Architecture





Software Architecture

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.