Overview

Software Design and Architecture BootCamp for .NET Developers

A well-designed and properly executed software design and application architecture is beneficial to all stakeholders.

With a clear blueprint, developers can more efficiently build a useful and user-friendly application for the end-users. Administrators will have a clear idea on how to maintain and scale the application, while knowing and ensuring that proper security measures are in place.

Key Features and Benefits

Deep knowledge related to newest architecture best practices and standards.
- Build to change, instead of building to last
- Model to analyze and reduce risk
- Identify key engineering decisions

Technical Highlights

Ready-to-apply knowledge on developing high-quality applications with particular reference to proven architecture for your development teams.

Delivery model

4 days intensive workshop, which shows latest standards, guidelines and best practices in software architecture and identify potential problems with current or planned design.

Only a part of the modules / days is possible. Please ask us.

Target Audience:

This course is an advanced course for developers who want to improve their knowledge about Software Architecture.

Challenges:

- Applications are developed with no architecture or design standards in mind
- No code and components reuse in development teams leads to increased application maintenance costs
- Lack of common application development and architectural standards

Duration: 4 days

Level: 200-400
Syllabus

Students should anticipate consistent start and end times for each day. Early departure on any day is not recommended.

**Module 1: Software Design**: Key Design Principles, Design Patterns, Component Design, SOLID Principles, Separation of Concerns, Inversion of Control, Dependency Injection


**Module 3: Architectural Styles and Guidelines**: What is Architecture? Software Architect Role, Key Principles, Key Architectural Styles (Client-Server, N-Tier, Service Oriented Architecture), Software Factories

**Module 4: Requirements, Product Quality and Scenarios**: Functional and Non-Functional Requirements, Quality In Use Model, Software Product Quality Model, Product Quality Scenarios

**Module 5: Cross Cutting Concerns**: Aspect Oriented Programming, Exception Handling Best Practices, Logging and Monitoring Best Practices, Extensibility (Plugins, Managed Extensibility Framework)

**Module 6: Architectural Patterns**: Layered Architecture, Presentation Layer Patterns (MVC, MVP, MVVM), Data Layer Patterns (Repository Pattern, Unit of Work), Domain Driven Design, CQRS

**Module 7: Software Modelling & Visualizing**: Visual Studio Software Design & Modelling Tools (Layer Diagram, Dependency Graph, Architecture Explorer, UML Diagrams), Enforcing Architectural Constraints, Architecture Sketches Practical Visualization

**Module 8: Testing & Analyzing**: Test (Automation) Pyramid, Aspects of Advanced Debugging, Advanced Performance analysis


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**Software Requirements**: Visual Studio 2013 Ultimate

**Go further**: If you need proof of concepts or an architecture design session for some or all findings, please let us know. Architect or developer coaching on an ongoing basis is also available.

**Other Microsoft Premier offerings from the Software Architecture Track**:

**Software Architecture: Foundation Assessment**
Assessment of existing software design and architecture against Microsoft’s guidelines, practices and patterns.

**Software Architecture: Individual Analysis**
Based on your functional and non-functional requirements this is a customized analysis of existing or planned software architecture guided by ISO 25000.

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