

Software Architecture: UML Diagrams & Layer Modeling

Learn to model, analyse and validate software architecture using UML diagrams, Architecture Explorer and layer diagrams in Visual Studio.

2 Days

DURATION

4

MODULES

56

TOPICS

COURSE OVERVIEW

This course covers the architecture tools available in Visual Studio Ultimate 2013, including model-driven development, domain-specific languages, and the range of UML diagram types. It then examines top-down design using use case, activity, sequence, component, and class diagrams, including how to generate code from a class diagram. The course also covers analysing existing applications through Architecture Explorer, dependency graphs, and code maps. Finally, it covers creating and validating layer diagrams to model and enforce application architecture.

WHO THIS COURSE IS FOR

Software Architects

Software Developers

Systems Analysts

Application Designers

Technical Leads

LEARNING OBJECTIVES

- Explain model-driven development and domain-specific languages
- Identify the architecture tools in Visual Studio Ultimate 2013
- Create use case, activity, sequence, component and class diagrams
- Generate code from a UML class diagram
- Analyse a code base using Architecture Explorer
- Build dependency graphs to navigate application structure
- Create layer diagrams to model application architecture
- Validate layer diagrams and enforce dependencies during the build process

4 Modules, 56 Topics

01

Introduction to Software Architecture

TOPICS

- Designing Visually
- Microsoft's Modeling Strategy
- Understanding Model-Driven Development
- Understanding Domain-Specific Languages
- The "Code Understanding" Experience
- The Architecture Tools in Visual Studio Ultimate 2013
- Use Case Diagrams
- Activity Diagrams
- Sequence Diagrams
- Component Diagrams
- Class Diagrams
- Layer Diagrams
- Architecture Explorer
- What's New with Architecture Tools in Visual Studio Ultimate 2013
- Code Maps
- Visual Studio Visualization and Modeling SDK

02

Top-Down Design with Use Case, Activity, Sequence, Component, and Class Diagrams

TOPICS

- Use Case Diagrams
- Creating a Use Case Diagram
- Use Case Diagram Toolbox
- Activity Diagrams
- Creating an Activity Diagram
- Activity Diagram Toolbox
- Adding an Activity Diagram to a Use Case Diagram
- Sequence Diagrams
- Creating a Sequence Diagram
- Sequence Diagram Toolbox
- Component Diagrams
- Creating a Component Diagram
- Component Diagram Toolbox
- Class Diagrams
- Creating a Class Diagram
- Class Diagram Toolbox
- Generating Code from a UML Class Diagram

03

Analyzing Applications Using Architecture Explorer, Dependency Graphs, and Code Maps

TOPICS

- Understanding the Code Base
- Architecture Explorer Basics
- Understanding the Architecture Explorer Window
- Architecture Explorer Options
- Navigating Through Architecture Explorer
- Exploring Options for Namespaces

EXPLORING OPTIONS FOR CLASSES

- Exploring Options for Members
- Dependency Graphs
- Creating the First Dependency Graph
- Creating a Dependency Graph Without Architecture Explorer
- Navigating Through Your Dependency Graph
- Dependency Graph Legend
- Dependency Graph Toolbar
- The Code Index
- Code Maps
- Summary

04

Using Layer Diagrams to Model and Enforce Application Architecture

TOPICS

Creating a Layer Diagram · Defining Layers on a Layer Diagram · Creating a Layer for a Single Artifact · Adding Multiple Objects to a Layer Diagram · The Layer Explorer · Defining Dependencies

VALIDATING THE LAYER DIAGRAM

Layer Diagrams and the Build Process

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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