Visual Modeling using UML 2 (1 Day)

Course Description: This one-day course is a focused and pragmatic introduction and survey of visual modeling practice using the Unified Modeling Language (UML) version 2. It can be a first step toward formal training in object-oriented analysis and design, or it can fulfill a need for a broad understanding of UML without a need for detail that the student may not need, or is not prepared to absorb. This course provides a concise overview of object-orientation, clearly defines the distinctive properties of classes versus objects, and how to think qualitatively about object-orientation while remaining independent of any specific implementation or programming language. The course discusses and offers examples of all 13 diagrams in UML version 2, but focuses on the five "core" diagrams needed most frequently for business analysis, and software projects. Students complete six diagramming exercises, and work together in an additional conceptual exercise. The exercises provide the students the opportunity to immediately test and evaluate their understanding of the course content.

Audience: Anyone desiring a clear understanding of the diagrams in UML 2, the benefits of each, plus when to use and how to construct each diagram.

Prerequisites: None.

Course Outline

1. Introduction to Classes & Objects

- Why is Object Thinking Important to You?
- Concept: Object
- Concept: Object Operations
- Concept: Class
- Concept: Object from a Class
- Concept: Relationships
- Concept: Abstraction
- Object Interactions

2. UML Overview

- The Unified Modeling Language
- UML Version 2
- The 13 Diagrams
- The five "Core" UML Diagrams

3. UML Use Case Diagram

- Intent and Anatomy of a Use Case Diagram

4. UML Class Diagram

- Intent and Anatomy of a Class Diagram
- UML Class Notation
- UML Visibility Notation

5. UML Class Diagram Relationships

- Association
- Aggregation
- Composition
- Inheritance

6. The UML Behavioral Diagrams

- 7 Behavioral Diagrams in UML

7. UML Sequence Diagram

- Sequence Diagram Intent and Anatomy

8. UML State Machine Diagram

- State: Why is it Important?
- Events
- Activities
- Actions
- Transition
- Special States: Initial State and Final State
- Constructing a State Machine Diagram

9. UML Activity Diagram

- Activity Diagram Intent and Anatomy

10. UML 2 Notation Reference