2012

GLOBAL RELEASE

1st Edition Starts March 15 th

HL7 Practitioner's Guide to UML

e-Learning UML Tutorial for professionals who develop and implement integration models with HL7 standards and agile methodologies

HL7 International™ -Health Level Seven- Founded in 1987 (http://www.hl7.org), is a not-for-profit, ANSI-accredited standards developing organization dedicated to providing a comprehensive framework and related standards for the exchange, integration, sharing, and retrieval of electronic health information that supports clinical practice and the management, delivery and evaluation of health services.

The Unified Modeling Language ™ - UML - (http://www.uml.org), is a specification developed and maintained by the Object Management Group "Organization for Standards Development", SDOs-formed by a nonprofit consortium of ICT industry. Since 1997 is the most used and comprehensive standard to define the structure, behavior and architecture of information systems, applications, business processes and data schemas.

Syllabus

Units & Learning Activities:

Section A

1. REQUIREMENTS - ACTORS

a. Define the problem frame
b. Determine scenarios, information needs and requirements
c. Identify Actors

2. ACTORS CASTING - CONTEXT

a. Define the system under discussion
b. Select HL7 interoperability artifacts
c. Specify the integration model

3. SCENARIOS - USE CASES

a. Scenario - Use Case Model conversion
b. Define the main Use Case and its relationships
c. Specify the elements of a Use Case

Section B

4. CONTROLLED VOCABULARY - PARTICIPANT OBJECTS

a. Write down the project "Concepts Glossary"
b. Identify the CRUD objects involved in Use Case Scenarios
c. Check the traceability between objects and Use Cases

5. DOMAIN MODEL - REFERENCE MODEL - DATA MODEL

a. Define the Domain Analysis Model (DAM)
b. Map the DAM to the HL7 Reference Information Model (RIM)
c. Create the Data Model from the DAM & RIM

6. PROCESS MODEL - ACTIVITY - OBJECT INTERACTION

a. Model the main Scenario Actions with an Activity Diagram
b. Model Use Case Scenario Actions with an Activity Diagram
c. Model a Scenario Object Interaction with a Sequence Diagram

Section C

7. COMPLEX LIFE OBJECTS - STATE MACHINES

a. Select a suitable object and define its life cycle
b. Model States and Transitions of an object life cycle
c. Optimize the State Machine with super-states and sub-states

8. MODEL TESTING - TEST CASES

a. Verify the quality and alignment of a Domain Analysis Model (DAM)
b. Specify Test Cases for the Use Case Scenarios proof
c. Certify a State Machine with multiple Use Case Scenarios

9. COMPONENTS & INTERFACES ARCHITECTURE

a. Work out Components and Interfaces from the DAM
b. Define a Platform Independent Model (PIM) Architecture
c. Resolve the Platform Specific Model (PSM) Architecture

Section D

10. AGILE DEVELOPMENT WITH UML & SCRUM

a. Determine the system's "Evidence Minimum Unit" (EMU)
b. Define the "Product Backlog" with Use Cases & "Prime User Stories"
c. Set up a "Sprint Backlog" with a Functionality Subset & Task Plan

Learning by Doing

Teaching by practice & example:

This virtual workshop facilitates an immersion to the world of formal UML notation. With the appointment of web resources, we develop several blocks of lessons and exercises that focus on one case study: specifying a model of integration between systems with HL7 interoperability artifacts: V2.x & V3 messages, and CDA R2 clinical documents.

At the end of the virtual workshop, participants should:

a. Know the UML rationale (20% to 80% easier problem solving) to model information elements.
b. Learn to use UML to visually communicate the decisions of a systems integration project with HL7 artifacts.
c. Specify requirements based on adequate evidence and usable documentation with a common vocabulary for all agents.
d. Understand the procedures for static and dynamic modelling with a variable scale of abstraction.
e. Know how to apply an agile methodology to document the project deliverables of an HL7 implementation guide.

Web-Based Training

Virtual Workshop:

- UML & HL7 Certified Teachers helping you step-by-step.
- Reading material and activities developed by our tutors.
- Bibliographic and link references.
- Integration activities stewarded by the coaching team.
- Glossary Terminology UML 2.x and SCRUM.
- Discussion forums with support from tutors.
- Self-assessment questionnaires for each teaching unit.
- Workbook with the development of a Case Study.
- UML 2.x diagrams sample repertoire for learning by example.
- UML 2.x Style Manual for creating better models.
- Analysis and Design Patterns explained.

Why?

Modeling & Knowledge Sharing:

- Reaching balance between Risk, Quality and Cost with a sustainable formal documentation.
- Optimize communication between actors through a neat project environment.
- Specify visual complexity and limits of an information problem before considering possible solutions.
- Define the mission and objectives of a project based on the value chain actors.
- Make more visible our decisions and their impact on meeting the functionality requirements and infrastructure.
- Use a common vocabulary to agree the usability and interoperability scheme of a system under discussion.
- Identify the objects involved in all possible scenarios of interaction.
- Establish a framework to facilitate the understanding of the rules of object creation, structure and behavior.
- Determine the life cycle of complex objects and the logic that determines the subsequent state transitions.
- Implement certification criteria to assess the quality of the components of a software architecture (consistency, completeness, usability, decoupling, security, etc.).

How to?

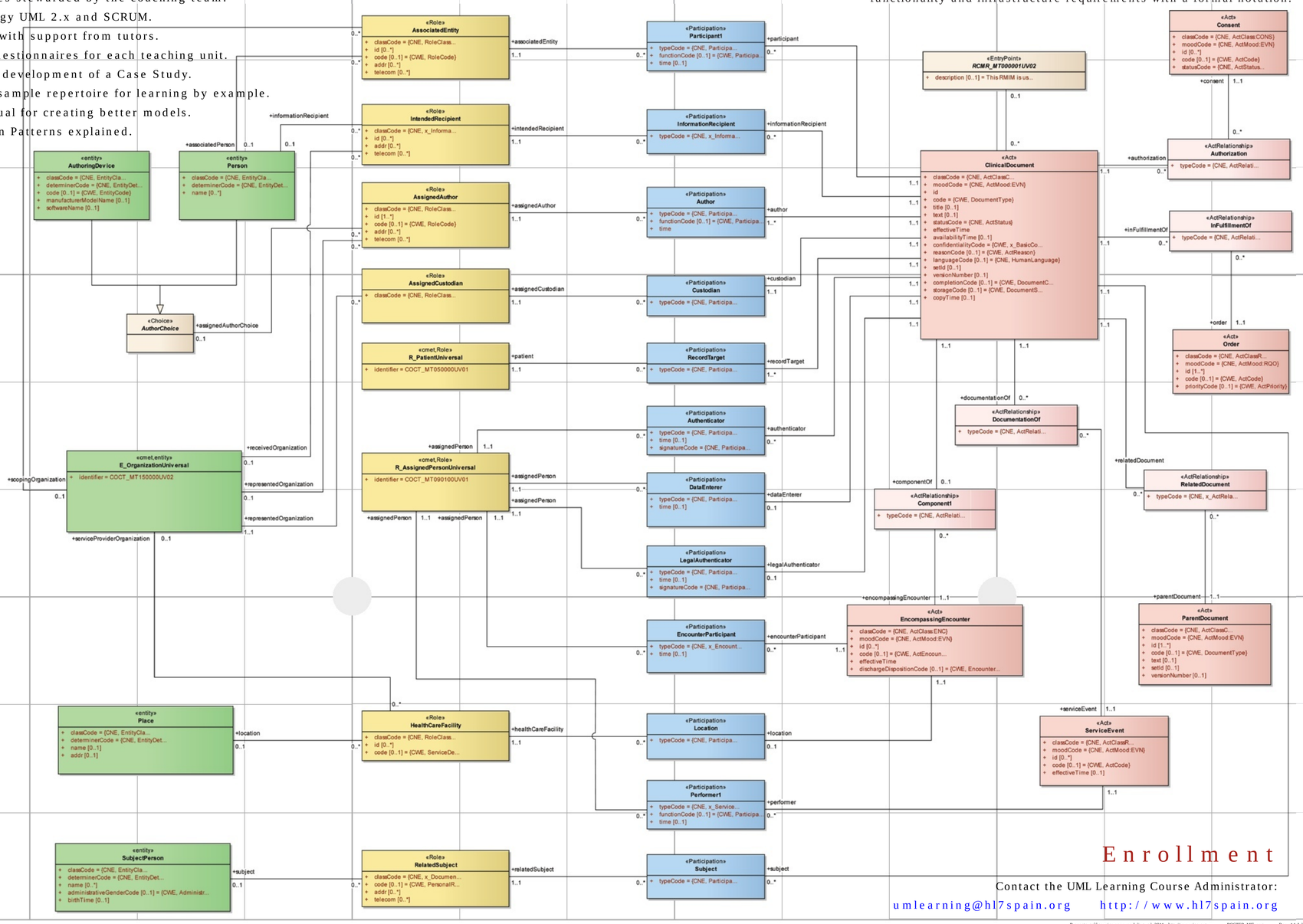
Specify requisites with UML & HL7:

- Virtual Workshop with 50 hours of Web-Based Training
- Syllabus of 10 Units and 30 Learning Activities.
- Average dedication per week: 5 hours.
- Duration of workshop: 10 weeks + 2 complimentary.
- Activities in a typical week:
  - Study of reading materials.
  - Review your lab notebook.
  - Complete self-assessment test.
  - Perform exercises to consolidate learning.
  - Solve questions with tutors.
- HL7 Spain will issue a certificate of accreditation to students who take the virtual workshop teaching units and learning activities.

Who?

Open to the community of:

- Professionals and students in the fields of healthcare information systems.
- Information technology managers concerned with software productivity planning, quality and innovation.
- Technicians in charge of systems integration projects and interoperability schemes specification based on HL7 Reference Information Model.
- Practitioners involved in the development of implementation guides for clinical messaging and clinical documents according to HL7 standards.
- Business Analysts and Software Architects that needs to specify functionality and infrastructure requirements with a formal notation.



Faculty

Editors:
Josep Vilalta (HL7 SPAIN)
Antonio Villegas (UPC - BARCELONA TECH)

Co-Editors HL7
Alberto Sáez (HL7 SPAIN)
Diego Kaminker (HL7 INTERNATIONAL)
Carles Gallego (HL7 SPAIN)
Daniel Nebot (HL7 SPAIN)

Co-Editors UML
Antoni Olivé (UPC - BARCELONA TECH)
Rafael Rosa (vico open modeling)
David Ortiz (UPC - BARCELONA TECH)

Enrollment

Contact the UML Learning Course Administrator:

umlearning@hl7spain.org http://www.hl7spain.org

Proyecto gráfico: vico open modeling, s.l. 2011 - http://www.vico.org POSTER_ME_eng Rev.: 4.1 Julio 2011