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Course : Developing with XSL-T and XSL-FO

generate XML, HTML, graphics and pdf documents

Practical course - 4d - 28h00 - Ref. LSX

Price : 2580 CHF E.T.

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You will master the XSL-T and XPath languages. You will learn XSL-FO for PDF document generation and SVG for image and interface generation. Participants will set up a complete environment for the automated production of documents containing both text and images.

Teaching objectives

At the end of the training, the participant will be able to:

- Creating style sheets using XSL-T and XPath
- Data manipulation and navigation in XML documents
- Generate PDF documents using XSL-FO
- Generate images and graphical interfaces using the SVG format

Intended audience

Application designers and developers, software architects, project managers.

Prerequisites

Basic knowledge of XML and HTML syntax.

Course schedule

1 Introduction to the context of XSL and XPath

- XML technology requirements.
- CSS technology for presentation, CSS limitations.
- Introduction to XSL, XSL-T, XSL-FO and SVG.
- Introduction to Xpath. Basic principles and mechanisms.
- XML parser and XSL processor. Web browser support.
- Implementation of XSL technologies.

PARTICIPANTS

Application designers and developers, software architects, project managers.

PREREQUISITES

Basic knowledge of XML and HTML syntax.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

2 The XPath query language

- XPath expressions. Querying an XML document.
- Research areas and vectors.
- Review of a few simple expressions.
- Select elements/nodes, node sets and attributes in an XML tree.
- Location operator.
- Equation of equality and relation, Boolean operators. Numerical operations.
- Standard functions and processor extensions.

Hands-on work

Writing and testing XPath expressions.

3 The transformation language: XSL-T

- XSL-T stylesheet structure, XSL-T processor processing.
- Namespaces and root XSL elements.
- Output formats: XML, HTML, X-HTML or text vocabularies.
- Use XPath expressions.
- Knots and sets of knots.
- Processing model: templates.
- XSL-T syntax, data types, control structures, etc.
- Notions of variables and parameters.
- Element and attribute generation.
- Declarative or mandatory invocation of processing.
- Element and content retrieval.
- Analysis of XSL-T processor behavior.
- Optimization of node searches.
- Error handling.

Hands-on work

Composition of different types of XSL-T stylesheets.

4 XSL-T, advanced features

- Write functions: simple and recursive calls.
- Modular structure of style sheets.
- Design patterns: Fill-in-the-blank, Navigational, Rule-based, Computational.
- Import and include style sheets with argument passing.
- Creation of reusable libraries.
- Modularity and heritage.
- Transformations based on multiple sources.
- Generate groups of documents.
- Specific features of certain processors.
- Work on heterogeneous namespaces.
- XSL dynamization of office documents: Microsoft Office (Open XML), Open Office (Open Document).

Hands-on work

Creation of modular, nested style sheets, with multiple input structures and generation of multiple output documents. Creation of MS Office documents using XSL.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

5 The developer's toolbox

- Launch command-line transformations.
- Use of various processors (XT, Saxon, Xerces, MSXml...).
- Transformation scripting with Ant.
- Website management.

Hands-on work
Implementation of an XML-based Web site management environment.

6 XSL-T 2.0 and 3.0, X-PATH 2.0 and 3.0

- New features: functions, expressions, operations, sorting, fallbacks and error handling, etc.
- New data types supported.
- Differences in treatment.
- Create a result tree, a sequence of nodes or values.
- XPath queries with regular expressions.
- Numerical functions and operators.
- String functions.
- Functions and operations on dates.

Hands-on work
Manipulate and navigate XML trees.

7 SVG for graphic interfaces and image creation

- SVG, Scalable Vector Graphics. The challenges of vector languages. Advantages of SVG over Flash.
- Server-side and client-side use.
- Editing and user environments: browsers...
- Document structure.
- Coordinate systems and dimensioning. Coordinate system transformation.
- Basic shapes. Styles. Curves and paths. Patterns and gradients. Text and internationalization.
- Masking and cutting.
- Filtering.
- Animation, interaction and scripts.

Hands-on work
Creation of style sheets to generate SVG documents. Generate HTML pages containing graphs.

8 XSL-FO for paper document generation

- XSL-FO, Formatting Objects.
- XSL-FO requirements and objectives. Introduction to the language.
- Available solutions and implementations.
- Example from the Apache.org FOP project.
- Initialization, definition of page templates.
- Content area, region dimensions, page sequences.
- Inclusion of graphics in SVG format.
- Result generation.

Hands-on work
Creation of style sheets combining XSL-T and XSL-FO to generate PDF output. Generate a report containing images in SVG format.

Dates and locations

REMOTE CLASS
2026 : 24 Mar., 16 June, 27 Oct.