SpiralTrain
developer courses

XML Fundamentals

Open Schedule

Audience Course XML Fundamentals
The course **XML** Fundamentals is designed for project managers, system analysts, application developers and system administrators who want to learn the fundamentals of XML and how and where XML can be used.

Prerequisites Course XML Fundamentals
To attend this course basic knowledge of the Internet and HTML is required. Knowledge of databases and object oriented programming is beneficial to the understanding of the subject matter.
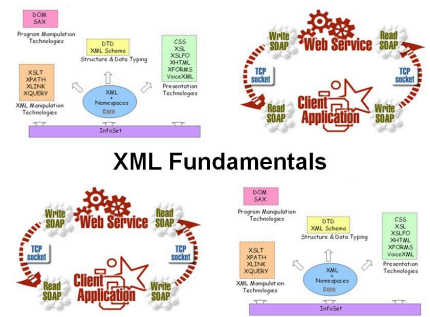
Realization Training XML Fundamentals
The theory is covered using presentation slides. Demos are used to clarify the theory. There is ample opportunity to practice.

Certification XML Fundamentals
Participants receive an official certificate XML Fundamentals after successful completion of the course.

XML Fundamentals

Content Course XML Fundamentals

In the course XML Fundamentals participants will gain a thorough understanding of the fundamentals of XML. The concepts of the meta language XML are discussed as well as the usage of XML.

XML Syntax
Attention is paid to the syntax of XML documents and to the difference between well-formed and valid XML documents.

DTD's and XML Schema
The role of Document Type Definitions (DTDs) and XML Schema's (XSD files) is discussed as well as the importance of several derived XML languages, so called XML vocabularies, is explained.

XPath and XSLT
Also the different ways to present XML documents is covered. In this respect the focus is on the use of eXtended Stylesheet and Transformation Language (XSLT) style sheets and the XPath language to locate and address certain parts in an XML document.

XQuery
The XQuery XML standard for accessing XML and relational data stores is covered and the syntax and practical applications of XQuery are explained.

Web Services
Also attention is paid to Web services for exchanging data between heterogeneous distributed systems and related standards such as SOAP and WSDL.

DOM and SAX
Finally the access of an XML document from a programming language with the DOM and SAX API is discussed. Possible follow-up courses are **XSLT Stylesheet**, **XML Schema** and **XQuery**.

Modules Course XML Fundamentals

Module 1 : XML Introduction	Module 2 : XML Syntax	Module 3 : XML Validity
What is XML?	XML Document Structure	Document Type Definition
XML versus HTML	Node Tree	DOCTYPE Declaration
Structured Documents	XML Prolog	Internal and External DTD
Roots of XML	XML Elements	Element Declaration in DTD
XML Standard	XML Attributes	Attribute Declaration in DTD
Markup Languages	Well Formed Documents	XML Schema as DTD Successor
XML as Meta Language	Valid Documents	DTD to XML-Schema Conversion
Benefits of XML	Processing Instructions	XML-Schema Vocabulary
XML Technologies	Entity References	XML Schema Namespace
Applications of XML	CDATA Sections	Referencing XML Schema's
XML Validation with XML Schema	Character References	Simple and Complex Types
XML Presentation with Stylesheets	Comments	XML Schema Data Types
XML Transport with Web Services	Namespaces	User Defined Data Types
Module 4 : XML Formatting	**Module 5 : XQuery**	**Module 6 : XML Programming**
Separate Content and Presentation	What is XQuery?	XML Processing Options
What is XSL?	XQuery Processing Model	The XML DOM
XSLT Stylesheets	Types of Queries	Building a DOM Tree
How does XSLT work?	Where is XQuery used?	Node Interface Model
What is XPath?	XQuery and other Technologies	XML Access through DOM
Stylesheet Blueprint	Basic Syntax Rules	Navigation and Manipulation
Templates	Selecting Nodes	Simple API for XML
xsl:value-of	XPath Expressions	SAX Callbacks
xsl:for-each	FLWOR Expressions	XML Parsing Models
xsl:if	Structure of an XQuery Module	Pull Parsing versus Push Parsing
Using Predicates	XQuery Functions	What is JAXB?
Applying templates	Element Constructors	JAXB Architecture
XSLT as Transformation Language	Conditional Expressions	JAXB Binding Life Cycle

Module 7 : XML Web Services
What is a Web Service?
Role of Interface
Interoperability
Web Service Stack
RPC Style Web Services
Document Style Web Services
What is SOAP?
SOAP
Structure SOAP Message
SOAP Messages as Payload
SOAP Header
What is WSDL?
Basic Structure WSDL
WSDL and Code generation
Service Orientation
WS Standards Overview