

XML Technology and Java

Opening

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Objective

The course has two main objectives:

- 1) To provide students with the solid foundation and understanding of XML and XML-related technologies.
- 2) To develop skills in writing XML-processing Java applications using:
 - a) SAX (Simple API for XML),
 - b) DOM (Document Object Model) and
 - c) XSLT (Extensible Stylesheet Language Transformations).

Program

1) Introduction

- a) motivation
- b) overview
- c) origin
- d) W3C

2) XML Language

- a) Unicode
- b) XML
- c) DTD
- d) namespaces

3) XML Technologies

- a) validation (XML Schema)
- b) access (XPath)
- c) transformation (XSLT)

4) XML Java Processing

- a) tree-based programming (DOM)
- b) event-based programming (SAX)
- c) rule-based programming (XSLT)

Timetable

4 days timetable:

- Introduction, Unicode
- XML
- DTD
- Namespaces, XML Schema
- XPath, XSLT
- Java XML with DOM
- Java XML with SAX and XSLT

Organization

The course consists of:

- lectures
- demonstrations
- assignments (tasks to perform)
- project work

Literature

The basis for the course are official technical documents of W3C:

- World Wide Web Consortium, Technical Reports, <http://www.w3c.org/TR/>

Recommended general books:

- Erik T. Ray, Learning XML, O'Reilly, 2001
- Kenneth B. Stall, XML Family of Specifications, Addison Wesley, 2003

More Literature

Recommended specialised books:

- Processing XML with Java, E. R. Harold, Addison Wesley
- XML Internationalisation and Localization, Yves Savourel, SAMS
- XML Topic Maps, Jack Park (Ed.), Addison Wesley
- Secure XML, D. E. Eastlake III and Kitty Niles, Addison Wesley
- XML Data Management, A. Chaudhri et. al., Addison Wesley
- ebXML, A. Walsh, Prentice Hall
- XML Distributed Systems Design, A.M. Rambhia, SAMS
- Modelling XML Applications with UML, D. Carlson, Addison Wesley
- etc.

History

This course was delivered before:

- 1) September 2003, UNU-IIST, Macau, 40 hours course for Macau IT staff from government, academia and industry.
- 2) October 2003 – January 2004, University of Gdańsk, Poland, 120 hours (60 hours of lectures and 60 of exercises) monograph elective course for Master degree students.