

PB138 — Overview of the course

(C) 2019 Masaryk University -- Tomáš Pitner, Luděk Bártek, Adam Rambousek

Motivation for semistructured data

- business data exchange (XML business formats)
- cloud app data management
- security applications: log and event processing
- web and mobile dynamic applications
- document data, document XML-based formats
- hand-made fast content creation (asciidoc, markdown...)
- industrial applications (in energy management: OMS/MBus data, DLMS/COSEM)
- security applications: XML and/in cryptography

Lifecycle of semistructured data

- create semistructured data
- share semistructured data
- use semistructured data
- store semistructured data

Application domains

- security and system operations
- testing
- enterprise/business data
- industry
- critical infrastructures
- text/document data
- web and mobile dynamic applications

1. Intro XML markup

- slides [Introduction to markup](#)
- slides [Motivation for XML and fundamental concepts](#)
- slides [XML document structure](#)
- slides [Characters in XML documents](#)
- demo [well-formedness checking with xmllint](#), download as [ZIP](#)

2-3: Fundamental XML Standards

- slides [Concepts, XML Specification](#)
- slides [XML Base](#)
- slides [XML Namespaces](#)
- slides [DOM and other APIs](#)
- demo showing [DOM tree listing](#) in Java
- demo showing simple [DOM manipulation](#) in Java

4. Navigation in XML, XPath

- slides [XPath](#)
- demo [XPath from Java](#)

5. Modeling, XML Schema

- slides [Modeling, XML Schema](#)
- demo [XML Schema validation with 'xmllint'](#)
- slides [Relax NG](#) as other XML modeling language

6-7. Processing, transformations, XSLT

- slides [XML Pipeline](#)
- slides [Transformations, XSLT](#)
- demo [XSLT from Java](#)

8. XQuery, XML Databases

- slides [XQuery](#)
- slides [XML Databases](#)

9-10. Web and Assistive Markups

- slides [XHTML](#)
- slides [HTML 5](#)
- slides [CSS](#)
- slides [XForms](#)
- slides [SVG](#)

- slides [Voice XML](#)

11. Document Markups

- slides [Docbook](#)
- slides [DITA](#)
- demo [Docbook Demo](#)

12. Specific Markups

- slides [XML markups](#)
- slides [Industry 4.0 markups](#)
- slides [Internet/Web of Things markups](#)
- slides [Cybersecurity markups](#)
- slides [Markups for Critical infrastructures](#)
- slides [Automated testing markups](#)
- slides [Business intelligence markups](#)

13. Metadata, Microformats, Advanced XML Processing

- slides [Metadata, RDF](#)
- slides [Microformats](#)
- slides [Shells etc.](#)