

A
Semantic
Web
Primer

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and
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1.5 **Book Overview**

In this book we concentrate on the Semantic Web technologies that have reached a reasonable degree of maturity.

In Chapter 2 we discuss XML and related technologies. XML introduces structure and metadata to Web documents, thus supporting syntactic interoperability. The structure of a document can be made machine-accessible through DTDs and XML Schema. We also discuss namespaces, a technique for resolving name clashes if more than one document is imported; accessing and querying XML documents using XPath; and transforming XML documents with XSLT.

In Chapter 3 we discuss RDF and RDF Schema. RDF is a language in which we can express statements about objects (resources); it is a standard data model for machine-processable semantics. RDF Schema offers a number of modeling primitives for organizing RDF vocabularies in typed hierarchies.

Chapter 4 discusses OWL, the current proposal for a Web ontology language. It offers more modeling primitives, compared to RDF Schema, and has a clean, formal semantics.

Chapter 5 is devoted to rules, both monotonic and nonmonotonic, in the framework of the Semantic Web. While this layer has not yet been fully defined, the principles to be adopted are quite clear, so it makes sense to present them.

Chapter 6 discusses several application domains and explains the benefits that they will draw from the materialization of the Semantic Web vision.

Chapter 7 describes the development of ontology-based systems for the Web and contains a miniproject that employs much of the technology described in this book.

Finally, chapter 8 discusses briefly a few issues which are currently under debate in the Semantic Web community.