

# ΑΝΟΙΚΤΑ ΣΥΝΔΕΔΕΜΕΝΑ ΔΕΔΟΜΕΝΑ ΚΑΙ ΕΦΑΡΜΟΓΕΣ

Μία Πρακτική Προσέγγιση στον Σημασιολογικό Ιστό



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### Abstract

In this book, an overview of the structural elements of the Linked Open Data (LOD) movement is presented, along with the historical relationship between LOD and the Semantic Web, emphasizing the fundamental value of metadata for constructing flexible ("intelligent") applications that dynamically adapt to data with unknown schemas. Special emphasis is placed on Uniform Resource Identifiers (URIs) and the use of HTTP URIs within the context of the Semantic Web and LOD. To provide readers with a comprehensive understanding of the representation model underlying LOD, the transition from different knowledge organization models (e.g., tabular organization and the relational model) to the graph model of the Resource Description Framework (RDF) is presented. The subsequent chapter further develops the use of URIs for denoting well-defined concepts and for partitioning datasets in an RDF database

using named graphs. Within the context of ontology development for use by LOD applications, standards for deriving new knowledge through inference from existing RDF databases are described, with particular emphasis on their practical application. Information retrieval in the form of LOD relies on two traditional techniques: navigation and search. This book presents information from the World Wide Web as a unified graph of connected data and provides navigation techniques for applications (agents) within it. Additionally, it discusses typical search services for RDF databases, analogous to search services targeting human users. The book concludes with the presentation of selected software components for the creation, publication, retrieval, and processing of LOD, along with the discussion of open issues regarding the application of LOD in the modern World Wide Web environment.

