

Linked Data

Storing, Querying, and Reasoning

This book describes efficient and effective techniques for harnessing the power of Linked Data by tackling the various aspects of managing its growing volume: storing, querying, reasoning, provenance management and benchmarking.

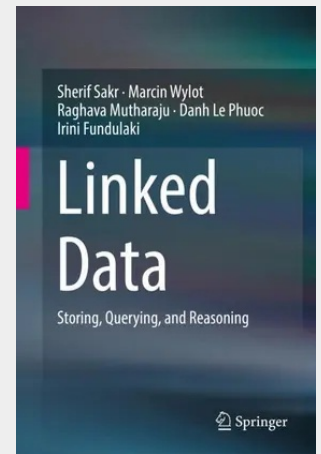
To this end, Chapter 1 introduces the main concepts of the Semantic Web and Linked Data and provides a roadmap for the book. Next, Chapter 2 briefly presents the basic concepts underpinning Linked Data technologies that are discussed in the book. Chapter 3 then offers an overview of various techniques and systems for centrally querying RDF datasets, and Chapter 4 outlines various techniques and systems for efficiently querying large RDF datasets in distributed environments. Subsequently, Chapter 5 explores how streaming requirements are addressed in current, state-of-the-art RDF stream data processing. Chapter 6 covers performance and scaling issues of distributed RDF reasoning systems, while Chapter 7 details benchmarks for RDF query engines and instance matching systems. Chapter 8 addresses the provenance management for Linked Data and presents the different provenance models developed. Lastly, Chapter 9 offers a brief summary, highlighting and providing insights into some of the open challenges and research directions.

Providing an updated overview of methods, technologies and systems related to Linked Data this book is mainly intended for students and researchers who are interested in the Linked Data domain. It enables students to gain an understanding of the foundations and underpinning technologies and standards for Linked Data, while researchers benefit from the in-depth coverage of the emerging and ongoing advances in Linked Data storing, querying, reasoning, and provenance management systems. Further, it serves as a starting point to tackle the next research challenges in the domain of Linked Data management.

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