



# DATA AND KNOWLEDGE MANAGEMENT

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## RESPONSABLES

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## OBJECTIFS

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While relational databases continue to play an important role for managing data, modern application contexts often require attention to specific aspects of data and its usage. Applications use data with respect to ontologies (that represent particular domains of knowledge) and require reasoning services. Data might be uncertain or of poor quality and applications need to cope with these issues. For certain applications it is more important why a particular tuple is (or is not) in the query result than the query result itself. Again other applications pose particular requirements w.r.t. to the modalities of access (for example natural language queries). Large-scale data requires again other data management services. The course gives an overview of modern data and knowledge management techniques and presents some of the recent research questions in these domains.

## KEYWORDS

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Data models, Semantic Web, Uncertain data, data quality, data provenance. Querying data and knowledge bases, other modalities of access (natural language, faceted search), large graphs, knowledge maintenance

## PREREQUISITES

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Bases de données

## CONTENTS

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Part 1: Data models : relational databases, RDF, formal models ontologies, Semantic Web, modelling uncertain data, data quality, data provenance

Part 2: Querying data and knowledge bases, query evaluation techniques, Other modalities of access (natural language, faceted search) Large graphs, models and data access for large-scale data, knowledge maintenance

## LEARNING OUTCOMES

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Data models, Semantic Web, Uncertain data, data quality, data provenance. Querying data and knowledge bases, other modalities of access (natural language, faceted search), large graphs, knowledge maintenance

## APPARTIENT À

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