

Mashups and semantic web



Outline

- Semantic web introduction
 - Semantic web technologies
 - RDF
 - Ontologies
 - OWL
 - SPARQL
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Outline ctd..

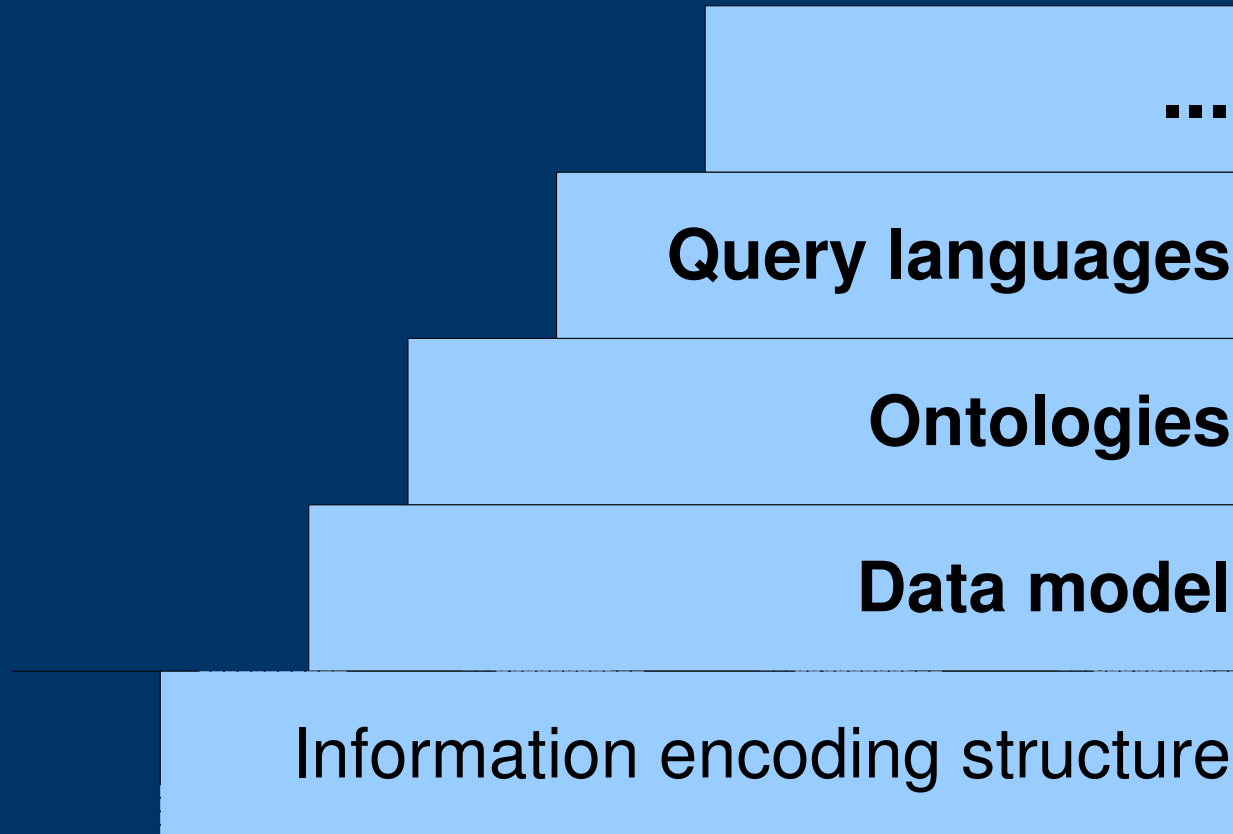
- Mashups
 - ONKI-Geo Service
 - RDF Book Mashup
- Final thoughts



Semantic web introduction

- Information in machine-readable format
 - Unified information representation
 - Application interoperability
 - Automation of reasoning processes
 - Application "smartness"
 - Layered design
 - Developers may use the selection of techniques they wish
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Semantic web: layer model



RDF

- Based on triplets
 - URI based vocabulary
 - No restrictions about structure
 - Anyone can make statements
 - Possibility of false or misleading information
 - Flexibility
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Ontologies

- Provide richer classification of information
 - Gives semantic web a domain
 - Everyone might not see information “the same”
 - For example the word lion
 - Astrologists vs. biologists
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OWL

- Ontology language
 - Extends RDF vocabulary
 - Three sublanguages
 - OWL Lite
 - OWL DL
 - OWL full
 - Provide increasingly expressive environments
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SPARQL

- An RDF database query language
- Communication via XML forms
 - Communication protocol freedom
- Single interface with only one function:
query



Mashups

- Combine data
 - Multiple sources
 - Solid developer base
 - With more easier-to-use development platforms
 - Ideal for combining legacy datastructures with semantic web data
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ONKI-Geo Service

- Created by FinnONTO project
 - Uses SUO (Finnish Place Ontology) information
 - FinnONTOs ontology browser with autocompletion
 - Google Maps visualization
 - For interested:
<http://www.seco.fi/onkipaikka>
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RDF Book Mashup

- Demonstration mashup to integrate data to semantic web
- Data retrieval from Amazon and Google aswell as from semantic web services
- Data relay as RDF
 - RDF crawlers and browsers

Final thoughts

- Masups emerged due to different service APIs
 - By definition suited for combining data from different sources
 - Working applications already exist
 - Can be invaluable tool in automating the conversion from legacy models to the semantic web format
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