



UNIVERSITY OF LEEDS

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Semantic Media Wiki & Extensions

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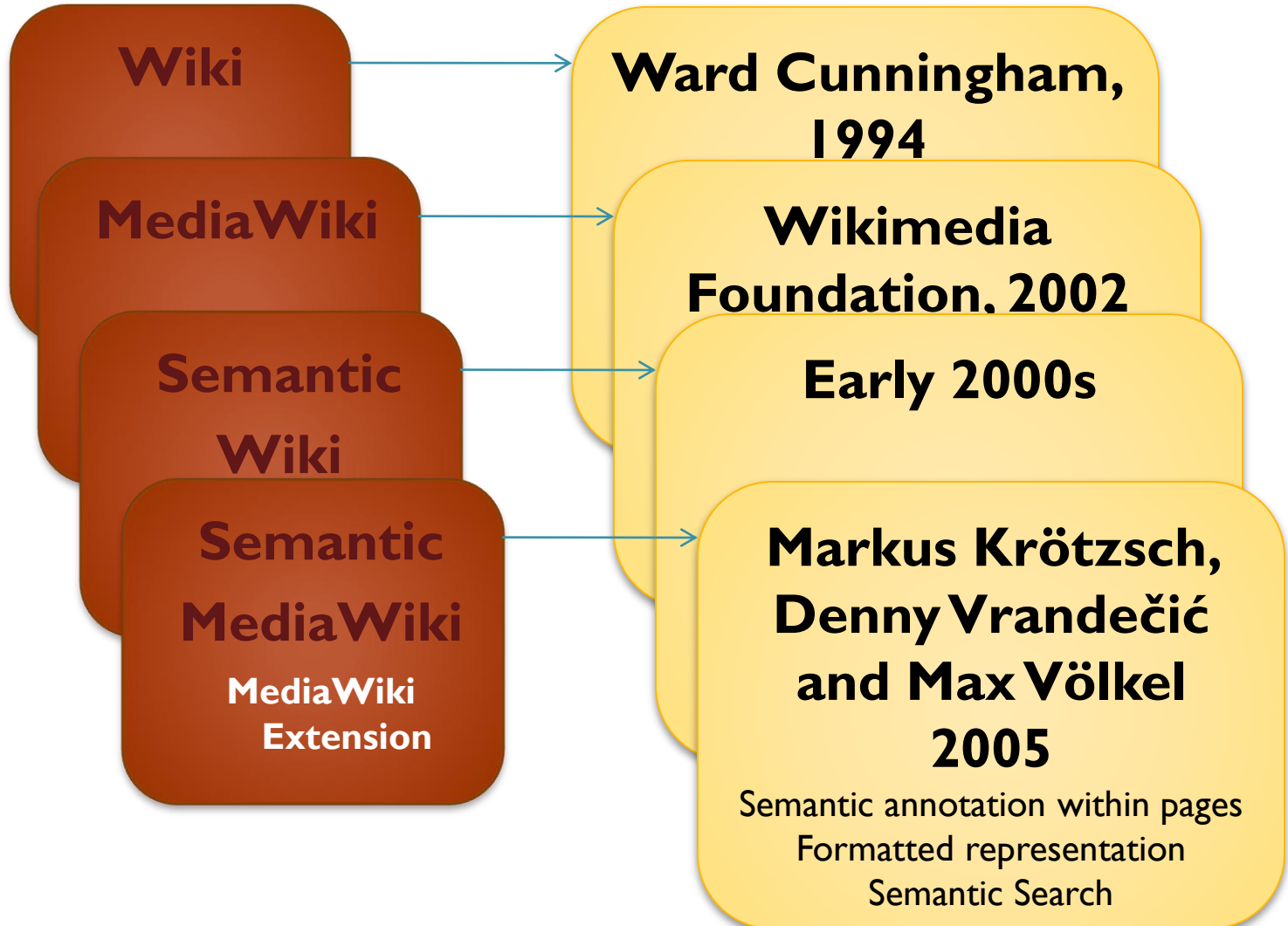
Outline

- Semantic Media Wiki fundamentals
- Architecture and development
- Challenges and Functionality
- Ontology in the SMW
- Extensions
- Discussion



Semantic Media Wiki fundamentals

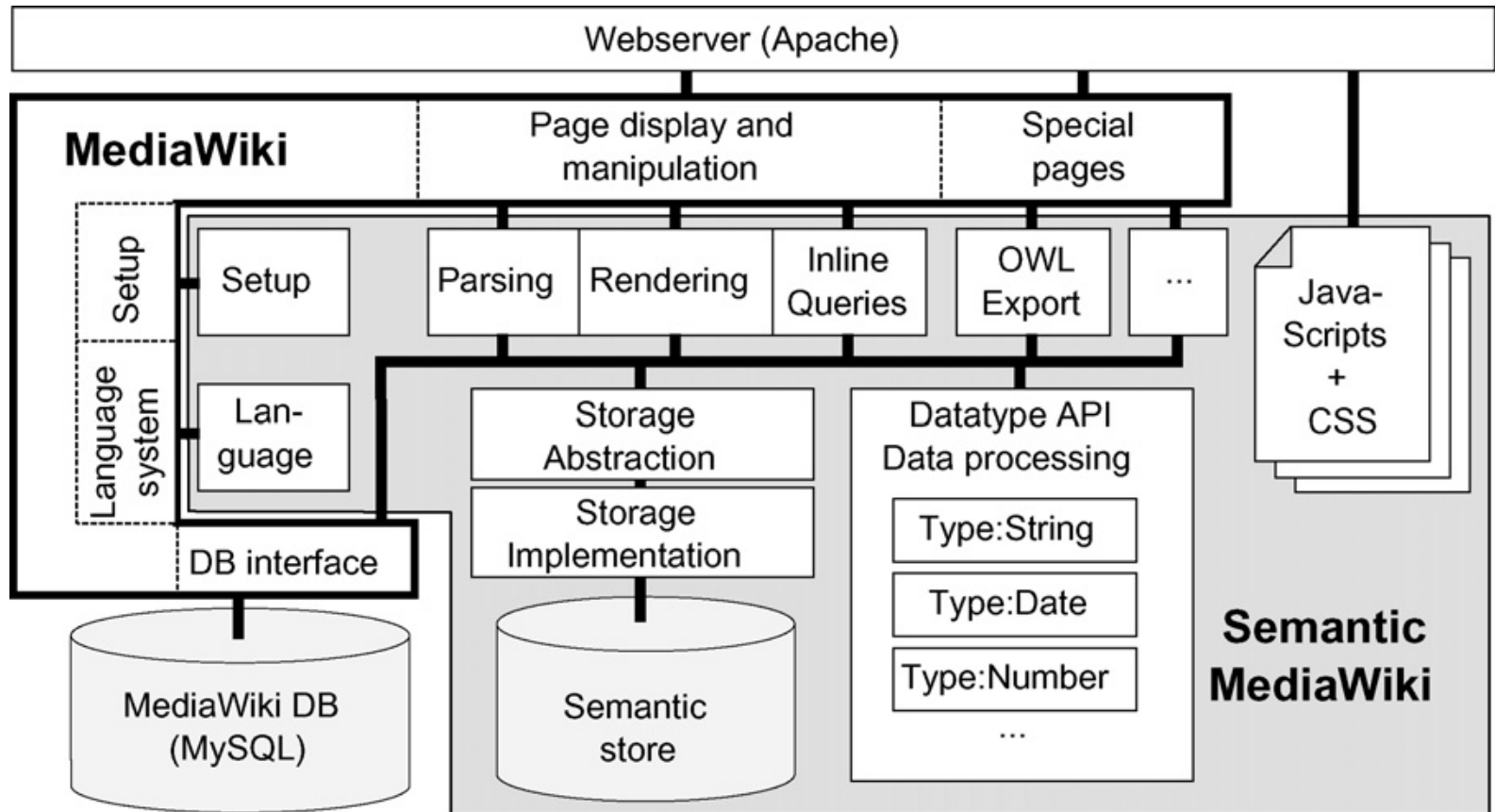
History...



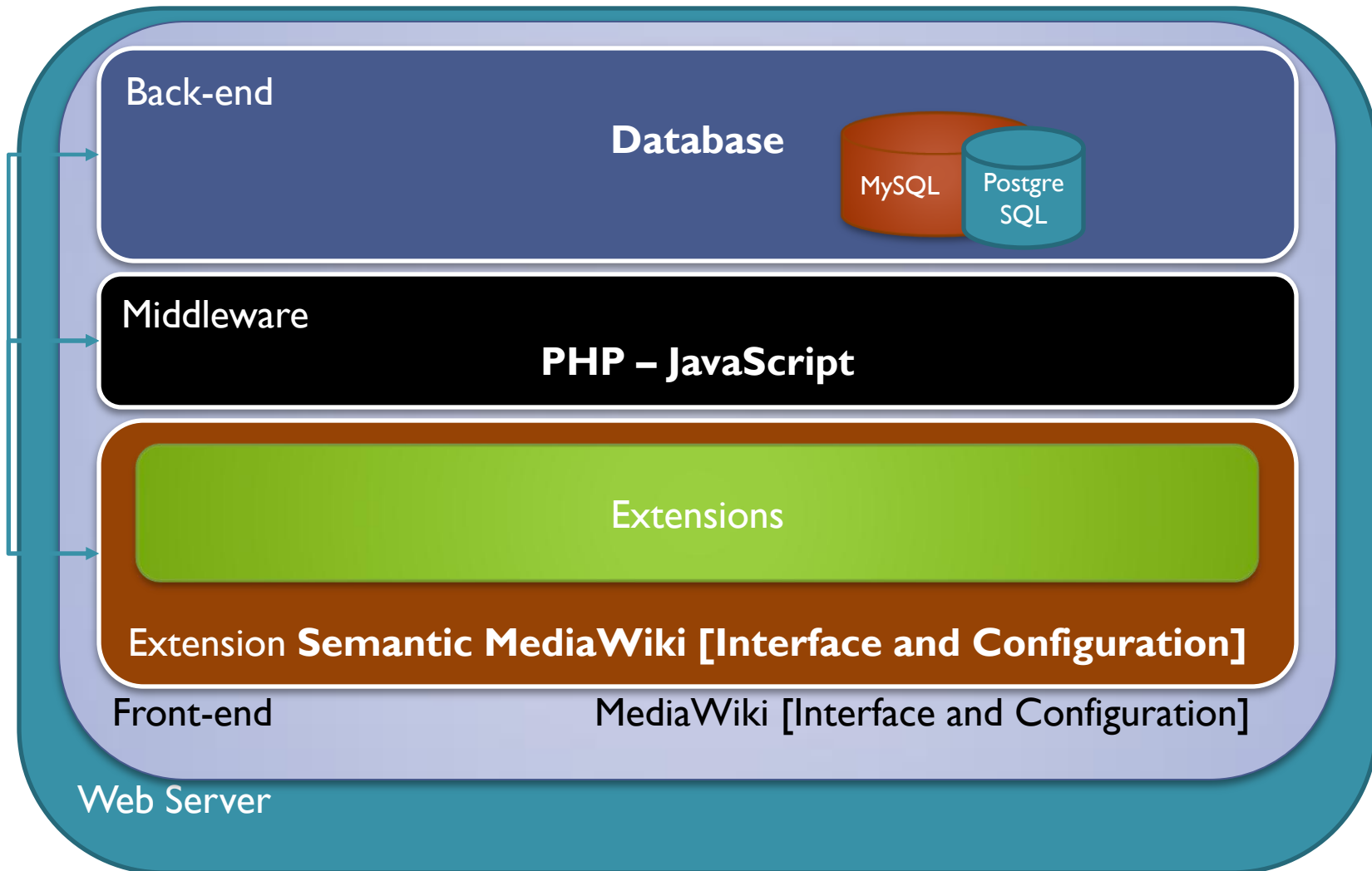


Architecture and development

SMW Architecture



SMW Development





Challenges and Functionality

Addressed challenges

- Consistency of Content
- Accessing Knowledge
- Reusing Knowledge

Main characteristics

- It is based on semantic annotation of web content (i.e. web pages)
 - Annotations make statements about articles
 - Categories: pages classification
 - Relations: annotations of existing links between articles
 - Attributes: relate articles to things that are not articles (e.g. Data Type)
 - Dynamic pages creation via inline queries
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- Enable user collaboration
 - Structured and organized Knowledge
 - Information sharing



Ontology in the SMW

Ontology in the SMW

- Persistent storage in SMW Database tables
- Articles mapping
 - Every article corresponds to exactly one ontology element (class, instance, property)
 - Article Category mapping to OWL Class
 - Relation of articles (links) mapping to OWL Object Property
 - Attributes of articles mapping to OWL Data Type Property, Annotation Property and Object Property

Mapping to OWL DL

- Reusing existing Ontology
 - Import Ontology: modify wiki pages to represent the relationships of the imported OWL DL Document
 - Vocabulary use: map wiki pages to elements in the ontology
- External Knowledge reuse
 - Export Ontology (OWL/RDF)
 - Ontology reuse in other applications



Extensions

http://www.mediawiki.org/wiki/Extension:Semantic_MediaWiki

SMW Extensions : Halo

- Semantic annotations enhancement
- Auto-completion
- Graphical query interface
- Ontology browser

http://en.wikipedia.org/wiki/Project_Halo

SMW Extensions : MetaVid

- Audio/Visual media meta-stream
- Media search engine
- Sequencer

http://metavid.org/wiki/MetaVidWiki_Software

SMW Extensions : Semantic Forms

- Add/Edit Data
- Create Categories, Properties and templates
- Querying

SMW Extensions : Semantic Query Form Tool

- User friendly query forms
- Inline queries
- Existing values selection

<http://www.mediawiki.org/wiki/Extension:SemanticQueryFormTool>



Discussion

Ideas and Questions

- Flexibility of coding and error handling
- “*On the fly*” interaction with the ontology
- Extend auto-completion with more intelligent input recommendation
- Inject self- implemented algorithms for queries
- User profiling
- Heterogeneity of media input