

Online Authoring System with Semi-automatic Annotation and Visual Knowledge Representation

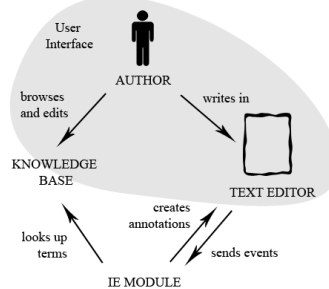
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Motivation

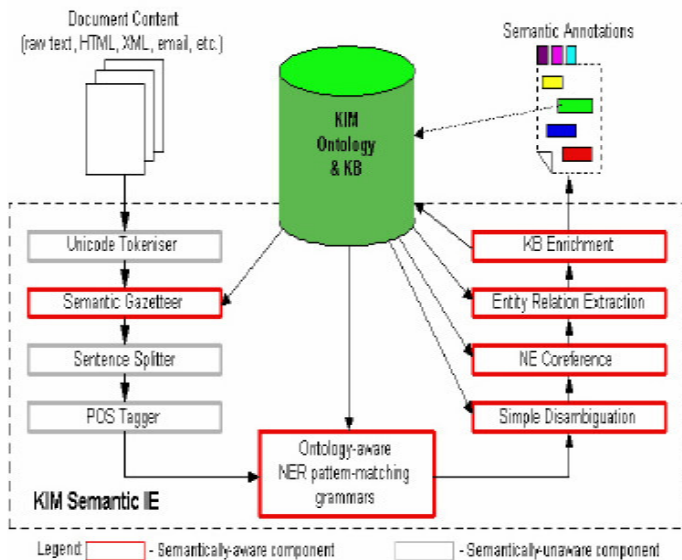
- SmartBook Project
- Adding links manually to everything an author mentions in his book has several shortcomings:
 - It's done manually;
 - Linked pages are inconsistent and incomplete;
 - Relations between terms are not instantly visible;
 - Authors cannot automatically use previous works on the same subject.



Our Solution

- **Centralized Knowledge Base** – to store unified information about the outer world
- **Text editor** – the place where authors write
- **Lookup-based information extraction** – named entities, available in the KB are automatically annotated in the text, while typing
- **Local Knowledge Base** – to store the pieces of knowledge, directly connected with the text (book)
- **Graph visualization tool** – dynamically synchronized to the semantic annotations provided by KIM.

KIM default Information Extraction pipeline

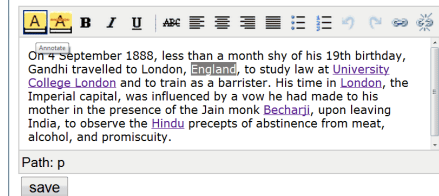


Semantic text editor

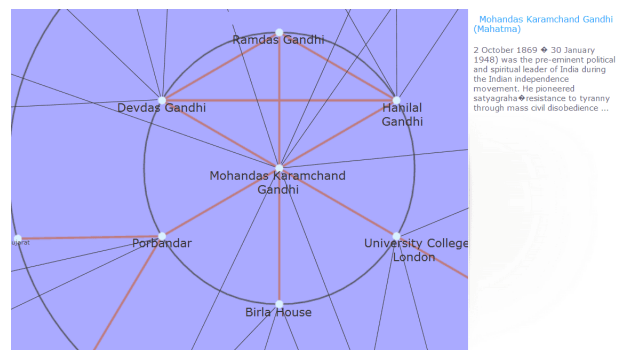
Mahatma Gandhi

Mohandas Karamchand Gandhi was born on 2 October 1869 in **Porbandar**, a coastal town in present-day **Gujarat, India**...

Mohandas and **Kasturba** had four more children, all sons: **Harilal**, born in 1888; **Manilal**, born in 1892; **Ramdas**, born in 1897; and **Devdas**, born in 1900...



Visualization tool



KIM

We use the KIM Platform because of:

- **GATE** - General Architecture for Text Engineering;
- **OWLIM** – The most scalable and robust;
- Server availability through web services;
- Established methodology for **semantic annotation** of documents;

We are customizing KIM for the needs of simultaneous annotation while the user is typing.

Future Work

- Apply custom ontologies and Knowledge Bases for different domains
- Integrate with popular Content Management Systems
- Utilize KIM search capabilities to provide semantic navigation
- Perform tests and improve usability