Mapping the Uncharted Lands of Linked Data

DBpedia Atlas

Mapping the Uncharted Lands of Linked Data

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Motivation

- Users always ask “What is the dataset like?”
- Linked Data sets are difficult to make sense to non-experts of Semantic Web:
  - Content (Data)
  - Structure (Ontologies)
- Visualizing or exploring LD sets is difficult:
  - Volume
  - Complexity
Applications like LODlive, RelFinder, DBpedia viewer, LOD Visualization, ... feature some but not all of the following:

- description of a single instance
- exploration of small groups of instances
- presentation of a summary of the whole dataset

None of them follows Shneiderman’s Mantra.
Visual Information-seeking Mantra

“Overview first, zoom and filter, then details on demand.”

Lead a user from an overview of the main features of a dataset to its tiniest details.

- Provide an overview that acts as an entry point of the dataset
- Allow to zoom and filter for focusing on specific parts of the dataset
- Give details on single instances
Use case

The DBpedia knowledge base*

- 3 billion RDF triples
- More than 4 million instances
- A hierarchical ontology composed of 685 classes

*DBpedia - A crystallization point for the Web of Data
Spatialization approach

Gosper space-filling curve*

Hexagonal tiles

Treemap

*[GosperMap: Using a Gosper Curve for Laying Out Hierarchical Data - Auber, D.]*
Why a map?

A map can leverage:

- innate visual perception abilities
- learned map-reading skills

...to attain a high level of efficiency in communicating features of large scale, complex structures.
Demonstration Video
**Future Works**

- **Similarity**: displace similar instances close together (inside the same region)
- **“Cities”**: implement an automatic system for ranking the importance of instances
- **Level of detail**: as the user zooms in, more content should be shown
- **Additional functionalities**:
  - Advanced search (SPARQL)
  - Path finding features (à la RelFinder)
  - ...
Thank you!

Take a look at the application:

http://wafi.iit.cnr.it/lod/dbpedia/atlas

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