

semantic arts

Data-Centric Transformation Made Possible

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Is An Upper Ontology Useful?

Peter Winstanley

Upper? What does that mean?

- More
 - Abstract
 - Coarse-grained
 - Generalised
 - Remote from experience
 - Difficult to understand
 - Vague
 - Flexible



[https://en.wikipedia.org/wiki/Up_\(2009_film\)](https://en.wikipedia.org/wiki/Up_(2009_film))

Is there a “Goldilocks” level of abstraction?

Too Abstract



Too Detailed

<https://digitalcollections.nypl.org/items/69b7beff-1641-5768-e040-e00a18061dc2>

What is an upper-level ontology useful for?

- A Starter Palette of Classes and Properties

A Selection of gist Top Classes

Category

A concept or label used to categorize other instances informally. Things that can be thought of as types are usually Categories.

Collection

Any identifiable grouping of instances. For instance, a jury is a collection of people.

Commitment

An obligation (possibly unilateral).

Organization

A generic organization that can be formal or informal, legal or non-legal. It can have members, or not.

Place

Union of all the geo classes

Event

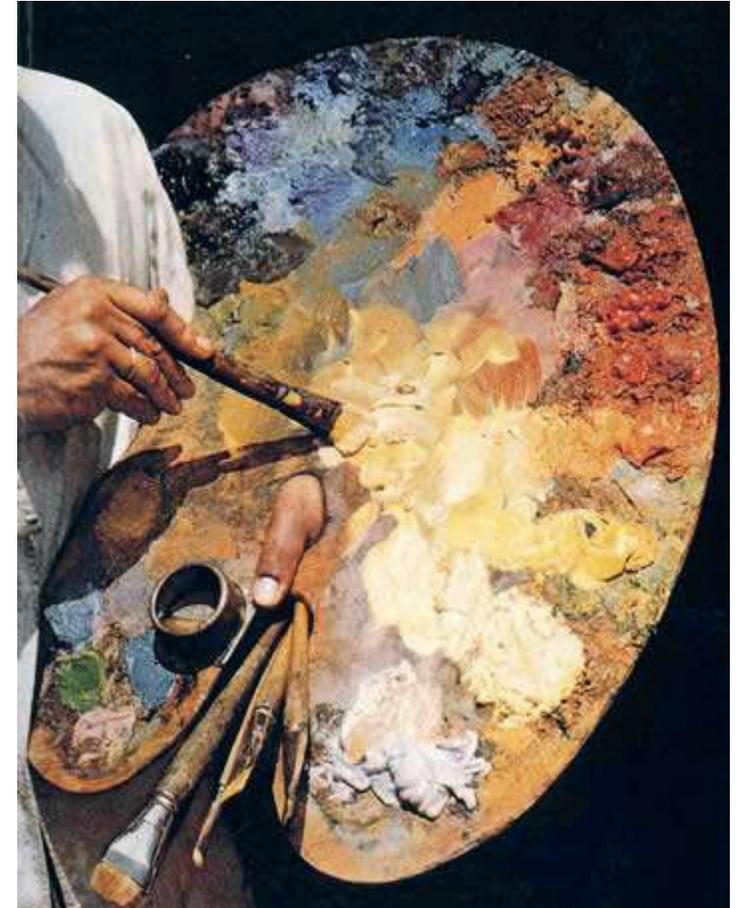
Something happening over some period of time, often characterized as some kind of activity being carried out by some person, organization, or software application.

Physical Identifiable Item

You could, at least in principle, put an RFID tag on members of this class. Physical things are made of something. E.g., statues are made of bronze.

Intention

Goal, desire, aspiration. This is the "teleologic" aspect of the system that indicates things are done with a purpose.

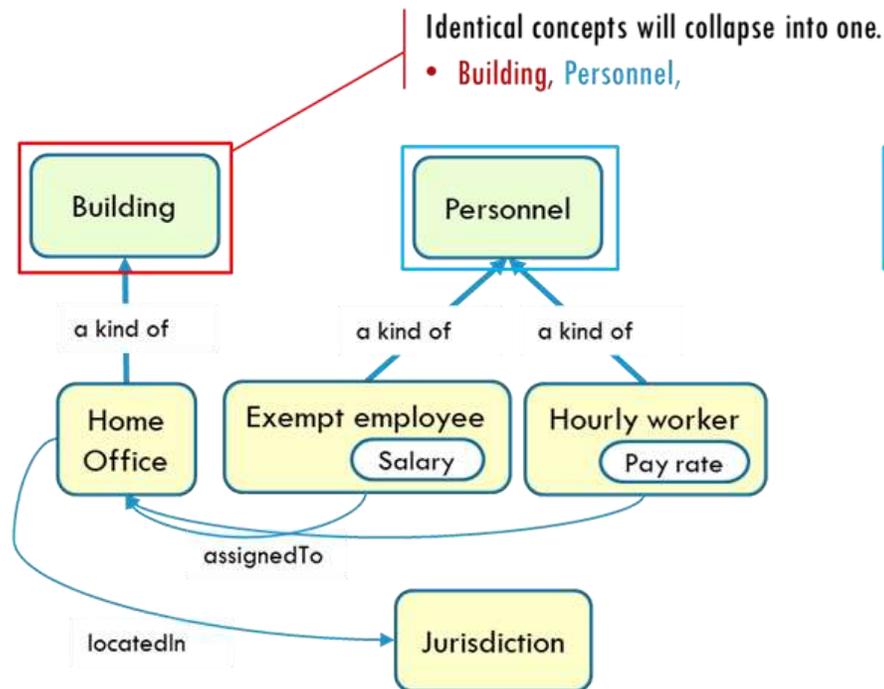


By Mlaoxve - http://en.wikipedia.org/wiki/Image:Oil_painting_palette.jpg,

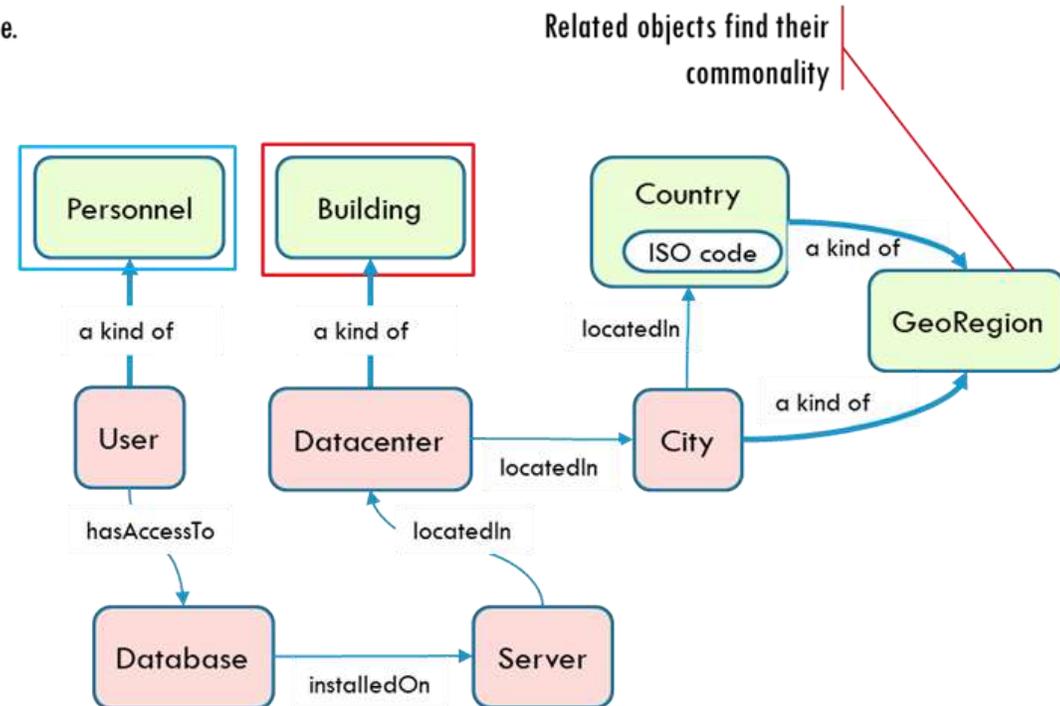
What is an upper-level ontology useful for?

- Commonality Between Domain Ontologies

HR Department



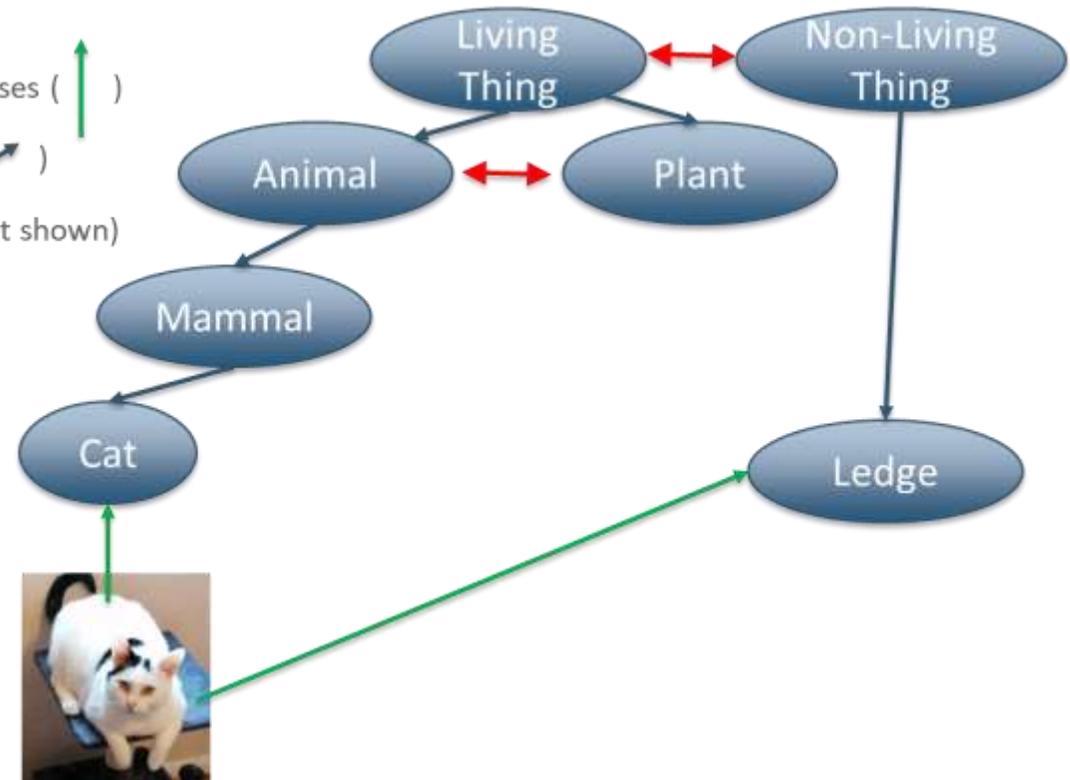
IT Department



What is an upper-level ontology useful for?

- Logical Consistency of Models

- via `rdf:type` (is-a) relationships to Classes ()
- via Class – Subclass relationships ()
- via Domain and Range constraints (not shown)
- via Disjoint statements ()



What is an upper-level ontology useful for?

- A Common Vocabulary

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Shared project vocabulary

£8.00

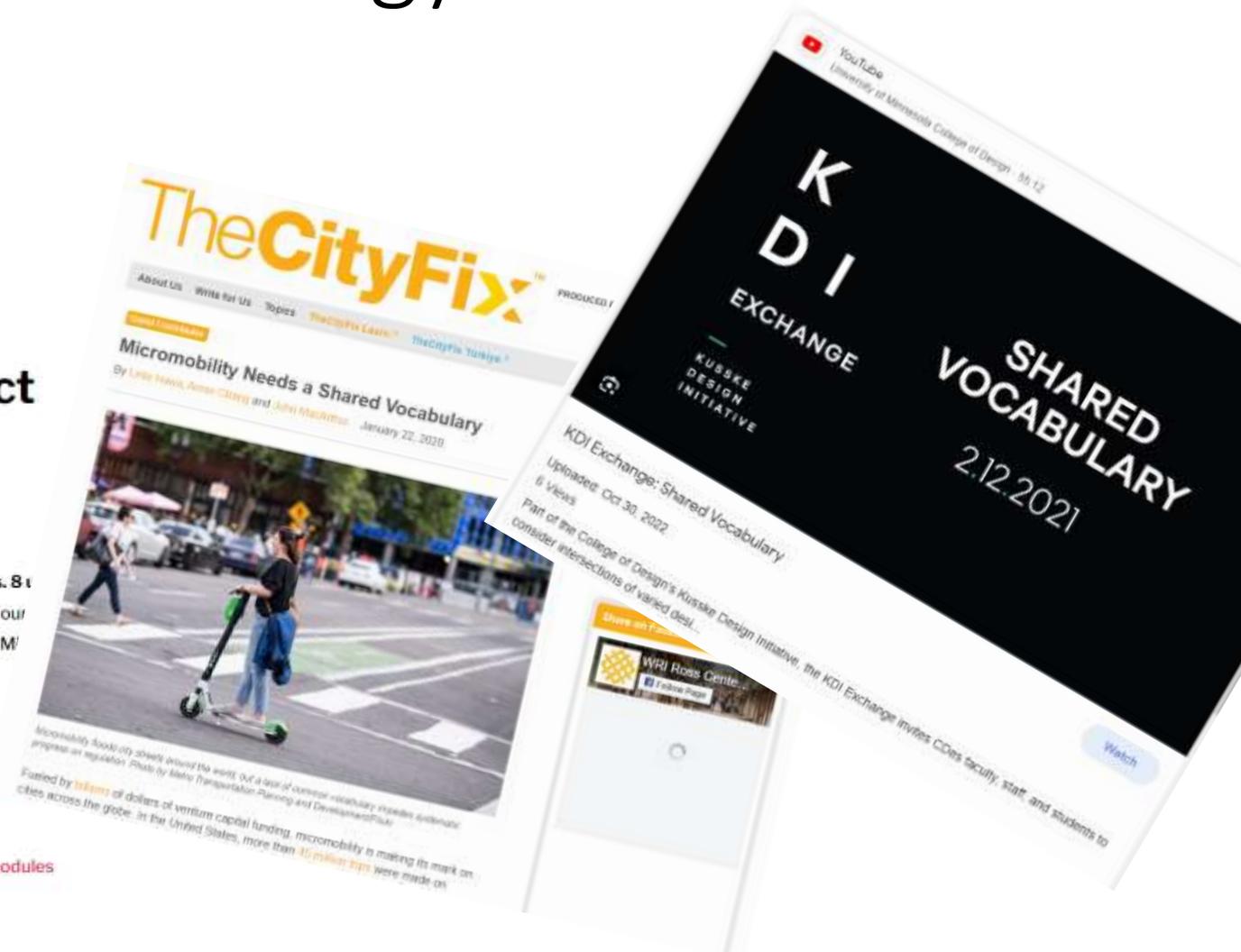
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What is an upper-level ontology useful for?

- A Tool for Thought

Chunking of ideas in line with the shared vocabulary of the upper ontology is an effective way to improve collaborative problem-solving within enterprises and other communities.



What is an upper-level ontology useful for?

- A Rule of Thumb to Size Domain Ontologies

An upper ontology gives you an idea about the size of components that you should be modelling. These fit with the 'goldilocks' size of abstraction.

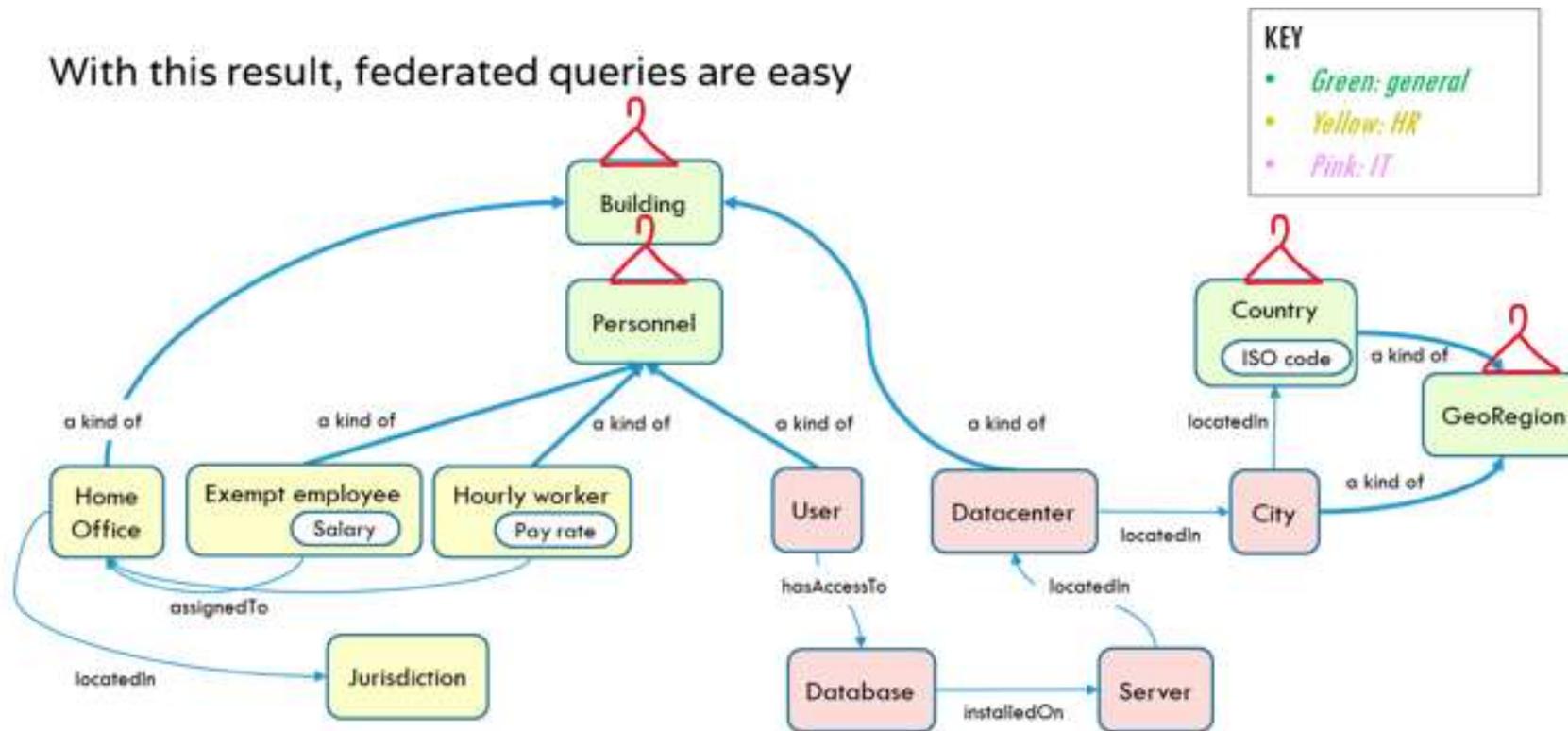
It is an indication of a scale of concept that others have found helpful in modelling.

'gist', all-in, has in the low 100s of concepts (classes and properties) and a domain ontology, by rule of thumb, is usually 2x the 'gist' size.



What is an upper-level ontology useful for?

- Integrated Data



What is an upper-level ontology useful for?

- Partitioning Data

Using an upper ontology ensures that our data are connected via thick branches and a shared trunk. This makes for easier isolation and speedier querying.



Is An Upper Ontology Useful?

Yes, absolutely!

Don't start any ontology work without one

Try to use the same one for all your ontologies