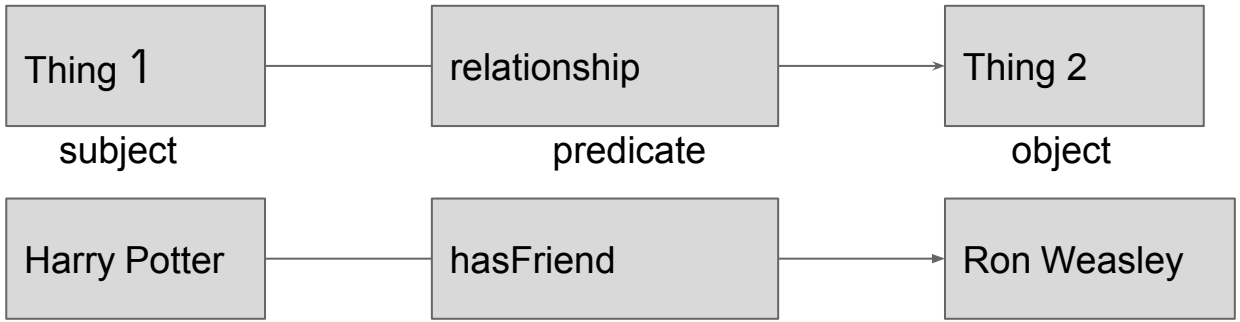
What is RDF?

SWWG: *Linked Data* Chapters 1.7-2.6

Resource Description Framework

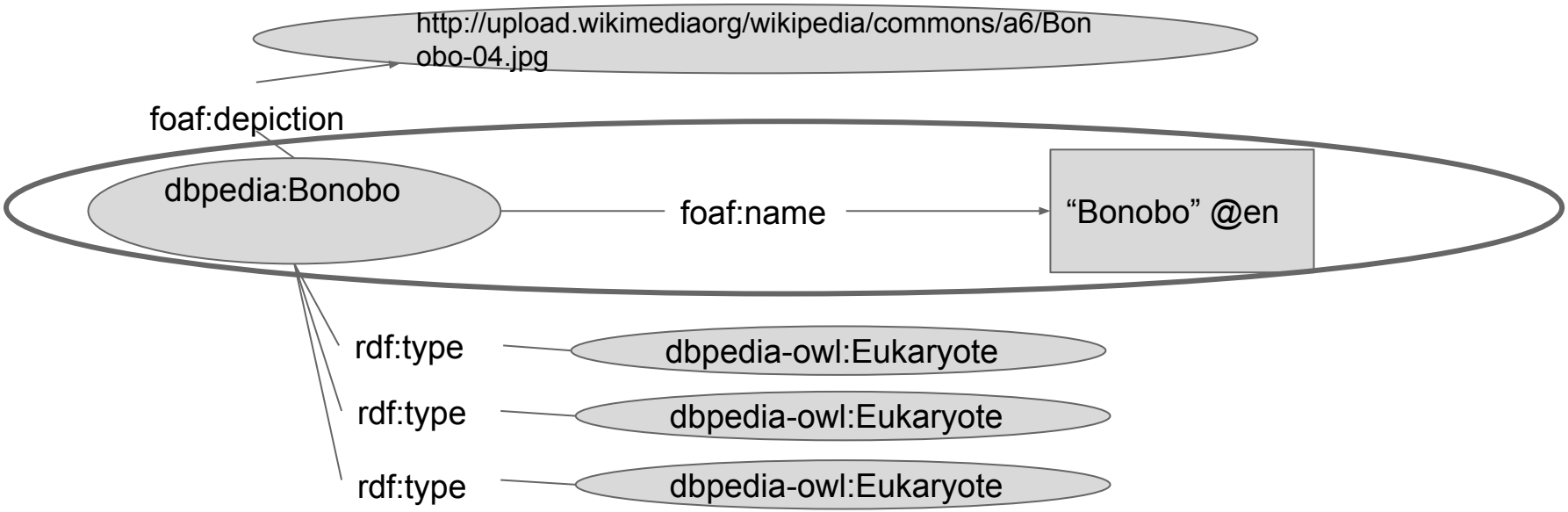
- Linked data uses RDF as a data *model*
- RDF statements describe two things, and a relationship between them. This is referred to as a “triple”

Ex.



RDF: graph

- Multiple triples together make a graph. Inserting authorized URIs for things eliminates ambiguity in who/what you are talking about



Web Example

- Example: Environmental Protection Agency website (EPA)
- Data from lots of sources - not coming from EPA site itself
- Even info that is from EPA is from various sources/databases that weren't designed to work together

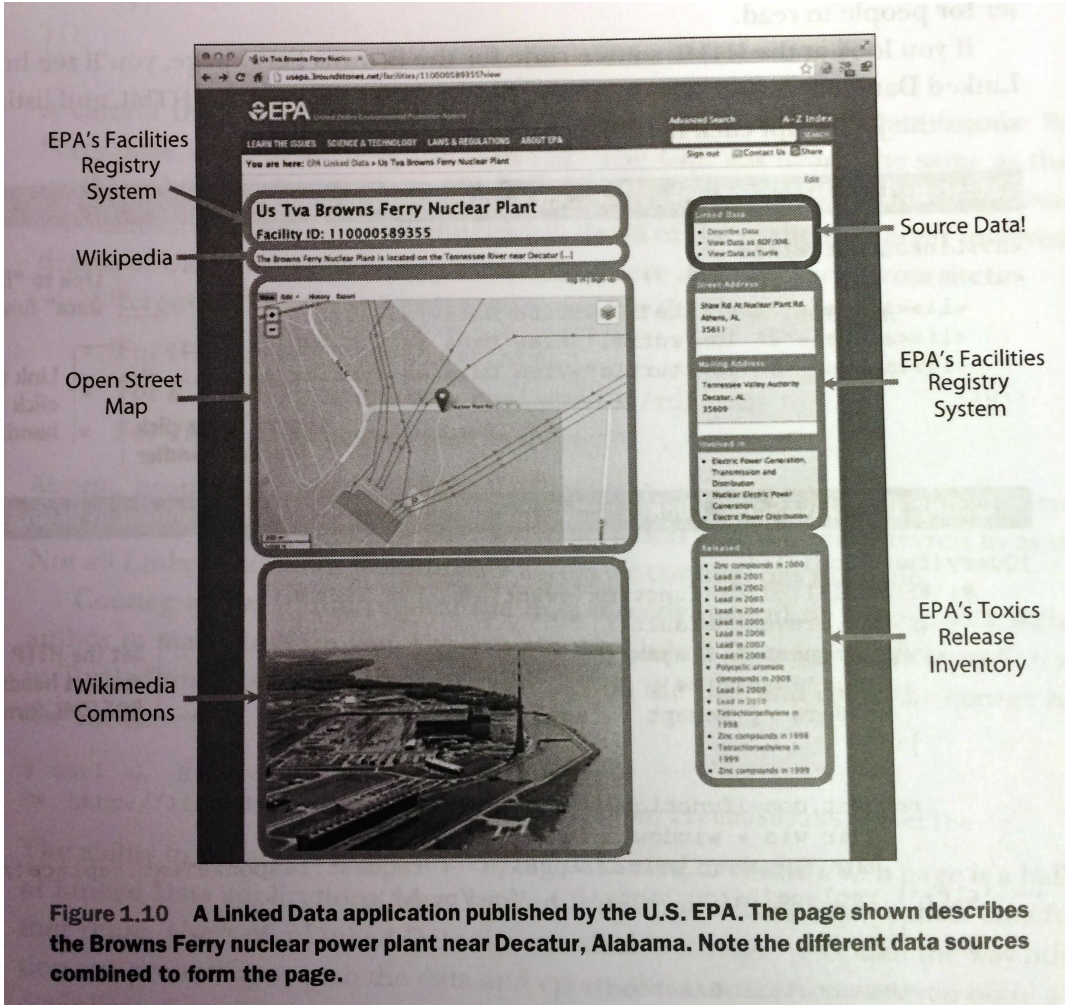
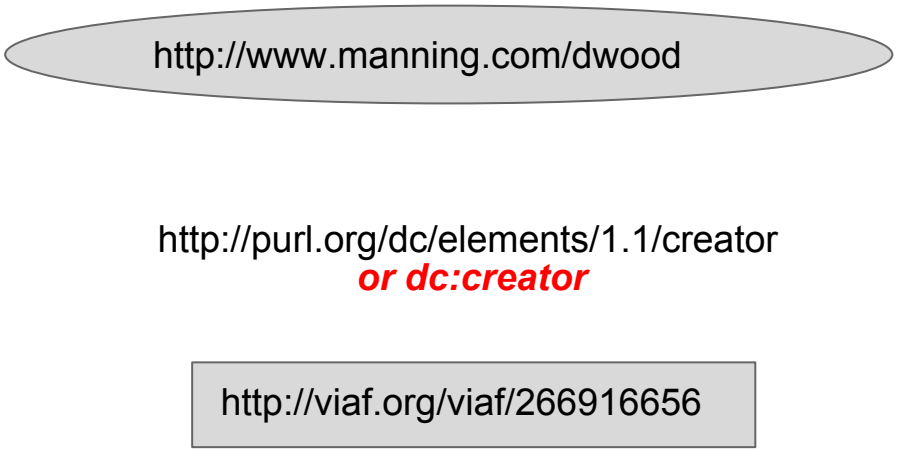


Figure 1.10 A Linked Data application published by the U.S. EPA. The page shown describes the Browns Ferry nuclear power plant near Decatur, Alabama. Note the different data sources combined to form the page.

Using shorthand for URIs

- Multiple triples together make a graph. Inserting authorized URIs for things eliminates ambiguity in who/what you are talking about



You can use shorthand if you name the URI with a prefix

Prefixes

Prefix	Namespace URI
dc:	http://purl.org/dc/elements/1.1/
foaf:	http://xmlns.com/foaf/0.1
rdf:	http://www.w3.org/1999/02/22-rdf-syntax-ns#
rdfs:	http://www.w3.org/2000/01/rdf-schema#

Minting URIs

- Name things with URIs
- Use a DNS domain that you control
- Use natural keys
  - E.g. http://paulsbakery.example.com/baked_goods/bread/rye-12 *versus* http://paulsbakery.example.com/984d66a
- Make URIs neutral to implementation details
  - Some sites can have server infrastructure changed by web admins, meaning all their URIs will change (bad for others who may have bookmarked pages or already written RDF using those older URIs)
- Use fragment identifiers with caution

Classes

- Resources can be divided into groups using property rdf:type

“San Diego Zoo” is a literal - a simple string

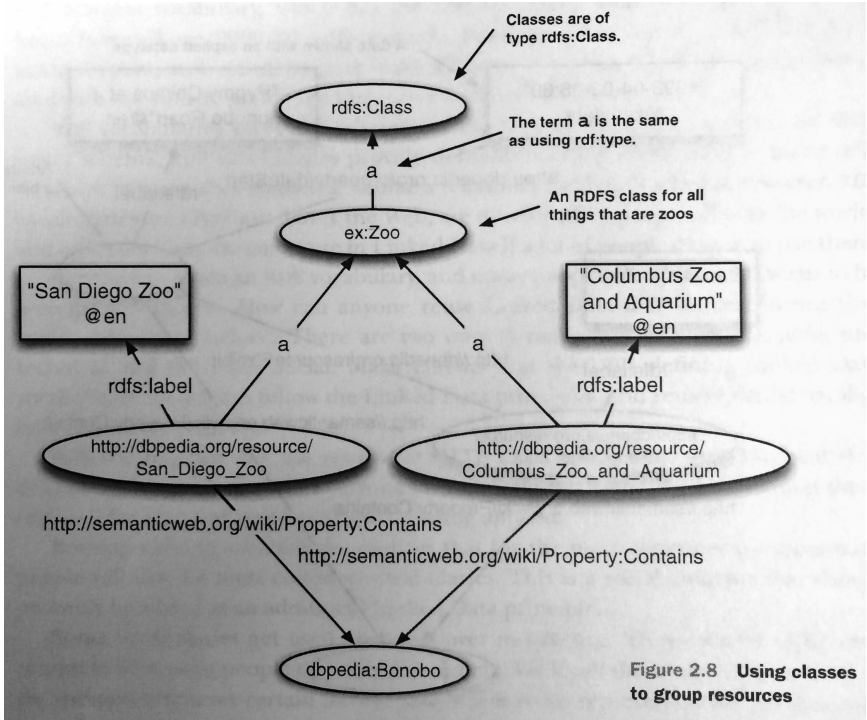


Figure 2.8 **Using classes to group resources**

Blank Nodes

- A URI without a name
- Temporary - URI cannot be relied upon
- Use case: insert into collection of items when you don’t want to bother making up your own URI for it
- Many people avoid them because they can’t be queried later
- Useful when you don’t want to claim responsibility for minting a new URI

Literals

- Strings, or nodes in a triple that are not represented by a linkable URI
  - E.g. “Harry Potter”
- Literals are a dead end: they cannot become the subject of any new triples or queries
- Good for data like numerals, some dates, or other values that don’t need to be linked.

Serializations

- RDF data can be expressed in a variety of ways.
- Common serializations:
  - Turtle,
  - N-triples,
  - RDFS,
  - JSON-LD
- Turtle is pretty common bc it’s uses a lot of shorthand - the book uses this