

Enriching Notes with Semantic Web

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Information Story

Linked Note taking apps such as Obsidian and Roam Research allow for semantic connections within personal notes, but take time to curate and grow.

RDF Data has rich connectivity, but has poor human-accessibility

My project aims to bridge this gap.



Existing Structure

Format: RDF Triples

Subject Predicate Object

Each represented by a URI

Key Strengths

- High FAIRness
- Extremely Rich contextually

DBpedia has vast amounts of rich data,
and an open format for accessing it,
including web UIs

Key Challenges

- Hard to utilize without technical know-how
- Low Signal-to-Noise ratio

```
@prefix dbr: <http://dbpedia.org/resource/> .
@prefix dbp: <http://dbpedia.org/property/> .
<http://dbpedia.org/resource/Episode_(film)> dbr:Berlin .
dbr:Paula_Wessely dbp:wikiPageWikiLink dbr:Berlin .
dbr:Reichsfilmkammer dbp:wikiPageWikiLink dbr:Berlin ;
dbp:location dbr:Berlin ;
dbp:headquarter dbr:Berlin .
dbr:Rosa_Albach-Retty dbp:wikiPageWikiLink dbr:Berlin .
dbr:Pasquale_Camerlengo dbp:wikiPageWikiLink dbr:Berlin .
dbr:Paradox_Interactive dbp:wikiPageWikiLink dbr:Berlin .
@prefix ns2: <http://dbpedia.org/resource/List_of_Vampirez> .
ns2:_The_Masquerade_books dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/800_metres> dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/1500_metres> dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/3000_metres> dbp:wikiPageWikiLink dbr:Berlin .
dbr:Mile_run dbp:wikiPageWikiLink dbr:Berlin .
dbr:BSM dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/25K_run> dbp:wikiPageWikiLink dbr:Berlin .
dbr:Heptathlon dbp:wikiPageWikiLink dbr:Berlin .
dbr:Hammer_throw dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/10_000_metres> dbp:wikiPageWikiLink dbr:Berlin .
dbr:Decathlon dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/60_metres_hurdles> dbp:wikiPageWikiLink dbr:Berlin .
dbr:One_hour_run dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/100_metres_hurdles> dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/4_x100_100_metres_relay> dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/50_metres> dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/10_kilometres_race_walk> dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/Women's_10000_metres_pentathlon> dbp:wikiPageWikiLink dbr:Berlin .
dbr:Alamy_Central_Stadium dbp:wikiPageWikiLink dbr:Berlin .
dbr:High_jump dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/10-mile_run> dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/1000_metres> dbp:wikiPageWikiLink dbr:Berlin .
dbr:William_I_of_the_Netherlands dbp:wikiPageWikiLink dbr:Berlin .
@prefix dbp: <http://dbpedia.org/property/> .
dbr:William_I_of_the_Netherlands dbp:deathPlace dbr:Berlin .
dbr:Asafa_Powell dbp:wikiPageWikiLink dbr:Berlin .
dbr:International_Whaling_Commission dbp:wikiPageWikiLink dbr:Berlin .
dbr:PAGU dbp:wikiPageWikiLink dbr:Berlin .
dbr:Der_Gelbe_Schein dbp:wikiPageWikiLink dbr:Berlin .
dbr:Emil_Jannings dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/Paul_Davidson_(producer)> dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/Athletics_at_the_2012_Summer_Olympics_10000_metres_marathon> dbp:worldPlace dbr:Berlin .
dbr:Reality_Killed_the_Video_Star dbp:wikiPageWikiLink dbr:Berlin .
dbr:Metreon dbp:wikiPageWikiLink dbr:Berlin .
dbr:Etching dbp:wikiPageWikiLink dbr:Berlin .
dbr:Phil_Murphy dbp:wikiPageWikiLink dbr:Berlin .
dbr:West_Pomeranian_Voivodeship dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/Zielona_G_003ra> dbp:wikiPageWikiLink dbr:Berlin .
dbr:Princess_Dorothea_of_Courland dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/1972_Summer_Olympics> dbp:wikiPageWikiLink dbr:Berlin .
dbr:FC_Schalke_04 dbp:wikiPageWikiLink dbr:Berlin .
dbr:Uniqlo dbp:wikiPageWikiLink dbr:Berlin .
dbr:International_Civil_Aviation_Organization dbp:wikiPageWikiLink dbr:Berlin .
dbr:Fine_art dbp:wikiPageWikiLink dbr:Berlin .
dbr:Saalfeld dbp:wikiPageWikiLink dbr:Berlin .
dbr:Geodesy dbp:wikiPageWikiLink dbr:Berlin .
dbr:Bava_Batra dbp:wikiPageWikiLink dbr:Berlin .
dbr:Landmark dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/2017_18_Bundesliga> dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/2018_19_Bundesliga> dbp:wikiPageWikiLink dbr:Berlin ;
dbp:stadium dbr:Berlin .
<http://dbpedia.org/resource/2019_DFB-Pokal_Final> dbp:wikiPageWikiLink dbr:Berlin ;
dbp:city dbr:Berlin ;
dbp:stadium dbr:Berlin .
<http://dbpedia.org/resource/2018_19_DFB-Pokal> dbp:wikiPageWikiLink dbr:Berlin ;
dbp:venue dbr:Berlin .
dbr:Lionel_Messi dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/2017_DFL-Supercup> dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/Luis_Suarez> dbp:wikiPageWikiLink dbr:Berlin .
dbr:DFB-Pokal dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/Record_(newspaper)> dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/Estadio_Nacional_Julio_Martí> dbp:wikiPageWikiLink dbr:Berlin .
dbr:Peruvian_national_football_team dbp:wikiPageWikiLink dbr:Berlin .
dbr:Presidency_of_Mauricio_Macri dbp:wikiPageWikiLink dbr:Berlin .
dbr:Ariosophy dbp:wikiPageWikiLink dbr:Berlin .
dbr:Carol_I_of_Romania dbp:wikiPageWikiLink dbr:Berlin .
<http://dbpedia.org/resource/J._Z._Knight> dbp:wikiPageWikiLink dbr:Berlin .
```

FAIR Assessment

	Findable	Accessible	Interoperable	Reusable
DBPedia RDF Data	<p>Highly</p> <ul style="list-style-type: none">• Unique Persistent IDs• Rich Metadata• Searchable Metadata Index	<p>Yes, But</p> <ul style="list-style-type: none">• Standard Protocol• Free Protocol• Hard to Implement	<p>Yes,</p> <ul style="list-style-type: none">• Formal, shared Metadata language• Qualified References to other metadata	<p>Absolutely</p> <ul style="list-style-type: none">• Plurality of Relevant attributes• Detailed Provenance• Community Standards
Obsidian Research Markdown	<p>Not Particularly</p> <ul style="list-style-type: none">• Page titles are unique• Minimal Metadata• Searchable	<p>Mostly</p> <ul style="list-style-type: none">• Locally-stored Markdown• Standard Protocol	<p>Yes</p> <ul style="list-style-type: none">• Uses Standard text format• Easy to translate to other platforms	<p>Yes, for personal use</p> <ul style="list-style-type: none">• Relevant standards• Supports plenty of metadata

Improvement Plan

Goals:

- Easy to implement
- Non-technical
- Unopinionated

```
1 // Function to get a resource from a URI
2 async function getResourceFromUri(uri) {
3   const query = `
4     SELECT ?property ?hasValue ?isValueOf
5     WHERE {{ <${uri}> ?property ?hasValue
6     FILTER (
7       (isIRI(?hasValue) || # Keep URIs (n
8       (lang(?hasValue) = "en") || # Keep
9       (!langMatches(lang(?hasValue), "*"))
10      &&
11      ?property NOT IN (rdf:type, foaf:dep
12    `;
13   const results = await queryDbpedia(query);
14   return results.results.bindings;
15 }
```

Why We're improving Access. Taking rich data that's hard to use, and making it approachable for anyone who might find use.

- How**
- Use Existing plugin system for Obsidian
 - Search for Keyword > Select relevant entity
 - Pull data from DBpedia API Endpoint
 - Pull too much data rather than not enough
 - Let users decide what is relevant

Out of Scope features

- Improved Search UI
- Output Configuration
- Multi-Entity Queries

Improved Structure

Label

Wiki Link

Abstract

{Property}

- {Value 1}

- {Value 2}

Product (business)

Wiki Page: [http://en.wikipedia.org/wiki/Product_\(business\)](http://en.wikipedia.org/wiki/Product_(business))

Abstract

Property: <http://dbpedia.org/ontology/abstract>

In marketing, a product is an object, or system, or service made available for consumer use as of the consumer demand; it is anything that can be offered to a market to satisfy the desire or need of a customer. In retailing, products are often referred to as merchandise, and in manufacturing, products are bought as raw materials and then sold as finished goods. A service is also regarded as a type of product. Commodities are usually raw materials such as metals and agricultural products, but a commodity can also be anything widely available in the open market. In project management, products are the formal definition of the project deliverables that make up or contribute to delivering the objectives of the project. A related concept is that of a sub-product, a secondary but useful result of a production process. Dangerous products, particularly physical ones, that cause injuries to consumers or bystanders may be subject to product liability.

Related Topics

Property: <http://dbpedia.org/ontology/wikiPageWikiLink>

- http://dbpedia.org/resource/Product_breakdown_structure
- http://dbpedia.org/resource/Product_certification
- http://dbpedia.org/resource/Energy_rating_label
- http://dbpedia.org/resource/North_American_Industry_Classification_System
- http://dbpedia.org/resource/List_of_fastest-selling_products
- <http://dbpedia.org/resource/Customer>
- http://dbpedia.org/resource/Customer_review
- http://dbpedia.org/resource/Vehicle_identification_number
- http://dbpedia.org/resource/Department_store

Quality Assessment

A clear Definition of Done is key, and making sure we have an understanding of user needs will drive refinement

Unit Tests: each SPARQL query will have a unit test

Integration Tests: an end-to-end run for two topics to ensure completeness

Clear Error Messaging: We ensure transparency for users

Performance Goals: Number of results and execution time should be tracked

Thank you

We open the floor to questions



John Thomas

I had to learn Typescript in three days to finish this