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Knowledge Graphs

Lecture 3 – Querying Knowledge Graphs with SPARQL

Excursion 3: DBpedia Knowledge Graph

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FIZ Karlsruhe – Leibniz Institute for Information Infrastructure
AIFB – Karlsruhe Institute of Technology
Autumn 2023

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Lecture 3: Querying Knowledge Graphs with SPARQL

3.1 How to Query RDF(S)

Excursion 3: DBpedia Knowledge Graph

Excursion 4: Wikidata Knowledge Graph

3.2 Complex Queries with SPARQL

3.3 More Complex SPARQL Queries

3.4 SPARQL Sub-Select and Property Paths

3.5 SPARQL is more than a Query Language

3.6 Quality Assurance with SHACL Constraints

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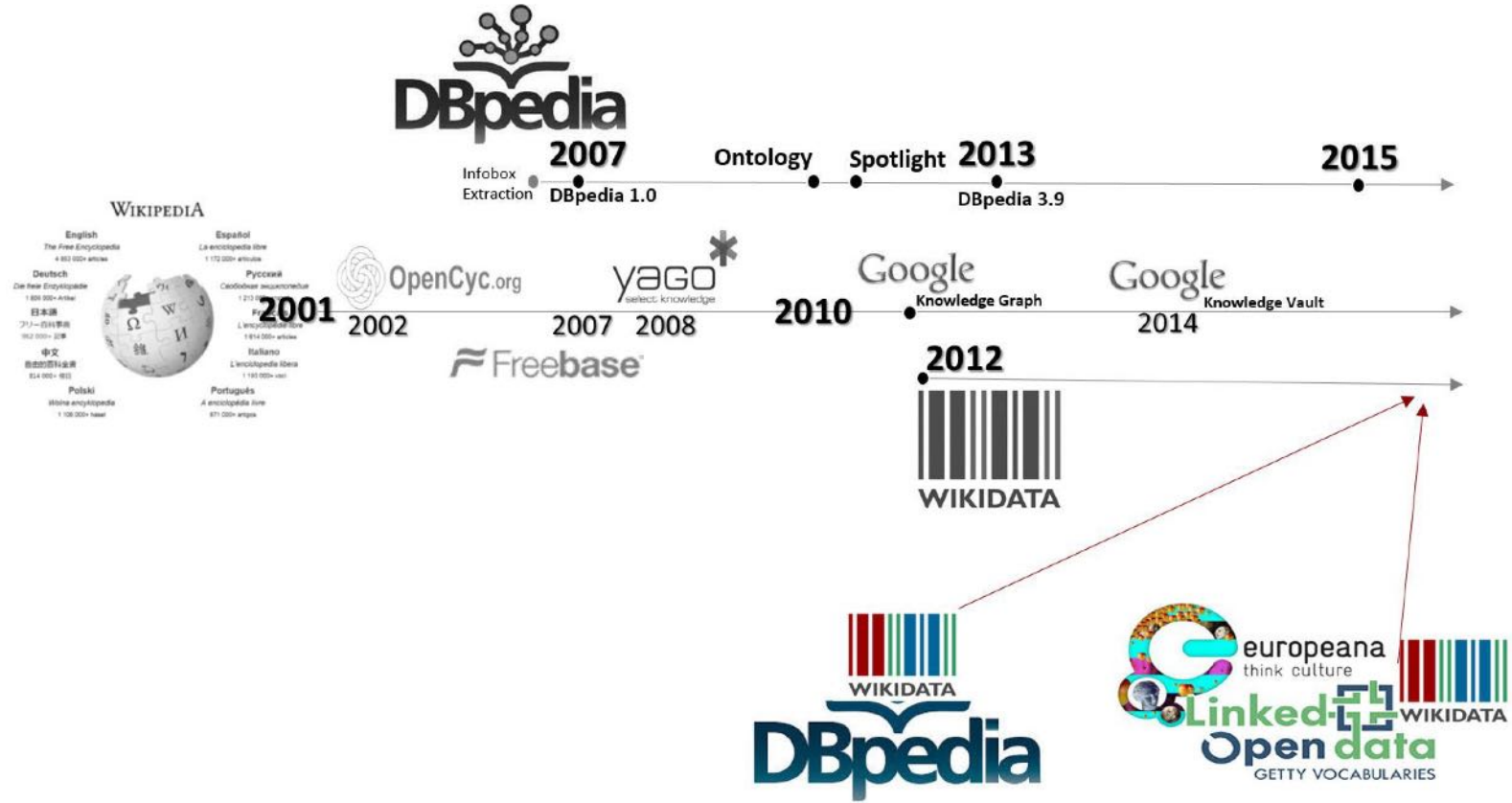
DBpedia and the Web of Data

Karlsruher Institut für Technologie
FIZ Karlsruhe
Leibniz Institute for Information Infrastructure

[2,3]

DBpedia and the Web of Data



[2]

DBpedia Stats

English version of the DBpedia Knowledge Graph (snapshot 2022/09)

- Contains 850 million facts (RDF triples),
- Connected via 55,000 properties,
- 1,377 of which are grounded in the DBpedia ontology,
- including 1.8 million persons,
- 757,000 places (including 597,000 populated places),
- 619,000 creative works
  - including 158,000 music albums,
  - 147,000 films and
  - 25,000 video games,
- 350,000 organizations
  including 88,000 companies and 64,000 educational institutions,
- 1.9 million species and
- 10,000 diseases.

[2]

https://www.dbpedia.org/blog/dbpedia-snapshot-2022-09-release/

DBpedia German Language Chapter

DBpedia German

HOME | DATASET & QUERIES | NEWS | SPARQL ENDPOINT

CONTACT

If you have questions or if you would like to collaborate, please contact

- Fabian Hoppe and
- Tabea Tietz.

Follow DBpedia Deutsch on Twitter

DATASET

The German DBpedia SPARQL Endpoint currently uses the dataset version of October 2016. We hope to update the endpoint soon, stay tuned! Until then, you can either use the Endpoint to query the dataset directly or download the dumpfile.
The datasets are made accessible on the Web under the terms of the Creative Commons Attribution-ShareAlike 3.0 License and the GNU Free Documentation License.

Download

Statistics

The dataset currently contains:

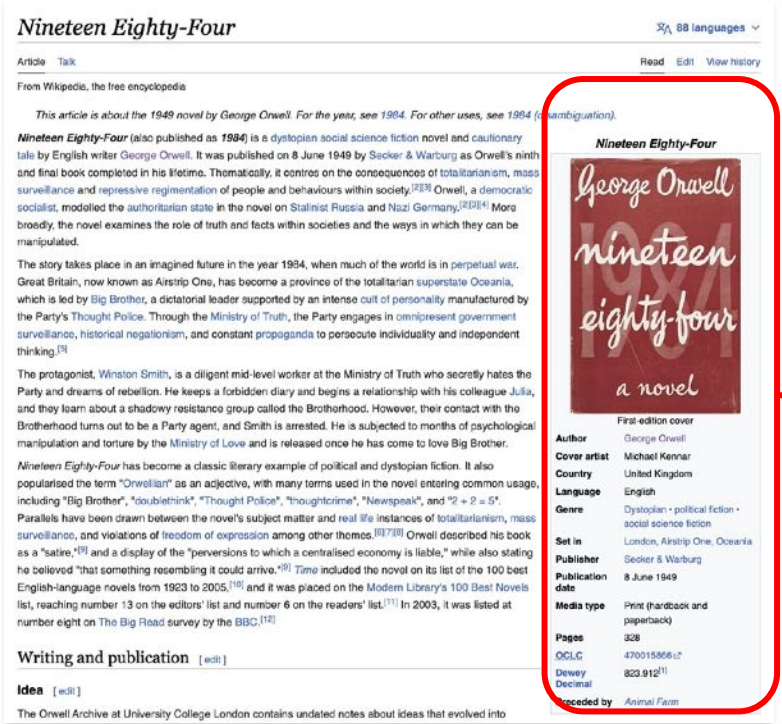
- 104.989.619 triples
- 1.374.894 entities
- 627.264 persons
- 62.054 organizations
- 406.943 locations

http://de.dbpedia.org/

From Wikipedia to DBpedia

https://en.wikipedia.org/wiki/Nineteen_Eighty-Four

WIKIPEDIA
The Free Encyclopedia



Nineteen Eighty-Four

88 languages

Article Talk Read Edit View history

From Wikipedia, the free encyclopedia

This article is about the 1949 novel by George Orwell. For the year, see 1984. For other uses, see 1984 (disambiguation).

Nineteen Eighty-Four (also published as ***1984***) is a dystopian social science fiction novel and cautionary tale by English writer George Orwell. It was published on 8 June 1949 by Secker & Warburg as Orwell's ninth and final book completed in his lifetime. Thematically, it centres on the consequences of totalitarianism, mass surveillance and repressive regimentation of people and behaviours within society.[2][3] Orwell, a democratic socialist, modelled the authoritarian state in the novel on Stalinist Russia and Nazi Germany.[2][3][4] More broadly, the novel examines the role of truth and facts within societies and the ways in which they can be manipulated.

The story takes place in an imagined future in the year 1984, when much of the world is in perpetual war. Great Britain, now known as Airstrip One, has become a province of the totalitarian superstate Oceania, which is led by Big Brother, a dictatorial leader supported by an intense cult of personality manufactured by the Party's Thought Police. Through the Ministry of Truth, the Party engages in omnipresent government surveillance, historical negationism, and constant propaganda to persecute individuality and independent thinking.[5]

The protagonist, Winston Smith, is a diligent mid-level worker at the Ministry of Truth who secretly hates the Party and dreams of rebellion. He keeps a forbidden diary and begins a relationship with his colleague Julia, and they learn about a shadowy resistance group called the Brotherhood. However, their contact with the Brotherhood turns out to be a Party agent, and Smith is arrested. He is subjected to months of psychological manipulation and torture by the Ministry of Love and is released once he has come to love Big Brother.

Nineteen Eighty-Four has become a classic literary example of political and dystopian fiction. It also popularised the term "Orwellian" as an adjective, with many terms used in the novel entering common usage, including "Big Brother", "doublethink", "Thought Police", "thoughtcrime", "Newspeak", and "2 + 2 = 5". Parallels have been drawn between the novel's subject matter and real life instances of totalitarianism, mass surveillance, and violations of freedom of expression among other themes.[6][7][8] Orwell described his book as a "satire,"[9] and a display of the "perversions to which a centralised economy is liable," while also stating he believed "that something resembling it could arrive."[6] *Time* included the novel on its list of the 100 best English-language novels from 1923 to 2005,[10] and it was placed on the Modern Library's 100 Best Novels list, reaching number 13 on the editors' list and number 6 on the readers' list.[11] In 2003, it was listed at number eight on The Big Read survey by the BBC.[12]

Writing and publication [edit]

Idea [edit]

The Orwell Archive at University College London contains undated notes about ideas that evolved into

Nineteen Eighty-Four

First-edition cover

Author	George Orwell
Cover artist	Michael Kennar
Country	United Kingdom
Language	English
Genre	Dystopian · political fiction · social science fiction
Set in	London, Airstrip One, Oceania
Publisher	Secker & Warburg
Publication date	8 June 1949
Media type	Print (hardback and paperback)
Pages	328
OCLC	470015866
Dewey Decimal	823.912[1]
Preceded by	*Animal Farm*

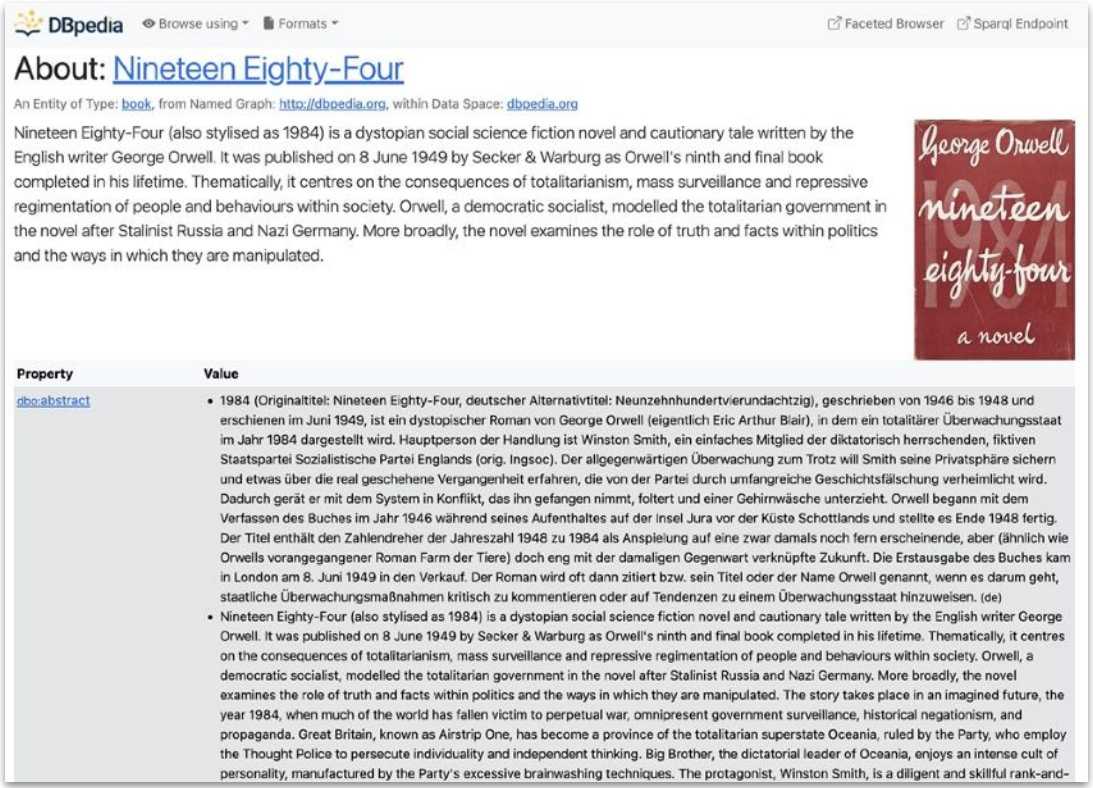
DBpedia

[2]

http://dbpedia.org/resource/Nineteen_Eighty-Four

From Wikipedia to DBpedia

http://dbpedia.org/resource/Nineteen_Eighty-Four



DBpedia Browse using Formats Faceted Browser Sparql Endpoint

About: Nineteen Eighty-Four

An Entity of Type: book, from Named Graph: http://dbpedia.org, within Data Space: dbpedia.org

Nineteen Eighty-Four (also stylised as 1984) is a dystopian social science fiction novel and cautionary tale written by the English writer George Orwell. It was published on 8 June 1949 by Secker & Warburg as Orwell's ninth and final book completed in his lifetime. Thematically, it centres on the consequences of totalitarianism, mass surveillance and repressive regimentation of people and behaviours within society. Orwell, a democratic socialist, modelled the totalitarian government in the novel after Stalinist Russia and Nazi Germany. More broadly, the novel examines the role of truth and facts within politics and the ways in which they are manipulated.

Property	Value
dbo:abstract	• 1984 (Originaltitel: Nineteen Eighty-Four, deutscher Alternativtitel: Neunzehnhundertvierundachtzig), geschrieben von 1946 bis 1948 und erschienen im Juni 1949, ist ein dystopischer Roman von George Orwell (eigentlich Eric Arthur Blair), in dem ein totalitärer Überwachungsstaat im Jahr 1984 dargestellt wird. Hauptperson der Handlung ist Winston Smith, ein einfaches Mitglied der diktatorisch herrschenden, fiktiven Staatspartei Sozialistische Partei Englands (orig. Ingsoc). Der allgegenwärtigen Überwachung zum Trotz will Smith seine Privatsphäre sichern und etwas über die real geschehene Vergangenheit erfahren, die von der Partei durch umfangreiche Geschichtsfälschung verheimlicht wird. Dadurch gerät er mit dem System in Konflikt, das ihn gefangen nimmt, foltert und einer Gehirnwäsche unterzieht. Orwell begann mit dem Verfassen des Buches im Jahr 1946 während seines Aufenthaltes auf der Insel Jura vor der Küste Schottlands und stellte es Ende 1948 fertig. Der Titel enthält den Zahlendreher der Jahreszahl 1948 zu 1984 als Anspielung auf eine zwar damals noch fern erscheinende, aber (ähnlich wie Orwells vorangegangener Roman Farm der Tiere) doch eng mit der damaligen Gegenwart verknüpfte Zukunft. Die Erstausgabe des Buches kam in London am 8. Juni 1949 in den Verkauf. Der Roman wird oft dann zitiert bzw. sein Titel oder der Name Orwell genannt, wenn es darum geht, staatliche Überwachungsmaßnahmen kritisch zu kommentieren oder auf Tendenzen zu einem Überwachungsstaat hinzuweisen. (de) • Nineteen Eighty-Four (also stylised as 1984) is a dystopian social science fiction novel and cautionary tale written by the English writer George Orwell. It was published on 8 June 1949 by Secker & Warburg as Orwell's ninth and final book completed in his lifetime. Thematically, it centres on the consequences of totalitarianism, mass surveillance and repressive regimentation of people and behaviours within society. Orwell, a democratic socialist, modelled the totalitarian government in the novel after Stalinist Russia and Nazi Germany. More broadly, the novel examines the role of truth and facts within politics and the ways in which they are manipulated. The story takes place in an imagined future, the year 1984, when much of the world has fallen victim to perpetual war, omnipresent government surveillance, historical negationism, and propaganda. Great Britain, known as Airstrip One, has become a province of the totalitarian superstate Oceania, ruled by the Party, who employ the Thought Police to persecute individuality and independent thinking. Big Brother, the dictatorial leader of Oceania, enjoys an intense cult of personality, manufactured by the Party's excessive brainwashing techniques. The protagonist, Winston Smith, is a diligent and skillful rank-and-

DBpedia Naming Conventions

https://en.wikipedia.org/wiki/**Nineteen_Eighty-Four**

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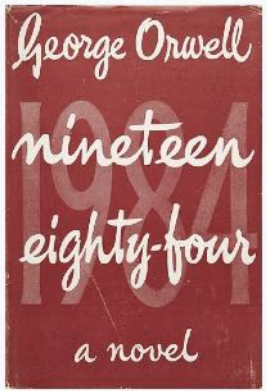
http://dbpedia.org/**resource**/Nineteen_Eighty-Four	Entity Identifier
http://dbpedia.org/**page**/Nineteen_Eighty-Four	HTML version
http://dbpedia.org/**data**/Nineteen_Eighty-Four	RDF/XML version

[2]

Wikipedia Infoboxes

Nineteen Eighty-Four



First-edition cover

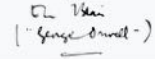
Author	George Orwell
Cover artist	Michael Kennar
Country	United Kingdom
Language	English
Genre	Dystopian · political fiction · social science fiction
Set in	London, Airstrip One, Oceania
Publisher	Secker & Warburg
Publication date	8 June 1949
Media type	Print (hardback and paperback)
Pages	328
OCLC	470015866
Dewey Decimal	823.912[1]
Preceded by	*Animal Farm*

George Orwell

Orwell's press card portrait, 1943

Born	Eric Arthur Blair 25 June 1903 Motihari, Bengal Presidency, British India
Died	21 January 1950 (aged 46) London, England
Resting place	All Saints' Church, Sutton Courtenay, Oxfordshire, England
Education	Eton College
Occupations	Novelist, essayist, journalist, literary critic
Political party	ILP (from 1938)
Spouses	Eileen O'Shaughnessy (m. 1936; died 1945) Sonia Brownell (m. 1949)
Children	Richard Blair
Writing career	
Pen name	George Orwell
Genre	Dystopia, *roman à clef*, satire
Subjects	Anti-fascism, anti-Stalinism, anarchism, democratic socialism, literary criticism, journalism, polemic
Years active	1928–1950

Signature



1984

UK theatrical release poster

Directed by	Michael Radford
Screenplay by	Michael Radford
Based on	*Nineteen Eighty-Four* by George Orwell
Produced by	Simon Perry
Starring	John Hurt Richard Burton Suzanna Hamilton Cyril Cusack
Cinematography	Roger Deakins
Edited by	Tom Priestley
Music by	Dominic Muldowney Eurythmics
Production companies	Virgin Films Umbrella-Rosenblum Films Atlantic Entertainment Group
Distributed by	20th Century Fox
Release date	10 October 1984 (United Kingdom)
Running time	110 minutes[1][note 1][2]
Country	United Kingdom[3]
Language	English
Budget	£5.5 million[4]
Box office	$8.4 million (United States)[5]

BBC Television

Logo used since 2021

Type	Subsidiary
Industry	Television
Headquarters	Broadcasting House, London MediaCityUK, Salford
Area served	Worldwide
Services	Television broadcasting
Parent	BBC
Website	BBC iPlayer

The "Television Symbol", known informally as the "Bats Wings", was the first BBC Television Service ident. It was created by Abram Games and was used from 1953 to 1960.[1]

Hail to the Thief

Studio album by Radiohead

Released	9 June 2003
Recorded	September 2002 – February 2003
Studio	Ocean Way, Hollywood Radiohead studio, Oxfordshire
Genre	Alternative rock · art rock · experimental rock · electronic rock
Length	56:35
Label	Parlophone · Capitol
Producer	Nigel Godrich · Radiohead

Radiohead chronology

I Might Be Wrong: Live Recordings (2001)	***Hail to the Thief*** (2003)	*COM LAG (2plus2isfive)* (2004)

Singles from *Hail to the Thief*

1. "There There"
   Released: 26 May 2003
2. "Go to Sleep"
   Released: 18 August 2003
3. "2 + 2 = 5"
   Released: 17 November 2003

DBpedia Infobox Extraction – Infobox Properties

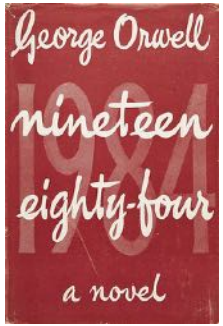
http://dbpedia.org/resource/Nineteen_Eighty-Four

http://dbpedia.org/property/author

http://dbpedia.org/resource/George_Orwell

DBpedia Ontology Classes

dbr:Nineteen_Eighty-Four



rdf:type

dbo:Book

rdfs:subClassOf

dbo:Written_Work

rdfs:subClassOf

dbo:Work

rdfs:subClassOf

owl:Thing

Prefixes:

```
rdf:    <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
dbr:    <http://dbpedia.org/resource/>
dbo:    <http://dbpedia.org/ontology/>
owl:    <http://www.w3.org/2002/07/owl#>
rdfs: <http://www.w3.org/2000/01/rdf-schema#>
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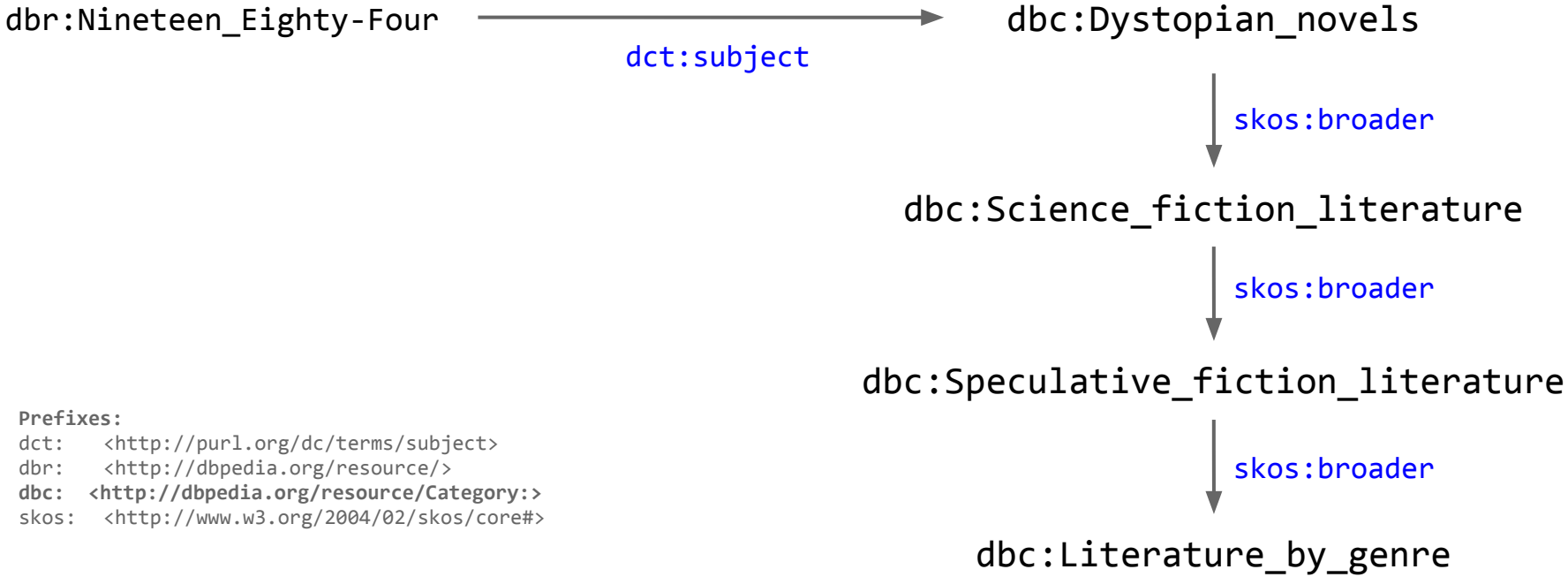
http://mappings.dbpedia.org/server/ontology/classes/

- Album (edit)
- ArtistDiscography (edit)
- ClassicalMusicComposition (edit)
- Musical (edit)
- NationalAnthem (edit)
- Opera (edit)
- Single (edit)
- Song (edit)
  - EurovisionSongContestEntry (e
- RadioProgram (edit)
- Software (edit)
  - VideoGame (edit)
- TelevisionEpisode (edit)
- TelevisionSeason (edit)
- TelevisionShow (edit)
- Website (edit)
- WrittenWork (edit)
  - Annotation (edit)
    - Reference (edit)
  - Article (edit)
  - Book (edit)
  - Comic (edit)
    - ComicStrip (edit)
    - Manga (edit)
    - Manhua (edit)
    - Manhwa (edit)
  - Drama (edit)
  - Law (edit)
  - Letter (edit)
  - MultiVolumePublication (edit)
  - PeriodicalLiterature (edit)
    - AcademicJournal (edit)
    - Magazine (edit)
    - Newspaper (edit)
    - UndergroundJournal (edit)
  - Play (edit)
  - Poem (edit)
  - Quote (edit)
  - Resume (edit)
  - StatedResolution (edit)
  - Treaty (edit)
- foaf:Document (edit)
- cidoccrm:E4_Period (edit)

Wikipedia Categories

Categories: Nineteen Eighty-Four | 1949 British novels | 1949 science fiction novels | British novels adapted into films | British novels adapted into plays | British novels adapted into television shows | British political novels | British science fiction novels | Censored books | Dystopian novels | English novels | Fiction about mind control | Fiction set in 1984 | Historical negationism | Historical revisionism in fiction | Mass surveillance | Novels about freedom of speech | Novels about mass surveillance | Novels about nuclear war and weapons | Novels about propaganda | Novels about revolutionaries | Novels about totalitarianism | Novels adapted into ballets | Novels adapted into operas | Novels adapted into radio programs | Novels by George Orwell | Novels set in fictional countries | Novels set in London | Novels set in the future | Propaganda in fiction | Secker & Warburg books | Social science fiction | Totalitarianism in fiction | Books about censorship

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Prefixes:
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dbr:    <http://dbpedia.org/resource/>
dbc:  <http://dbpedia.org/resource/Category:>
skos:   <http://www.w3.org/2004/02/skos/core#>
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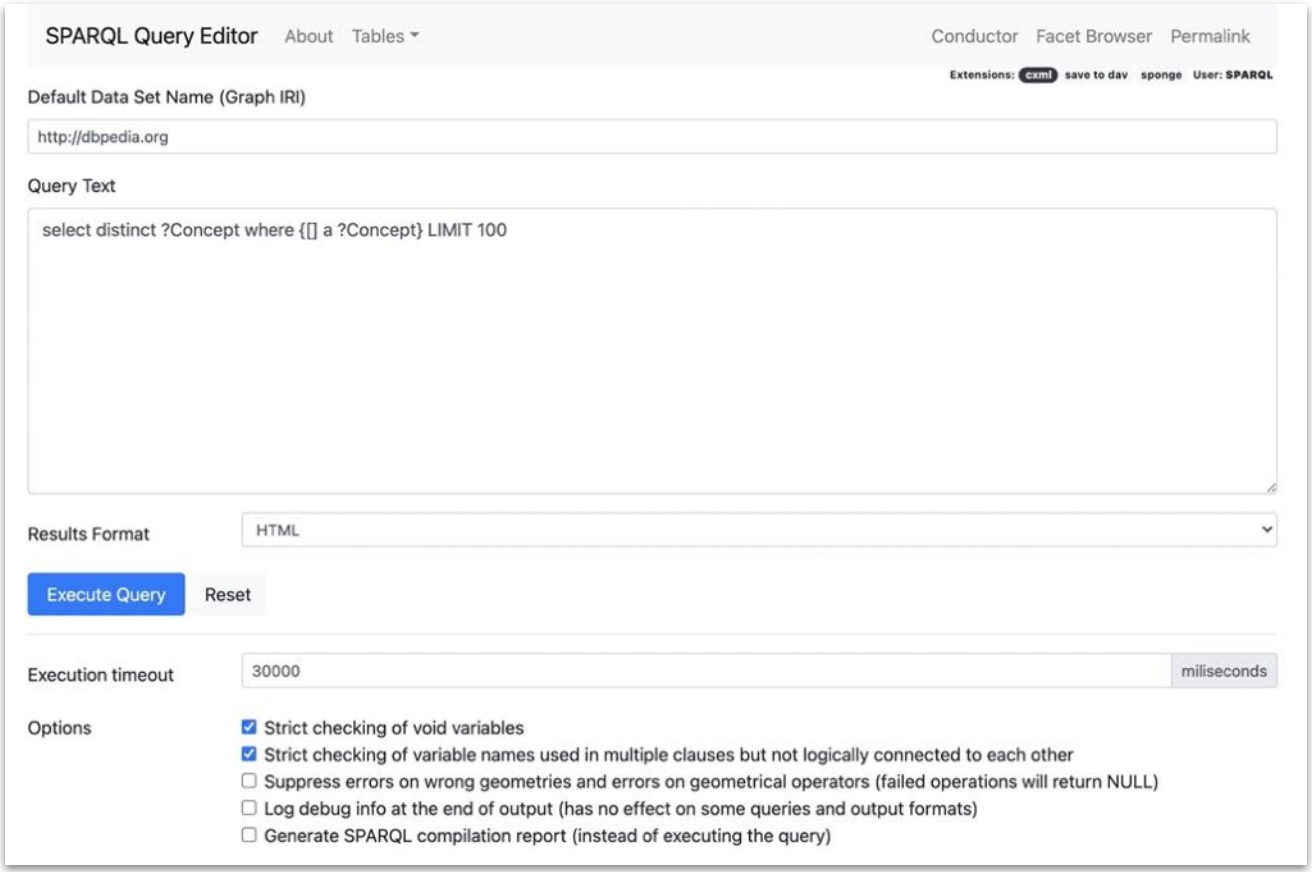
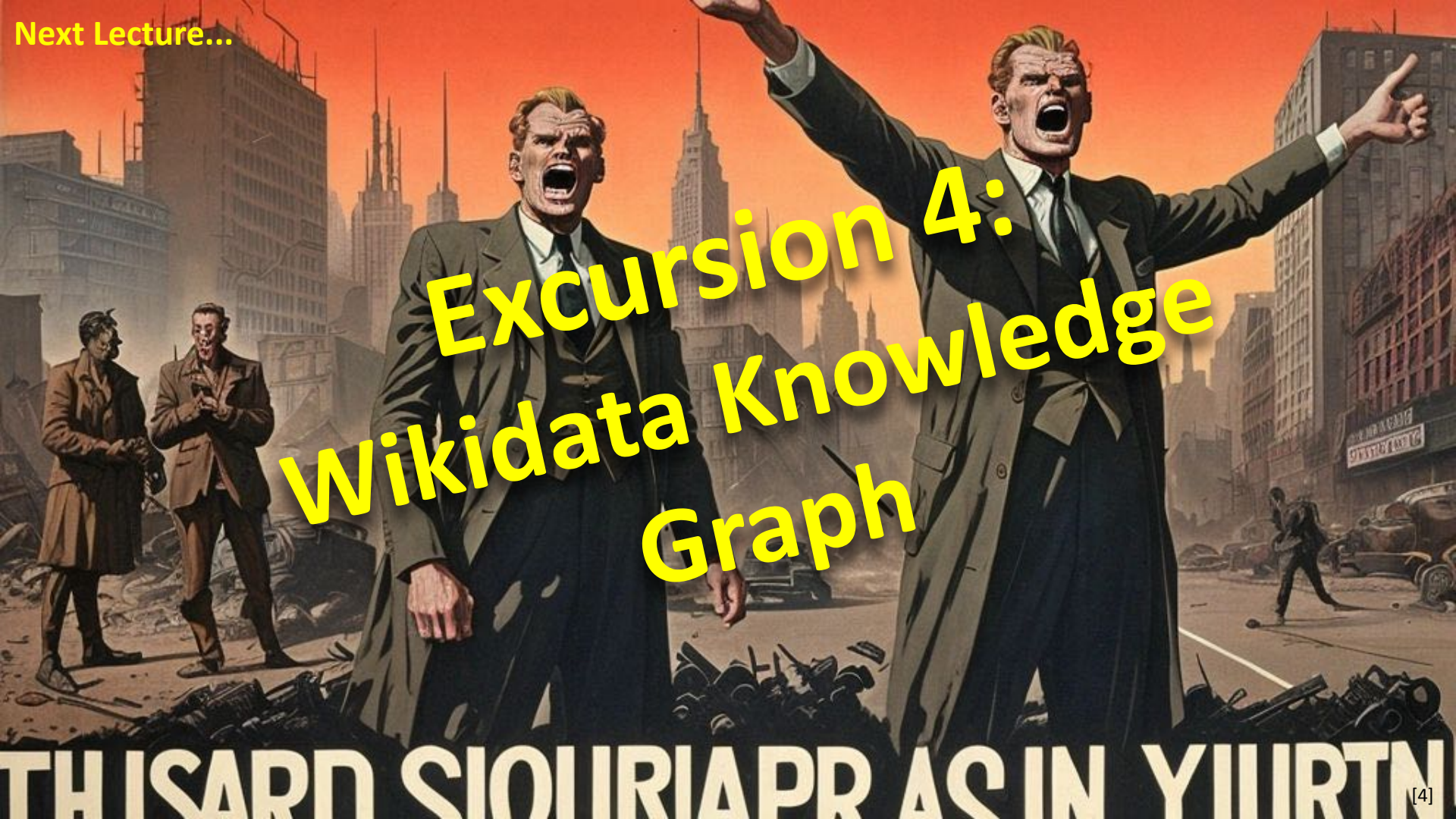
DBpedia SPARQL Endpoint



http://dbpedia.org/sparql

[2]

Next Lecture...



Bibliographic References:

Lehmann, Jens, Robert Isele, Max Jakob, Anja Jentzsch, Dimitris Kontokostas, Pablo N. Mendes, Sebastian Hellmann, Mohamed Morsey, Patrick van Kleef, S. Auer and Christian Bizer (2015). *DBpedia - A large-scale, multilingual knowledge base extracted from Wikipedia*. Semantic Web 6 (2015): 167–195.

Picture References:

[1] "In this picture in the style of a neofuturistic science fiction cover, an old man is sitting in a wheelchair is looking up high in the sky holding a small book in his hands. In the background there are superfuturistic lonely sky scrapers, entire cities floating in the air, and two giant moons." , created via ArtBot, Deliberate 2023, [CC-BY-4.0], https://tinybots.net/artbot

[2] DBpedia logo, wiki.dbpedia.org, DBpedia Team [Public Domain], https://commons.wikimedia.org/wiki/File:DBpediaLogo.svg

[3] The Linked Open Data Cloud, lod-cloud.net, [CC-BY], https://lod-cloud.net/clouds/lod-cloud.svg

[4] "Charlton Heston is shouting in despair depicted in a dystopian city street scene clearly exhibiting the consequences of both unchecked population growth on society and the hoarding of resources by a wealthy minority in the style of a 1960s pulp cover." , created via ArtBot, Deliberate, 2023, [CC-BY-4.0], https://tinybots.net/artbot