

LINKED (OPEN) DATA

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5 STAR LINKED OPEN DATA



Linked Open Data star scheme by example:

<http://5stardata.info/>

OSNOVNI PRINCIPI LINKOVANJA PODATAKA NA WEB-U

1) Koristiti URI za jedinstvenu identifikaciju entiteta/objekata/pojava/...

ISBN: 9781775411840

2) Koristiti HTTP URI tako da se informacije o entitetima učine dostupnim posredstvom Web-a

```
<http://www.worldcat.org/title/north-and-south/oclc/606818482>
```

3) Opisati entitete korisnim podacima primenom RDF modela; u te svrhe, preporučuje se korišćenje postojećih RDF vokabulara

```
<http://www.worldcat.org/title/north-and-south/oclc/606818482>  
rdf:type schema:Book
```

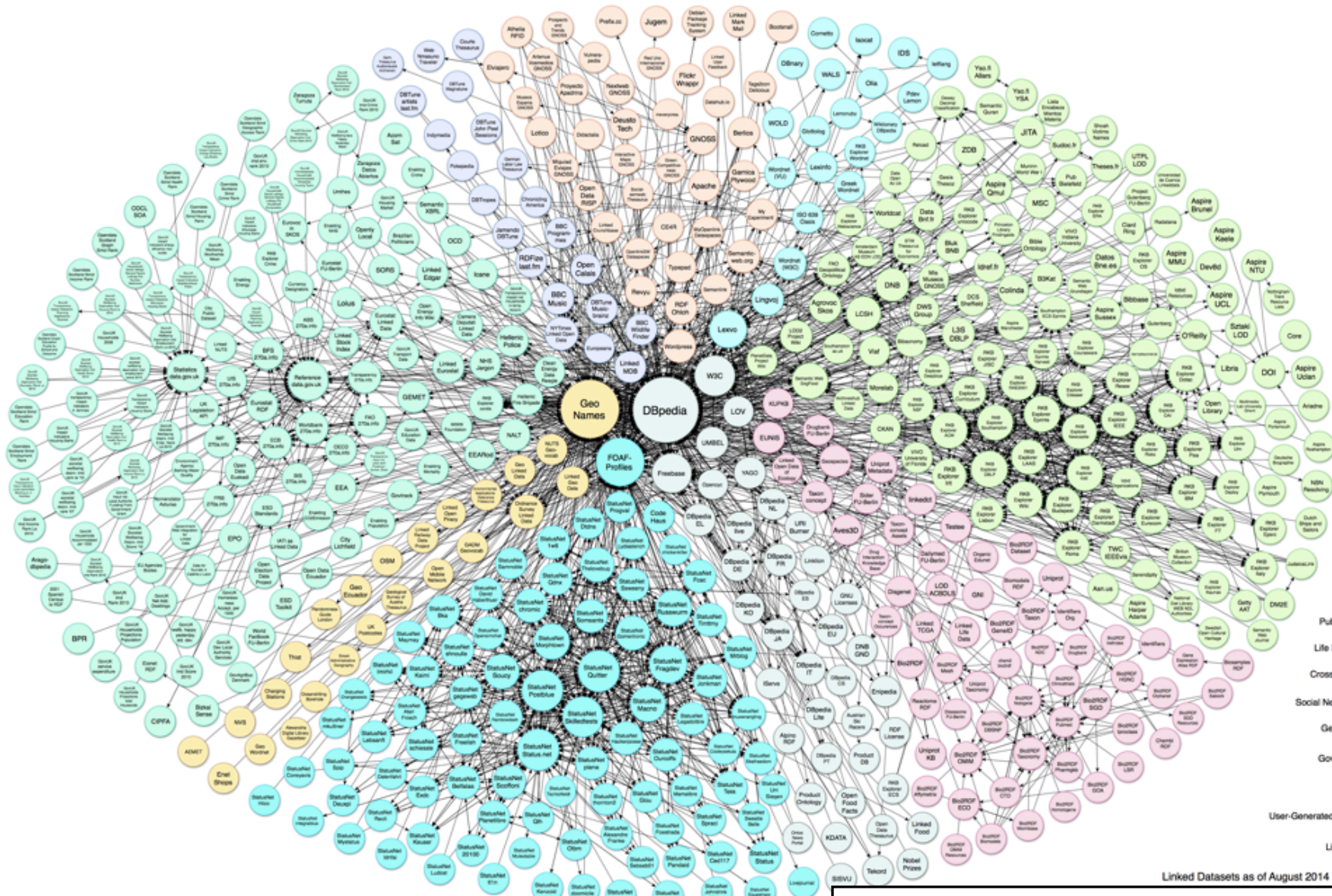
4) Uspostaviti imenovane linkove ka drugim entitetima/objektima/pojavama...

```
<http://www.worldcat.org/title/north-and-south/oclc/606818482>  
schema:author <http://viaf.org/viaf/39377536/>
```

OSNOVNA IDEJA IZA
LINKOVANIH OTVORENIH PODATAKA

Transformisati
World Wide Web (WWW)
u
Gigantic Global Graph (GGG)

LINKED OPEN DATA CLOUD



Linked Datasets as of August 2014



- Publications
- Life Sciences
- Cross-Domain
- Social Networking
- Geographic
- Government
- Media
- User-Generated Content
- Linguistics

Animacija koja ilustruje razvoj
LOD Cloud-a: <http://goo.gl/49p9Eh>

Izvor: <http://lod-cloud.net/>

Mašinski čitljiva verzija Wikipedia-e; sadrži strukturirane i semantički opisane podatke preuzete iz Wikipedia-e

http://en.wikipedia.org/wiki/San_Francisco

Country State	 United States  California
Founded	June 29, 1776
Incorporated	April 15, 1850 ^[9]
Founded by	José Joaquin Moraga Francisco Palóu
Named for	St. Francis of Assisi
Government	
• Type	Mayor-council
• Body	Board of Supervisors
• Mayor of San Francisco	Ed Lee
• Board of Supervisors	Supervisors [show]
• California State Assembly ^{[10][11]}	Tom Ammiano (D) Phil Ting (D)
• CA State Senate ^[12]	Mark Leno (D)
• United States House of Representatives ^{[13][14]}	Nancy Pelosi (D) Barbara Lee (D) Jackie Speier (D)

```
<http://dbpedia.org/resource/San_Francisco>  
db:country dbpedia:United_States ;  
...  
db:foundingDate "1776-6-29"^^xsd:date ;  
dbpprop:namedFor  
    dbpedia:Francis_of_Assisi ;  
db:governmentType  
    dbpedia:Mayor-council_government ;  
...
```

GEONAMES ([HTTP://WWW.GEONAMES.ORG/](http://www.geonames.org/))

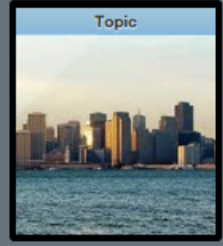
- Otvorena, globalna geo. baza znanja - Wikipedia za geo podatke/znanje
- Omogućuje odgovore na pitanja tipa:
 - Gde se nalazi neko mesto?
 - Koje su njegove koordinate?
 - Kojoj regiji ili provinciji mesto pripada?
 - Koji grad ili adresa su u blizini zadate geografske širine i dužine?

GEONAMES ([HTTP://WWW.GEONAMES.ORG/](http://www.geonames.org/))

```
<http://sws.geonames.org/3020251/>
  rdf:type geo:Feature ;
  geo:name "Embrun"@fr ;
  geo:alternateName "Embrun, Hautes-Alpes"@fr ;
  geo:inCountry <http://www.geonames.org/countries/#FR> ;
  geo:population "7069" ;
  geo:postalCode "05200" ;
  wgs84_pos:lat "44.5667" ;
  wgs84_pos:long "6.5000" ;
  geo:locationMap
    <http://www.geonames.org/3020251/embrun.html> ;
  owl:sameAs <http://rdf.insee.fr/geo/COM_05046> ;
  geo:wikipediaArticle
    <http://en.wikipedia.org/wiki/Embrun> ;
  ...
```


FREEBASE.COM

- Otvorena baza enciklopedijskog znanja – “strukturirana Wikipedia”
- Znanje koje sadrži dolazi iz dva glavna izvora:
 - Znanje importovano iz različitih online izvora
 - npr., CIA Factbook, Wikipedia
 - Znanje koje dodaju korisnici
 - User-friendly proces dodavanja novih činjenica
- Osnova baze znanja na kojoj je zasnovan Google Knowledge Graph



San Francisco ^{en}

mid: /m/0d6lp notable type: /location/us_county notable for: /location/us_county on the web: [W](#) wikipedia.org

San Francisco, officially the City and County of San Francisco, is the cultural, commercial and financial center of Northern California. The only consolidated city-county in California, San Francisco covers about 46.9 square miles on the northern end of the San Francisco Peninsula, giving it a density of about 17,867 people per square mile. It is the most densely settled large city in the state and the most densely populated major city in the United States after New York City. San Francisco is the fourth-most populous city in California, after Los Angeles, San Diego and San Jose, and the 14th in the United States with a population of 837,442. The city and its surrounding area, known as the San Francisco Bay Area, is the San Jose-San Francisco-Oakland combined statistical area.

Properties

View and edit specific data

Filter options: Show all

[Common](#) /common

[Topic](#) /common/topic

Also known as /common

Also known as

- San Fran, Frisco, The City, The City
 - SanFran
 - San Francisco, California
 - San Francisco, CA
 - Frisco
 - Baghdad by the Bay
 - SF
 - The City by the Bay
 - Esseff
- 26 values total

[Description](#) /common/

Google

+Jelena

[Web](#) [News](#) [Maps](#) [Images](#) [Videos](#) [More](#) [Search tools](#)

About 852,000,000 results (0.45 seconds)

San Francisco - Wikipedia, the free encyclopedia

[en.wikipedia.org/wiki/San_Francisco](#) - Wikipedia
The only consolidated city-county in California, **San Francisco** encompasses a land area of about 46.9 square miles (121 km²) on the northern end of the San Francisco Peninsula. It is the most densely settled large city in the state and the most densely populated major city in the United States after New York City. San Francisco is the fourth-most populous city in California, after Los Angeles, San Diego and San Jose, and the 14th in the United States with a population of 837,442. The city and its surrounding area, known as the San Francisco Bay Area, is the San Jose-San Francisco-Oakland combined statistical area.

San Francisco Travel

[www.sanfrancisco.travel/](#)
San Francisco is home to a little bit of everything. Whether you're a first time visitor or a long-time local. This is the place to find out about all things **San Francisco** ...
[Explore](#) - [Events](#) - [Meeting Planners](#) - [Hotels](#)

San Francisco Chronicle

[www.sfgate.com/](#) - San Francisco Chronicle
Daily newspaper for the greater **San Francisco** area. Includes global news, regional information, classifieds, and entertainment.

San Francisco City Guide | Hotels, Restaurants, Nightlife ...

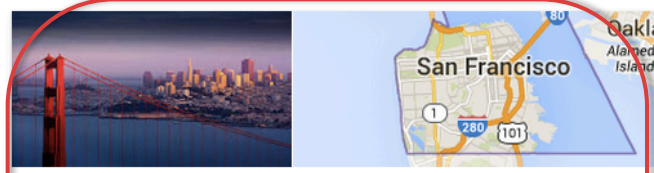
[www.sanfrancisco.com/](#)
Playing host to every type of traveler—from foreign dignitaries to fashionistas to New Age nomads—**San Francisco** offers hotels as diverse as those of any city in ...

City and County of San Francisco

[sfgov.org/](#) - San Francisco
The official website for the City and County of **San Francisco**. Municipal code, services, information for businesses and visitors.

In the news

Google's Knowledge Graph



San Francisco

City in California

San Francisco, officially the City and County of San Francisco, is the cultural, commercial and financial center of Northern California. [Wikipedia](#)

Area: 231.9 sq miles (600.6 km²)

Founded: June 29, 1776

Weather: 68°F (20°C), Wind W at 3 mph (5 km/h), 50% Humidity

Local time: Wednesday 2:29 PM

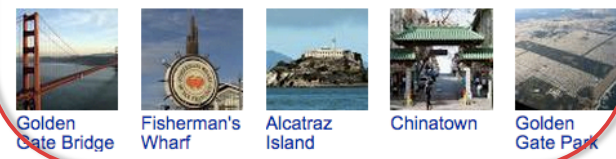
Minimum wage: 10.74 USD per hour (Jan 1, 2014)

Population: 837,442 (2013)

Colleges and Universities: [San Francisco State University](#), [More](#)

Points of interest

[View 45+ more](#)



PUBLIKOVANJE LINKOVANIH (OTVORENIH) PODATAKA

Različiti oblici publikovanja podataka :

- Umetanje podataka u Web stranice
- Pristup podacima preko SPARQL tačaka pristupa (SPARQL endpoints)
- Pristup preko [Linked Data APIs](#)

DODATNI PRIMERI OTVORENIH LINKOVANIH PODATAKA

- Open Government Data
 - USA government data: <http://data.gov>
 - UK government data: <http://data.gov.uk>
 - [World Map of Open Government Data Initiatives](#)
- Linked Clean Energy Data: <http://data.reegle.info/>

DODATNI PRIMERI OTVORENIH LINKOVANIH PODATAKA

- Europeana (evropska kulturna baština):
<http://pro.europeana.eu/linked-open-data>
- Ugledne svetske biblioteke
 - [Library of Congress](#)
 - [British Library](#)
 - [ZBW German National Library of Economics](#)
- [World Catalog](#)
 - najveći svetski online katalog knjiga i rukopisa iz preko 72,000 biblioteka iz celog sveta

PREPORUKE

Uvodni materijali (slides, webcasts, e-books,..) na temu Linked Data (fokus na praktičnu primenu):

<http://euclid-project.eu/resources/learning-materials>

Linked Data Glossary

<http://www.w3.org/TR/ld-glossary/>

Hello Open Data World – tutorial na temu Linked Data, Web of Data, i relevantnih tehnologija

<http://www.slideshare.net/terraces/hello-open-world-semtech-2009>