Rafael Orihuela Brindis
Open Data and Knowledge Graphs - Advanced set of SPARQL queries

Create the SPARQL query and the result for the following queries expressed in natural language. The endpoint that you can use for this exercise is: http://es.dbpedia.org/sparql

1) **Get all the properties that can be applied to instances of the Politician class (<http://dbpedia.org/ontology/Politician>)**

SELECT DISTINCT ?property
WHERE {
  ?politician a <http://dbpedia.org/ontology/Politician> .
  ?politician ?property ?value .
} LIMIT 20

SPARQL | HTML5 table

property
http://www.w3.org/1999/02/22-rdf-syntax-ns#type
http://www.w3.org/2000/01/rdf-schema#label
http://www.w3.org/2000/01/rdf-schema#comment
http://www.w3.org/2000/01/rdf-schema#seeAlso
http://xmlns.com/foaf/0.1/name
http://xmlns.com/foaf/0.1/homepage
http://dbpedia.org/property/name
http://xmlns.com/foaf/0.1/depiction
http://dbpedia.org/ontology/birthPlace

2) **Get all the properties, except rdf:type, that can be applied to instances of the Politician class**

SELECT DISTINCT ?property
WHERE {
  ?politician a <http://dbpedia.org/ontology/Politician> .
  ?politician ?property ?value .
  FILTER(?property != rdf:type)
} LIMIT 20

SPARQL | HTML5 table

property
http://www.w3.org/2000/01/rdf-schema#label
http://www.w3.org/2000/01/rdf-schema#comment
http://www.w3.org/2000/01/rdf-schema#seeAlso
http://xmlns.com/foaf/0.1/name
http://xmlns.com/foaf/0.1/homepage
http://dbpedia.org/property/name
http://xmlns.com/foaf/0.1/depiction
http://dbpedia.org/ontology/birthPlace
http://dbpedia.org/ontology/deathPlace
http://dbpedia.org/property/deathPlace
http://dbpedia.org/ontology/deathDate

3) Which different values exist for the properties, except for rdf:type, applicable to the instances of Politician?

SELECT DISTINCT ?property ?value
WHERE {
  ?politician a <http://dbpedia.org/ontology/Politician> .
  ?politician ?property ?value .
  FILTER(?property != rdf:type)
} LIMIT 20

SPARQL | HTML5 table

property	value
http://www.w3.org/2000/01/rdf-schema#label	"CaMia Hopson"@en
http://www.w3.org/2000/01/rdf-schema#label	"كابل بريكينريدغ"@ar
http://www.w3.org/2000/01/rdf-schema#label	"Cabell Breckinridge"@en
http://www.w3.org/2000/01/rdf-schema#label	"Cabo Almi"@en
http://www.w3.org/2000/01/rdf-schema#label	"كابو ألمي"@ar
http://www.w3.org/2000/01/rdf-schema#label	"Cabo Almi"@es
http://www.w3.org/2000/01/rdf-schema#label	"Cabo Almi"@fr
http://www.w3.org/2000/01/rdf-schema#label	"Cabo Almi"@pt
http://www.w3.org/2000/01/rdf-schema#label	"Cabo Daciolo"@en
http://www.w3.org/2000/01/rdf-schema#label	"Cabo Daciolo"@de
http://www.w3.org/2000/01/rdf-schema#label	"Cabo Daciolo"@es
http://www.w3.org/2000/01/rdf-schema#label	"Cabo Daciolo"@pt
http://www.w3.org/2000/01/rdf-schema#label	"Cabo Junio Amaral"@en

4) For each of these applicable properties, except for rdf:type, which different values do they take globally for all those instances?

SELECT ?property (GROUP_CONCAT(DISTINCT ?value; SEPARATOR= ', ') AS ?values)
WHERE {
  ?politician a <http://dbpedia.org/ontology/Politician> .
  ?politician ?property ?value .
  FILTER(?property != rdf:type)
} GROUP BY ?property
LIMIT 20

SPARQL | HTML5 table (partial result: anytime timeout)

property	values
http://dbpedia.org/ontology/birthDate	1665-03-06, 1688-02-07, 1728-10-07, 1745-01-09, 1758-11-11, 1759-12-22, 1767-04-16, 1767-04-29, 1769-04-04, 1772-01-04, 1776-09-09,
http://www.w3.org/2002/07/owl#sameAs	http://af.dbpedia.org/resource/Calle_Schlettwein, http://af.dbpedia.org/resource/Calvin_Coolidge, http://am.dbpedia.org/resource/h
http://dbpedia.org/property/after	N/A, Patrick Boies, Philos B. Tyler, Thomas Robins, http://dbpedia.org/resource/Alfred_C._Harmer, http://dbpedia.org/resource/Ambr
http://dbpedia.org/property/battles	*American Revolutionary War **1780 Black Camp Rebellion, American Civil War * Battle of Cotton Plant * Vicksburg Campaign ** Siege of Vicksburg ** Jackson Expedition * Second Battle of Memphis * Banks' Texas Coast Operations ** Battle of Brownsville ** Battle of Mustang Island ** Battle of Fort Esperanza, http://dbpedia.org/resource/American_Civil_War, http://dbpedia.org/resource/Gulf_War, http://dbpedia.(
http://dbpedia.org/property/before	Board of Selectmen, Guo Jinlong, John Phelps, N/A, New office, None, http://dbpedia.org/resource/Alanson_Skinner, http://dbpedia.o
http://dbpedia.org/property/education	, Albany State University, Concordia College, Dixie State University, Drew University, Fort Valley State University, George Washing
http://dbpedia.org/property/honorificSuffix	, MP, http://dbpedia.org/resource/Order_of_Canada, http://dbpedia.org/resource/Order_of_the_Tower_and_Sword, http://dbpedia.org/res

5) For each of these applicable properties, except for rdf:type, how many distinct values do they take globally for all those instances?

SELECT ?property (COUNT(DISTINCT ?value) AS ?distinctValuesCount)
WHERE {
  ?politician a <http://dbpedia.org/ontology/Politician> .
  ?politician ?property ?value .
  FILTER(?property != rdf:type)
} GROUP BY ?property
LIMIT 20

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SPARQL | HTML5 table (partial result: anytime timeout)

property	distinctValuesCount
http://dbpedia.org/ontology/birthDate	29989
http://www.w3.org/2002/07/owl#sameAs	422904
http://dbpedia.org/property/after	18459
http://dbpedia.org/property/battles	2026
http://dbpedia.org/property/before	18409
http://dbpedia.org/property/bot	6
http://dbpedia.org/property/class	5
http://dbpedia.org/property/education	4885
http://dbpedia.org/property/gr	2
http://dbpedia.org/property/honorificSuffix	982
http://dbpedia.org/property/majority	785
http://dbpedia.org/property/minister	590