UNIVERSIDAD POLITÉCNICA DE MADRID

ESCUELA TÉCNICA SUPERIOR DE INGENIEROS INFORMÁTICOS



MASTER OF SCIENCE IN HEALTH AND MEDICAL DATA ANALYTICS

OPEN DATA AND KNOWLEDGE GRAPHS

ADVANCED SET OF SPARQL QUERIES

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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>

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| **1. Get all the properties that can be applied to instances of the Politician class (<http://dbpedia.org/ontology/Politician>)** |
| *SELECT DISTINCT ?properties*  *WHERE {*  *?x a <http://dbpedia.org/ontology/Politician> .*  *?x ?properties ?value .*  *}* |
| <https://dbpedia.org/sparql?default-graph-uri=http%3A%2F%2Fdbpedia.org&query=SELECT+DISTINCT+%3Fproperties%0D%0AWHERE+%7B%0D%0A++%3Fx+a+%3Chttp%3A%2F%2Fdbpedia.org%2Fontology%2FPolitician%3E+.%0D%0A++%3Fx+%3Fproperties+%3Fvalue+.%0D%0A%7D&format=text%2Fhtml&timeout=10000&signal_void=on&signal_unconnected=on> |

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| **2. Get all the properties, except rdf:type, that can be applied to instances of the Politician class** |
| *SELECT DISTINCT ?properties*  *WHERE {*  *?x a <http://dbpedia.org/ontology/Politician> .*  *?x ?properties ?value .*  *FILTER (?properties != rdf:type)*  *}* |
| <https://dbpedia.org/sparql?default-graph-uri=http%3A%2F%2Fdbpedia.org&query=SELECT+DISTINCT+%3Fproperties%0D%0AWHERE+%7B%0D%0A++%3Fx+a+%3Chttp%3A%2F%2Fdbpedia.org%2Fontology%2FPolitician%3E+.%0D%0A++%3Fx+%3Fproperties+%3Fvalue+.%0D%0A++FILTER+%28%3Fproperties+%21%3D+rdf%3Atype%29%0D%0A%7D&format=text%2Fhtml&timeout=10000&signal_void=on&signal_unconnected=on> |

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| **3. Which different values exist for the properties, except for rdf:type, applicable to the instances of Politician?** |
| *SELECT DISTINCT ?values*  *WHERE {*  *?x a <http://dbpedia.org/ontology/Politician> .*  *?x ?properties ?values .*  *FILTER (?properties != rdf:type)*  *}* |
| <https://dbpedia.org/sparql?default-graph-uri=http%3A%2F%2Fdbpedia.org&query=SELECT+DISTINCT+%3Fvalues%0D%0AWHERE+%7B%0D%0A++%3Fx+a+%3Chttp%3A%2F%2Fdbpedia.org%2Fontology%2FPolitician%3E+.%0D%0A++%3Fx+%3Fproperties+%3Fvalues+.%0D%0A++FILTER+%28%3Fproperties+%21%3D+rdf%3Atype%29%0D%0A%7D&format=text%2Fhtml&timeout=10000&signal_void=on&signal_unconnected=on> |

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| **4. For each of these applicable properties, except for rdf:type, which different values do they take globally for all those instances?** |
| *SELECT DISTINCT ?properties (GROUP\_CONCAT(DISTINCT ?values; SEPARATOR="\n") AS ?values)*  *WHERE {*  *?x a <http://dbpedia.org/ontology/Politician> .*  *?x ?properties ?values .*  *FILTER (?properties != <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>)*  *}* |
| <https://dbpedia.org/sparql?default-graph-uri=http%3A%2F%2Fdbpedia.org&query=SELECT+DISTINCT+%3Fproperties+%28GROUP_CONCAT%28DISTINCT+%3Fvalues%3B+SEPARATOR%3D%22%5Cn%22%29+AS+%3Fvalues%29%0D%0AWHERE+%7B%0D%0A++%3Fx+a+%3Chttp%3A%2F%2Fdbpedia.org%2Fontology%2FPolitician%3E+.%0D%0A++%3Fx+%3Fproperties+%3Fvalues+.%0D%0A++FILTER+%28%3Fproperties+%21%3D+%3Chttp%3A%2F%2Fwww.w3.org%2F1999%2F02%2F22-rdf-syntax-ns%23type%3E%29%0D%0A%7D%0D%0A%0D%0A&format=text%2Fhtml&timeout=10000&signal_void=on&signal_unconnected=on> |

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| **5. For each of these applicable properties, except for rdf:type, how many distinct values do they take globally for all those instances?** |
| *SELECT DISTINCT ?properties (COUNT(DISTINCT ?values) AS ?numberDistinctValues)*  *WHERE {*  *?x a <http://dbpedia.org/ontology/Politician> .*  *?x ?properties ?values .*  *FILTER (?properties != rdf:type)*  *}* |
| <https://dbpedia.org/sparql?default-graph-uri=http%3A%2F%2Fdbpedia.org&query=SELECT+DISTINCT+%3Fproperties+%28COUNT%28DISTINCT+%3Fvalues%29+AS+%3FnumberDistinctValues%29%0D%0AWHERE+%7B%0D%0A++%3Fx+a+%3Chttp%3A%2F%2Fdbpedia.org%2Fontology%2FPolitician%3E+.%0D%0A++%3Fx+%3Fproperties+%3Fvalues+.%0D%0A++FILTER+%28%3Fproperties+%21%3D+rdf%3Atype%29%0D%0A%7D%0D%0A%0D%0A&format=text%2Fhtml&timeout=10000&signal_void=on&signal_unconnected=on> |