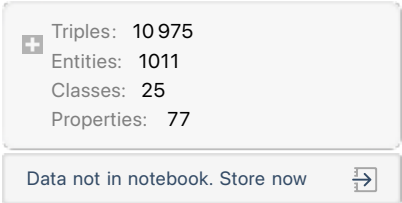

SemiWiki Queries

Importing .jsonld file exported from the SemiWiki

```
In[27]:= Needs["GraphStore`"]
```

```
In[1]:= semiWiki = Import["/Users/kylemaclaury/Downloads/statements.jsonld"]
```

```
Out[1]:= RDFStore[
```

The image shows a summary box for the RDFStore. It contains the following information: Triples: 10 975, Entities: 1011, Classes: 25, Properties: 77. Below this box is a button that says "Data not in notebook. Store now" with a small icon of a document and a right-pointing arrow.

Namespaces

```
In[6]:= wd = "https://query.wikidata.org/sparql";
```

```
In[17]:= wikibase[s_] := URL["http://wikiba.se/ontology#" <> s];
```

```
In[5]:= sw[s_] := URL["http://synthesis-infrastructures.wiki/Special:URIResolver/" <> s]
```

Example SPARQL Queries

```
In[6]:= ImportString[  
  "SELECT?subject?predicate?object  
  WHERE {?subject ?predicate ?object .}",  
  "SPARQLQuery"]
```

```
Out[6]:= SPARQLQuery[  
  SPARQLSelect[{RDFTriple[SPARQLVariable[subject], SPARQLVariable[predicate],  
    SPARQLVariable[object]]}] /* SPARQLProject[{subject, predicate, object}]]
```

How many Triples?

```
In[15]:= query = SPARQLQuery[SPARQLSelect[{RDFTriple[SPARQLVariable["subject"],  
  SPARQLVariable["predicate"], SPARQLVariable["object"]}] /*  
  SPARQLProject[{subject, predicate, object}]]
```

```
Out[15]:= SPARQLQuery[  
  SPARQLSelect[{RDFTriple[SPARQLVariable[subject], SPARQLVariable[predicate],  
    SPARQLVariable[object]]}] /* SPARQLProject[{subject, predicate, object}]]
```

In[16]:= SPARQLExecute[semiWiki, query]

Out[16]=

```
{ < | subject → URL [ http://semantic-mediawiki.org/swivt/1.0#file >> ], predicate → URL [ http://www.w3.org/1
object → URL [ http://www.w3.org/2002/07/owl#ObjectProperty >> ] | >, < | subject → URL [ http://semantic-n
predicate → URL [ http://www.w3.org/1999/02/22-rdf-syntax-ns#type >> ], object → URL [ http://www.w3.o
< | subject → URL [ http://semantic-mediawiki.org/swivt/1.0#page >> ], predicate → URL [ http://www.w3.org/
object → URL [ http://www.w3.org/2002/07/owl#ObjectProperty >> ] | >, < | subject → URL [ http://semantic-n
predicate → URL [ http://www.w3.org/1999/02/22-rdf-syntax-ns#type >> ], object → URL [ http://www.w3.o
< | subject → URL [ http://semantic-mediawiki.org/swivt/1.0#specialImportedFrom >> ], predicate → URL [ ht
object → URL [ http://www.w3.org/2002/07/owl#DatatypeProperty >> ] | >, < | subject → URL [ http://semantic
predicate → URL [ http://www.w3.org/1999/02/22-rdf-syntax-ns#type >> ], object → URL [ http://www.w3.o
< | subject → URL [ http://semantic-mediawiki.org/swivt/1.0#wikiNamespace >> ], predicate → URL [ http://w
object → URL [ http://www.w3.org/2002/07/owl#DatatypeProperty >> ] | >, < | subject → URL [ http://semantic
predicate → URL [ http://www.w3.org/1999/02/22-rdf-syntax-ns#type >> ], object → URL [ http://www.w3.o
< | subject → URL [ http://xmlns.com/foaf/0.1/name >> ], predicate → URL [ http://synthesis-infrastructures.w
object → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AFoaf-3Aname-23_MLb34778903f
< | subject → URL [ http://xmlns.com/foaf/0.1/name >> ], predicate → URL [ http://www.w3.org/1999/02/22-rd
object → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Category-3APages_with_ignored_display_title
< | subject → URL [ http://xmlns.com/foaf/0.1/name >> ], predicate → URL [ http://www.w3.org/1999/02/22-rd
object → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Category-3AImported_vocabulary >> ] | >,
predicate → URL [ http://www.w3.org/2000/01/rdf-schema#isDefinedBy >> ], object → URL [ https://synthes
< | subject → URL [ http://xmlns.com/foaf/0.1/name >> ], predicate → URL [ http://www.w3.org/2000/01/rdf-sc
< | subject → URL [ http://xmlns.com/foaf/0.1/name >> ], predicate → URL [ http://www.w3.org/2004/02/skos/c
object → RDFString[A name for some thing or agent., en] | >, < | subject → URL [ http://xm
predicate → URL [ http://www.w3.org/1999/02/22-rdf-syntax-ns#type >> ], object → URL [ http://www.w3.o
```

large output

show less

show more

show all

set si

ze limit...

```
ImportString["SELECT*WHERE {?s ? ?o .}
LIMIT 200", "SPARQLQuery"]
```

Out[19]= SPARQLQuery[SPARQLSelect[
{RDFTriple[SPARQLVariable[s], SPARQLVariable[p], SPARQLVariable[o]]}]] /*
SPARQLLimit[200]]

Who has FOAF

```
In[12]:= query2 = SPARQLQuery[
  SPARQLSelect[{RDFTriple[SPARQLVariable["s"], sw["Property-3AHas_FOAF"],
    SPARQLVariable["o"]]}] /* SPARQLLimit[200]
Out[12]= SPARQLQuery[SPARQLSelect[{RDFTriple[SPARQLVariable[s],
  URL[http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_FOAF >>],
  SPARQLVariable[o]}] /* SPARQLLimit[200]

In[14]:= SPARQLExecute[semiWiki, query2]
Out[14]= {<| s → URL[http://synthesis-infrastructures.wiki/Special:URIResolver/Jodi_Schneider >>],
  o → URL[http://www.jodischneider.com/#me >>] |>,
  <| s → URL[http://synthesis-infrastructures.wiki/Special:URIResolver/Jonny_Saunders >>],
  o → URL[https://jon-e.net/#i >>] |> }
```

find the properties

```
In[3]:= SPARQLQuery["select distinct ?p where {?s ?p ?o .}"][semiWiki]
Out[3]= {<| p → URL[http://www.w3.org/1999/02/22-rdf-syntax-ns#type >>] |>,
  <| p → URL[http://semantic-mediawiki.org/swikt/1.0#page >>] |>,
  <| p → URL[http://semantic-mediawiki.org/swikt/1.0#specialImportedFrom >>] |>,
  <| p → URL[http://semantic-mediawiki.org/swikt/1.0#type >>] |>,
  <| p → URL[http://semantic-mediawiki.org/swikt/1.0#wikiNamespace >>] |>,
  <| p → URL[http://semantic-mediawiki.org/swikt/1.0#wikiPageContentLanguage >>] |>,
  <| p → URL[http://semantic-mediawiki.org/swikt/1.0#wikiPageModificationDate >>] |>,
  <| p → URL[http://semantic-mediawiki.org/swikt/1.0#wikiPageSortKey >>] |>,
  <| p → URL[http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AModification_date-23aux >>] |>,
  <| p → URL[http://www.w3.org/2000/01/rdf-schema#isDefinedBy >>] |>,
  <| p → URL[http://www.w3.org/2000/01/rdf-schema#label >>] |>,
  <| p → URL[http://www.w3.org/2000/01/rdf-schema#subClassOf >>] |>,
  <| p → URL[http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AInverse_of >>] |>,
  <| p → URL[http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AExternal_formatter_URI >>] |>,
  <| p → URL[http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_subobject >>] |>,
  <| p → URL[http://semantic-mediawiki.org/swikt/1.0#masterPage >>] |>,
  <| p → URL[https://schema.org/author >>] |>, <| p → URL[https://schema.org/dateSent >>] |>,
  <| p → URL[https://schema.org/text >>] |>, <| p → URL[https://schema.org/url >>] |>, }
```

```

< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_Topic >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AAffiliated_With >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AAssigned_Table >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AContributes_to >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_Frame >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_query >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AInterested_In >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AMember_of >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3ATimezone >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AQuery_depth >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AQuery_format >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AQuery_size >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AQuery_string >> ] |> ,
< p → URL [ https://schema.org/contributor >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_Description >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_Homepage >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_completion_status >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_Interested_Participant >> ] |> ,
< p → URL [ https://schema.org/identifier >> ] |> ,
< p → URL [ http://www.w3.org/2004/02/skos/core#exactMatch >> ] |> ,
< p → URL [ https://schema.org/isPartOf >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_Author >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_PDF >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3APublished_By >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3ARelated_to >> ] |> ,
< p → URL [ http://semantic-mediawiki.org/swikt/1.0#redirectsTo >> ] |> ,
< p → URL [ http://www.w3.org/2002/07/owl#sameAs >> ] |> , < p → URL [ https://schema.org/hasPart >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_Discord_Channel_Name >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_Discord_Channel_URL >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_Facilitator >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_Member >> ] |> ,
< p → URL [ http://www.w3.org/2004/02/skos/core#related >> ] |> ,
< p → URL [ http://semantic-mediawiki.org/swikt/1.0#file >> ] |> ,
< p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_FOAF >> ] |> ,

```

```

< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas\_Github\_Handle » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas\_ORCID » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas\_Twitter\_Handle » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AExample\_of » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas\_Discord\_Handle » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas\_Fedi\_Handle » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas\_Git\_Handle » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3ATag » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3ALongName » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AShortName » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3ADepends\_On » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3ALanguage\_code » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AText » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AAllows\_value » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AChange\_propagation » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AUsed\_In » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas\_fields » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3ASchema\_definition » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3ASchema\_tag » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3ASchema\_type » ] | > ,
< | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AProperty\_description » ] | > ,
< | p → URL [ http://www.w3.org/2004/02/skos/core#scopeNote » ] | > }

```

Find the subjects

```
In[10]:= SPARQLQuery["select distinct ?s where {?s ?p ?o .}"][semiWiki];
```

```
In[22]:= ImportString["select distinct ?o where {?s ?p ?o .}", "SPARQLQuery"]
```

```
Out[22]:= SPARQLQuery [ SPARQLSelect [
    {RDFTriple[SPARQLVariable[s], SPARQLVariable[p], SPARQLVariable[o]]} / *
    SPARQLProject[o] / * SPARQLDistinct[] ]
```

```
In[23]:= query3 = SPARQLQuery[SPARQLSelect[
  {RDFTriple[SPARQLVariable["s"], SPARQLVariable["p"], SPARQLVariable["o"]]}] /*
  SPARQLProject["o"] /* SPARQLDistinct[]]
```

```
Out[23]= SPARQLQuery[SPARQLSelect[
  {RDFTriple[SPARQLVariable[s], SPARQLVariable[p], SPARQLVariable[o]]}] /*
  SPARQLProject[o] /* SPARQLDistinct[]]
```

```
In[24]:= SPARQLExecute[semiWiki, query3]
```

```
Out[24]= {<| o → URL [ http://www.w3.org/2002/07/owl#ObjectProperty » ] |>, <| o → URL [ http://www.w3.org/2002/07/owl#
  <| o → URL [ https://synthesis-infrastructures.wiki/Property-3AHas_author » ] |>, <| o → schema:author | http:
  <| o → URL [ http://semantic-mediawiki.org/swikt/1.0#_wpg » ] |>, <| o → 102 |>, <| o → en |>, <| o → Sun 16
  <| o → Has author |>, <| o → 2.45987 × 106 |>, <| o → URL [ https://synthesis-infrastructures.wiki/Special:Exp
  <| o → URL [ https://synthesis-infrastructures.wiki/Category-3ACode » ] |>, <| o → schema:Code | https://s
  <| o → Code |>, ... 4510 ... , <| o → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AFoaf-3A
  <| o → URL [ https://synthesis-infrastructures.wiki/Special:ExportRDF/Property-3AFoaf-3Ahomepage » ] |>,
  <| o → RDFString[URL of the homepage of something, which is a general web resource
  <| o → URL [ https://synthesis-infrastructures.wiki/Property-3AFoaf-3Aknows » ] |>, <| o → foaf:knows | http:
  <| o → Foaf:knows |>, <| o → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AFoaf-3Akn
  <| o → URL [ https://synthesis-infrastructures.wiki/Special:ExportRDF/Property-3AFoaf-3Aknows » ] |>,
  <| o → RDFString[A person known by this person (indicating some level of reciproca
  <| o → URL [ https://synthesis-infrastructures.wiki/Property-3AFoaf-3Aname » ] |>, <| o → foaf:name | http:/
  <| o → Foaf:name |>, <| o → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AFoaf-3Aname
  <| o → URL [ https://synthesis-infrastructures.wiki/Special:ExportRDF/Property-3AFoaf-3Aname » ] |>, <| o → RDFString[
  large output | show less | show more | show all | set size limit...
```

find the objects

```
In[7]:= SPARQLQuery["select distinct ?o where {?s ?p ?o .}"][semiWiki];
```

what hasPart

```
In[28]:= ImportString["select * where {http://schema.org/hasPart ?p ?w .}", "SPARQLQuery"]
```

```
... Import : Cannot import data as SPARQLQuery format.
```

```
Out[28]= $Failed
```

Formula and structure image of Caffeine

```
In[ ]:= SPARQLExecute["https://query.wikidata.org/sparql", "
select * where {
  wd:Q60235          # caffeine
  wdt:p247 ?formula;
  wdt:P117 ?image.
}
"]
```

```
Out[ ]:= { }
```

Subject “Xanadu”

```

In[9]:= SPARQLExecute[semiWiki,
  SPARQLSelect[
    {
      RDFTriple[sW["Xanadu"], SPARQLVariable["p"], SPARQLVariable["0"]]
    }
  ]
]

Out[9]= { < | p → URL [ http://semantic-mediawiki.org/swivt/1.0#page >> ] ,
  0 → URL [ https://synthesis-infrastructures.wiki/Xanadu >> ] | > ,
  < | p → URL [ http://semantic-mediawiki.org/swivt/1.0#wikiNamespace >> ] , 0 → 0 | > ,
  < | p → URL [ http://semantic-mediawiki.org/swivt/1.0#wikiPageContentLanguage >> ] , 0 → en | > ,
  < | p → URL [ http://semantic-mediawiki.org/swivt/1.0#wikiPageModificationDate >> ] ,
  0 → Fri 11 Nov 2022 14:04:40 GMT | > ,
  < | p → URL [ http://semantic-mediawiki.org/swivt/1.0#wikiPageSortKey >> ] , 0 → Xanadu | > ,
  < | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AHas_subobject >> ] ,
  0 → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Xanadu-23joelchan86-2D22-2D11-2D11_14-3A05-3A3
  < | p → URL [ http://synthesis-infrastructures.wiki/Special:URIResolver/Property-3AModification_date-23aux >> ] ,
  0 →  $2.4599 \times 10^6$  | > , < | p → URL [ http://www.w3.org/2000/01/rdf-schema#isDefinedBy >> ] ,
  0 → URL [ https://synthesis-infrastructures.wiki/Special:ExportRDF/Xanadu >> ] | > ,
  < | p → URL [ http://www.w3.org/2000/01/rdf-schema#label >> ] , 0 → Xanadu | > ,
  < | p → URL [ http://www.w3.org/1999/02/22-rdf-syntax-ns#type >> ] ,
  0 → URL [ http://semantic-mediawiki.org/swivt/1.0#Subject >> ] | > }

```