**SPARQL Queries for Interface**

| **Search Objective** | **Pseudo SPARQL Query** | **SPARQL Query Example** |
| --- | --- | --- |
| To find the broader term of a category | SELECT variables *a* and *aLabel* and *b* and *bLabel*  WHERE  BIND ([category] to variable *a*)  *a* hasLabel *aLabel*  *a* isSubClassOf *b*  *b* hasLabel *bLabel* | SELECT ?a ?aLabel ?b ?bLabel  WHERE  {  BIND (wd:Q20983127 as ?a)  ?a rdfs:label ?aLabel.  ?a wdt:P279 ?b.  ?b rdfs:label ?bLabel.  } |
| To find the narrower term of a category | SELECT variable *a* and *aLabel* and *n* and *nLabel*  WHERE  BIND ([given item] to variable *a*)  *a* hasLabel *aLabel*  *a* inverse of isSubClassOf *n*  *n* hasLabel *nLabel* | SELECT ?a ?aLabel ?n ?nLabel  WHERE  {  BIND (wd:Q2453629 as ?a)  ?a rdfs:label ?aLabel.  ?a ^wdt:P279 ?n.  ?n rdfs:label ?nLabel.  } |
| To find the related Nomen term of a category | SELECT variable *category* and *match*  WHERE  BIND ([given item] to variable *category*)  *category* hasExactMatch to *match*  or  *category* hasbroadMatch to *match*  or  *category* hascloseMatch to *match*  FILTER the values of *match* for the string “nomen” | SELECT ?category ?match  WHERE  {  BIND (wd:Q20983127 as ?category)  {?category skos:exactMatch ?match . } UNION  {?category skos:broadMatch ?match . } UNION  {?category skos:closeMatch ?match .}  FILTER regex(str(?match), "nomen", "i")  } |
| To find the related Getty AAT term of a category | SELECT variable *category* and *match*  WHERE  BIND ([given item] to variable *category*)  *category* hasExactMatch to *match*  or  *category* hasbroadMatch to *match*  or  *category* hascloseMatch to *match*  FILTER the values of *match* for the string “getty” | SELECT ?category ?match  WHERE  {  BIND (wd:Q20983127 as ?category)  {?category skos:exactMatch ?match . } UNION  {?category skos:broadMatch ?match . } UNION  {?category skos:closeMatch ?match .}  FILTER regex(str(?match), "getty", "i")  } |
| To find the related Nomen term of a given item | SELECT variable *a* and *category* and *match*  WHERE  BIND ([given item] to variable *a*)  *a* isInstanceOf *category*  *category* hasExactMatch to *match*  or  *category* hasbroadMatch to *match*  or  *category* hascloseMatch to *match*  FILTER the values of *match* for the string “nomen” | SELECT ?a ?category ?match  WHERE  {  BIND (wd:Q102971296 as ?a)  {?a wdt:P31 ?category .  ?category skos:exactMatch ?match . } UNION  {?a wdt:P31 ?category .  ?category skos:broadMatch ?match . } UNION  {?a wdt:P31 ?category .  ?category skos:closeMatch ?match .}  FILTER regex(str(?match), "nomen", "i")  } |
| To find the related Getty term of a given item | SELECT variable *a* and *category* and *match*  WHERE  BIND ([category] to variable *a*)  *a* isInstanceOf *category*  *category* hasExactMatch to *match*  or  *category* hasbroadMatch to *match*  or  *category* hascloseMatch to *match*  FILTER the values of *match* for the string “getty” | SELECT ?a ?category ?match  WHERE  {  BIND (wd:Q102971296 as ?a)  {?a wdt:P31 ?category .  ?category skos:exactMatch ?match . } UNION  {?a wdt:P31 ?category .  ?category skos:broadMatch ?match . } UNION  {?a wdt:P31 ?category .  ?category skos:closeMatch ?match .}  FILTER regex(str(?match), "getty", "i")  } |
| To see all art objects in a certain category | SELECT variable *a* and *aLabel*  WHERE  *a*  isInstanceOf [category iri]  *a* hasLabel *aLabel* | SELECT ?a ?aLabel  WHERE  {  ?a wdt:P31 wd:Q12826066 ;  rdfs:label ?aLabel .  } |
| To see all art objects categorized in a subclass of a higher level. | SELECT variables *a* and *aLabel* and *c* and *cLabel* and *n* and *nLabel*  WHERE  BIND ([category iri] to variable *c)*  *c* isInverse of isSubClassOf *n*  *c* hasLabel *cLabel*  *a* isInstanceOf *n*  *a* hasLabel *aLabel*  *n* hasLabel *nLabel* | SELECT ?a ?aLabel ?c ?cLabel ?n ?nLabel  WHERE  {  BIND (wd:Q2453629 as ?c)  ?c ^wdt:P279\* ?n.  ?c rdfs:label ?cLabel.  ?a wdt:P31 ?n.  ?a rdfs:label ?aLabel.  ?n rdfs:label ?nLabel.  } |
| To see an art object’s category | SELECT variable *a* and *category* and *categoryLabel*  WHERE  BIND ([object iri] to variable *a*)  *a* isInstnceOf *category*  *category* hasLabel *categoryLabel* | SELECT ?a ?category ?categoryLabel  WHERE  {  BIND ( wd:Q103309293 as ?a)  ?a wdt:P31 ?category .  ?category rdfs:label ?categoryLabel .  } |
| To see an art object’s exact match category in other vocabularies | SELECT variable *a* and *category* and *exactMatch*  WHERE  BIND ([object iri] to variable *a*)  *a* isInstanceOf *category*  *category* hasExactMatch *exactMatch* | SELECT ?a ?category ?exactMatch  WHERE  {  BIND ( wd:Q103309293 as ?a)  ?a wdt:P31 ?category .  ?category skos:exactMatch ?exactMatch .  } |
| To see an art object’s category and various matching relationships to the other vocabularies. | SELECT variable *a* and *category* and *match*  WHERE  BIND ([object iri] to variable *a*  *a* isInstanceOf *category*  *category* hasExactMatch to *match*  or  *category* hasbroadMatch to *match*  or  *category* hascloseMatch to *match* | SELECT ?a ?category ?match  WHERE  {  BIND (wd:Q102971296 as ?a)  {?a wdt:P31 ?category .  ?category skos:exactMatch ?match . } UNION  {?a wdt:P31 ?category .  ?category skos:broadMatch ?match . } UNION  {?a wdt:P31 ?category .  ?category skos:closeMatch ?match .}  } |
| To find art objects with string value in Label | SELECT variables *a* and *aLabel* and *c*  FROM work-class-link graph  WHERE  *a* hasLabel *aLabel*  *a* isInstanceOf *c*  FILTER *aLabel* values for [insert search value] | SELECT ?a ?aLabel ?c  FROM <http://work-class-links>  WHERE  {  ?a rdfs:label ?aLabel .  ?a wdt:P31 ?c .  FILTER regex(str(?aLabel)," cup ","i")  }  LIMIT 100 |
| To see a category, its broader term, and its narrower term(s) in Getty | SELECT variables *term* and *termLabel* and *parentLabel* and *childLabel*  WHERE  BIND ([aat term] as *term*)  *term* hasbroaderPreferred *parent*  *term* hasInversebroaderPreferred *child*  *term* haspreferredLabel *t*  *t* hasliteralvalue *termLabel*  *parent* haspreferredLabel *l*  *l* hasliteralValue *parentLabel*  *child* haspreferredLabel *c*  *c* hasliteralValue *childLabel* | SELECT ?term ?termLabel ?parentLabel ?childLabel  WHERE { bind (aat:300435539 as ?term)  ?term gvp:broaderPreferred ?parent ; ^gvp:broaderPreferred ?child.  ?term gvp:prefLabelGVP ?t.  ?t skosxl:literalForm ?termLabel.  ?parent gvp:prefLabelGVP ?l.  ?l skosxl:literalForm ?parentLabel.  ?child gvp:prefLabelGVP ?c.  ?c skosxl:literalForm ?childLabel.  } |
| To see a category, its broader term, and its narrower term(s) in Nomenclature | SELECT variables *term* and *termLabel* and *parentLabel* and *childLabel*  WHERE  BIND ([nom term] as *term*)  *term* hasbroader *parent*  *term* hasnarrower *child*  *term* haspreferredLabel *termLabel*  *parent* haspreferredLabel *parentLabel*  *child* haspreferredLabel *childLabel* | PREFIX nom: <https://nomenclature.info/nom/>  SELECT ?term ?termLabel ?parentLabel ?childLabel  WHERE { bind (nom:11153 as ?term)  ?term skos:broader ?parent ; skos:narrower ?child.  ?term skos:prefLabel ?termLabel.  ?parent skos:prefLabel ?parentLabel.  ?child skos:prefLabel ?childLabel.  filter(lang(?termLabel)="en")  filter(lang(?parentLabel)="en")  filter(lang(?childLabel)="en")  } |
| To see a category’s hierarchy placement (**NOTE**: I have an idea on doing this for the AAT using the parent string. Not sure how best to do this with the other vocabs). | (Not added as this query still needs to be | SELECT ?hierarchy  WHERE  {  BIND (wd:Q2453629 as ?term)  {?term wdt:P279 ?parent.} UNION  {?term ^wdt:P279 ?child.}  ?parent rdfs:label ?parentLabel.  ?child rdfs:label ?childLabel.  ?term rdfs:label ?termLabel.  BIND (str(concat("parent: ", ?parentLabel, "; ","term: ", ?termLabel,"; ", "child: ",?childLabel, ".")) as ?hierarchy)  } LIMIT 100 |

Other thoughts and musings:

Is there a way to create a query that results in suggested terms? Maybe there is a way to create a synonym ring or associative terms that could be used. I don’t know how the search interface can accommodate that though.

For example, maybe we could use the dataset from WordNet <https://wordnet.princeton.edu/download> to match words a user enters that are semantically similar to the vocabulary terms.

**Collection of SPARQL Queries (Not already captured)**

| Description | Query |
| --- | --- |
| Sculptures with images in Vanderbilt Wikidata Collection  [Wikidata Endpoint] | #defaultView:ImageGrid  select ?art ?artLabel ?pic  where {  ?art wdt:P195 wd:Q18563658 .  ?art wdt:P31 wd:Q860861 .  ?art wdt:P18 ?pic .  SERVICE wikibase:label { bd:serviceParam wikibase:language "[AUTO\_LANGUAGE],en".}    } |
| Sculptures with and without images in Vanderbilt Wikidata Collection  [Wikidata Endpoint] | #defaultView:ImageGrid  select ?art ?artLabel ?pic  where {  ?art wdt:P195 wd:Q18563658 .  ?art wdt:P31 wd:Q860861 .  optional {?art wdt:P18 ?pic .}  SERVICE wikibase:label { bd:serviceParam wikibase:language "[AUTO\_LANGUAGE],en".}    } |
| Artists with/without pictures in the Vanderbilt Wikidata Collection  [Wikidata Endpoint] | #defaultView:ImageGrid  select ?artist ?artistLabel ?pic  where {  ?artist wdt:P6379 wd:Q18563658  optional {?artist wdt:P18 ?pic .}  SERVICE wikibase:label { bd:serviceParam wikibase:language "[AUTO\_LANGUAGE],en".}    } |
| Artists in Vanderbilt Wikidata collection with map location of birthplace  [Wikidata Endpoint] | #defaultView:Map  select ?artist ?artistLabel ?placeLabel ?geo  where {  ?artist wdt:P6379 wd:Q18563658.  ?artist wdt:P19 ?place.  ?place wdt:P625 ?geo  SERVICE wikibase:label { bd:serviceParam wikibase:language "[AUTO\_LANGUAGE],en".}    } |
| Artwork URI, Label, Class URI, and Class Label  [Vanderbilt Endpoint] | SELECT DISTINCT ?work ?workLabel ?class ?classLabel  WHERE {  ?work wdt:P31 ?class.  ?work rdfs:label ?workLabel.  ?class rdfs:label ?classLabel.  }  limit 10 |
| Construction query to build triple statements for wikidata classes to their parent class  [Vanderbilt Endpoint] | construct {  ?class wdt:P279 ?superclass.  ?base\_class rdfs:label ?base\_label.  ?superclass rdfs:label ?super\_label.  }  where {  # Q102971873 is "Soba-choko (noodle sauce cup) with a design in blue underglaze of a stylized rock and grasses"  bind (wd:Q102971873 as ?artwork) # Comment out this line to do all artworks  ?artwork wdt:P195 wd:Q18563658. # must be in the Vanderbilt Art Gallery  ?artwork wdt:P31 ?base\_class. # artwork is an instance of the base class  ?base\_class wdt:P279\* ?class. # the subject class is 0 to many subclass\_of links from the base class  ?class wdt:P279 ?superclass. # the class must have a superclass    ?base\_class rdfs:label ?base\_label.  filter(lang(?base\_label)="en")  ?superclass rdfs:label ?super\_label.  filter(lang(?super\_label)="en")  } |
| List of named graphs  [Vanderbilt Endpoint} | PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>  PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>  PREFIX skos: <http://www.w3.org/2004/02/skos/core#>  PREFIX skosxl: <http://www.w3.org/2008/05/skos-xl#>  PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>  PREFIX dc: <http://purl.org/dc/elements/1.1/>  PREFIX dcterms: <http://purl.org/dc/terms/>  PREFIX dcat: <http://www.w3.org/ns/dcat#>  PREFIX wd: <http://www.wikidata.org/entity/>  PREFIX wdt: <http://www.wikidata.org/prop/direct/>  PREFIX aat: <http://vocab.getty.edu/aat/>  PREFIX gvp: <http://vocab.getty.edu/ontology#>  PREFIX sd: <http://www.w3.org/ns/sparql-service-description#>    SELECT DISTINCT ?NamedGraph ?modified ?issued ?publisher ?status  FROM <https://sparql.vanderbilt.edu/graphs>  WHERE {  ?Service sd:endpoint <https://sparql.vanderbilt.edu/sparql>.  ?Service sd:availableGraphs ?GraphCollection.  ?GraphCollection sd:namedGraph ?NamedGraph.  ?NamedGraph dcterms:modified ?modified.  optional {?NamedGraph dcterms:issued ?issued.}  optional {?NamedGraph dc:publisher ?publisher.}  optional {?NamedGraph <http://rs.tdwg.org/dwc/terms/attributes/status> ?status.}  }  order by desc(?issued) |
| Construction query to link Wikidata item to their classes  [Vanderbilt Endpoint] | construct {  ?artwork wdt:P31 ?class.  ?artwork rdfs:label ?label.  }  where {  ?artwork wdt:P195 wd:Q18563658.  ?artwork wdt:P31 ?class.  ?artwork rdfs:label ?label.  filter(lang(?label)="en")  } |
| Query of AAT to see various broader classes | select distinct ?broader\_subject ?subject\_label ?broader\_object ?object\_label  from <http://AATOut\_2Terms>  from <http://AATOut\_HierarchicalRels>  where {  # http://vocab.getty.edu/aat/300043022 is the IRI for "teapots"  bind(<http://vocab.getty.edu/aat/300193015> as ?broader\_subject)  ?broader\_subject gvp:broaderGeneric ?broader\_object.  #?broader\_subject gvp:broaderPreferred ?broader\_object.  #?broader\_subject gvp:broaderNonPreferred ?broader\_object.  ?broader\_subject skosxl:prefLabel ?labelSubject.  ?labelSubject skosxl:literalForm ?subject\_label.  filter(lang(?subject\_label)="en")  ?broader\_object skosxl:prefLabel ?labelObject.  ?labelObject skosxl:literalForm ?object\_label.  filter(lang(?object\_label)="en")  } |
| Query to find equivalent concepts to Getty AAT classes | prefix skos: <http://www.w3.org/2004/02/skos/core#>  prefix skosxl: <http://www.w3.org/2008/05/skos-xl#>  select distinct ?iri ?prefLabel ?otherConcept  where {  # Use bind to avoid having to enter the ID twice  bind(<http://vocab.getty.edu/aat/300047090> as ?iri)  ?iri skosxl:prefLabel ?labelObject.  ?labelObject skosxl:literalForm ?prefLabel.  filter(lang(?prefLabel)="en")  # Get the equivalent Wikidata concept  optional {?iri skos:exactMatch ?otherConcept.}  } |
| Query to find equivalent concepts to Nomenclature classes | select distinct ?iri ?prefLabel ?otherConcept ?other\_label  where {  # Use bind to avoid having to enter the ID twice  bind(<https://nomenclature.info/nom/13997> as ?iri)  ?iri skos:prefLabel ?prefLabel.  filter(lang(?prefLabel)="en")  # Get the equivalent AAT or Wikidata concept  optional {?iri skos:exactMatch ?otherConcept.}  # Get the equivalent concept label  optional {  ?otherConcept skosxl:prefLabel ?labelOther.  ?labelOther skosxl:literalForm ?other\_label.  filter(lang(?other\_label)="en")  }  } |
| Query to find subject and object IRIs for Getty AAT hierarchy classes | PREFIX gvp: <http://vocab.getty.edu/ontology#>  PREFIX skosxl: <http://www.w3.org/2008/05/skos-xl#>  select distinct ?broader\_subject ?subject\_label ?broader\_object ?object\_label  from <http://AATOut\_2Terms>  from <http://AATOut\_HierarchicalRels>  where {  # http://vocab.getty.edu/aat/300043022 is the IRI for "teapots"  <http://vocab.getty.edu/aat/300043022> gvp:broaderGeneric\* ?broader\_subject.  ?broader\_subject gvp:broaderGeneric ?broader\_object.  ?broader\_subject skosxl:prefLabel ?labelSubject.  ?labelSubject skosxl:literalForm ?subject\_label.  filter(lang(?subject\_label)="en")  ?broader\_object skosxl:prefLabel ?labelObject.  ?labelObject skosxl:literalForm ?object\_label.  filter(lang(?object\_label)="en")  } |
| Query to find subject and object IRIs for Nomenclature hierarchy classes | PREFIX skos: <http://www.w3.org/2004/02/skos/core#>  select distinct ?broader\_subject ?subject\_label ?broader\_object ?object\_label  from <http://nomenclature\_2022-02-02>  where {  <https://nomenclature.info/nom/12978> skos:broader\* ?broader\_subject.  ?broader\_subject skos:broader ?broader\_object.  ?broader\_subject skos:prefLabel ?subject\_label.  filter(lang(?subject\_label)="en")  ?broader\_object skos:prefLabel ?object\_label.  filter(lang(?object\_label)="en")  } |
| Query that selects nomenclature classes and lists exact matches in Wikidata classes and AAT classes | #selects items in nomenclature and provides preferred label and exact match to other vocabularies.  select \*  where  {  ?item skos:inScheme <https://nomenclature.info/nom/>; skos:prefLabel ?label; skos:exactMatch ?match.  {?match rdfs:label ?matchLabel.} UNION  {?match gvp:prefLabelGVP/skosxl:literalForm ?matchLabel .}  filter langMatches( lang(?label), "en")  } LIMIT 100 |