A Semantic Model for Federated Queries Over a Normalized Corpus

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Semantic Model in Web Ontology Language (OWL)

We present here a model implemented in OWL which improves information retrieval and data integration of the corpus. The model is populated with entities from CALBC and some simple queries over it are presented.

Local and Federated Queries Example - SPARQL

Which are the sentences where the protein P35413 (Uniprot) has been identified? List the title of the articles.

SELECT DISTINCT Title, Article WHERE {
  Article rdf:type owl:Class
  Article dc:title Title
  Article calbc:has_sentence Sentence
  Sentence calbc:has_annotation Annotation
  Annotation uniprot:Participant P35413
}

Which are the sentences having both an annotation about a chemical and an annotation about a protein? List only the annotations.

SELECT DISTINCT Annotation1, Annotation2 WHERE {
  Sentence calbc:has_annotation Annotation1
  Annotation1 calbc:has_annotation Annotation2
}

Which are the sentences with 2 protein annotations? These proteins have to be known to interact together from Uniprot. List these annotations and the sentences.

SELECT DISTINCT Annotation1, Annotation2, Sentence WHERE {
  Sentence calbc:has_annotation Annotation1
  Annotation1 calbc:has_annotation Annotation2
  Annotation2 calbc:has_annotation Annotation1
}

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