

*Technical report:*

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# ***QDQL - Quisper Data Query Language***

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# Harmonized Quisper Web Service

Version 1.0

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## Abbreviations

QDQL	Quisper Data Query Language
Quisper	Another name of the QuaLiFY Server Platform
SQL	Structured Query Language
XML	EXtensible Markup Language

## Quisper Data Query Language

The webservice *HarmonizationQuisper* is based on the *Quisper Data Query Language* (QDQL), which is used to determine the information content and search options in a request. The language is similar to SQL, but it is unrelated to any existing data model in any specific database. It is connected with the data model introduced by the *Quisper Ontology*. More information about the *Quisper Ontology* can be found in the Technical Report (Eftimov & Koroušić Seljak, 2015). The *Quisper Ontology* can also be explored in Protégé via the temporal JSI account (<http://webprotege.stanford.edu/#List:coll=Home;>).

### QDQL Reserved Words

The QDQL reserved words are words that are used to define

- i. the QDQL sentence structure and
- ii. the data content.

The QDQL language structure is defined by the XML schema with the element names and the attribute names.

Entity	Term	SELECT- clause	WHERE- clause	ORDER BY- clause	Comment
Food	FoodName	✓	✓	✓	
Component	ComponentName	✓	✓	✓	ClassificationConditionField (WHERE clause defines the search scope (BT/NT))
Component	ComponentValue	✓	✓	-	
SNP	SnpName	✓	✓	-	
SNP	SnpValue	✓	✓	-	
Unit	UnitName	-	✓	-	
Personal	PersonalName	-	✓	✓	
Personal	PersonalValue	-	✓	✓	
FoodGroup	FoodGroupName	✓	✓	✓	
WebService	WebServiceName	✓	✓	✓	

More information and a detailed specification is provided in the XML schema for the QDQL sentence.

### QDQL Sentence Structure in XML

The QDQL sentence has four main elements:

- 1) MetaData
- 2) SelectClause
- 3) WhereClause
- 4) OrderByClause

### **MetaData**

MetaData describes the XML schema and its version.

### **SelectClause**

SelectClause describes the required information content. This element is REQUIRED.

### **WhereClause**

WhereClause may restrict the retrieved information content. This element is OPTIONAL.

### **OrderByClause**

OrderByClause may order the retrieved information content. This element is OPTIONAL.

## Examples of the QDQL Sentence

### **Example 1:**

```
<DQL_Sentence>
  <MetaData>
    <SchemaVersion>1.0</SchemaVersion>
    <Schema> QDQL_Sentence_version_1_0.xsd</Schema>
  </MetaData>
  <SelectClause>
    <FieldName>FoodName</FieldName>
  </SelectClause>
</DQL_Sentence>
```

### **Example 2:**

```
DQL_Sentence>
  <MetaData>
    <SchemaVersion>1.0</SchemaVersion>
    <Schema> QDQL_Sentence_version_1_0.xsd</Schema>
  </MetaData>
  <SelectClause>
    <FieldName>ComponentValue</FieldName>
  </SelectClause>
  <WhereClause>
    <Condition xmlns:xsi=http://www.w3.org/2001/XMLSchema-instance
      xsi:type="T_CommonCondition" logicalOperator="AND">
      <ClassificationConditionField searchScope="NT">
        <FieldName>ComponentName</FieldName>
      </ClassificationConditionField>
      <ConditionOperator>=</ConditionOperator>
      <ConditionValue>alpha-carotene</ConditionValue>
    </Condition>
  </WhereClause>
  <OrderByClause>
    <OrderByField orderingDirection="DESC">
      <FieldName>FoodName</FieldName>
    </OrderByField>
  </OrderByClause>
</DQL_Sentence>
```

## QuisperHarmonization Webservice

### **postXML**

The method is used to send a request. It requires an QDQL sentence as a parameter, and the response depends on which web service it is requested.

Parameter: **qdql\_sentence**

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## References

Eftimov, T. & Koroušić Seljak, B. (2015) "QOL - Quisper Ontology Learning using personalized dietary services". The JSI Technical Report No. 11985, Jožef Stefan Institute, Ljubljana, Nov. 2015.