Wikibase/Indexing/RDF Dump Format

< Wikibase | Indexing

Changes to the RDF mapping are subject to the Stable Interface Policy.

Wikimedia Foundation project

Wikibase indexing

RDF export for wikibase indexing

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This page describes the RDF dump and export format produced by Wikidata and used for export and indexing purposes. Note that while it is close to the format (http://korrekt.org/page/Introducing_Wikidata_to_the_Linked_Data_Web) used by the Wikidata Toolkit, it is not the same code and not the same format. While we strive to keep divergence to a minimum, there may be differences and one should use documentation only for the format that is actually being consumed.

This document describes the RDF dump as can be downloaded from Wikimedia dump source (https://dumps.wikimedia.org/wikidatawiki/entities/), and while it can be used to create queries for Wikidata query service, the service can have small differences in how the data there look like. See the WDQS data differences chapter for the full list.

The canonical URI of the Wikibase RDF ontology is <http://wikiba.se/ontology>. The current version can be found at <http://wikiba.se/ontology-1.0.owl>.

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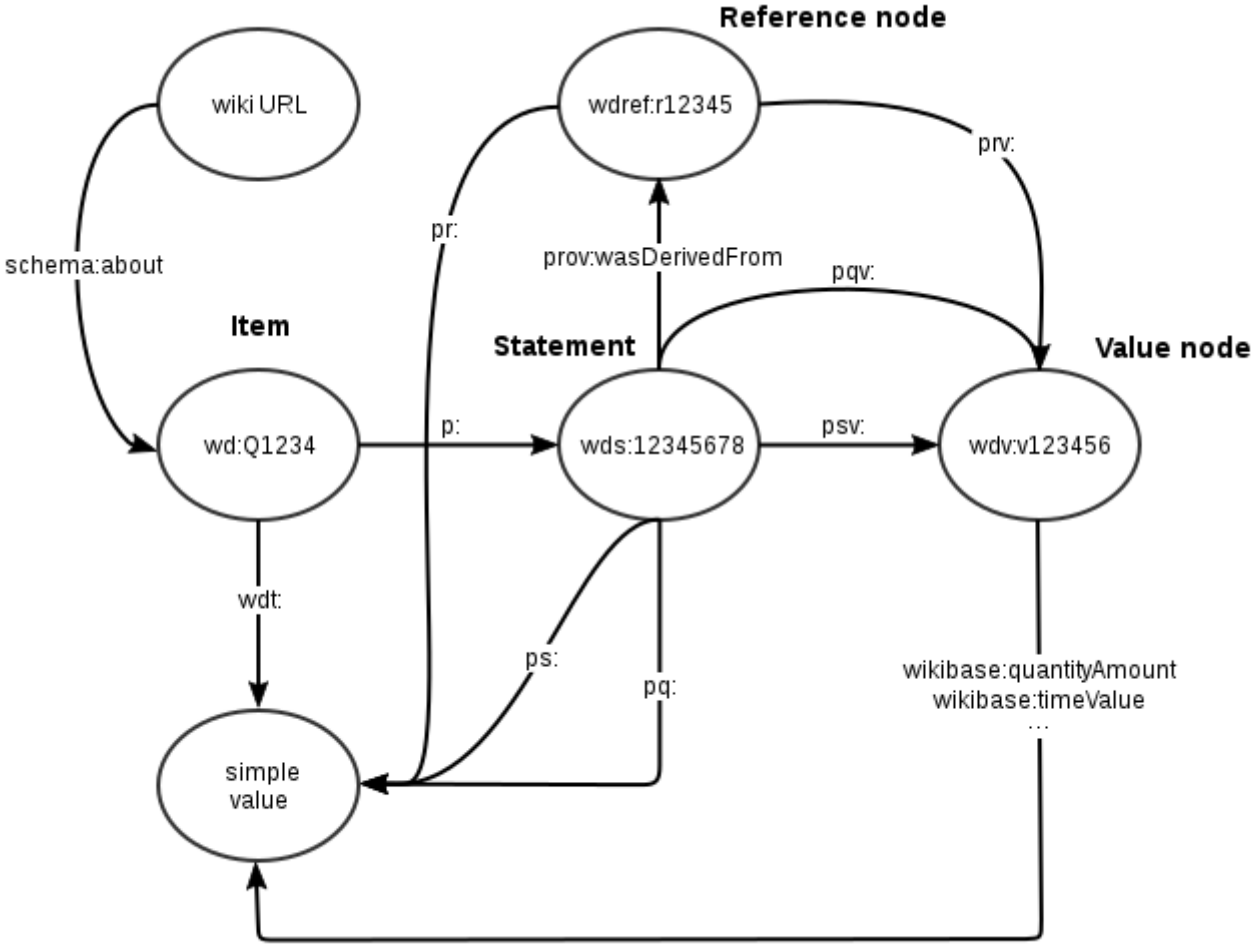
Contents

Data model

The RDF format is a binding for on the Wikibase data model and represents an export format for it. That means, in particular, that if/when the data model changes, the export format will be changed accordingly. This document will be updated for such changes. The following description assumes familiarity with the data model and the terminology used.

This RDF binding is based on the one designed for the Wikidata Toolkit by Denny Vrandecic and Markus Krötzsch, see http://korrekt.org/papers/Wikidata-RDF-export-2014.pdf.

The following description uses prefixes to describe the IRIs of the RDF resources mentioned. See the Prefixes chapter for the full description. All examples below are given in Turtle format.



the data used in the description of a single item

Versions

The version of the data model is specified by `schema:softwareVersion` predicate of the `schema:Dataset` node, which is either dump node for the dump or entity data node (`wdata:`) for single entity page. Released versions:

Version	Description
0.0.1	Initial version.
0.0.2	Changed WKT coordinate order (see T130049)
0.0.3	Added page props option to `wdata:` (see T129046)
0.0.4	Added unit conversion & normalization support (see T117031)
0.0.5	Added quantities without bounds. (see T115269)
0.1.0	Changed link encoding (see T131960)
1.0.0	Removed `-beta` from the ontology prefix (see T112127). The RDF mapping is now considered stable.

Header

For the RDF dump, there is the header node `wikibase:Dump` containing information about the license, the software version of the generator and the date the data was produced. In single-entity export, this data is attached to the data node (see below).

Example header:

```
wikibase:Dump a schema:Dataset ;
    cc:license <http://creativecommons.org/publicdomain/zero/1.0/> ;
    schema:softwareVersion "1.0.1" ;
    schema:dateModified "2015-03-21T06:03:55Z"^^xsd:dateTime .
```

- `cc:license` specifies the IRI of the license that applies to the whole RDF document.
- `schema:softwareVersion` specifies which version of the dump format is being used (currently `1.0.0`), will be updated when format changes, once the format is out of the beta period. The version updates will be done along the lines of semantic versioning (http://semver.org/), with major changes being BC breaking ones, minor being major BC-compatible changes and patch part changes on minor tweaks.
- `schema:dateModified` specifies the date of the dump's data validity. Some data that is contained in a dump may be more recent than this date, but it is guaranteed that no data in the dump is older than this date. The date should be close to the time of the oldest data contained in the dump, but for technical reasons may not be exactly the same as the time of the oldest data in the dump.

Entity representation

The entity is described in two nodes - data node and entity node. For entity Q1, data node is `wdata:Q1` and entity node is `wd:Q1`.

Data node describes the metadata about the entity record in the Wikibase - i.e. data which are not part of the entity's information but instead describe the status of the entity inside Wikibase. It has type of `schema:Dataset` and contains the following metadata:

- Information about the entity revision (`schema:version`) - this is a counter that increases with each modification of the entity data
- Last modification time of the entity data (`schema:dateModified`) - as an `xsd:dateTime` timestamp
- Link to the entity node with `schema:about` predicate

Example:

```
wdata:Q2 schema:version "59"^^xsd:integer ;
    schema:dateModified "2015-03-18T22:38:36Z"^^xsd:dateTime ;
    a schema:Dataset ;
    schema:about wd:Q2 .
```

Entity node describes the actual entity data and has type `wikibase:Item` or `wikibase:Property` depending on the kind of entity. Other entity types can be introduced in the future.

Entity description includes the following:

- Entity labels - the main name of the entity. Labels are defined as `schema:name`, `rdfs:label` and `skos:prefLabel` predicates with objects being language-tagged string literals.

- Entity aliases - the secondary names of the entity. Aliases are defined as `skos:altLabel` predicates with objects being language-tagged string literals.
- Entity description - the longer description of the entity. Defined as `schema:description` predicates with objects being language-tagged string literals.
- Truthy statements (see below)
- Predicates linking it to full statements

Example of the entity definition:

```
wd:Q3 a wikibase:Item ;
    rdfs:label "The Universe"@en ;
    skos:prefLabel "The Universe"@en ;
    schema:name "The Universe"@en ;
    schema:description "The Universe is big"@en ;
    skos:altLabel "everything"@en ;
    wdt:P2 wd:Q3 ;
    wdt:P7 "value1", "value2" ;
    p:P2 wds:Q3-4cc1f2d1-490e-c9c7-4560-46c3cce05bb7 ;
    p:P7 wds:Q3-24bf3704-4c5d-083a-9b59-1881f82b6b37,
         wds:Q3-45abf5ca-4ebf-eb52-ca26-811152eb067c .
```

Page properties

Entity node can also carry additional information about the entity, such as number of links or statements. The data is sourced from page properties and can be specified in config file. For example:

```
wdata:Q42 a schema:Dataset ;
   schema:about wd:Q42 ;
   wikibase:statements "112"^^xsd:integer ;
   wikibase:sitelinks "99"^^xsd:integer .
```

`wikibase:statements` specifies how many statements this entity has, and `wikibase:sitelinks` specifies the number of sitelinks. Additional statements can be introduced in the future.

Items

Entities that represent items have the common entity data as described above, plus can have sitelinks attached to them, as described below.

Properties

Entities that represent properties additionally feature the property type using `wikibase:propertyType` predicate. The object of the predicate is the property type described in Value representation below, with `wikibase:` prefix and each word capitalized, with no separators. I.e., `wikibase-item` becomes `wikibase:WikibaseItem`.

Each property is also linked to the predicates that are derived from it. Example:

```
wd:P22 a wikibase:Property ;
    rdfs:label "Item property"@en ;
    wikibase:propertyType wikibase:WikibaseItem ;
    wikibase:directClaim wdt:P22 ;
    wikibase:claim p:P22 ;
```

```
     wikibase:statementProperty ps:P22 ;
     wikibase:statementValue psv:P22 ;
     wikibase:qualifier pq:P22 ;
     wikibase:qualifierValue pqv:P22 ;
     wikibase:reference pr:P22 ;
     wikibase:referenceValue prv:P22 ;
     wikibase:novalue wdno:P22 .
```

The property predicates also have type definitions:

```
prv:P22 a owl:ObjectProperty .
wdt:P22 a owl:DatatypeProperty .
```

The type depends on the type of the original property - whether its value is literal (`DatatypeProperty`) or IRI (`ObjectProperty`). However, `p:`, `psv:` , `pqv:` and `prv:` predicates would always be `owl:ObjectProperty`.

Note that wdno:P22 mentioned above is not a predicate, unlike others, but a class. See the full description of it in Novalue section.

Lexemes

Please see full description at Lexeme RDF mapping.

Lexemes are represented according to Lexeme RDF mapping. Example:

```
wd:L64723 a ontolex:LexicalEntry ;
     # lemma
     wikibase:lemma "hard"@en ;

     # language
     dct:language wd:Q1860 ;
     schema:inLanguage "en" ;

     # lexical category
     wikibase:lexicalCategory wd:Q34698 ;

     # statements
     wdt:P2 wd:Q3 ;
     wdt:P7 "value1" , "value2" ;
     p:P2 wds:Q3-4cc1f2d1-490e-c9c7-4560-46c3cce05bb7 ;
     p:P7 wds:Q3-24bf3704-4c5d-083a-9b59-1881f82b6b37 ,
          wds:Q3-45abf5ca-4ebf-eb52-ca26-811152eb067c ;

     # forms
     ontolex:lexicalForm wd:L64723-F1 ;

     # senses
     ontolex:sense wd:L64723-S1 .
```

Statement types

The RDF format represents statements in two forms - truthy and full statements.

Truthy statements

Truthy statements represent statements that have the best non-deprecated rank for given property. Namely, if there is a preferred statement for property P2, then only preferred statements for P2 will be considered truthy. Otherwise, all normal-rank statements for P2 are considered truthy.

Truthy statement predicates have prefix `wdt:` with the property name (e.g. `wdt:P2`) and the object is the simple value (see below) for the statement. The qualifiers are ignored.

If the value has simple value normalization (currently true only for external ID), normalized value is listed under `wdtn:` prefix, e.g. `wdtn:P2`.

Full statements

Full statements represent all data about the statement in the system. Full statement is represented as separate node, with prefix `wds:` with the id of the statement (e.g. `wds:Q3-4cc1f2d1-490e-c9c7-4560-46c3cce05bb7`). There is no guaranteed format or meaning to the statement id.

The statements are linked to the entity with the predicate with prefix `p:` and the name of the property (e.g. `p:P2`).

Statement representation

Warning: It *is* possible that a statement refers to a property or item that no longer exists. Therefore you should not assumed the predicates and objects are always defined.

The statement node represents a single statement about the entity. It has type `wikibase:Statement`. The statement can contain the rank, the simple value (see below) of the statement, the link to the full value, the qualifiers and the references.

The statement rank is represented by the predicate `wikibase:rank` and the object being one of:`wikibase:NormalRank` , `wikibase:PreferredRank`, `wikibase:DeprecatedRank`.

The statement that has the best rank for the property (i.e., preferred if there are any preferred statements in the property, otherwise normal) is also has type of `wikibase:BestRank`.

The simple value is represented by the predicate with prefix `ps:` and the name of the property (e.g. `ps:P2`) and the object being the simple value.

The full value (if required by the type) is represented by the predicate with prefix `psv:` (e.g. `psv:P2`) and the object being the full value node.

The statement always has no more than one value, but can have multiple qualifiers and references.

Qualifiers

The qualifiers are represented by predicates with prefix `pq:` and the name of the property (e.g. `pq:P2`) and the object being the simple value of the qualifier.

The full value (if required by the type) is represented by the predicate with prefix `pqv:` (e.g. `pqv:P2`) and the object being the full value node.

References

References are represented by the predicate `prov:wasDerivedFrom` with the object being the reference node (see below).

Example of the statement:

```
wds:Q3-24bf3704-4c5d-083a-9b59-1881f82b6b37 a wikibase:Statement, wikibase:BestRank ;
    ps:P2 wd:Q3 ;
    wikibase:rank wikibase:PreferredRank ;
    pq:P8 "-13000000000-01-01T00:00:00Z"^^xsd:dateTime ;
    pqv:P8 wdv:382603eaa501e15688076291fc47ae54 ;
    prov:wasDerivedFrom wdref:87d0dc1c7847f19ac0f19be978015dfb202cf59a,
        wdref:d95dde070543a0e0115c8d5061fce6754bb82280 .
```

Constraints

The service also may contain data for Wikibase Quality Constraints violations, via `wikibase:hasViolationForConstraint` predicate. The predicate links violating statement to the statement describing the constraint, e.g.:

```
wds:Q2-F0E59974-533A-461C-86FC-A11112E308CE wikibase:hasViolationForConstraint wds:P1225-EADAFC4F-D9A3-4B1E-A13C-5A4697587B6E .
```

Note that constraint violations are loaded from constraint cache and are not guaranteed to be up-to-date or present for all items (which means if you find no constraint violation statements for an item, that doesn't mean it doesn't have any - check Wikibase Quality tools for more up-to-date information).

Reference representation

References represent provenance information about statements.

Reference is represented as node, with prefix `wdref:` and the local name being the hash derived from the reference contents (e.g. `wdref:d95dde070543a0e0115c8d5061fce6754bb82280`). The exact value of the hash is not guaranteed beyond the fact that the same references (i.e. ones with identical content) will generate the same hash, and the different one will generate the different one. The same reference (i.e. reference having the same properties with the same values) will be usually represented with single node, though duplicate reference nodes are possible in the data.

The type of the node is a `wikibase:Reference`.

The reference values are represented the same as statement values, with simple values using predicates with `pr:` prefix (e.g. `pr:P2`) and full values with prefix `prv:` (e.g. `prv:P2`) and the object being the full value node. Unlike statements, references can have any number of values.

Example of the reference node:

```
wdref:d95dde070543a0e0115c8d5061fce6754bb82280 a wikibase:Reference ;
    pr:P7 "Some data" ;
    pr:P8 "1976-01-12T00:00:00Z"^^xsd:dateTime ;
    prv:P8 wdv:b74072c03a5ced412a336ff213d69ef1 .
```

Value representation

In the RDF format, the values are represented as two forms - simple value and full value. Simple value is always a literal or IRI, and is used as direct value that is convenient to search, index and match. The full value contains additional information about the value, such as ranges, precision, calendar used, etc. Note that while for many queries simple values will be enough, for other, more complex values, only full values will be adequate.

If the statement has a value (i.e. is not set to *novalue*) then the simple value will always be present.

Full values are represented as nodes having prefix `wdv:` and the local name being the hash of the value contents (e.g. `wdv:382603eaa501e15688076291fc47ae54`). There is no guarantee of the value of the hash except for the fact that different values will be represented by different hashes, and same value mentioned in different places will have the same hash. Value node has type `wikibase:Value`. The content of the node is defined by the type of the value (see below).

Example of the value node:

```
wdv:b74072c03a5ced412a336ff213d69ef1 a wikibase:TimeValue ;
    wikibase:timeValue "+1976-01-12T00:00:00Z"^^xsd:dateTime ;
    wikibase:timePrecision "11"^^xsd:integer ;
    wikibase:timeTimezone "0"^^xsd:integer ;
    wikibase:timeCalendarModel <http://www.wikidata.org/entity/Q1985727> .
```

The following describes the handling of each kind of value, depending on the type of the value and the type of the property. Note that not all aspects of the data model are represented in RDF currently, some aspects that are currently unused (such as units or before/after values for dates) are omitted since they currently do not carry any useful information. This may change in the future if/when these aspects come into use by Wikidata.

String

Strings have value type `string` and property type `string`.

String is represented as a string literal. Strings only have simple value.

Commons media

Media on commons: have value type `string` and property type `commonsMedia`.

Commons media is represented as an IRI with the full Commons resource URL, derived from the Commons filename in the underlying data item. E.g.: `<http://commons.wikimedia.org/wiki/Special:FilePath/Universe%20Photo.svg>`. It has only simple value.

URL

URL values have value type `string` and property type `url`.

URL is represented as a an IRI matching the URL string (e.g. `<http://www.wikidata.org/>`). It has only simple value.

External Id

External Id values have value type `string` and property type `external-id`. They are represented by a string literal. It has only simple value.

If the property has URL formatter for RDF configured, the RDF will also have normalized value, e.g.:

```
wd:Q123 wdt:P234 "External-ID" ;
        wdtn:P234 <http://external.example.com/reference/External-ID>
```

Wikibase Entity Id

Wikibase Entity Id values have value type `wikibase-entityid` and property type `wikibase-item`.

The entity is represented by its IRI, e.g. `wd:Q2`. It has only simple value.

Monolingual text

Monolingual text values have value type `monolingualtext` and property type `monolingualtext`.

The text is represented as a string literal with language tag. It has only simple value.

Globe coordinate

Coordinate text values have value type `globecoordinate` and property type `globe-coordinate`.

The simple value of the coordinate is the WKT string with the coordinates, with type `geo:wktLiteral`, e.g.: `"Point(35.3 12.93)"^^geo:wktLiteral`. The order of the coordinates in WKT is longitude, latitude (since format version 0.0.2).

The full value has latitude, longitude and precision as double, and the globe as IRI.

Example:

```
v:a10564107110b2d5739b8fe235cddf73 a wikibase:GlobecoordinateValue ;
    wikibase:geoLatitude "12.933333333333"^^xsd:double ;
    wikibase:geoLongitude "35.3"^^xsd:double ;
    wikibase:geoPrecision "0.000277778"^^xsd:double ;
    wikibase:geoGlobe <http://www.wikidata.org/entity/Q2> .
```

Quantity

Quantity values have value type `quantity` and property type `quantity`.

The simple value of the quantity is the specified amount, as a decimal literal.

The full value includes amount, unit URI (the default for unit-less values being http://www.wikidata.org/entity/Q199), and optionally upper and lower bound. If no upper an lower bound are given, the uncertainty of the quantity is undefined. Exact values are represented by quantities that have the same value for amount, upper bound and lower bound.

Example:

```
v:cb213eea7a0b90d1d7f65c6eabfab9da a wikibase:QuantityValue ;
  wikibase:quantityAmount "+123"^^xsd:decimal ;
  wikibase:quantityUpperBound "+124"^^xsd:decimal ;
  wikibase:quantityLowerBound "+122"^^xsd:decimal ;
  wikibase:quantityUnit <http://www.wikimedia.org/entity/Q199> .
```

Time

Time values have value type `time` and property type `time`.

The simple value of the time value is either datetime value of type `xsd:dateTime`, if the value can be converted to Gregorian date in ISO format, or a string as represented in the database, if not. The `xsd:dateTime` dates follow XSD 1.1 standard (http://www.w3.org/TR/xmlschema11-2/#dateTime), which uses the proleptic Gregorian calendar, and represents the year 1 BCE as +0000. This is in contrast the JSON representation of Julian and Gregorian dates, which follows the traditional year numbering, representing the year 1 BCE as -0001.

The full value includes the simple value above under `wikibase:timeValue`, precision and timezone as integers and calendar model as IRI. Note that the calendar model is the original values calendar model even if `wikibase:timeValue` was converted to Gregorian.

Example:

```
v:85374678f22bda99efb44a5617d76e51 a wikibase:Time ;
    wikibase:timeValue "+1948-04-12T00:00:00Z"^^xsd:dateTime ;
    wikibase:timePrecision "11"^^xsd:integer ;
    wikibase:timeTimezone "0"^^xsd:integer ;
    wikibase:timeCalendarModel <http://www.wikidata.org/entity/Q1985727> .
```

Normalized values

Some values can be represented in several forms, depending on the purpose. For example, length can be expressed in different units - feet, inches, meters, miles, etc. In order to provide means to unify these forms and thus make data more friendly for automatic processing, the normalized values are introduced, which represent diverse data in a unified way.

Right now, the only value normalization that is supported is converting units for quantities into base units - e.g. length to meters. In the future, more units and more normalizations may be added, which will be documented here. The conversion table is available on the Mediawiki gerrit (https://gerrit.wikimedia.org/r/plugins/gitiles/operations/mediawiki-config/+/master/wmf-config/unitConversionConfig.json) if needed.

The only normalized simple values are external IDs (see below).

Normalized quantity

Normalized quantity values are value nodes that are parallel to the original data nodes but represented in base units. They are connected to their parent nodes by predicates with prefix having "v" replaced with "n" - i.e. `psn:`, `prn:` and `pqn:`, for example:

```
wds:Q3-24bf3704-4c5d-083a-9b59-1881f82b6b37 a wikibase:Statement, wikibase:BestRank ;
    ps:P8 "123"^^xsd:decimal ;
    psv:P8 wdv:382603eaa501e15688076291fc47ae54 ;
    psn:P8 wdv:85374998f22bda54efb44a5617d76e51 .
```

Original quantity value is connected to the normalized value by `wikibase:quantityNormalized` predicate:

```
wdv:382603eaa501e15688076291fc47ae54 a wikibase:QuantityValue ;
    wikibase:quantityAmount "+123"^^xsd:decimal ;
    wikibase:quantityUpperBound "+124"^^xsd:decimal ;
    wikibase:quantityLowerBound "+122"^^xsd:decimal ;
    wikibase:quantityUnit <http://www.wikidata.org/entity/Q218593> ;
    wikibase:quantityNormalized wdv:85374998f22bda54efb44a5617d76e51.
```

The normalized value has `wikibase:quantityNormalized` pointing to itself.

If the value is already normalized - i.e. is expressed in base units - then both "v" and "n" predicates point to the same value, and `wikibase:quantityNormalized` for this value points to itself.

Quantities with no units or with units that are not normalizable (have no base unit they can be reduced to) do not have normalized predicates and normalized values and do not include `wikibase:quantityNormalized`.

The recommendation is to have no more than one base unit per property. Base units depend on Wikibase configuration and usually are chosen to represent universally accepted standard units, such as SI units.

Normalized External ID

For external IDs, normalization converts string value to URL, if the URL formatter for that purpose is defined in property data (via `canonicalUriProperty` setting), then the normalized value will be listed as `wdtn:` value for truthy values, and as normalized value for the statements in `psn:`, `prn:` and `pqn:` predicates, depending on the context where the value appears.

Special values

Wikibase data model has two special kinds of snaks - PropertySomeValueSnak, specifying a value that exists but whose identity or value is unknown, and PropertyNoValueSnak, specifying that a value does not exist.

Somevalue

Unknown value is represented as RDF blank node in both simplified and full statements:

```
wd:Q3 a wikibase:Item, wdt:P2 _:genid1 .
wds:Q3-45abf5ca-4ebf-eb52-ca26-811152eb067c a wikibase:Statement ;
    ps:P2 _:genid2 ;
    wikibase:rank wikibase:NormalRank .
```

Novalue

Novalue is represented not by a regular value but as a class of the entity or statement or reference, with prefix `wdno:` and the name of the property. Example:

```
wd:Q3 a wikibase:Item, wdno:P7 .

wds:Q3-45abf5ca-4ebf-eb52-ca26-811152eb777c a wikibase:Statement,  wdno:P7 ;
    wikibase:rank wikibase:NormalRank .
```

The entity has a `wdno:` class if it has a truthy *novalue* statement for that property. *Novalue* in the main snak or qualifiers of a statement corresponds to a `wdno:` class on the statement node, and *novalue* in a reference snak corresponds to a `wdno:` class on the reference node.

The classes for `wdno:` are defined as follows:

```
wdno:P2 a owl:Class ;
   owl:complementOf _:genid1 .

_:genid1 a owl:Restriction ;
   owl:onProperty wdt:P2 ;
   owl:someValuesFrom owl:Thing .
```

Sitelinks

The links are represented as set of predicates describing the link URL. The type of the node is `schema:Article` and it linked with the entity via `schema:about` predicate.

Badges are described with `wikibase:badge` predicates. `schema:name` predicate holds the plain-text name of the article, in the language of the linked wiki.

Example:

```
<https://en.wikipedia.org/wiki/Duck> a schema:Article ;
    schema:about wd:Q3 ;
    schema:inLanguage "en" ;
    schema:isPartOf <https://en.wikipedia.org/> ;
    schema:name "Duck"@en ;
    wikibase:badge wd:Q5 .

<https://en.wikipedia.org/> wikibase:wikiGroup "wikipedia" .
```

The subject URL is composed from the language site prefix and the article name, URL-encoded according to RFC 3986, e.g.:

```
<https://ru.wikipedia.org/wiki/%D0%A3%D1%82%D0%BA%D0%B0>
```

More specifically, encoding used is as follows:

1. Normalize the title by replacing spaces with underscores (_).
2. Apply wfUrlencode() function, which percent-encodes all non-alphanumeric characters except ";:@$!*(),/-_~".

Redirects

Redirected entities are implemented as `owl:sameAs` predicates, for example if Q6 redirects to Q1, the dump would be:

```
wd:Q6 owl:sameAs wd:Q1 .
```

Prefixes used

The prefixes are used in RDF formats that allow short prefixes (such as Turtle and RDF). For other formats, the full URL is used.

All prefix URLs that do not contain hostname are prefixed with the hostname of the generating wiki. All prefix URLs that contain hostname are fixed and do not depend on generating wiki.

Prefix	Full URL	Usage	Example
wikibase:	http://wikiba.se/ontology# (http://wikiba.se/ontology#)	Wikibase ontology	`wd:Q2 a wikibase:Item`
	Nodes		
wdata:	/Special:EntityData/	Data set describing certain entity	`wdata:Q2 schema:about wd:Q2 .`
wd:	/entity/	Wikibase entity - item or property.	`wd:Q2 p:P9 wds:Q2-82a6e009-4f93-28dc-3555-38bbfc3afe6a`
wds:	/entity/statement/	Statement node, describes claim about entity.	`wds:Q2-a4078553-4ec1-a64a-79e7-c5b5e17b2782 a wikibase:Statement`
wdv:	/value/	Value node	`wdv:87d0dc1c7847f19ac0f19be978015dfb202cf59a a wikibase:Value`
wdref:	/reference/	Reference node	`wds:Q3-24bf3704-4c5d-083a-9b59-1881f82b6b37 prov:wasDerivedFrom wdref:87d0dc1c7847f19ac0f19be978015dfb202cf59a . wdref:87d0dc1c7847f19ac0f19be978015dfb202cf59a a wikibase:Reference .`
	Predicates		
wdt:	/prop/direct/	Truthy assertions about the data, links entity to value directly.	`wd:Q2 wdt:P9 <http://acme.com/>`
wdtn:	/prop/direct-normalized/	Truthy assertions about the data, links entity to normalized value directly.	`wd:Q2 wdtn:P9 <http://acme.com/ABCDE>`
p:	/prop/	Links entity to statement	`wd:Q2 p:P9 wds:Q2-82a6e009-4f93-28dc-3555-38bbfc3afe6awd`
wdno:	/prop/novalue/	Class to use when the entity has *novalue* for this property.	`wd:Q2 a wdno:P9 .`
ps:	/prop/statement/	Links value to statement	`wds:Q3-24bf3704-4c5d-083a-9b59-1881f82b6b37 ps:P8 "-13000000000-01-01T00:00:00Z"^^xsd:dateTime`

psv:	/prop/statement/value/	Links deep value to statement	`wds:Q3-24bf3704-4c5d-083a-9b59-1881f82b6b37`
			`psv:P8`
			`wdv:87d0dc1c7847f19ac0f19be978015dfb202cf59a`

psn:	/prop/statement/value-normalized/	Links normalized value to statement node	`wds:Q3-24bf3704-4c5d-083a-9b59-1881f82b6b37`
			`psn:P8`
			`wdv:87d0dc1c7847f19ac0f19be978015dfb202cf59a`

pq:	/prop/qualifier/	Links qualifier to statement node	`wds:Q3-24bf3704-4c5d-083a-9b59-1881f82b6b37` `pq:P8 "-13000000000-01-01T00:00:00Z"^^xsd:dateTime`

pqv:	/prop/qualifier/value/	Links qualifier deep value to statement node	`wds:Q3-24bf3704-4c5d-083a-9b59-1881f82b6b37`
			`pqv:P8`
			`wdv:87d0dc1c7847f19ac0f19be978015dfb202cf59a`

pqn:	/prop/qualifier/value-normalized/	Links normalized qualifier value to statement node	`wds:Q3-24bf3704-4c5d-083a-9b59-1881f82b6b37`
			`pqn:P8`
			`wdv:87d0dc1c7847f19ac0f19be978015dfb202cf59a`

pr:	/prop/reference/	Links reference to value	`wdref:87d0dc1c7847f19ac0f19be978015dfb202cf59` `a pr:P8 "-13000000000-01-01T00:00:00Z"^^xsd:dateTime`

prv:	/prop/reference/value/	Links reference to deep value	`wdref:87d0dc1c7847f19ac0f19be978015dfb202cf59`
			`a prv:P8`
			`wdv:87d0dc1c7847f19ac0f19be978015dfb202cf59a`

prn:	/prop/reference/value-normalized/	Links reference to normalized value	`wdref:87d0dc1c7847f19ac0f19be978015dfb202cf59`
			`a prn:P8`
			`wdv:87d0dc1c7847f19ac0f19be978015dfb202cf59a`

Standard prefixes used:

Prefix	Full URL
rdf:	http://www.w3.org/1999/02/22-rdf-syntax-ns#
rdfs:	http://www.w3.org/2000/01/rdf-schema#
xsd:	http://www.w3.org/2001/XMLSchema#
owl:	http://www.w3.org/2002/07/owl#
skos:	http://www.w3.org/2004/02/skos/core#
schema:	http://schema.org/
prov:	http://www.w3.org/ns/prov#
geo:	http://www.opengis.net/ont/geosparql#

Full list of prefixes

This list can be used for queries in SPARQL:

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX ontolex: <http://www.w3.org/ns/lemon/ontolex#>
PREFIX dct: <http://purl.org/dc/terms/>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
PREFIX schema: <http://schema.org/>
PREFIX cc: <http://creativecommons.org/ns#>
PREFIX geo: <http://www.opengis.net/ont/geosparql#>
PREFIX prov: <http://www.w3.org/ns/prov#>
PREFIX wikibase: <http://wikiba.se/ontology#>
PREFIX wdata: <http://www.wikidata.org/wiki/Special:EntityData/>
PREFIX bd: <http://www.bigdata.com/rdf#>

PREFIX wd: <http://www.wikidata.org/entity/>
PREFIX wdt: <http://www.wikidata.org/prop/direct/>
PREFIX wdtn: <http://www.wikidata.org/prop/direct-normalized/>

PREFIX wds: <http://www.wikidata.org/entity/statement/>
PREFIX p: <http://www.wikidata.org/prop/>
PREFIX wdref: <http://www.wikidata.org/reference/>
PREFIX wdv: <http://www.wikidata.org/value/>
PREFIX ps: <http://www.wikidata.org/prop/statement/>
PREFIX psv: <http://www.wikidata.org/prop/statement/value/>
PREFIX psn: <http://www.wikidata.org/prop/statement/value-normalized/>
PREFIX pq: <http://www.wikidata.org/prop/qualifier/>
PREFIX pqv: <http://www.wikidata.org/prop/qualifier/value/>
PREFIX pqn: <http://www.wikidata.org/prop/qualifier/value-normalized/>
PREFIX pr: <http://www.wikidata.org/prop/reference/>
PREFIX prv: <http://www.wikidata.org/prop/reference/value/>
PREFIX prn: <http://www.wikidata.org/prop/reference/value-normalized/>
PREFIX wdno: <http://www.wikidata.org/prop/novalue/>

PREFIX hint: <http://www.bigdata.com/queryHints#>
```

Ontology

This compiles the list of all objects and predicates that are internal to the format. For the meaning of the prefixes, see the prefixes list.

Objects

Name	Usage	Context
wikibase:Item	Wikibase item	Type for wd:Q123 describing item
wikibase:Property	Wikibase property	Type for wd:P123 describing property
wikibase:Lexeme	Wikibase lexeme	Type for wd:L123 describing lexeme
wikibase:Form	Wikibase lexeme form	Type for wd:L123-F1 describing form
wikibase:Sense	Wikibase lexeme sense	Type for wd:L123-S1 describing sense
wikibase:Statement	Statement about the entity	Type for wds:1234 describing statement
wikibase:Reference	Reference node	Type for wdref:1234 describing reference
wikibase:TimeValue	Value node representing time value	Type for wdv:1234 describing time value
wikibase:QuantityValue	Value node representing quantity value	Type for wdv:1234 describing quantity value
wikibase:GlobecoordinateValue	Value node representing coordinate value	Type for wdv:1234 describing coordinate value
wikibase:Dump	Node describing the dump datatset	Used in dump header to describe metadata for whole dump
wikibase:PreferredRank	Represents preferred rank for the statement	Used as object of wikibase:rank
wikibase:NormalRank	Represents normal rank for the statement	Used as object of wikibase:rank
wikibase:DeprecatedRank	Represents deprecated rank for the statement	Used as object of wikibase:rank
wikibase:BestRank	Represents statement that has best rank for the property - i.e. suitable for inclusion as truthy statement	Used as type of wikibase:Statement
wikibase:WikibaseItem	Entity reference type	Used as object of wikibase:propertyType
wikibase:CommonsMedia	Commons media reference type	Used as object of wikibase:propertyType
wikibase:GlobeCoordinate	Geo coordinate type	Used as object of wikibase:propertyType
wikibase:Monolingualtext	Single language text value	Used as object of wikibase:propertyType
wikibase:Quantity	Quantity type	Used as object of wikibase:propertyType
wikibase:String	String value	Used as object of wikibase:propertyType
wikibase:Time	Time value	Used as object of wikibase:propertyType
wikibase:Url	URL reference type	Used as object of wikibase:propertyType

Predicates

Italicized names mean that any property name can be substituted instead of example name P123.

Name	Usage	Domain	Range
wdt:*P123*	Link entity to truthy statement value	wikibase:Itemlwikibase:Property	Simple value
wdtn:*P123*	Link entity to normalized truthy statement value	wikibase:Itemlwikibase:Property	Simple value
p:*P123*	Link entity to statement	wikibase:Itemlwikibase:Property	wikibase:Statement
ps:*P123*	Link statement to simple value	wikibase:Statement	Simple value
pr:*P123*	Link reference to simple value	wikibase:Reference	Simple value
pq:*P123*	Link statement to qualifier value	wikibase:Statement	Simple value
psv:*P123*	Link statement to value node	wikibase:Statement	wikibase:Value
psn:*P123*	Link statement to normalized value node	wikibase:Statement	wikibase:Value
prv:*P123*	Link reference to value node	wikibase:Reference	wikibase:Value
prn:*P123*	Link reference to normalized value node	wikibase:Reference	wikibase:Value
pqv:*P123*	Link statement to qualifier value node	wikibase:Statement	wikibase:Value
pqn:*P123*	Link statement to normalized qualifier value node	wikibase:Statement	wikibase:Value
wikibase:rank	Specifies rank of the statement	wikibase:Statement	One of the rank objects above
wikibase:badge	Badge attached to a sitelink	schema:Article	wikibase:Item - URL of the badge
wikibase:propertyType	Property type of the property entity	wikibase:Property	One of the property type objects above
wikibase:directClaim	Links property entity to direct claim predicate	wikibase:Property	wdt:*P123*
wikibase:directClaimNormalized	Links property entity to normalized direct claim predicate	wikibase:Property	wdtn:*P123*
wikibase:claim	Links property entity to claim/statement predicate	wikibase:Property	p:*P123*
wikibase:statementProperty	Links property entity to statement simple value predicate	wikibase:Property	ps:*P123*
wikibase:statementValue	Links property entity to statement full value predicate	wikibase:Property	psv:*P123*
wikibase:statementValueNormalized	Links property entity to statement normalized value predicate	wikibase:Property	psn:*P123*
wikibase:qualifier	Links property entity to	wikibase:Property	pq:*P123*

	qualifier simple value predicate		
wikibase:qualifierValue	Links property entity to qualifier full value predicate	wikibase:Property	pqv:*P123*
wikibase:qualifierValueNormalized	Links property entity to qualifier normalized value predicate	wikibase:Property	pqn:*P123*
wikibase:reference	Links property entity to reference simple value predicate	wikibase:Property	pr:*P123*
wikibase:referenceValue	Links property entity to reference full value predicate	wikibase:Property	prv:*P123*
wikibase:referenceValueNormalized	Links property entity to reference normalized value predicate	wikibase:Property	prn:*P123*
wikibase:hasViolationForConstraint	Links statement violating a constraint to the constraint statement	wikibase:Statement	wikibase:Statement
wikibase:lemma	Links Wikibase lexeme with the lemma text	wikibase:Lexeme	Simple string value
wikibase:lexicalCategory	Links Wikibase lexeme with its lexical category item	wikibase:Lexeme	wikibase:Item
wikibase:grammaticalFeature	Links Wikibase lexeme form with its grammatical features	wikibase:Form/ontolex:Form	wikibase:Item

The following predicates are used in deep values for the values of specific types. All these predicates have the domain of `wikibase:Value` and the range depending on type below.

Predicates for Globecoordinate

Name	Type	Meaning
wikibase:geoLatitude	xsd:double	Latitude component of the coordinate
wikibase:geoLongitude	xsd:double	Longitude component of the coordinate
wikibase:geoPrecision	xsd:double	Precision of the coordinates
wikibase:geoGlobe	IRI	The URL of the globe, e.g. http://www.wikidata.org/entity/Q2 (https://wikidata.org/entity/Q2) (Earth)

Predicates for Quantity

Name	Type	Meaning
wikibase:quantityAmount	xsd:decimal	The specified amount
wikibase:quantityUpperBound	xsd:decimal	The upper limit of the value range
wikibase:quantityLowerBound	xsd:decimal	The lower limit of the value range
wikibase:quantityUnit	IRI	The unit of measurement, for unit-less quantities is http://www.wikidata.org/entity/Q199 (i.e. "1")
wikibase:quantityNormalized	IRI	Points to the normalized value, if exists.

Predicates for Time

Name	Type	Meaning
wikibase:timeValue	xsd:dateTimeIstring	Gregorian time or string if the value can not be represented as Gregorian time
wikibase:timePrecision	xsd:integer	Time precision constant
wikibase:timeTimezone	xsd:integer	Timezone offset from UTC in minutes
wikibase:timeCalendarModel	IRI	URL of the calendar used, e.g. http://www.wikidata.org/entity/Q1985727 (Gregorian)

WDQS data differences

The Wikidata query service has the data in the format described above, but there are small differences that can be important while writing SPARQL queries:

1. Types (`a` or `rdf:type`) for `wikibase:Item`, `wikibase:Statement`, `wikibase:Reference` , `wikibase:Lexeme`, `wikibase:Form`, `wikibase:Sense` are currently omitted for performance reasons.
2. Data nodes (`wdata:Q2`) are not stored, all the information like version, revision and page props is stored in the entity node (`wd:Q2`) instead. This is done for performance reasons.
3. For labels, only `rdfs:label` is stored but not `schema:name` or `skos:prefLabel`. Since they all have the same data, storing all three is redundant.
4. Redirects are recorded but currently have no additional semantics implemented.

See also SPARQL query examples for how to query the data using WDQS service.