

sheXer

Automatic Extraction of Shape Expressions In Wikidata

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... and they are such a wonderful couple!



What is ShEx?



The **Shape Expressions (ShEx)** language describes structures called shapes in RDF graphs.

As you may know, **ShEx** has been recently adopted by Wikidata as a tool for describing groups of entities of different domain models...

Toy example of a shape **human (Q5)** with some comments:

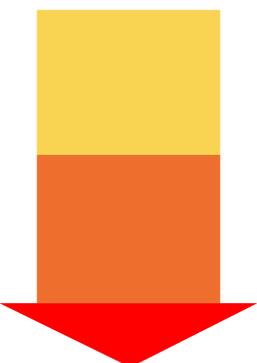
```
<human> {  
  wdt:P31 [wd:Q5]; # humans are instance of (P31) the entity human (Q5)  
  wdt:P21 [wd:Q6581097 wd:Q6581072 wd:Q1097630 wd:Q1052281 wd:Q2449503 wd:Q48270];  
  # their gender (P21) is one of male (Q6581097), female (Q6581072), intersex (Q1097630), non-binary (Q48270)...  
  wdt:P19 IRI; # They have one place of birth (P19)  
  wdt:P106 IRI * ; They can have several occupations (P106) }  
}
```

You can check **WikiProject ShEx** using the following QR:



TIP: Instead of handcrafting each shape from scratch, you can use automatic processes to detect the most common features of a set of entities. For such a goal, we provide the free tool **sheXer**.

sheXer workflow



1. **Select the graph** to be considered: a local RDF file, some subgraph collected using an endpoint...
2. **Choose the shapes** you want to extract and the entities related to them. Typically, each set is composed by instances of a class, but custom node agrupattions can be selected as well.
3. **Run and get** the shapes!

How to use sheXer

You can try an easy-to-use **online demo** deployed at shexer.weso.es or the **library 'shexer'** for Python.



Online demo



Library at GitHub

Main current features

- Shapes compliant with the defined standards
- Publicly available library and source code (Python) at GitHub
- Value sets in triples with instance of (P31)
- Scores of trustworthiness for each constraint
- Algorithm compatible with any RDF graph, not just Wikidata
- Many configuration options for adapting the process to your needs
- Detection of swapped constraints
- Recognition of IRIs and different kinds of literals
- Shapes interlinkage



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