Summary of Syntax Validity of Instance Graphs

Concept	Code	Valid Syntax	Parser Output
rdfs:Resource	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . @prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> . rdf:Resource a rdfs:Class .	True	None
rdfs:Literal	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . @prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> . <http://example.com/example> rdf:type rdfs:Literal ; rdfs:label 'This is a literal value' .	True	None
rdfs:Class	@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#>. rdfs:Class a rdfs:Class ; rdfs:label 'A class' ; rdfs:comment 'This is an example of an RDFS class.' .	True	None
rdfs:Datatype	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . @prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> . rdfs:Datatype rdf:type rdfs:Class .	True	None
rdfs:Container	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . @prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> . <http://example.org/mycontainer> rdf:type rdfs:Container ; rdfs:label 'This is my container' ; rdfs:member <http://example.org/resource1>, <http://example.org/resource2> ; . <http://example.org/resource1> rdfs:label 'Resource 1' ; . <http://example.org/resource2> rdfs:label 'Resource 2' ; .	True	None
rdfs:label	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . @prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> . <https://example.com/MyResource> a rdf:Resource ; rdfs:label 'My label' .	True	None
rdfs:comment	@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> . @prefix ex: <http://www.example.org#> . ex:exampleResource rdfs:comment 'This is an example resource.' .	True	None
rdfs:domain	@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#>. @prefix ex: <http://example.org/>. ex:Person a rdfs:Class ; rdfs:label 'Person'@en ; rdfs:comment 'A human being.'@en ; rdfs:subClassOf ex:Animal ; rdfs:domain ex:hasName . ex:hasName a rdf:Property ; rdfs:domain ex:NamedEntity ; rdfs:range rdfs:Literal ; rdfs:label 'has name'@en ; rdfs:comment 'The name of something.'@en .	False	at line 10 of <>: Bad syntax (Prefix "rdf:" not bound) at ^ in: "...b'assOf ex:Animal ;\n rdfs:domain ex:hasName .\n\ nex:hasName a '^b'rdf:Property ;\n rdfs:domain ex:NamedEntity ;\n rdfs:range'..."
rdfs:range	@prefix ex: <http://example.com/> . @prefix foaf: <http://xmlns.com/foaf/0.1/> . @prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> . ex:Person a rdfs:Class ; rdfs:label 'Person' ; rdfs:comment 'A human being.' . ex:name a rdf:Property ; rdfs:label 'name' ; rdfs:comment 'The name of a person.' ; rdfs:domain ex:Person ; rdfs:range xsd:string .	False	at line 9 of <>: Bad syntax (Prefix "rdf:" not bound) at ^ in: "...b"bel 'Person' ;\n rdfs:comment 'A human being.' .\n\nex:name a '^b"rdf:Property ;\n rdfs:label 'name' ;\n rdfs:comment 'The nam"..."
rdfs:subClassOf	@prefix : <http://example.org/> . @prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .	True	None

	:Animal rdfs:subClassOf :LivingThing . :Bird rdfs:subClassOf :Animal . :Fish rdfs:subClassOf :Animal .		

skos:Concept	@prefix skos: <http://www.w3.org/2004/02/skos/core#> .
	@prefix ex: <http://example.com/> .
	
	ex:cat a skos:Concept ;
	  skos:prefLabel 'Cat' ;
	  skos:altLabel 'Kitty' ;
	  skos:related ex:domesticAnimal ;
	  skos:broader ex:mammal .
	
	ex:dog a skos:Concept ;
	  skos:prefLabel 'Dog' ;
	  skos:altLabel 'Puppy' ;
	  skos:related ex:domesticAnimal ;
	  skos:broader ex:mammal .
	
	ex:mammal a skos:Concept ;
	  skos:prefLabel 'Mammal' ;
	  skos:altLabel 'Animal' ;
	  skos:related ex:vertebrate ;
	  skos:narrower ex:cat ;
	  skos:narrower ex:dog .
	
	ex:domesticAnimal a skos:Concept ;
	  skos:prefLabel 'Domestic animal' ;
	  skos:altLabel 'Pet' ;
	  skos:related ex:animal ;
	  skos:broader ex:animal .
	
	ex:animal a skos:Concept ;
	  skos:prefLabel 'Animal' ;
	  skos:altLabel 'Creature' ;
	  skos:related ex:nature .
	
	ex:vertebrate a skos:Concept ;
	  skos:prefLabel 'Vertebrate' ;
	  skos:altLabel 'Animal with backbone' ;
	  skos:related ex:animal ;
	  skos:broader ex:animal .
		True	None

skos:Collection	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	@prefix skos: <http://www.w3.org/2004/02/skos/core#> .
	
	<http://example.com/myCollection> a skos:Collection ;
	   skos:prefLabel 'My Collection'@en ;
	   skos:member <http://example.com/myConcept1> ,
	         <http://example.com/myConcept2> .
		True	None

skos:ConceptScheme	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	@prefix skos: <http://www.w3.org/2004/02/skos/core#> .
	@prefix ex: <http://example.com/> .
	
	ex:myScheme a skos:ConceptScheme ;
	  skos:prefLabel 'My SKOS Concept Scheme' ;
	  skos:definition 'An example SKOS concept scheme' ;
	  skos:hasTopConcept ex:myTopConcept ;
	  skos:hasTopConcept ex:anotherTopConcept .
	
	ex:myTopConcept a skos:Concept ;
	  skos:prefLabel 'My Top Concept' ;
	  skos:definition 'An example top-level concept in my SKOS
	concept scheme' .
	
	ex:anotherTopConcept a skos:Concept ;
	  skos:prefLabel 'Another Top Concept' ;
	  skos:definition 'Another example top-level concept in my
	SKOS concept scheme' .
		True	None

skos:OrderedCollection	@prefix skos: <http://www.w3.org/2004/02/skos/core#> .
	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	
	skos:myOrderedCollection rdf:type skos:OrderedCollection ;
	  skos:member skos:concept1 , skos:concept2 ,
	skos:concept3 .
	
	skos:concept1 rdf:type skos:Concept ;
	  skos:prefLabel 'Concept 1' .
	
	skos:concept2 rdf:type skos:Concept ;
	  skos:prefLabel 'Concept 2' .
		True	None

	skos:concept3 rdf:type skos:Concept ; skos:prefLabel 'Concept 3' .		

skos:CollectableProperty	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	@prefix skos: <http://www.w3.org/2004/02/skos/core#> .
	
	skos:CollectableProperty a rdf:Class ;
	  rdf:label 'Collectable Property'@en ;
	  rdf:comment 'A concept property that can be used to group:
	
	- concepts that may be collected (e.g. specimens);
	
	- concepts that are documented separately (e.g. manuscripts);
	
	- concepts that have a separate existence (e.g. coins).'@en .
		False	at line 6 of <>:
			Bad syntax (newline found in string literal) at ^ in:
			"...b" rdf:comment 'A concept property that can be used to group:"^b'\n\n- concepts that may be collected (e.g. specimens);\n\n- conc'..."

skos:topConceptOf	@prefix skos: <http://www.w3.org/2004/02/skos/core#> . @prefix ex: <http://example.com/> . ex:myConcept a skos:Concept ; skos:topConceptOf ex:myScheme . ex:myScheme a skos:ConceptScheme .	True	None
skos:semanticRelation	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . @prefix skos: <http://www.w3.org/2004/02/skos/core#> . @prefix ex: <http://example.org/> . ex:term1 skos:semanticRelation ex:term2 .	True	None

skos:memberList	@prefix skos: <http://www.w3.org/2004/02/skos/core#> .
	@prefix ex: <http://example.org/> .
	
	ex:myList a skos:Concept ;
	  skos:prefLabel 'My List' ;
	  skos:memberList (
	    ex:item1
	    ex:item2
	    ex:item3
	  ) .
	
	ex:item1 a skos:Concept ;
	  skos:prefLabel 'Item 1' .
	
	ex:item2 a skos:Concept ;
	  skos:prefLabel 'Item 2' .
	
	ex:item3 a skos:Concept ;
	  skos:prefLabel 'Item 3' .
		True	None

skos:member	@prefix skos: <http://www.w3.org/2004/02/skos/core#> .
	@prefix ex: <http://example.com/> .
	
	ex:book1 a ex:Book ;
	  skos:member ex:collection .
	
	ex:collection a skos:Collection ;
	  skos:member ex:book1, ex:book2 .
	
	ex:book2 a ex:Book ;
	  skos:member ex:collection .
		True	None

skos:hasTopConcept	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	@prefix skos: <http://www.w3.org/2004/02/skos/core#> .
	
	<http://example.org/my-vocabulary>
	  rdf:type skos:ConceptScheme ;
	  skos:hasTopConcept <http://example.org/my-vocabulary#Foo> ;
	  skos:hasTopConcept <http://example.org/my-vocabulary#Bar> .
	
	<http://example.org/my-vocabulary#Foo>
	  rdf:type skos:Concept ;
	  skos:prefLabel 'Foo'@en .
	
	<http://example.org/my-vocabulary#Bar>
	  rdf:type skos:Concept ;
	  skos:prefLabel 'Bar'@en .
		True	None

foaf:Agent	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>. @prefix foaf: <http://xmlns.com/foaf/0.1/>. foaf:Agent rdf:type rdf:Class.	True	None

foaf:Person	@prefix foaf: <http://xmlns.com/foaf/0.1/> . <http://example.com/person/Jane> a foaf:Person ; foaf:name 'Jane Doe' ; foaf:age 35 ; foaf:gender 'female' . <http://example.com/person/John> a foaf:Person ; foaf:name 'John Smith' ; foaf:age 42 ; foaf:gender 'male' .	True	None
foaf:Document	@prefix foaf: <http://xmlns.com/foaf/0.1/> . @prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . foaf:Document rdf:type rdf:Class .	True	None

foaf:Group	@prefix foaf: <http://xmlns.com/foaf/0.1/> .
	
	<http://example.com/my-group>
	  a foaf:Group ;
	  foaf:name 'My Group' ;
	  foaf:member <http://example.com/john-doe> ,
	    <http://example.com/jane-doe> ;
	  foaf:homepage <http://example.com/my-group-page> .
		True	None

foaf:OnlineAccount	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	@prefix foaf: <http://xmlns.com/foaf/0.1/> .
	
	foaf:AccountOwner a rdf:Class .
	
	foaf:OnlineAccount a rdf:Class ;
	   rdfs:subClassOf foaf:OnlineChatAccount .
	
	foaf:account a rdf:Property ;
	   rdfs:domain foaf:AccountOwner ;
	   rdfs:range foaf:OnlineAccount .
	
	foaf:homepage a rdf:Property ;
	   rdfs:domain foaf:OnlineAccount ;
	   rdfs:range rdfs:Resource .
	
	foaf:accountName a rdf:Property ;
	   rdfs:domain foaf:OnlineAccount ;
	   rdfs:range xsd:string .
	
	foaf:accountServiceHomepage a rdf:Property ;
	   rdfs:domain foaf:OnlineAccount ;
	   rdfs:range rdfs:Resource .
		False	at line 7 of <>:
			Bad syntax (Prefix "rdfs:" not bound) at ^ in:
			"...b'ntOwner a rdf:Class .\n\ nfoaf:OnlineAccount a rdf:Class ;\n '^b'rdfs:subClassOf foaf:OnlineChatAccount .\ n\nfoaf:account a rdf'..."

foaf:name	@prefix foaf: <http://xmlns.com/foaf/0.1/> . <http://example.org/person1> foaf:name 'John Doe' .	True	None
foaf:knows	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . @prefix foaf: <http://xmlns.com/foaf/0.1/> . <http://example.org/person1> a foaf:Person ; foaf:name 'John Doe' ; foaf:knows <http://example.org/person2> . <http://example.org/person2> a foaf:Person ; foaf:name 'Jane Smith' .	True	None

foaf:based_near	@prefix foaf: <http://xmlns.com/foaf/0.1/> .
	@prefix geo: <http://www.w3.org/2003/01/geo/wgs84_pos#> .
	
	<http://example.org/person1>
	   foaf:name 'John Doe' ;
	   foaf:based_near [
	     geo:lat '37.7749' ;
	     geo:long '-122.4194'
	   ] .
		True	None

foaf:accountName	@prefix foaf: <http://xmlns.com/foaf/0.1/> . @prefix ex: <http://example.org/> . ex:person1 foaf:name 'John Doe' ; foaf:accountName 'johndoe' .	True	None
foaf:holdsAccount	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . @prefix foaf: <http://xmlns.com/foaf/0.1/> .	True	None

	@prefix ex: <http://example.org/> .
	
	ex:person1 foaf:holdsAccount [
	    rdf:type foaf:OnlineAccount ;
	    foaf:accountName 'user@example.org' ;
	    foaf:accountServiceHomepage
	<http://www.example.org/>
	] .		

prov:Agent	@prefix prov: <http://www.w3.org/ns/prov#> .
	@prefix ex: <http://www.example.com/> .
	
	ex:person1 a prov:Agent ;
	  prov:name 'John Doe' ;
	  prov:hadActivity ex:activity1 .
	
	ex:activity1 a prov:Activity ;
	  prov:wasAssociatedWith ex:person1 .
		True	None

prov:Activity	@prefix prov: <http://www.w3.org/ns/prov#> . <http://example.org/activity1> a prov:Activity ; prov:label 'Activity 1' ; prov:startTime '2021-01-01T00:00:00Z'^^xsd:dateTime ; prov:endTime '2021-01-01T01:00:00Z'^^xsd:dateTime .	False	at line 6 of <>: Bad syntax (Prefix "xsd:" not bound) at ^ in: "...b"bel 'Activity 1' ;\n prov:startTime '2021-01-01T00:00:00Z'^^"^b"xsd:dateTime ;\n prov:endTime '2021-01-01T01:00:00Z'^^xsd:da"..."

prov:Entity	@prefix prov: <http://www.w3.org/ns/prov#> .
	@prefix ex: <http://example.com/> .
	
	ex:entity1 a prov:Entity ;
	  prov:wasDerivedFrom ex:data1 ;
	  prov:wasGeneratedBy ex:process1 .
		True	None

prov:Collection	@prefix prov: <http://www.w3.org/ns/prov#> .
	@prefix ex: <http://example.com/> .
	
	ex:collection1 a prov:Collection ;
	  rdfs:label 'My Collection'@en ;
	  prov:hadMember ex:item1, ex:item2, ex:item3 ;
	  prov:wasGeneratedBy ex:process1 ;
	  prov:wasDerivedFrom ex:sourceDataset ;
	  .
	
	ex:item1 a prov:Entity ;
	  rdfs:label 'Item 1'@en ;
	  prov:wasGeneratedBy ex:process1 ;
	  .
	
	ex:item2 a prov:Entity ;
	  rdfs:label 'Item 2'@en ;
	  prov:wasGeneratedBy ex:process1 ;
	  .
	
	ex:item3 a prov:Entity ;
	  rdfs:label 'Item 3'@en ;
	  prov:wasGeneratedBy ex:process1 ;
	  .
	
	ex:process1 a prov:Activity ;
	  rdfs:label 'My Process'@en ;
	  prov:used ex:inputDataset .
	
	ex:inputDataset a prov:Entity ;
	  rdfs:label 'Input Dataset'@en .
	
	ex:sourceDataset a prov:Entity ;
	  rdfs:label 'Source Dataset'@en ;
	  prov:wasGeneratedBy ex:sourceProcess .
	
	ex:sourceProcess a prov:Activity ;
	  rdfs:label 'Source Process'@en ;
	  prov:used ex:rawData .
	
	ex:rawData a prov:Entity ;
	  rdfs:label 'Raw Data'@en .
		False	at line 5 of <>:
			Bad syntax (Prefix "rdfs:" not bound) at ^ in: "...b'ttp://example.com/> . \n\nex:collection1 a prov:Collection ;\n '^b"rdfs:label 'My Collection'@en ;\n prov:hadMember ex:item1, e"..."

prov:Location	@prefix prov: <http://www.w3.org/ns/prov#> . @prefix ex: <http://example.com/> .	True	None

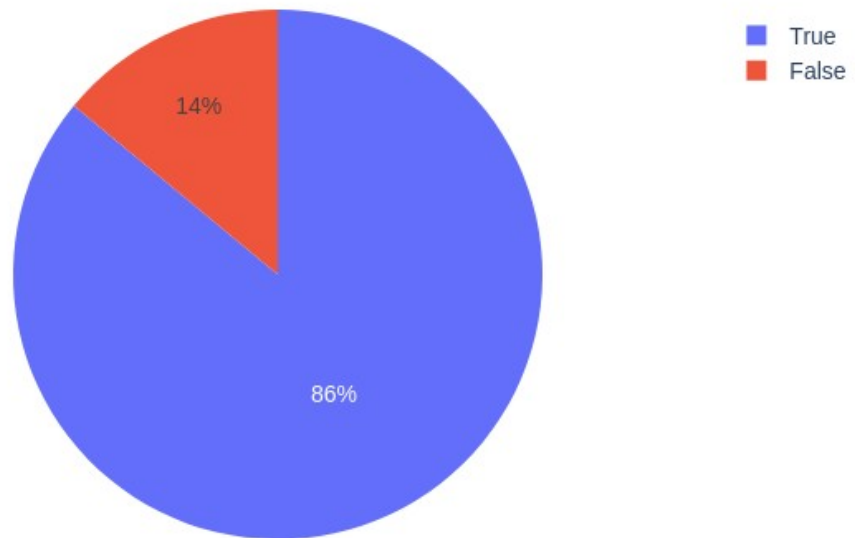|			
	ex:location1 a prov:Location ; prov:atLocation 'New York' .		

prov:wasGeneratedBy	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	@prefix prov: <http://www.w3.org/ns/prov#> .
	
	<http://example.org/document> prov:wasGeneratedBy
	<http://example.org/tool> .
	
	<http://example.org/tool>
	  rdf:type prov:Software ;
	  prov:wasAttributedTo <http://example.org/developer> .
		True	None

prov:generatedAtTime	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	@prefix prov: <http://www.w3.org/ns/prov#> .
	@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .
	
	<http://example.com/document>
	  rdf:type prov:Entity ;
	  prov:generatedAtTime '2021-08-
	10T12:00:00Z'^^xsd:dateTime .
		True	None

prov:atLocation	@prefix prov: <http://www.w3.org/ns/prov#> .
	@prefix ex: <http://example.org/> .
	
	ex:entity1
	  a prov:Entity ;
	  prov:atLocation ex:location1 .
	
	ex:location1
	  a prov:Location ;
	  prov:latitude '51.5072' ;
	  prov:longitude '-0.1276' .
		True	None

prov:hadMember	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	@prefix prov: <http://www.w3.org/ns/prov#> .
	@prefix ex: <http://example.org/> .
	
	ex:Collection1 a prov:Collection ;
	  prov:hadMember ex:Entity1 ;
	  prov:hadMember ex:Entity2 ;
	  prov:hadMember ex:Entity3 .
		True	None

prov:used	@prefix prov: <http://www.w3.org/ns/prov#> . <http://example.com/activity/123> a prov:Activity ; prov:used <http://example.com/resource/456> . <http://example.com/resource/456> a prov:Entity .	True	None

rdf:List	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>.
	@prefix ex: <http://example.com/>.
	
	ex:myList rdf:type rdf:List;
	    rdf:first 'apple';
	    rdf:rest [
	       rdf:first 'banana';
	       rdf:rest [
	          rdf:first 'cherry';
	          rdf:rest rdf:nil
	       ]
	    ].
		True	None

rdf:Bag	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	@prefix ex: <http://example.com/ns#> .
	
	ex:Collection rdf:type rdf:Bag ;
	    rdf:_1 ex:Item1 ;
	    rdf:_2 ex:Item2 ;
	    rdf:_3 ex:Item3 ;
	    rdf:_4 ex:Item4 .
		True	None

rdf:Statement	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	@prefix ex: <http://example.com/> .
	
	ex:subject1 ex:predicate1 ex:object1 .
	ex:subject2 ex:predicate2 ex:object2 .
	
	ex:statement1 a rdf:Statement ;
	    rdf:subject ex:subject1 ;
	    rdf:predicate ex:predicate1 ;
	    rdf:object ex:object1 .
	
	ex:statement2 a rdf:Statement ;
	    rdf:subject ex:subject2 ;
	    rdf:predicate ex:predicate2 ;
	    rdf:object ex:object2 .
		True	None

rdf:Property	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>.
	
	# Define a custom property
	@prefix ex: <http://example.org/> .
	
	ex:hasColor rdf:type rdf:Property ;
	    rdfs:label 'has color' ;
	    rdfs:comment 'Relates an object to its color' .
		False	at line 7 of <>:
			Bad syntax (Prefix "rdfs:" not bound) at ^ in: "...b':://example.org/> .\n\ nex:hasColor rdf:type rdf:Property ;\n ^b"rdfs:label 'has color' ;\ n rdfs:comment 'Relates an object"..."

rdf:HTML	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . @prefix ex: <http://example.org/> . ex:myWebpage rdf:type rdf:HTML .	True	None

rdf:first	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	@prefix ex: <http://example.org/> .
	
	ex:myList rdf:type rdf:List ;
	        rdf:first 'apple' ;
	        rdf:rest _:b0 .
	
	_:b0 rdf:type rdf:List ;
	    rdf:first 'banana' ;
	    rdf:rest _:b1 .
	
	_:b1 rdf:type rdf:List ;
	    rdf:first 'cherry' ;
	    rdf:rest rdf:nil .
		True	None

rdf:type	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . @prefix foaf: <http://xmlns.com/foaf/0.1/> . <http://example.org/person1> rdf:type foaf:Person . <http://example.org/person1> foaf:name 'John Doe' .	True	None
rdf:subject	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . <http://example.org/myresource> rdf:subject <http://example.org/mysubject> .	True	None

rdf:value	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
	
	<http://example.org/resource1>
	    rdf:value 'example'
	    .
	
	<http://example.org/resource2>
	    rdf:value 42
	    .
		True	None

rdf:rest	@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> . rdf:nil rdf:rest rdf:nil .	True	None

The table below shows the occurrences of each category for the tested ontologies.

Ontology Prefix	True Count	False Count	No Response Count
rdfs	8	2	0
skos	9	1	0
foaf	9	1	0
prov	8	2	0
rdf	9	1	0

Figure 1: Occurences of each category of response ('True', 'False', 'None')

Code Category	True Count	False Count	No Response Count
Instance Graphs	43	7	0
Shacl Shapes	46	4	0
Sparql Queries	43	7	0