

# Exercise

- Create a SWRL to infer values for the new relation “hasParent”. Next, we use this property to check whether a person has more than 2 (biological) parents. If that is the case, the below SHACL Shape triggers a warning message.

@prefix : <http://laurenzi.ch#> .

@prefix sh: <http://www.w3.org/ns/shacl#> .

```
:PersonShape a sh:NodeShape ;  
  sh:targetClass :Person ;  
  sh:property [  
    sh:path :hasParent ;  
    sh:maxCount 2 ;  
    sh:message "A person cannot have more than two parents." ;  
  ]
```

# SHACL Shape executed in the SHACL Editor of Protégé

The screenshot displays the SHACL Editor interface in Protégé. On the left, the 'Class hierarchy: Woman' panel shows a tree structure with 'owl:Thing' at the root, followed by 'City', 'Movie', 'Person', 'Man', 'Woman', and 'UnhappyMan'. The 'Direct instances: Grazia' panel lists instances: Adelia, Alina, Amalia, Fabiana, and Grazia. The 'SHACL editor' panel shows the following code:

```
@prefix : <http://laurenzi.ch#> .
@prefix sh: <http://www.w3.org/ns/shacl#> .
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .

:PersonShape a sh:NodeShape ;
  sh:targetClass :Person ;
  sh:property [
    sh:path :hasParent ;
    sh:maxCount 2 ;
    sh:message "A person cannot have more than two parents." ;
  ] .
```

A red box highlights the warning: "A warning is triggered because the instance Grazia has more than 2 parents in the ontology." Below this, a blue box labeled "The affected resource (focus node)" points to the 'FocusNode' column in the 'SHACL constraint violations: 1' table. Another blue box labeled "Warning message" points to the 'Message' column in the same table.

Severity	SourceShape	FocusNode	Path	Message
	http://www.w3.org/ns/shacl#Vi... 9b86cd865c82495e70824b3...	http://laurenzi.ch#Grazia	http://laurenzi.ch#hasParent	A person cannot have more than two parents.