

Modular Ontology Evaluation Report

Ontology IRI: <https://w3id.org/polifonia/ON/core>

Date: January 22, 2024

1 Evaluation Matrices

1.1 Naming Convention

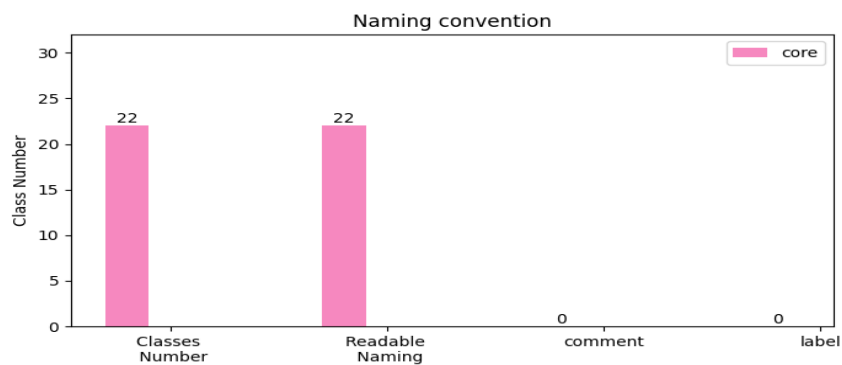


Figure 1: Classes Naming Convention Histogram

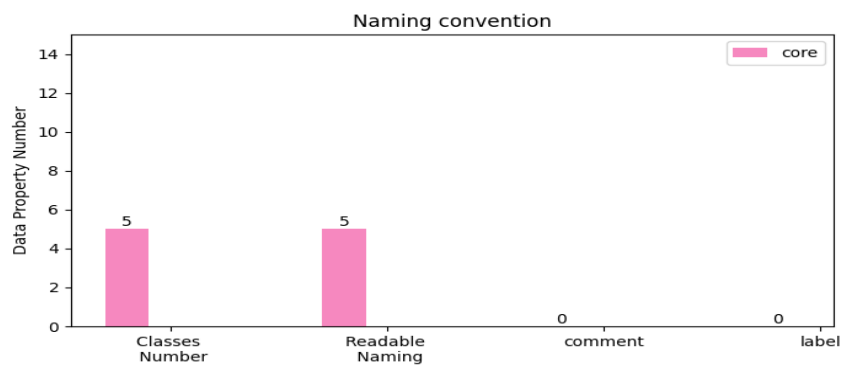


Figure 2: Data Properties Naming Convention Histogram

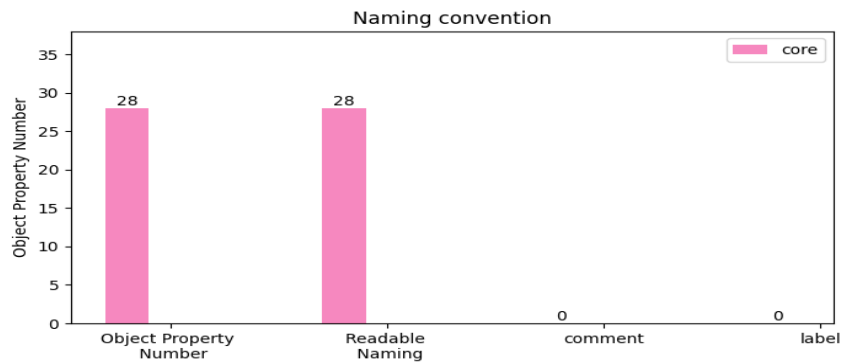


Figure 3: Object Properties Naming Convention Histogram

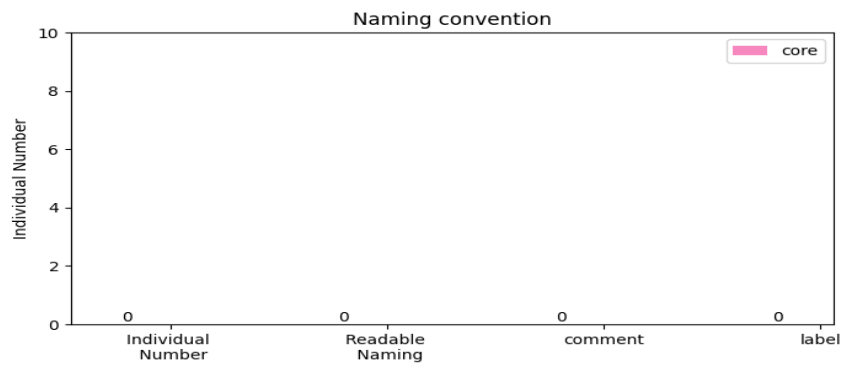


Figure 4: Individuals Naming Convention Histogram

1.2 Syntax Evaluation

Module	Lawfulness	Richness	Syntactic Quality
OneModule	0.279	0.037	0.158

Table 1: Modules Syntax Evaluation Results

1.3 Categorization & Distribution Evaluation

Module	Class Distribution	Attribute Distribution	Relationship Distribution	Module Distribution
OneModule	0.102	0.023	0.130	0.256

Table 2: Modules Categorization & Distribution Evaluation Results

1.4 Structure Evaluation

Module	Size of Module	Appropriateness	Relative Size	Depth of Module	Average Depth of inheritance Tree
OneModule	215	1.000	1.000	1.000	1.000

Module	Atomic Size	Module Density	Breadth of Module	Overall Complexity of Module
OneModule	1.772	61.989	22	8.454

Table 3: Modules Structure Evaluation Results

1.5 Richness Evaluation

Module	Attribute Richness	Inheritance Richness	Relationship Richness
OneModule	0.227	0.545	0.700

Table 4: Modules Richness Evaluation Results

1.6 Logical Criteria Evaluation

Module	Correctness of Module	Completeness of Module
OneModule	True	True

Table 5: Modules Logical Criteria Evaluation Results

1.7 Relatedness Evaluation

Module	Inter-Module Distance	Intra-Module Distance	Relative Intra-Module Distance
OneModule	1	2.367	4.155

Module	Encapsulation	Redundancy	Independency
OneModule	1	0	99.556

Table 6: Modules Relatedness Evaluation Results

1.8 Quality Evaluation

Module	Precision	Recall	Module Cohesion	Module Coupling	Module Overall Quality
OneModule	1.000	1.000	1.772	(22,203)	64.500

Table 7: Modules Quality Evaluation Results

2 Use cases tested

Use case N 1:

Input

Individuals	Features
-------------	----------

Output

Individuals	New features
-------------	---------------------