Modular Ontology Evaluation Report

Ontology IRI: https://w3id.org/OWLunit/ontology/
Date: January 23, 2024

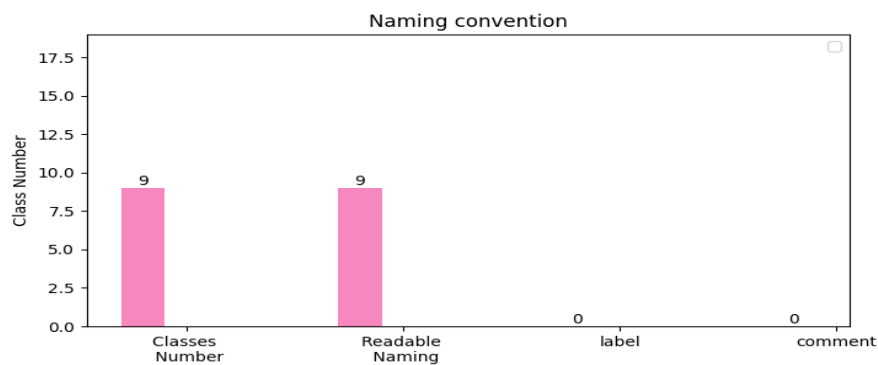## 1 Evaluation Matrics

1.1 Naming Convention

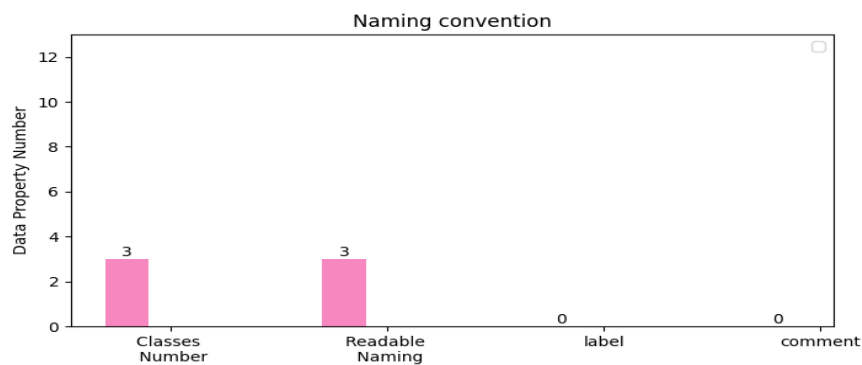Figure 1: Classes Naming Convention Histogram
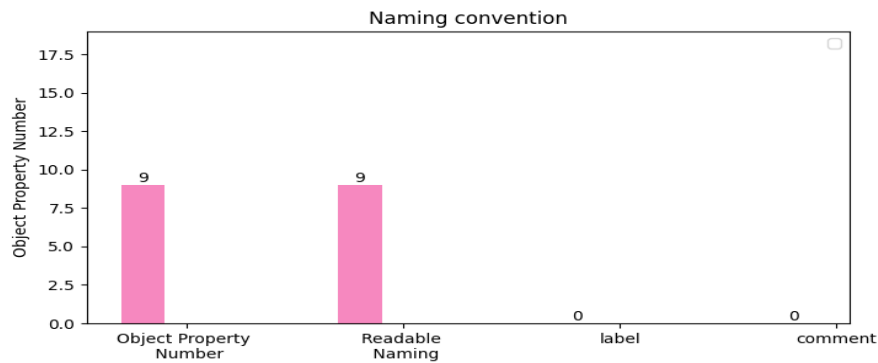

Figure 2: Data Properties Naming Convention Histogram

Figure 3: Object Properties Naming Convention Histogram
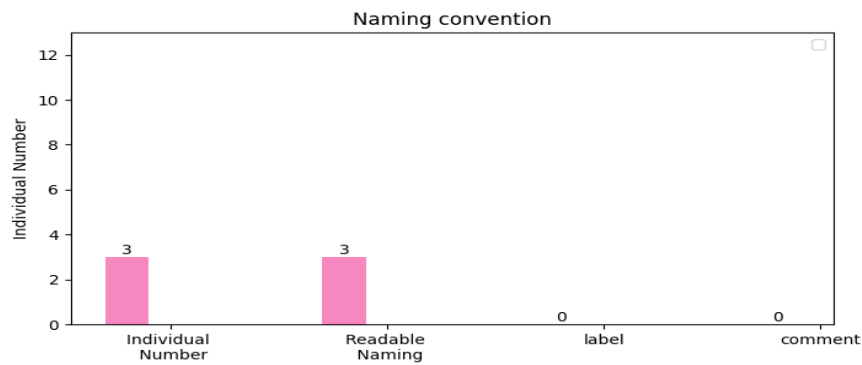

Figure 4: Individuals Naming Convention Histogram

1.2 Syntax Evaluation

Module	Lawfulness	Richness	Syntactic Quality
OneModule	0.382	0.074	0.228

Table 1: Modules Syntax Evaluation Results

1.3   Categorization & Distribution Evaluation

Module	Class Distribution	Attribute Distribution	Relationship Distribution	Module Distribution
OneModule	0.115	0.038	0.115	0.269

Table 2: Modules Categorization & Distribution Evaluation Results

1.4   Structure Evaluation

Module	Size of Module	Appropriate-ness	Relative Size	Depth of Module	Average Depth of inheritance Tree
OneModule	78	1.000	0.987	1.000	1.000

Module	Atomic Size	Module Density	Breadth of Module	Overall Comlexity of Module
OneModule	1.352	25.097	9	5.488

Table 3: Modules Structure Evaluation Results

1.5   Richness Evaluation

Module	Attribute Richness	Inheritance Richness	Relationship Richness
OneModule	0.333	0.444	0.692

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	5.240	1.511

Module	Encapsulation	Redundancy	Independency
OneModule	0	0	100.000

Table 6: Modules Relatedness Evaluation Results

1.8   Quality Evaluation

Module	Precision	Recall	Module Cohesion	Module Coupling	Module Overall Quality
OneModule	1.000	0.900	1.352	(9,87)	23.400

Table 7: Modules Quality Evaluation Results

2 Use cases tested

Use case N 1:

Input

Individuals	Features

Output

Individuals	**New** features