

## Esercizi Ontologie

### Esercizio 1n

Riclassificare le istanze rispetto alle classi presenti nella ontologia.

```
<owl:Class rdf:ID="Nodo"/>
<owl:Class rdf:ID="ObiettivoC">
  <owl:equivalentClass>
    <owl:Restriction>
      <owl:onProperty rdf:resource="#prop1"/>
      <owl:hasValue rdf:resource="#NodoC"/>
    </owl:Restriction>
  </owl:equivalentClass>
</owl:Class>
<owl:ObjectProperty rdf:ID="prop1">
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#TransitiveProperty"/>
  <rdfs:domain rdf:resource="#Nodo "/>
  <rdfs:range rdf:resource="#Nodo "/>
</owl:ObjectProperty>
<Nodo rdf:ID="NodoA">
  <prop1 rdf:resource="#NodoB" />
</Nodo >
<owl:Thing rdf:ID="NodoB">
  <prop1 rdf:resource="#NodoC" />
</owl:Thing >
< owl:Thing rdf:ID="NodoC" />
```

## Esercizio 2n

Riclassificare le istanze rispetto alle classi presenti nella ontologia.

```
<owl:Class rdf:ID="Nodo"/>
<owl:Class rdf:ID="ObiettivoC">
  <owl:equivalentClass>
    <owl:Restriction>
      <owl:onProperty rdf:resource="#prop2"/>
      <owl:hasValue rdf:resource="#NodoC"/>
    </owl:Restriction>
  </owl:equivalentClass>
</owl:Class>
<owl:ObjectProperty rdf:ID="prop1">
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#TransitiveProperty"/>
  <rdfs:domain rdf:resource="#Nodo"/>
  <rdfs:range rdf:resource="#Nodo"/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="prop2">
  <rdfs:subPropertyOf rdf:resource="#prop1"/>
</owl:ObjectProperty>
<Nodo rdf:ID="NodoA">
  <prop2 rdf:resource="#NodoB"/>
</Nodo>
<owl:Thing rdf:ID="NodoB">
  <prop2 rdf:resource="#NodoC"/>
</owl:Thing>
<owl:Thing rdf:ID="NodoC"/>
```

## Esercizio 3n

Riclassificare le istanze rispetto alle classi presenti nella ontologia.

```
<owl:Class rdf:ID="Persona"/>
<owl:Class rdf:ID="Obiettivo">
  <owl:equivalentClass>
    <owl:Restriction>
      <owl:onProperty rdf:resource="#parente"/>
      <owl:hasValue rdf:resource="#Luca"/>
    </owl:Restriction>
  </owl:equivalentClass>
</owl:Class>
<owl:ObjectProperty rdf:ID="parente">
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#TransitiveProperty"/>
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl#SymmetricProperty"/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="haFiglio">
  <rdfs:subPropertyOf rdf:resource="#parente"/>
</owl:ObjectProperty>
<Persona rdf:ID="Mario">
  <haFiglio rdf:resource="#Luca" />
  <haFiglio rdf:resource="#Luigi" />
</Persona >
<Persona rdf:ID="Luca"/>
<Persona rdf:ID="Luigi"/>
```

## Esercizio 4n

Riclassificare le istanze rispetto alle classi presenti nella ontologia.

```
<owl:Class rdf:ID="Persona"/>
<owl:Class rdf:ID="Obiettivo">
  <owl:equivalentClass>
    <owl:Restriction>
      <owl:onProperty rdf:resource="#parente"/>
      <owl:hasValue rdf:resource="#Mario"/>
    </owl:Restriction>
  </owl:equivalentClass>
</owl:Class>
<owl:ObjectProperty rdf:ID="parente">
  <rdf:type rdf:resource="http://www.w3.org/2002/07/owl# SymmetricProperty "/>
</owl:ObjectProperty>
<Persona rdf:ID="Mario">
  <parente rdf:resource="#Luigi" />
</Persona>
<Persona rdf:ID="Luigi">
  <parente rdf:resource="#Luca" />
</Persona>
<Persona rdf:ID="Luigi"/>
```

## Esercizio 5n

Riclassificare le istanze rispetto alle classi presenti nella ontologia.

```
<owl:Class rdf:ID="Colore"/>
<owl:Class rdf:ID="Mobile"/>
<owl:Class rdf:ID="Obiettivo">
  <owl:equivalentClass>
    <owl:intersectionOf rdf:parseType="Collection">
      <owl:Class rdf:about="#Mobile" />
      <owl:Restriction>
        <owl:onProperty rdf:resource="#haColore" />
        <owl:hasValue rdf:resource="#Nero"/>
      </owl:Restriction>
    </owl:intersectionOf>
  </owl:equivalentClass>
</owl:Class>
<owl:ObjectProperty rdf:ID="haColore">
  <rdfs:range rdf:resource="#Colore"/>
</owl:ObjectProperty>
<Mobile rdf:ID="Tavolo">
  <haColore rdf:resource="#Rosso" />
</Mobile>
<Mobile rdf:ID="Sedia">
  <haColore rdf:resource="#Nero" />
</ Mobile>
<owl:Thing rdf:ID="Scrivania">
  <haColore rdf:resource="#Nero" />
</owl:Thing>
<Colore rdf:ID="Nero">
<Colore rdf:ID="Rosso">
```

## Esercizio 6n

Data l'ontologia.

```
<owl:Class rdf:ID="Persona"/>
<owl:Class rdf:ID="Donna">
  <rdfs:subClassOf rdf:resource="#Persona"/>
</owl:Class>
<owl:Class rdf:ID="Uomo">
  <rdfs:subClassOf rdf:resource="#Persona"/>
</owl:Class>
<owl:ObjectProperty rdf:ID="haAmico">
  <rdfs:range rdf:resource="# Persona "/>
  <rdfs:domain rdf:resource="# Persona "/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="haFiglio">
  <rdfs:range rdf:resource="# Persona "/>
  <rdfs:domain rdf:resource="# Persona "/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="haMarito">
  <rdfs:range rdf:resource="#Uomo"/>
  <rdfs:domain rdf:resource="#Donna"/>
</owl:ObjectProperty>
<owl:ObjectProperty rdf:ID="haMoglie">
  <rdfs:range rdf:resource="#Donna"/>
  <rdfs:domain rdf:resource="#Uomo"/>
</owl:ObjectProperty>
<Uomo rdf:ID="Mario"/>
```

Scrivere le formule DL per:

1. Donna con almeno due figli
2. Persone sposate
3. Persone che hanno come amici solo Uomini
4. Gli amici di Mario