

**TUTORS:**

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**LECTURE SLIDES:** The lecture slides can be accessed through the following link:<https://slidewiki.org/playlist/237>**QUESTIONS:** Please don't hesitate to ask any questions. Questions help you and your peers.**PRINT:** Please consider the environment before printing the exercise.Required Slides <https://slidewiki.org/deck/90781/03-rdf-serializations/deck/90781>

## 1 Serializations

```

<?xml version="1.0" encoding="utf-8" ?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:ex="http://example.org/"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#">

  <rdf:Description rdf:about="http://example.org/NinjaTurtles">
    <rdf:type rdf:resource="http://example.org/Comic"/>
    <ex:members>
      <rdf:Bag>
        <rdf:li>
          <rdf:Description rdf:about="http://example.org/Leo">
            <rdf:type rdf:resource="http://example.org/NinjaTurtle"/>
            <rdfs:label>Leo</rdfs:label>
            <rdfs:label>Leonardo</rdfs:label>
            <ex:maskColor>blue</ex:maskColor>
            <ex:weapons>Sword</ex:weapons>
            <ex:characteristics>tactics</ex:characteristics>
            <ex:characteristics>leader</ex:characteristics>
          </rdf:Description>
        </rdf:li>
        <rdf:li>
          <rdf:Description rdf:about="http://example.org/Donnie">
            <rdf:type rdf:resource="http://example.org/NinjaTurtle"/>
            <rdfs:label>Donnie</rdfs:label>
            <rdfs:label>Donatello</rdfs:label>
            <ex:maskColor>purple</ex:maskColor>
            <ex:weapons>staff</ex:weapons>
            <ex:characteristics>scientist</ex:characteristics>
            <ex:characteristics>engineer</ex:characteristics>
            <ex:characteristics>technological genius</ex:characteristics>
          </rdf:Description>
        </rdf:li>
        <rdf:li>
          <rdf:Description rdf:about="http://example.org/Raph">
            <rdf:type rdf:resource="http://example.org/NinjaTurtle"/>
            <rdfs:label>Raph</rdfs:label>
            <rdfs:label>Raphael</rdfs:label>
            <ex:maskColor>red</ex:maskColor>
            <ex:weapons>sai</ex:weapons>
            <ex:characteristics>muscle</ex:characteristics>
            <ex:characteristics>short fused</ex:characteristics>
          </rdf:Description>
        </rdf:li>
      </rdf:li>
    </rdf:li>
  </rdf:li>

```

```

<rdf:Description rdf:about="http://example.org/Mikey">
  <rdf:type rdf:resource="http://example.org/NinjaTurtle"/>
  <rdfs:label>Mikey</rdfs:label>
  <rdfs:label>Michelangelo</rdfs:label>
  <ex:maskColor>orange</ex:maskColor>
  <ex:weapons>nunchaks</ex:weapons>
  <ex:characteristics>comedian</ex:characteristics>
  <ex:characteristics>goofy</ex:characteristics>
  <ex:characteristics>eats most of the pizza</ex:characteristics>
</rdf:Description>
</rdf:li>
</rdf:Bag>
</ex:members>
</rdf:Description>
</rdf:RDF>

```

Tasks:

- Draw corresponding graph for the data
- Provide turtle (TTL) representation
- Provide RDFa representation for **one** of the ninja turtles.

## 2 Text to Turtle (including RDFS semantics)

Required rdfs properties. `rdfs:subClassOf`, `rdfs:domain`, `rdfs:range`, `rdfs:subPropertyOf`

### Text:

The person Lucky Luke has a friend Jolly Jumper who is a horse.

However, Lucky Luke has also an enemy, Joe Dalton who is a person.

Rantanplan is a Dog and he knows Lucky Luke but he is a friend of Jolly Jumper.

### Classes:

- `ex:Person`
- `ex:Horse`
- `ex:Dog`
- `ex:Animal`
- `ex:LivingCreature`.

### Properties:

- `ex:isFriendOf`
- `ex:isEnemyOf`
- `ex:knows`

2a) Create class hierarchy using the subclass relation and draw a diagram

2b) Create property hierarchy and define domain range restrictions

2c) Translate text snippet into Turtle serialization