CO7216 Semantic Web

Surgery

Exercise 1 – RDF Schema

Given the following XML document

```
<?xml version="1.0"?>
<purchaseOrder id ="PO-01">
      <shipTo id="SH-01">
            <country> US </country>
            <name>Alice Smith</name>
            <street>123 Maple Street</street>
      </shipTo>
      <comment>Hurry, my lawn is going wild!</comment>
      <items>
            <item id="I1-01">
                  <partNum>"872-AA"</partNum>
                  <productName>Lawnmower</productName>
                  <quantity>1</quantity>
                  <USPrice>148.95</USPrice>
            </item>
      </items>
</purchaseOrder>
```

- Write an XML schema for the above XML document.
- Write an RDF schema corresponding to the above XML document using the RDF/XML syntax.
- Write an RDF document that corresponds to your RDF Schema.

RDFSchema Hint:

```
<rdfs:Class rdf:ID="purchaseOrder"/>

<rdf:Property rdf:ID="hasShippingInfo">
      <rdfs:domain rdf:resource="#purchaseOrder"/>
      <rdfs:range rdf:resource="#ShippingInfo"/>
</rdf:Property>
```

Exercise 2 - Concepts, Attributes and Relationships

Consider the domain of restaurants.

A restaurant is managed by a management team. It employs a head chef, several chefs and a busser (cleaner). The restaurant provides takeaway as well as eat-in services. The menu provides an option of several courses including appetisers, main courses, desserts and wines. It serves both vegetarian and non vegetarian food items. Customers have the option to have their meals as Ala carte or set meals. The restaurant have a policy of serving only specific wine with specific food items. It arranges theme evenings such as "Italian Feast", "Indian Festival" and "Chinese celebration". The restaurant uses a check cover to present checks (bills) to the customers. Your task is to build a taxonomy of concepts and identify their attributes and relationships.

- Concepts and sub concepts, e.g. FoodCourses is a concept and MainCourse is a subconcept of FoodItem.
- Identify Attributes, e.g., hasShelfLife is an attribute of food item.
- Identify relationships between the concepts, e.g., hasChef is a relationship between the Concepts, Restaurant and Chef.