Lab 04

Exercise 01: We consider the following XML schema

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema
xmlns:xs="http://www.w3.org/2001/XMLSchema">
<xs:element name="bond_movies">
<xs:complexType>
<xs:sequence>
<xs:element maxOccurs="unbounded" name="movie">
<xs:complexType>
<xs:sequence>
<xs:element name="title" type="xs:string" />
<xs:element name="bond" type="xs:string" />
<xs:element name="bond_girl" type="xs:string" />
<xs:element name="regie" type="xs:string" />
<xs:element name="year" type="xs:gYear" />
<xs:element name="duration" type="durationType" />
</xs:sequence>
<xs:attribute name="number" type="numberType"
use="required" />
</xs:complexType>
</xs:element>
</xs:sequence>
<xs:attribute name="month" type="monthType"
use="required" />
<xs:attribute name="year" type="xs:gYear" use="required"
/>
</xs:complexType>
</xs:element>
<xs:simpleType name="monthType">
<xs:restriction base="xs:string">
<xs:enumeration value="January"/>
<xs:enumeration value="February"/>
<xs:enumeration value="March"/>
<xs:enumeration value="May"/>
<xs:enumeration value="June"/>
<xs:enumeration value="July"/>
<xs:enumeration value="August"/>
<xs:enumeration value="September"/>
<xs:enumeration value="October"/>
<xs:enumeration value="November"/>
<xs:enumeration value="December"/>
</xs:restriction>
</xs:simpleType>
<xs:simpleType name="durationType">
<xs:restriction base="xs:short">
<xs:minInclusive value="0"/>
<xs:maxInclusive value="300"/>
</xs:restriction>
</xs:simpleType>
<xs:simpleType name="numberType">
<xs:restriction base="xs:string">
<xs:length value="3"/>
<xs:pattern value="_\d{2}"/>
</xs:restriction>
</xs:simpleType>
</xs:schema>
```

1. Give a valid document for this schema.

NB:

To validate your files, you can use the following command:

xmllint --noout --schema schemaCatalogue.xsd catalogue.xml.

2. Provide an equivalent DTD that validates the same documents as this schema.

Exercise 02:

Propose a BibTex.xsd file allowing the definition of XML documents representing Bibtex files (as described in Lab 02).

Exercise 03:

Propose a schema file allowing the definition of XML documents describing the internal organization of a company ((as described in Lab 04 exercise 4).

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Exercise 04: . Propose an XML schema for Atlas.xml file:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<atlas>
  <pays n="p2" population="82" continent="c1">
    <nom>Allemagne</nom>
    <langue>Allemand</langue>
    <frontiere pays="p1"/>
  </pays>
  <pays n="p1" population="60" continent="c1" >
    <nom>France</nom>
    <langue pourcentage="100">Français</langue>
    <langue pourcentage="1">Corse</langue>
    <frontiere pays="p2"/>
    <frontiere pays="p3"/>
  </pays>
  <pays n="p3" population="40" continent="c1">
    <nom>Espagne</nom>
    <langue pourcentage="74">Espagnol</langue>
    <langue pourcentage="17">Catalan</langue>
    <langue pourcentage="7">Galicien</langue>
    <frontiere pays="p1"/>
  </pays>
  <pays n="p4" population="76" continent="c2">
    <nom>Egypte</nom>
    <langue>Arabe</langue>
  </pays>
  <continent n="c1" nom="Europe" superficie="10"/>
  <continent n="c2" nom="Afrique" superficie="30"/>
  <mer n="m1" nom="Mer Mediterranee" profondeur="5120">
    <situation pays="p1"/> <situation pays="p3"/> <situation pays="p4"/>
  </mer>
  <montagne n="M1" nom="Alpes" altitude="4810">
    <situation pays="p1"/> <situation pays="p2"/>
  </montagne>
    <montagne n="M2" nom="Cevennes" altitude="1700">
    <situation pays="p1"/>
  </montagne>
</atlas>
```