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## Lab 03

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**Exercise 01:** Write a valid XML file against the following DTD

```
<!ELEMENT directory (person)+>
<!ELEMENT person(lastname, firstname, email+, tel*)>
<!ATTLIST person profession (student | professor | assistant) "student">
<!ELEMENT lastname (#PCDATA)>
<!ELEMENT firstname (#PCDATA)>
<!ELEMENT email (#PCDATA)>
<!ELEMENT tel (#PCDATA)>
<!ATTLIST tel type (fixed | portable) #REQUIRED>
```

**Note:**

1. You can link this DTD with your XML file using:

```
<!DOCTYPE Racine SYSTEM "file.dtd">
```

2. Verify that your file is well-formed and valid using the command:

```
xmllint --noout --valid file.xml
```

Or

```
xmllint --noout --dtdvalid file.dtd file.xml
```

(This command displays nothing if the file is well-formed and valid and displays errors otherwise).

**Exercise 02:** The *catalog.xml* file represents a list of albums.

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<collection>
  <cd>
    <title>Empire Burlesque </title>
    <artist>Bob Dylan</artist>
    <country>USA</country>
    <company>Columbia</company>
    <price>10.90</price>
    <year>1985</year>
  </cd>
  <cd>
    <title>Hide your heart</title>
    <artist>Bonnie Tyler</artist>
    <country>UK</country>
    <company>CBS Records</company>
    <price>9.90</price>
    <year>1988</year>
  </cd>
  <cd>
    <title>Greatest Hits</title>
    <artist>Dolly Parton</artist>
    <country>USA</country>
    <company>RCA</company>
    <price>9.90</price>
    <year>1982</year>
  </cd>
  <cd>
    <title>S t i l l got the blues</title>
    <artist>Gary Moore</artist>
    <country>UK</country>
    <company>Virgin records</company>
    <price>10.20</price>
    <year>1990</year>
  </cd>
  <cd>
    <title>Eros</title>
    <artist>Eros Ramazzotti</artist>
    <country>EU</country>
    <company>BMG</company>
    <price>9.90</price>
    <year>1997</year>
  </cd>
</collection>
```

Propose a *catalog.dtd* file allowing the definition of XML documents representing a collection of albums.

**Exercise 03:** Propose a *dtd* file defining the XML file which was described in Lab 02 exercise 03.

**Exercise 04:** Propose a *BibTex.dtd* file allowing the definition of XML documents representing Bibtex files (as described in Lab 02 exercise 04).

**Exercise 05:** Propose a *dtd* file defining the XML file which was described in Lab 02 exercise 05.