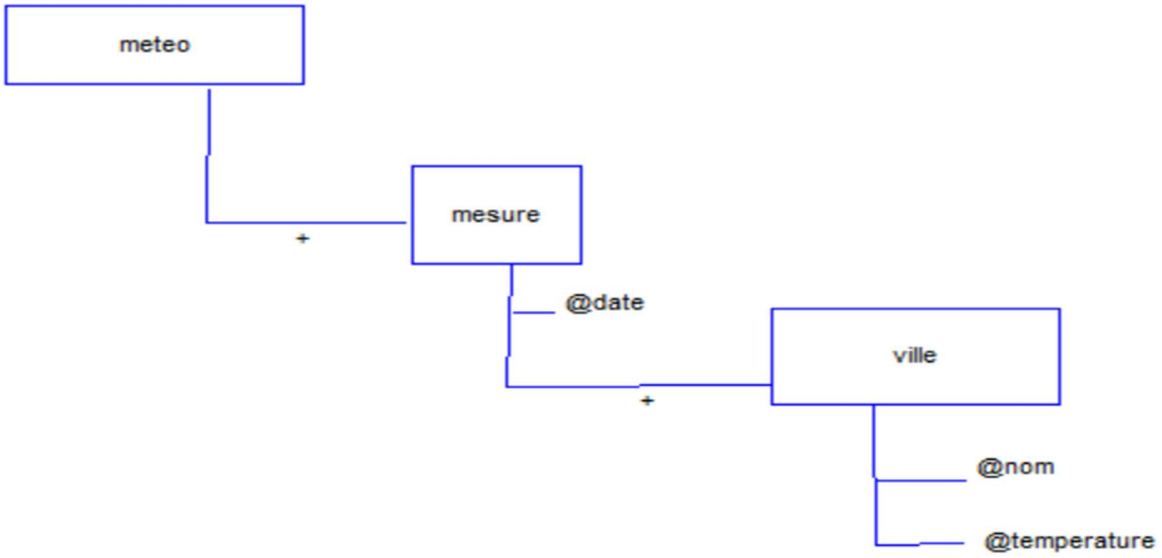
Activité pratique N°1 - XML DTD XSD XPath XSL SVG

1-Faire une représentation graphique de l'arbre XML :

Arbre XML créé par PowerAMC



2-Créer une DTD :

```
<?xml version="1.0" encoding="UTF-8"?>
<!ELEMENT meteo (mesure+)>
<!ELEMENT mesure (ville+)>
<!ELEMENT ville EMPTY>
<!ATTLIST mesure
        date CDATA #REQUIRED>
<!ATTLIST ville
        nom CDATA #REQUIRED
        temperature CDATA #REQUIRED>
```

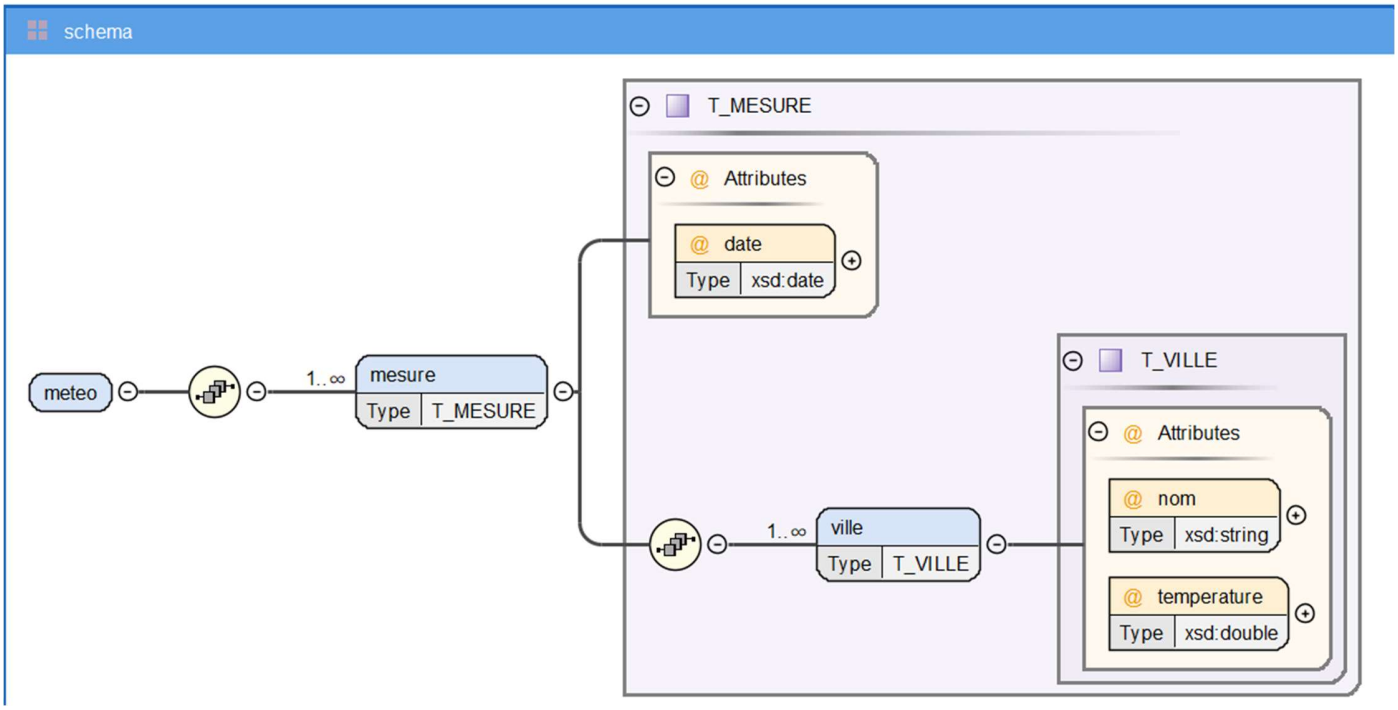
3- Créer un document XML Valide basé sur la DTD

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE meteo SYSTEM "meteo.dtd">
<meteo>
  <mesure date="2025-11-16">
    <ville nom="Casablanca" temperature="19"/>
    <ville nom="Rabat" temperature="18"/>
    <ville nom="Marrakech" temperature="23"/>
    <ville nom="Eljadida" temperature="19"/>
    <ville nom="Tanger" temperature="16"/>
    <ville nom="Fes" temperature="20"/>
    <ville nom="Agadir" temperature="24"/>
  </mesure>
  <mesure date="2025-11-17">
    <ville nom="Casablanca" temperature="17"/>
    <ville nom="Rabat" temperature="18"/>
    <ville nom="Marrakech" temperature="21"/>
    <ville nom="Eljadida" temperature="18"/>
    <ville nom="Tanger" temperature="17"/>
    <ville nom="Fes" temperature="20"/>
    <ville nom="Agadir" temperature="25"/>
  </mesure>
</meteo>
```

4- Créer un schéma XML

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <xsd:element name="meteo">
    <xsd:complexType>
      <xsd:sequence>
<xsd:element name="mesure" maxOccurs="unbounded" type="T_MESURE"> </xsd:element>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
    <xsd:complexType name="T_MESURE">
      <xsd:sequence>
        <xsd:element name="ville" maxOccurs="unbounded" type="T_VILLE"></xsd:element>
```

```
        </xsd:sequence>
        <xsd:attribute name="date" type="xsd:date" use="required"></xsd:attribute>
      </xsd:complexType>
  <xsd:complexType name="T_VILLE">
    <xsd:attribute name="nom" type="xsd:string" use="required"></xsd:attribute>
    <xsd:attribute name="temperature" type="xsd:double" use="required"></xsd:attribute>
  </xsd:complexType>
</xsd:schema>
```



5- Créer le document XML Valide basé sur le schéma XML

```
<?xml version="1.0" encoding="UTF-8"?>
<meteo xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="meteo.xsd">
  <mesure date="2025-11-16">
    <ville nom="casablanca" temperature="19"/>
    <ville nom="rabat" temperature="18"/>
    <ville nom="marrakech" temperature="23"/>
    <ville nom="eljadida" temperature="19"/>
    <ville nom="tanger" temperature="16"/>
```

```
    <ville nom="fes" temperature="20"/>
    <ville nom="agadir" temperature="24"/>
  </mesure>
  <mesure date="2025-11-17">
    <ville nom="casablanca" temperature="17"/>
    <ville nom="rabat" temperature="18"/>
    <ville nom="marrakech" temperature="21"/>
    <ville nom="eljadida" temperature="18"/>
    <ville nom="tanger" temperature="17"/>
    <ville nom="fes" temperature="20"/>
    <ville nom="agadir" temperature="25"/>
  </mesure>
</meteo>
```

6- Créer une feuille de style qui permet de transformer le document XML en un Document HTML

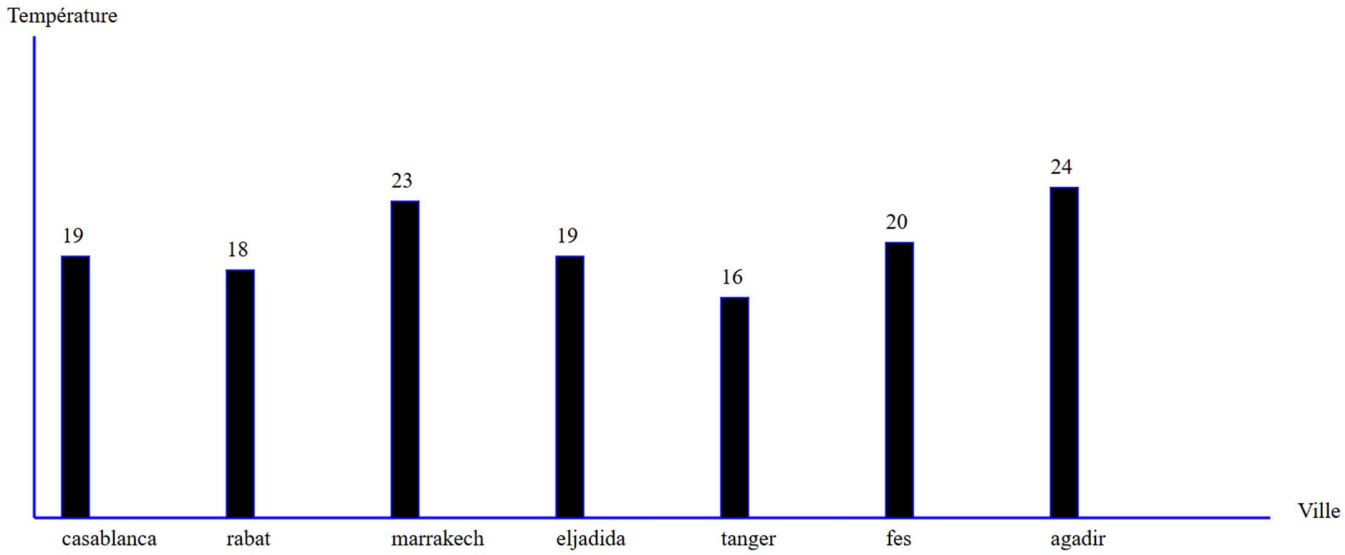
```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
    version="3.0">
  <xsl:template match="/">
    <html>
      <head>
        <title>Meteo</title>
      </head>
      <body>
        <xsl:for-each select="meteo/mesure[@date='2025-11-16']">
      <ul>
        <li> Date Mesure : <xsl:value-of select="@date"/></li>
      </ul>
          <table border="1" width="80%">
            <tr>
              <th>Ville</th>
              <th>Température</th>
            </tr>
            <xsl:for-each select="ville">
              <tr>
                <td><xsl:value-of select="@nom"/></td>
                <td><xsl:value-of select="@temperature"/></td>
              </tr>
            </xsl:for-each>
          </table>
```

```
        </xsl:for-each>
      </body>
    </html>
  </xsl:template>
</xsl:stylesheet>
```

7- Créer une feuille de style qui permet de transformer ce document en un document SVG qui permet qui représente un histogramme SVG animé.

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
    version="3.0">
  <xsl:template match="/">
    <svg xmlns="http://www.w3.org/2000/svg" width="100%" height="100%">
      <line x1="100" y1="150" x2="100" y2="500" stroke="blue" stroke-width="2"></line>
      <line x1="100" y1="500" x2="1000" y2="500" stroke="blue" stroke-width="2"></line>
      <text strok="blue" x="80" y="140">Température</text>
      <text strok="blue" x="1020" y="500">Ville</text>
        <xsl:for-each select="meteo/mesure[@date='2025-11-16']/ville">
      <xsl:variable name="pos" select="position()*120"/>
      <xsl:variable name="temp" select="@temperature*10"/>
      <text strok="blue" x="{$pos}" y="520">
      <xsl:value-of select="@nom"/>
      </text>
      <rect width="20" height="{$temp}" x="{$pos}" y="{500-$temp}" stroke="blue" fil="red">
        <animate attributeName="height" dur="3s" from="0" to="{$temp}"></animate>
        <animate attributeName="y" dur="3s" from="500" to="{500-$temp}"></animate>
      </rect>
          <text strok="blue" x="{$pos}" y="{500-$temp - 10}">
            <xsl:value-of select="@temperature"/>
          </text>
        </xsl:for-each>
    </svg>
  </xsl:template>

</xsl:stylesheet>
```


Température
19
18
23
19
16
20
24
Ville
casablanca
rabat
marrakech
eljadida
tanger
fes
agadir