

This section, you will practice using XML and querying it with XPath which is a way to specify elements within an XML document using a notation reminiscent of the Unix file system.

We will use the Mondial database, which you are using in homework 5, due next week. Note that for homework 5, you will use XQuery instead of XPath, but every XPath expression is also an XQuery query.

Here is a simplified example of Mondial:

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<mondial>
  <continent id="europe">
    <name>Europe</name>
    <area>9562488</area>
  </continent>
  <country car_code="D" capital="cty-Germany-Berlin">
    <name>Germany</name>
    <population>83536115</population>
    <population_growth>0.67</population_growth>
    <infant_mortality>6</infant_mortality>
    <gdp_total>1452200</gdp_total>
    <indep_date>1871-01-18</indep_date>
    <government>federal republic</government>
    <encompassed continent="europe" percentage="100"/>
    <border country="F" length="451"/>
    <border country="A" length="784"/>
    <province id="prov-cid-cia-Germany-2" capital="cty-cid-cia-Germany-9">
      <name>Baden Wurttemberg</name>
      <city id="cty-cid-cia-Germany-9">
        <name>Stuttgart</name>
        <longitude>9.1</longitude>
        <latitude>48.7</latitude>
        <population year="95">588482</population>
      </city>
    </province>
  </country>
  <river id="river-Thjorsa" country="IS">
    <name>Thjorsa</name>
    <to watertype="sea" water="sea-Atlantic"/>
    <area>7530</area>
    <length>230</length>
    <source country="IS">
      <longitude>-18</longitude>
      <latitude>65</latitude>
    </source>
    <estuary country="IS">
      <longitude>-20.8</longitude>
      <latitude>63.9</latitude>
    </estuary>
  </river>
</mondial>
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Questions:

Q0. List the entire contents of Mondial.

Q1. Give a list of all the countries in XML.

Q2. Give a list of the countries that Germany borders.

Q3. Give the names of all the countries with population at least 10 million.

Q4. Find all cities located in countries that are partially or fully part of Europe. (The cities themselves don't have to be in Europe.)

Q5. Find the names of all rivers that start north of the equator (at a positive latitude).

Q6. Find the names of all rivers that start in Iceland.

Q7. Get the names of all countries in both Asia and Europe.