

TD XPath, XSL 3IF

3IF, February 2023

Part 1, XPath

This exercise is based on the following xml file:

```
<?xml version="1.0" encoding="UTF-8"?>
<Company>
  <Employee id="01" salary="10000">
    <FirstName>Tim</FirstName>
    <LastName>Browne</LastName>
    <Position>CEO</Position>
    <Email>TBrowne@Infoteria.com</Email>
    <Category>Officer</Category>
    <Age>25</Age>
  </Employee>
  <Employee id="02">
    <FirstName>David</FirstName>
    <LastName>Silverlight</LastName>
    <Position>Chief XML Evangelist</Position>
    <Email>HeadGeek@XMLPitstop.com</Email>
    <Category>Evangelist</Category>
    <Age>30 </Age>
  </Employee>
  <Employee id="03" salary="6000">
    <FirstName>Mike </FirstName>
    <LastName>Damphouse</LastName>
    <Position>Chief Marketing Officer
  </Position>
    <Email>MDamphouse@Infoteria.com</Email>
    <Category>Officer</Category>
    <Age>31</Age>
  </Employee>
  <Employee id="04">
    <FirstName>Todd</FirstName>
    <LastName>Headrick</LastName>
    <Position>Chief Technology
Officer</Position>
    <Email>Theadrick@Infoteria.com</Email>
    <Category>Officer</Category>
    <Age>33</Age>
  </Employee>
  <Employee id="05" salary="7000">
    <FirstName>Lilly</FirstName>
    <LastName>Rose</LastName>
    <Position>President of
Operations</Position>
    <Email>LRose@xmlcom</Email>
    <Category>President</Category>
    <Age>35</Age>
  </Employee>
  <Employee id="06">
    <FirstName>Timm</FirstName>
    <LastName>Cok</LastName>
    <Position>CEO</Position>
    <Email>tcok@apple.com</Email>
    <Category>President</Category>
    <Age>55</Age>
  </Employee>
  <Employee id="07">
    <FirstName>John</FirstName>
    <LastName>Wayne</LastName>
    <Position>Problem solver</Position>
    <Email>Cowboy@XML.com</Email>
    <Category>Officer</Category>
    <Age>40</Age>
  </Employee>
  <Employee id="08" salary="20000">
    <FirstName>Joe</FirstName>
    <LastName>Dalton</LastName>
    <Position>Chief Evasion
Officer</Position>
    <Email>Chief@Dalton.com</Email>
    <Category>President</Category>
    <Age>31</Age>
  </Employee>
  <Employee id="09">
    <FirstName>Averell</FirstName>
    <LastName>Dalton</LastName>
    <Position>Tall Evasion Officer</Position>
    <Email>Averell@Dalton.com</Email>
    <Category>Officer</Category>
    <Age>25</Age>
  </Employee>
  <Employee id="10">
    <FirstName>Rantan</FirstName>
    <LastName>Plan</LastName>
    <Position>Watchdog</Position>
    <Email>RPlan@waouf.com</Email>
    <Category>Guardian</Category>
    <Age>10</Age>
  </Employee>
</Company>
```

Use Firefox to open this XML file, then show the developer console using the F12 key or press the right mouse button and choose “Inspect Element”, then change to the “Console” frame. Test the XPath expressions here, using the `$x ("XPath")` command.

Write the XPath expressions that return

1. "Employee" nodes
2. The emails
3. Their salaries
4. The count of employees
5. The second employee
6. The first 3 employees
7. The age of the employee with the id "06"
8. The age of the employee "Wayne"
9. The employees younger than 30
10. The sum of the salaries
11. Last names of employees whose category is "Officer"
12. Employees whose names length is at least 4 characters
13. Employees whose position contains "Chief"
14. Employees whose last name is the same as the domain of their email address
15. The last child of the second last Employee node
16. The employee after John Wayne

Part 2, XSLT

The goal of this exercise is to create XSL stylesheets.

1. Complete the following stylesheet so that it transforms the Employee.xml into a result similar to the one shown in Figure 1.

Company Information for Infoteria

Employee Listing

Name	Position	E-mail
Tim Browne	CEO	TBrowne@Infoteria.com
David Silverlight	Chief XML Evangelist	HeadGeek@XMLPitstop.com
Mike Damphouse	Chief Marketing Officer	MDamphouse@Infoteria.com
Todd Headrick	Chief Technology Officer	Theadrick@Infoteria.com
Lilly Rose	President of Operations	LRose@xmlcom
Timm Cok	CEO	tcok@apple.com
John Wayne	Problem solver	Cowboy@XML.com
Joe Dalton	Chief Evasion Officer	Chief@Dalton.com
Averell Dalton	Tall Evasion Officer	Averell@Dalton.com
Rantan Plan	Watchdog	RPlan@waouf.com

Total Employees: 10

Figure 1 layout to produce

```
<?xml version="1.0" encoding="utf-8"?>
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="html"/>
  <xsl:template match="/">
    <html>
      <head>
        <title>XSLT Excercises</title>
      </head>
      <body bgcolor="beige">
        <H1>Company Information for Infoteria</H1>
        <H2>Employee Listing</H2>
        <table border="1">
          <tr>
            <th>Name</th>
            <th>Position</th>
            <th>E-mail</th>
          </tr>

          </table>
          <p>Total Employees:</p>
        </body>
      </html>
    </xsl:template>
  </xsl:stylesheet>
```

You have here a small recall on the html table syntax:

```
<table border="3" width="600" align="center">
  <tr bgcolor="white">
    <td></td> <td></td>
  </tr>
  <tr>
    <td></td> <td></td>
  </tr>
</table>
```

2. Modify the stylesheet to produce the same result, in a declarative way, without using loops.
3. Modify the stylesheet to sort the employees according to their last name.
4. Modify the stylesheet to show only employees younger than 30.
5. Modify the stylesheet to group together (in following rows, see Figure 2) employees from the same company (use their email's domain).

Company Information for Infoteria

Employee Listing

Name	Position	E-mail
Timm Cok	CEO	tcok@apple.com
Joe Dalton	Chief Evasion Officer	Chief@Dalton.com
Averell Dalton	Tall Evasion Officer	Averell@Dalton.com
Tim Browne	CEO	TBrowne@Infoteria.com
Mike Damphouse	Chief Marketing Officer	MDamphouse@Infoteria.com
Todd Headrick	Chief Technology Officer	Theadrick@Infoteria.com
Rantan Plan	Watchdog	RPlan@waouf.com
John Wayne	Problem solver	Cowboy@XML.com
Lilly Rose	President of Operations	LRose@xmlcom
David Silverlight	Chief XML Evangelist	HeadGeek@XMLPitstop.com

Total Employees: 10

Figure 2 Employees grouped by their company

6. Modify the stylesheet to show every second employee on a white background