

# WAD LABORATORY 8

---

## 1 Objectives covered in this laboratory

- ❑ Practise to design XML documents and understand and apply rules for well-formed XML documents
- ❑ Practise to use XPath and XSLT
- ❑ Practise to use CSS

## 2 Exercises

- a) Develop an XML representation of the books in a collection. Each book has a title, a number of authors (may be 1, or more than 1), a publisher, a year of publication, and a price. Each book is either fiction or non-fiction. In the XML representation, you must represent the kind of book (fiction or non-fiction) as an attribute of the title element. Store this in the file “books.xml”.

Develop an XSL stylesheet that will extract the title, the first author and the price of every book which is fiction, and whose price is less than \$30, and will transform them into HTML with 3 spans (tagged with appropriately named attributes), so that the first contains the title, the second the author name\*, and the third the price. At the bottom of the list of selected books, there should be an additional span that includes text that gives the total cost (with an appropriate caption). Call the file “books3.xsl”. If there is more than 1 author (e.g. Grant, Colman and Liu), the author details should be extracted as Grant et al.

Write an HTML file that will present the user with a button, which, when pressed, will access the XML data, will use the XSL stylesheet to select the appropriate books and transform the data into HTML, and will present the list of selected books in the browser formatted according to a stylesheet that you should design and implement using CSS. The title should be bold and blue, the author should be italics and red, and the price should be in plain text and black. You should choose your own style for the total cost line in the output. Use any font and size, but do specify these in the CSS (i.e. do not rely on a default) (see Figure 1).

You may choose to do the XSL transform on either client (in which case you need to send all the XML to the client) or server (in which case you should send the HTML those results from the XSL transform from the server to the client).

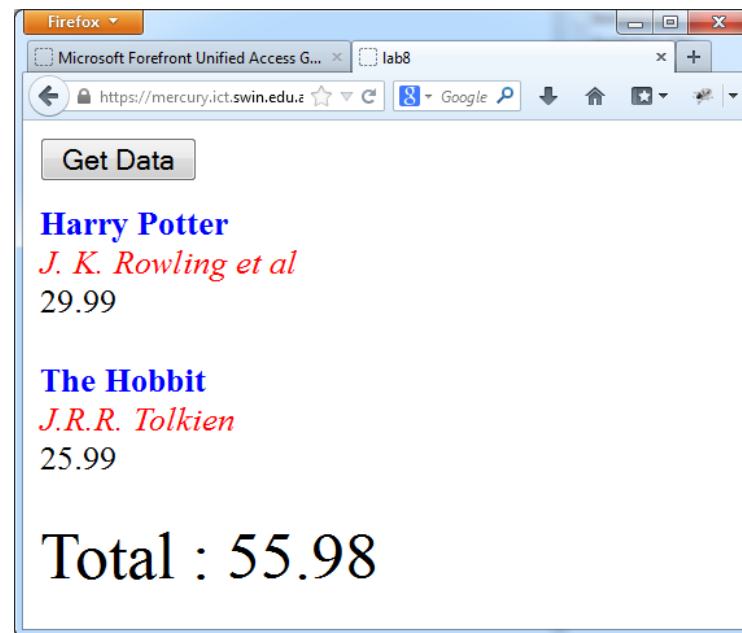


Figure 1 display books

You must use an XHR Object for the client-server communication. This should “call” a suitable PHP file on the server.

- b) The following files constitute a simple system to store and query some data about unit convenerships. The code given above has several sections in **bold**, **red**. **Your task** is to do what is requested.

#### conveners.htm

```
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" />
    <title>Unit Conveners</title>
    <script type="text/javascript" src="conveners.js"></script>
  </head>
  <body>
    <form>
      <input type = "button" id="butt1" value = "Press for Results" /><br />
    </form>
    <script type="text/javascript">
      (1) WRITE CODE HERE THAT SPECIFIES FUNCTION getResults AS
          THE EVENT HANDLER FOR THE onclick EVENT FOR
          THE BUTTON DEFINED IN THE FORM
    </script>
    <span id="results" /></span>
  </body>
</html>
```

**conveners.xml**

```
<?xml version="1.0" encoding="iso-8859-1"?>
```

```
<Units>
```

```
  <Unit>
```

```
    <title>Web Application Development</title>
```

```
    <convener>Doug Grant</convener>
```

```
    <moderator>Chengfei Liu</moderator>
```

```
    <points>12.5</points>
```

```
    <group>CSSE</group>
```

```
    <Faculty>FICT</Faculty>
```

```
  </Unit>
```

```
  <Unit>
```

```
    <title>Software Development in Java</title>
```

```
    <convener>Buzz Bayley</convener>
```

```
    <moderator>Doug Grant</moderator>
```

```
    <points>25</points>
```

```
    <group>CSSE</group>
```

```
    <Faculty>FICT</Faculty>
```

```
  </Unit>
```

```
  <Unit>
```

```
    <title>Financial Accounting</title>
```

```
    <convener>Anil Dhoni</convener>
```

```
    <moderator>Hoang Ngyuen</moderator>
```

```
    <points>25</points>
```

```
    <group>AFL</group>
```

```
    <Faculty>FBE</Faculty>
```

```
  </Unit>
```

```
  <Unit>
```

```
    <title>IS Project</title>
```

```
    <convener>Paul Kindler</convener>
```

```
    <moderator>Gil Ravalli</moderator>
```

```
    <points>25</points>
```

```
    <group>IS</group>
```

```
    <Faculty>FICT</Faculty>
```

```
  </Unit>
```

```
</Units>
```

**conveners.js**

**(2) WRITE CODE HERE TO CREATE AN XMLHttpRequest object**

```
function getResults(){
```

```
  xhr.open("GET", "conveners.php?id=" + Number(new Date), true);
```

```
  xhr.onreadystatechange = getData;
```

```
  xhr.send(null);
```

**(3) CHANGE THE CODE HERE TO USE THE POST PROTOCOL**

```
}
```

```
function getData ()
```

```
{
```

```
  if ((xhr.readyState == 4) &&(xhr.status == 200))
```

```
  {
```

**(4) WRITE CODE HERE TO WRITE THE HTML THAT COMES FROM THE SERVER INTO THE SPAN WITH id "results" in the HTML document**

```
  }
```

```
}
```

**conveners.xsl**

<?xml version="1.0"?><!-- DWXMLSource="results.xml" -->
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
<xsl:output method="html"/>
<xsl:template match="/">
<HTML>
<HEAD>
<TITLE> Units</TITLE>
</HEAD>
<BODY>
Units with More than 12.5 Credit Points :  
<b>(5) IN HERE WRITE XSL THAT WILL GET THE FACULTY, GROUP AND TITLE OF ALL UNITS WITH MORE THAN 12.5 CREDIT POINTS</b>
-----
Number of Units Offered by CSSE :
<b>(6) IN HERE WRITE XSL THAT WILL WRITE THE NUMBER OF UNITS FOR THE CSSE GROUP</b>
</BODY>
</HTML>
</xsl:template>
</xsl:stylesheet>

**conveners.php**

<?php
\$xmlDoc = new DomDocument;
\$xmlDoc->load("conveners.xml");
\$xslDoc = new DomDocument;
\$xslDoc->load("conveners.xsl");
\$proc = new XSLTProcessor;
\$proc->importStyleSheet(\$xslDoc);
echo \$proc->transformToXML(\$xmlDoc);
?>