

Lahore Garrison

University

DHA Phase 6 Lahore

Lab Task 5



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Lab 5: Forms & Multimedia

Lab Objectives

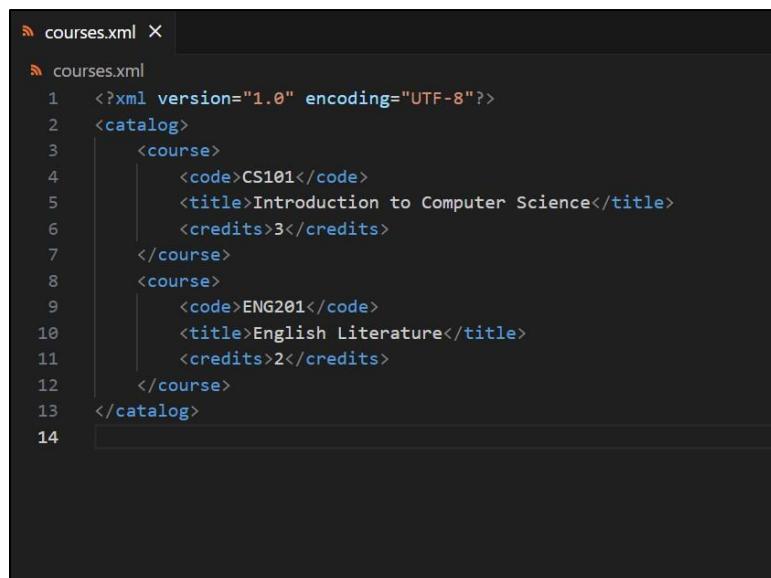
- Create a well-formed XML document.
- Validate XML using XSD or DTD.
- Understand the difference between HTML and XML.
- Optionally convert a simple HTML snippet to XHTML.

Tools Required

- VS Code (or any text editor)
- Online XML Validator (e.g., <https://www.xmlvalidation.com/>)
- Sample XSD/DTD file (can be created or provided)

Step 1: Create an XML File

- Let's create a sample XML file for a Course Catalog.
- File Name: courses.xml



The screenshot shows a code editor window with the file 'courses.xml' open. The XML code is displayed in a dark-themed editor. The code defines a course catalog with two courses: CS101 and ENG201. Each course has a code, title, and credits.

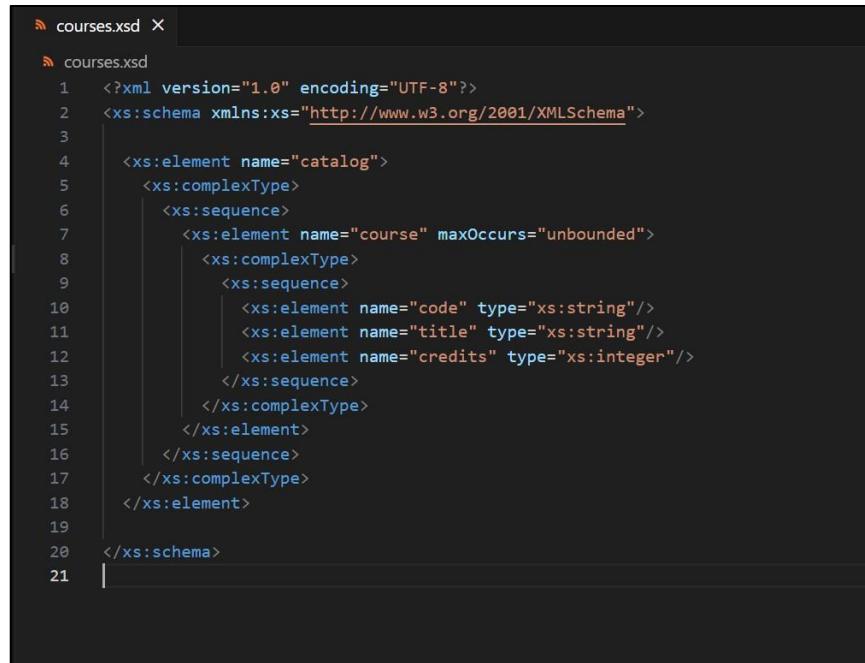
```
<?xml version="1.0" encoding="UTF-8"?>
<catalog>
    <course>
        <code>CS101</code>
        <title>Introduction to Computer Science</title>
        <credits>3</credits>
    </course>
    <course>
        <code>ENG201</code>
        <title>English Literature</title>
        <credits>2</credits>
    </course>
</catalog>
```

Explanation:

- <?xml version="1.0" encoding="UTF-8"?> → XML declaration line.
- <catalog> → Root element.
- Each <course> has three child tags:
 - <code> – Course code
 - <title> – Course name
 - <credits> – Credit hours

Step 2: Create an XSD File to Validate XML

- **File Name: courses.xsd**



```
courses.xsd X
courses.xsd
1  <?xml version="1.0" encoding="UTF-8"?>
2  <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
3
4      <xs:element name="catalog">
5          <xs:complexType>
6              <xs:sequence>
7                  <xs:element name="course" maxOccurs="unbounded">
8                      <xs:complexType>
9                          <xs:sequence>
10                             <xs:element name="code" type="xs:string"/>
11                             <xs:element name="title" type="xs:string"/>
12                             <xs:element name="credits" type="xs:integer"/>
13                         </xs:sequence>
14                     </xs:complexType>
15                 </xs:element>
16             </xs:sequence>
17         </xs:complexType>
18     </xs:element>
19
20 </xs:schema>
21
```

Explanation:

- xs:schema → Defines the XML schema (structure).
- catalog → Root element containing multiple course elements.
- maxOccurs="unbounded" → Means you can have many <course> entries.
- Data types:
 - xs:string → Text
 - xs:integer → Numbers only

Step 3: Validate XML Against XSD

- **Use an online XML validator:**
- **Go to <https://www.xmlvalidation.com/> or <https://www.freeformatter.com/xml-validator-xsd.html>**
- **Paste your XML and XSD code**
- **Click Validate**

Deliverable: Save the validation result as a screenshot or report.

The XML document is valid. X

Option 1: Copy-paste your XML document here

```
<?xml version="1.0" encoding="UTF-8"?>
<catalog>
  <course>
    <code>CS101</code>
    <title>Introduction to Computer Science</title>
```

Option 2: Or upload your XML file File encoding

<input style="margin-bottom: 5px;" type="button" value="Choose file"/> No file chosen	File encoding UTF-8 ▼
---	--

Option 1: Copy-paste your XSD here (Optional if XSD referred in XML using schemaLocation)

```
<?xml version="1.0" encoding="UTF-8"?>
<xss:schema xmlns:xss="http://www.w3.org/2001/XMLSchema">

  <xss:element name="catalog">
    <xss:complexType>
```

Option 2: Or upload your XSD document File encoding

◆ Step 4 (Optional): Convert HTML to XHTML

Original HTML Snippet:

```
<html>
<head>
<title>Sample Page</title>
</head>
<body>
<h1>Welcome</h1>
<p>This is a sample page.</p>
</body>
</html>
```

Converted XHTML:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
 "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>Sample Page</title>
</head>
<body>
```

```
<h1>Welcome</h1>
<p>This is a sample page.</p>
</body>
</html>
```

■ Validate XHTML using <https://validator.w3.org/>

The screenshot shows the W3C Markup Validation Service interface. At the top, there's a blue header bar with the W3C logo and the text "Markup Validation Service". Below it, a sub-header says "Check the markup (HTML, XHTML, ...) of Web documents". The main content area has a green banner at the top stating "This document was successfully checked as XHTML 1.0 Strict!". Below this, there are several input fields and sections:

Result:	Passed, 1 warning(s)	
Source:	<?xml version="1.0" encoding="UTF-8"?> <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <title>Sample Page</title> </head> <body> <h1>Welcome</h1> <p>This is a sample page.</p> </body> </html>	
Encoding:	utf-8	(detect automatically)
Doctype:	XHTML 1.0 Strict	(detect automatically)
Root Element:	html	

Final Deliverables

- courses.xml (well-formed XML)
 - courses.xsd (schema file)
 - Validation report or screenshot
 - (Optional) sample.xhtml file
-

CONCLUSION:

In this lab, I successfully created a well-formed XML document and validated it using an XSD schema. This helped me understand the structure and data types used in XML. Additionally, I learned how to convert HTML into XHTML, which follows stricter syntax rules for compatibility and correctness. This lab improved my understanding of XML, XSD, and XHTML validation techniques.

RUBRICS:

Performance			Lab Report		
Description	Total Marks	Marks Obtained	Description	Total Marks	Marks Obtained
Ability to Conduct practical	5		Structure	5	
Data Analysis & Interpretation	5		Efficiency	5	
Total Marks obtained			Total Marks Obtained		

Instructor Signature _____