

Lahore Garrison University

DHA Phase 6 Lahore

Lab Task 5



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Lab 5: Forms & Multimedia

Lab Objectives

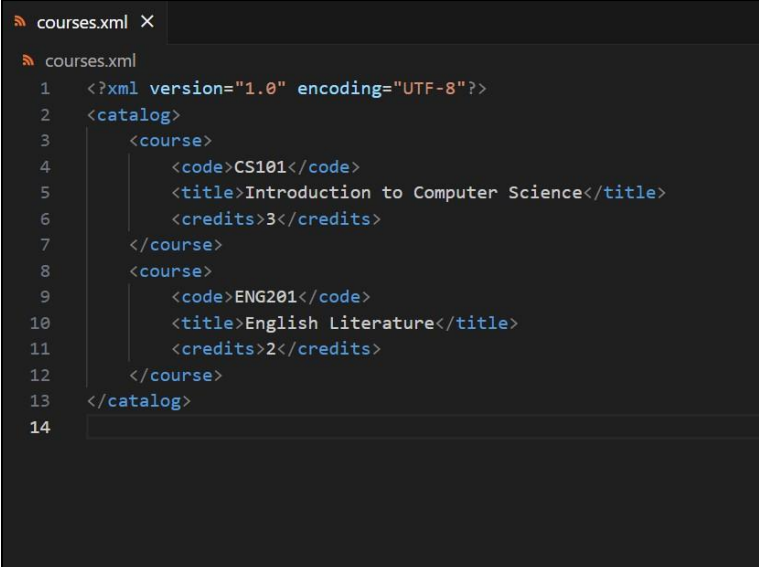
- Create a well-formed XML document.
- Validate XML using XSD or DTD.
- Understand the difference between HTML and XML.
- Optionally convert a simple HTML snippet to XHTML.

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

A screenshot of a text editor window titled 'courses.xml'. The editor shows the following XML code:

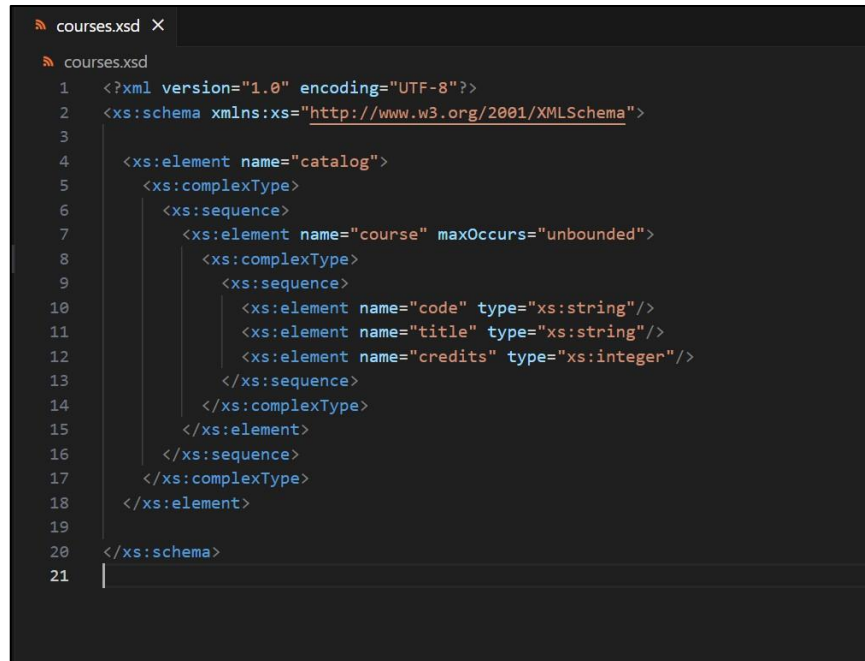
```
1  <?xml version="1.0" encoding="UTF-8"?>
2  <catalog>
3      <course>
4          <code>CS101</code>
5          <title>Introduction to Computer Science</title>
6          <credits>3</credits>
7      </course>
8      <course>
9          <code>ENG201</code>
10         <title>English Literature</title>
11         <credits>2</credits>
12     </course>
13 </catalog>
14
```

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.

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

Choose file

No file chosen

UTF-8

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

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

  <xs:element name="catalog">
    <xs: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, the W3C logo and the text "Markup Validation Service" are visible. Below this, a green banner states "This document was successfully checked as XHTML 1.0 Strict!". The main content area displays the validation result: "Result: Passed, 1 warning(s)". Below the result, the "Source" tab is selected, showing the XML code of the document. The code includes the XML declaration, DOCTYPE declaration, and the body content. At the bottom, there are dropdown menus for "Encoding" (set to utf-8) and "Doctype" (set to XHTML 1.0 Strict), and a "Root Element" field showing "html".

W3C Markup Validation Service

Check the markup (HTML, XHTML, ...) of Web documents

Jump To: Notes and Potential Issues Congratulations · Icons

This document was successfully checked as XHTML 1.0 Strict!

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 _____