

# Lahore Garrison University

DHA Phase 6 Lahore



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## Lab 5: Forms & Multimedia

### Lab Objectives

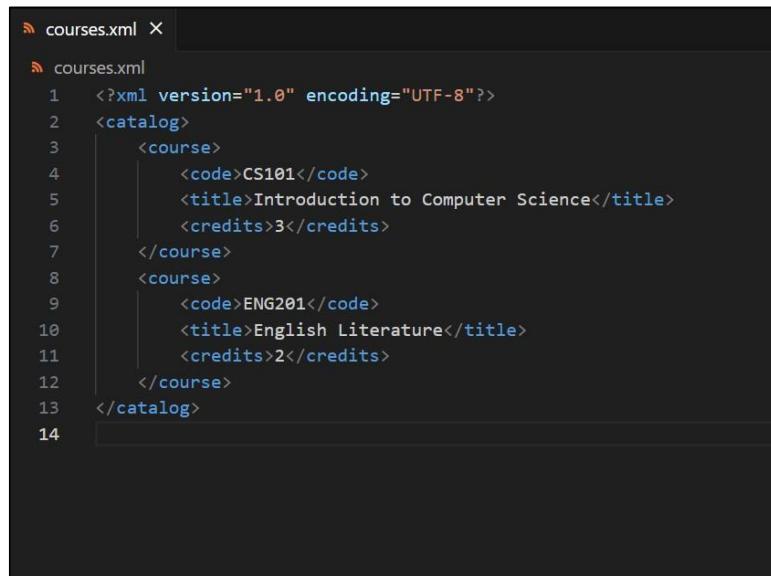
- Create a well-formed XML document.
- Validate XML using XSD or DTD.
- Understand the difference between HTML and XML.
- Optionally convert a simple HTML snippet to XHTML.

### 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 titled "courses.xml". The file contains the following XML code:

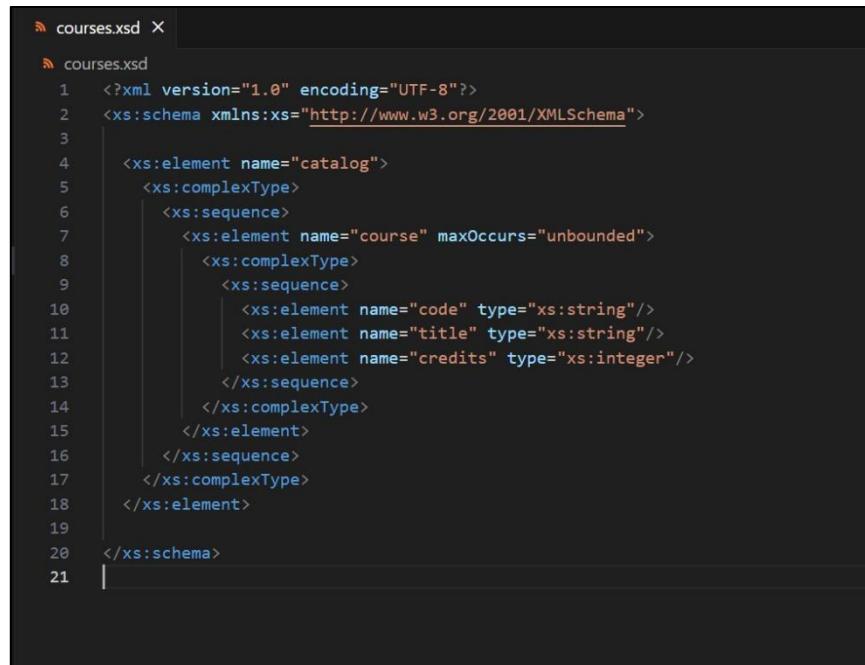
```
<?xml version="1.0" encoding="UTF-8"?>
<catalog>
    <course>
        <code>CS101</code>
        <title>Introduction to Computer Science</title>
        <credits>3</credits>
    </course>
    <course>
        <code>ENG201</code>
        <title>English Literature</title>
        <credits>2</credits>
    </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  <x: schema xmlns:x="http://www.w3.org/2001/XMLSchema">
3
4      <x:element name="catalog">
5          <x:complexType>
6              <x:sequence>
7                  <x:element name="course" maxOccurs="unbounded">
8                      <x:complexType>
9                          <x:sequence>
10                         <x:element name="code" type="xs:string"/>
11                         <x:element name="title" type="xs:string"/>
12                         <x:element name="credits" type="xs:integer"/>
13                     </x:sequence>
14                 </x:complexType>
15             </x:element>
16         </x:sequence>
17     </x:complexType>
18 </x:element>
19
20 </x: 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/xmlvalidator-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

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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 <span style="border: 1px solid #ccc; padding: 2px 5px; display: inline-block;">▼</span>
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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, the W3C logo and the service name 'Markup Validation Service' are visible. Below that, a sub-instruction 'Check the markup (HTML, XHTML, ... ) of Web documents' is present. The main content area has a green header bar stating 'This document was successfully checked as XHTML 1.0 Strict!'. Underneath, there are several input fields and sections: 'Result:' set to 'Passed, 1 warning(s)', 'Source:' containing the pasted XHTML code, 'Encoding:' set to 'utf-8', 'Doctype:' set to 'XHTML 1.0 Strict', and 'Root Element:' set to 'html'. The code in the source section is:

```
<?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>
```

## 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 \_\_\_\_\_