# XML and JavaScript ITC5202

## Week 1

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# Agenda

- Review the course outline
- Introduction to JavaScript and XML

# Get to know each other

- Your background in
  - Programming
  - Web development
  - Working with XML and JSON data
- Please introduce yourself in the Discussion Board!

# ITC5202

- Students will learn how to employ XML/JSON in different data exchange applications, for the web, e-commerce and n-tier architectures.

- Ajax architecture is introduced in the course.

- Integration with XML/JSON and its supporting technologies is demonstrated in web-based applications.

# What we are going to learn…

- Apply XML syntax and write well-formed XML documents
- Validate XML documents using DTD
- Validate XML documents using Schema
- Apply XSLT to transform XML into other formats
- Locate data with XPath
- Develop simple XML parsers in JavaScript
- Apply DOM in application development
- Integrate Ajax with XML and JSON to build web applications
- Implement JavaScript objects and JSON
- Implement jQuery and JavaScript in web pages

# Required Resources

- Beginning XML, 5E
  - Publisher: Wrox, ISBN #: 978-1-118-16213-2
  - Authors: Fawcett, Ayers and Quin
- **Supplemental Resources**
  - XML Primer Plus, Nicholas Chase, Sams Publishing, ISBN # 978-0672324222
  - Beginning XML with DOM and Ajax, Sas Jacobs, Apress Publishing, ISBN#978-1590596760

# Assessment Weighting

| Assessment | % |
|---|---|
| Lab Activities | 20 |
| Quiz | 25 |
| Assignments / projects | 55 |

# BlackBoard

- Course outline
- Critical Path

# Class Terms & Rules

- Punctuality
  - Attending in class on time
  - Submitting assignments on time
- Plagiarism is strictly avoided
  - **Plagiarism** is the "wrongful appropriation" and "stealing and publication" of another author's "language, thoughts, ideas, or expressions" and the representation of them as one's own original work.

# Let's Start
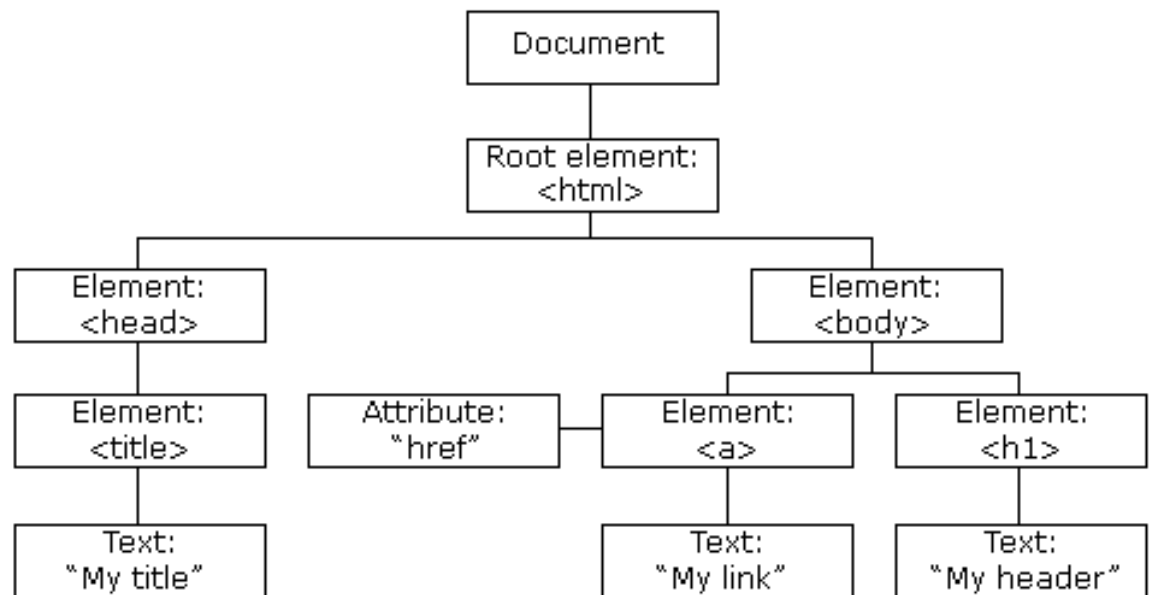
- Enjoy the journey!

# Introduction

- Lets think about the following question:
- What is the purpose of HTML?
- What is the purpose of CSS?
- What can you do with JavaScript?
  - How to display a message in JavaScript?
  - What is Event/Event Handler?
  - What is DOM?

# The HTML DOM (Document Object Model)

- With the HTML DOM, JavaScript can access and change all the elements of an HTML document.

- When a web page is loaded, the browser creates a **D**ocument **O**bject **M**odel of the page.

- The **HTML DOM** model is constructed as a tree of **Objects**:

# DOM….

- *"The W3C Document Object Model (DOM) is a platform and language-neutral interface that allows programs and scripts to dynamically access and update the content, structure, and style of a document."*

# Evaluation 1

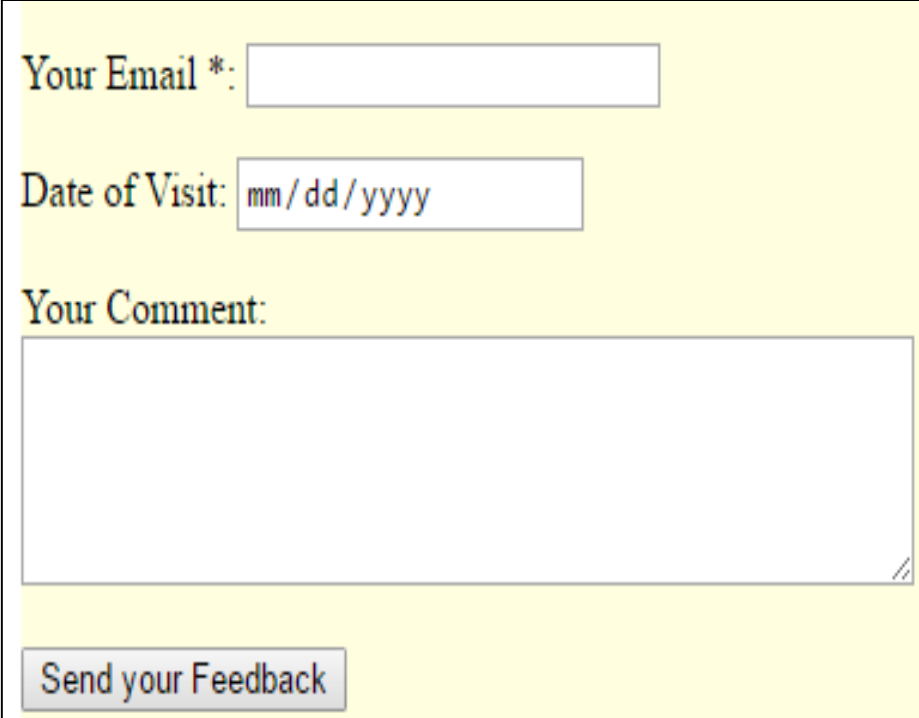- Design a HTML page with a button "Click Me"



**Welcome to ITC5202**

[ Click here to display my name ]

- Develop a JavaScript program which displays "Your name" when user clicks on the button
  - Display the message below the button

# Evaluation 2
# Submit both evaluation 1 and 2 to the Bb->Assignment

- Design the following webform, and add some CSS style (like color)
  - Use any tools!
- Using JavaScript, develop a program which collect form data and display them, when user clicks on "send your feedback" button

Your Email *: [                    ]

Date of Visit: [mm/dd/yyyy    ]

Your Comment:
[                              ]

[Send your Feedback]

# What is XML?

- Extensible Markup Language (**XML**) is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable.

- XML isn't a language; its rules are used to construct other languages

- XML is based on W3C Standard

# What is...

- A markup language
  - A markup language is a system for <u>annotating</u> a document in a way that is <u>syntactically</u> distinguishable from the text.
- SGML
  - The Standard Generalized Markup Language is a standard for defining generalized markup languages for documents
    - (SGML; ISO 8879:1986)
  - SGML is device-independent and system-independent

# SGML, …

- In reality, there are many different **markup languages** out there in the world. For web design and development, there are three specific markup languages that you will likely run across.

- These are HTML, XML, and XHTML.

# What is the difference between HTML and XML?

- **XML** and **HTML** were designed with **different** goals:

  - **XML** was designed to carry data - with focus on what data is.

  - **HTML** was designed to display data - with focus on how data looks.

- **XML** tags are not predefined like **HTML** tags are.

# XML: Main Goal

- To make data more interchangeable, to use formats readable by both humans and machines, and to relieve developers from having to write low-level code every time they needed to read or write data.

# Example of an XML file

```xml
<?xml version="1.0" encoding="utf-8"?>
<myMessage>
	<subject> This is a welcome message </subject>
	<date> Jan 31, 2018 </date>
</myMessage>
```

# Understanding the Structure of an XML Document

- Each XML document is divided into two parts: the **prolog** and the document or **root** element.

- The **prolog** appears at the top of the XML document and contains information about the document.

- Any content within an XML document must appear within the document or **root** element.

# XML Declaration

- XML Declaration is one of the prolog.
  - The prolog of an XML document contains meta information about the document rather than document content.
- The very first line of an XML file is the *XML declaration*. In general, the XML declaration is optional.

# Elements

- *Elements* are the backbone of an XML document.
- An element typically consists of a start tag, character data, and an end tag:
    - `<message>Welcome!</message>`
    - In this example, the name of the element is message.
- The name of the element is the prominent feature of the markup that defines an element.

# Elements

- XML element names have simple rules:
  - The name must start with a letter or the underscore character (_).
  - The end tag must contain exactly the same name as the start tag. This includes case; XML is case sensitive.
  - Names *should not* contain colons. Officially, they're allowed, but as you'll see when we get to namespaces later in the chapter, the colon has a special meaning and should not be used under other circumstances.
  - Names *must not* contain spaces.

# Activity 1

- Create a simple XML file which describes you and your interests/hobbies!

```
<?xml version="1.0" encoding="utf-8"?>
<myMessage>
        <subject> This is a welcome message </subject>
        <date> Jan 31, 2018 </date>
</myMessage>
```

# Activity

- How to structure the data in previous activity in order to have Name/Hobbies for a group of 10 people?

# Activity 2

- Try to display/represent the following Data in XML format

| Empno | Empname | Salary |
|-------|---------|--------|
| 1001  | Alex    | 3000   |
| 1002  | Sara    | 4000   |
| 1003  | Peter   | 3500   |

# Activity 3

- Drag and drop XML files that you created so far into EXCEL worksheet.

- What happen?

# Submit your Lab works

- Submit the
  - Activity 1 : Hobbies/Interests
  - Activity 2: EMP Table--> XML
  - Activity 3: XML and EXCEL file
- Take screenshot of the output and store them into a MS-Word file
- Submit your assignment in BB-> Assignments