

# XML

- **Extensible Markup Language (XML) is a powerful mechanism of data exchange. It is an ideal solution for transferring *structured data* from server-to-client, server-to-server or an application-to-application.**

```
<?xml version="1.0" ?>
  <note>
    <sender id="02">Tove</sender>
    <from>Jani</from>
    <heading>Reminder</heading>
    <body>Don't forget me this
weekend!</body>
  </note>
```

# What is XML?

- XML stands for eXtensible Markup Language
- XML is a meta-markup language that specifies rules for creating mark up languages
- XML was designed to CARRY data, not to display data
- XML does not have any fixed set of tags (hence is extensible!) You must define your tags
- XML is designed to be self-descriptive
- XML is case-sensitive. Hence in an XML document <account>, <Account> and <ACCOUNT> are three different tags.
- XML is a W3C Recommendation
- Every XML-document is text-based and has the file extension .xml
- Questions:
- What is meant by text based (as opposed to binary) here?
- Why is XML being text based then an advantage?

# The Difference Between XML and HTML

- XML is not a replacement for HTML.
- XML and HTML were designed with different goals:
- XML was designed to transport and store data, with focus on what the data is
- HTML was designed to display data, with focus on how data looks
- HTML is about displaying information, while XML is about carrying information.

# **XML Does Not DO Anything**

- **Maybe it is a little hard to understand, but XML does not DO anything. XML was created to structure, store, and transport information.**
- **XML tags are actually elements**
- **Elements can have sub elements or child elements just like html and other markup languages**

# XML is Not a Replacement for HTML

- XML is a complement to HTML.
- It is important to understand that XML is not a replacement for HTML. In most web applications, XML is used to transport data, while HTML is used to format and display the data.
- XML is a software- and hardware-independent tool for carrying information.
- XML is Everywhere
- XML is now as important for the Web as HTML was to the foundation of the Web.
- XML is the most common tool for data transmissions between all sorts of applications.
- Can you think of anywhere that XML is in use?

## An XML example:

```
<?xml version="1.0" ?>
  <note>
    <sender id="02">Tove</sender>
    <from>Jani</from>
    <heading>Reminder</heading>
    <body>Don't forget me this
weekend!</body>
  </note>
```

- This example is quite self descriptive. It has sender and receiver information, it also has a heading and a message body.
- But still, this XML document does not DO anything. It is just information wrapped in tags. Someone must write a piece of software to send, receive or display it.
- With XML You Invent Your Own Tags
- The tags in the example (like <to> and <from>) are not defined in any XML standard. These tags are "invented" by the author of the XML document.
- That is because the XML language has no predefined tags.
- The tags used in HTML are predefined. HTML documents can only use tags defined in the HTML standard (like <p>, <h1>, etc.).
- XML allows the author to define his/her own tags and his/her own document structure.

# “Well formed” XML Syntax and Rules

- XML documents have the file extension .xml
- Includes XML Declaration eg `<?xml version="1.0" ?>`
- One root- element eg `<note>`
- Every tag is opened and ended `<from>`  
`</from>`
- Attributes are inside quotations `<sender id="02">`
- Has no overlapping tags
- Is Case sensitive

# Exercise 1

- Is the following xml file wellformed?
- Does it utilise sub elements or child elements
- ```
<booklist>  
  <book id=01>  
    <title>XML Made Easy</title>  
    <author>John Smith</Author>  
  book>  
</booklist>
```



# Exercise 2

- **Open Dreamweaver → Define a new site**
- **Create a new xml document with the previous content but ensure it is “well formed”.**
- **Open this xml document in a browser the xml tags should display and be colour coded. Why are they a different content to the “tag” content?**

# Exercise 3

- Download an flash image slideshow from <http://www.flashxml.net/basic-files/>
- Download these images <http://www.urshula.com/xtras/week10images.zip>
- Edit the xml to include only my images that I asked you to download (the hyperlinks can go to <http://www.urshula.com>; <http://www.google.com>; <http://www.northcoast.tafensw.edu.au>; and any where else you want.)
- Look at the xml document from flashxml is it well formed?
- What is the root element ?
- What sub elements and attributes does it use?