XML_1

XML is eXtensible Markup Language

- Tag-based syntax, very much like HTML.
- XML is used to structure and describe information.
- It was designed to exchange data between different systems - and it's designed to be used over the internet.

XPath: is used to find and extract information from xml documents.

XSLT: XML stylesheet language transformations - transforming xml.

XQuery: It's like SQL but for XML - more advance querying than XPath.

XPinter & XLink: links between and within XML documents.

The Weird things <> or <> are tags.

Suppose *Joe Schmoe* has a business card, and this card has his name, a home phone number, a work phone number, and a mobile phone number, and an email. So the "root tag" is "BusinessCard" which encompases child tags like "name",

Some websites have xml data, so when you right click the page and click on "view page source" you can see the xml code (as opposed to html code).

Microsoft word and other Microsoft Office such as excel can be stored as xml.

Document declaration is put on the top of an xml file

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
```

Comments are defined with `<!-- this comment here -->`

Processing instructions (e.g. like an instruction to have a special instruction) can be implemented with eg `<?SpellCheckMode mode="en-GB" ?>` You can have a file called `first.xml` with the contents

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<FirstTag>
<!-- Root tag-->
    This is our first XML file
    <!-- This is a comment -->
</FirstTag>
```

and you can open it with a browser by right clicking on it. Further, you can assocuate a display style to it by making another file, say `fist_style.css` and putting your style for each tag in `fist_style.css` and then associating that *styling* style sheet with the xml file by **first.xml**

```
<?xml-stylesheet type="text/css" href="fist_style.css"?>
```

You can also have a container tag followed by other tags it contains for example

```
<BusinessCards>
 <BusinessCard>
 <Name>Joe Schmoe</Name>
 <phone type="mobile" primary="primary">(417) 990-9088</phone>
 <phone type="home"...>...<phone>
 </BusinessCard>
 ...
 </BusinessCards>
```

The DOM (Document Object Model)

It's like API/styling for xml document. It is represented by a graph, where you have a parent node, represented by some tag, followed by its child nodes.

We can use xPath for query on these, on VS Code this can be done with ctrl+shift+p, then type "xpath" then a query, like "/BusinessCard" or "/BusinessCard/phone"...

XSLT is another very powerful tool, it's like a stylesheet but can do more than just styling like transforming, Using the </xsl:template match...> one can transform xml content to other languages, e.g. html, pdf, etc. on matched tags....