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# XML-Day 2

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# Agenda

- CSS in XML
- XSL
- XSLT
- Xpath
- DTD
- CDATA
- PCDATA
- DOM
- XML Namespace

# How to add CSS to XML

- A CSS can be applied to an XML document using the following syntax:

```
<?xml:stylesheet type="text/css" href="path-name"?>
```

# XSL

- CSS does not support the reorder, sort, and display of elements based on a condition.
- For such advanced formatting, XML supports Extensible Style Sheet Language (XSL).
- XSL has two parts:
  - XSL Transformations (XSLT)
  - XML Path (XPath)

# XSLT

- XSL:
  - Contains instructions on how an XML document should be transformed into an HTML or an XHTML document.
  - Uses XPath expressions to extract specific data from an XML document.
- The XSLT processor transforms the XML document into an HTML or XHTML or into another XML document.

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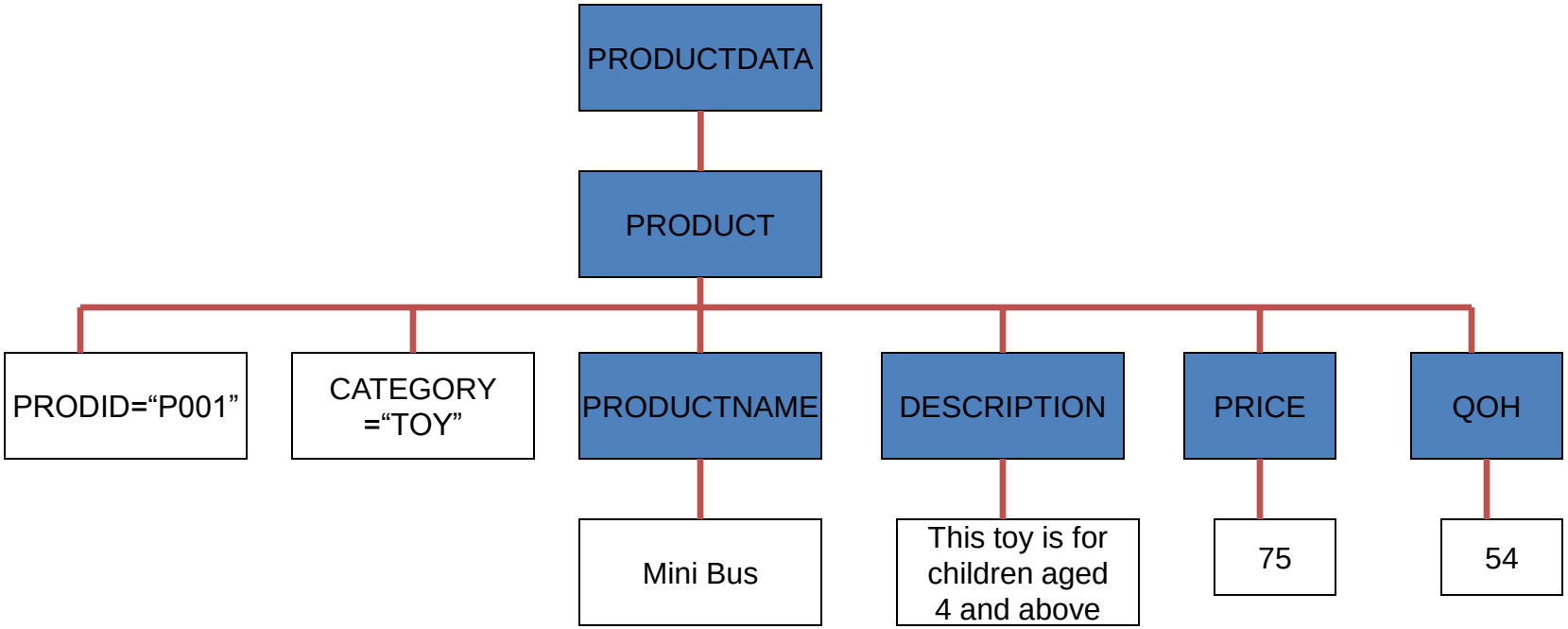
# Xpath

- Is used to search and retrieve information from an XML file.
- Treats an XML document as a tree of interrelated branches and nodes, as shown in the following figure.



# Xpath Expressions

- XPath expressions can be used to retrieve data based on specific conditions.
- XPath expressions identify the nodes in an XML document based on their names and values.
- The following table lists the operators that can be used to create XPath expressions.

| Operator/Special Character | Example | Description |
|---|---|---|
| / | /PRODUCTDATA | Selects the immediate child elements of PRODUCTDATA. If this operator occurs at the start of the pattern, it indicates that the child elements should be selected from the root node. |
| // | //PRODUCTNAME | Searches for the specified element at any node level. |
| . | .PRODUCTNAME | Indicates the current context. |
| .. | ../PRODUCTNAME | Selects the PRODUCTNAME element, which exists within the parent of the current element. |
| * | * | Selects all elements. |

# DTD

- Document Type Definition.
- Defines the legal building blocks and structure of an XML document.
- Contains a list of legal elements and define the structure with the help of them.

# Internal and External DTD

- We can write internal DTD:

```
<?xml version="1.0"?>
<!DOCTYPE note [ ]>
```

- External DTD where the note.dtd file is to be created and use in XML:

```
<?xml version="1.0"?>
<!DOCTYPE note SYSTEM "note.dtd">
```

# CDATA

- **Unparsed Character data** : CDATA contains the text which is not parsed further in an XML document.

- Tags inside the CDATA text are not treated as markup and entities will not be expanded.

# PCDATA

- **Parsed Character Data :** XML parsers are used to parse all the text in an XML document.
- Tags inside the PCDATA will be treated as markup and entities will be expanded.

# DOM

The DOM defines the objects and properties of all document elements, and the methods (interface) to access them.

The DOM is separated into 3 different parts / levels:

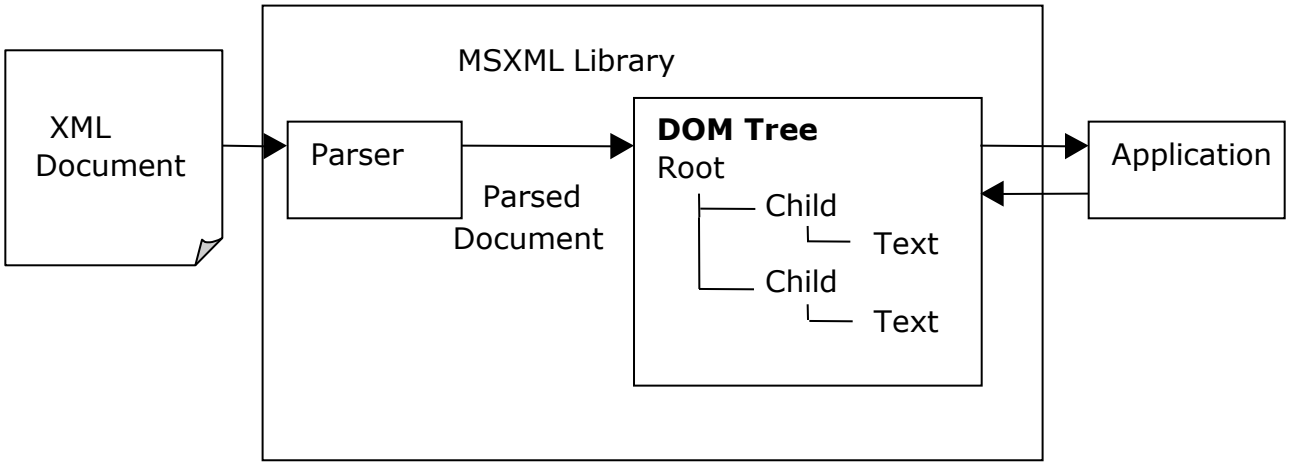
- **Core DOM** - standard model for any structured document
- **XML DOM** - standard model for XML documents
- **HTML DOM** - standard model for HTML documents

# XML DOM

- The XML DOM is:
- A standard object model for XML
- A standard programming interface for XML
- Platform- and language-independent
- A W3C standard

The XML DOM is a standard for how to get, change, add, or delete XML elements.

# XML Parser



# Difference

| DTD | XSD |
|---|---|
| DTD stands for Document Type Definition. | XSD stands for XML Schema Definition. |
| DTDs are derived from SGMLsyntax. | XSDs are written in XML. |
| DTD doesn't support datatypes. | XSD supports datatypes for elements and attributes. |
| DTD doesn't support namespace. | XSD supports namespace. |
| DTD doesn't define order for child elements. | XSD defines order for child elements. |
| DTD is not extensible. | XSD is extensible. |
| DTD is not simple to learn.. | XSD is simple to learn because you don't need to learn new language.. |
| DTD provides less control on XML structure. | XSD provides more control on XML structure. |

# Any Questions?

# Thank you!