



DOM

What is the DOM?

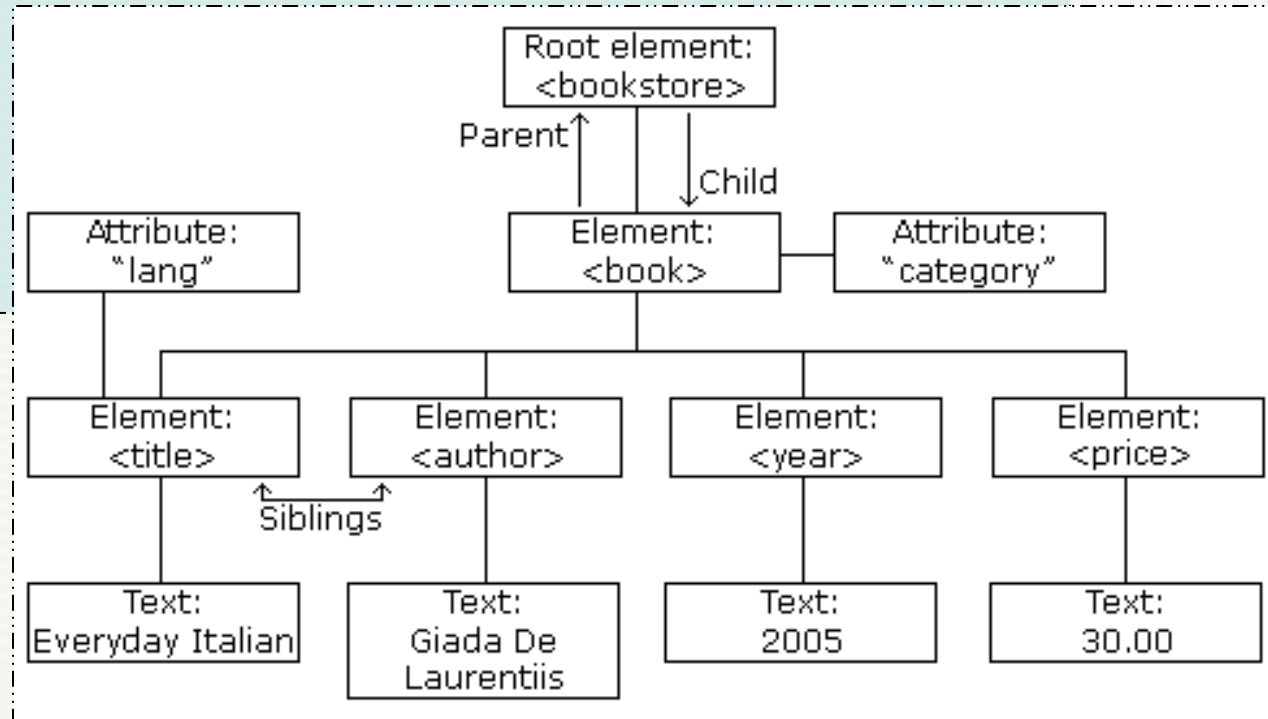
- The W3C Document Object Model (DOM) is a platform and language-neutral interface that allows programs and scripts to dynamically access and update the content, structure, and style of a document.
- The W3C DOM is separated into different parts (Core, XML, and HTML) and different levels (DOM Level 1/2/3):
 1. Core DOM
 2. XML DOM
 3. HTML DOM

What is the XML DOM?

- The XML DOM is the Document Object Model for XML. The XML Document Object Model defines a standard way for accessing and manipulating XML documents.
- The DOM presents an XML document as a tree-structure (a node tree), with the elements, attributes, and text defined as nodes.
- The XML DOM is a W3C standard

XML DOM Nodes

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<bookstore>
<book category="COOKING">
<title lang="en">Everyday Italian</title>
<author>Giada De Laurentiis</author>
<year>2005</year>
<price>30.00</price>
</book>
.....
</bookstore>
```

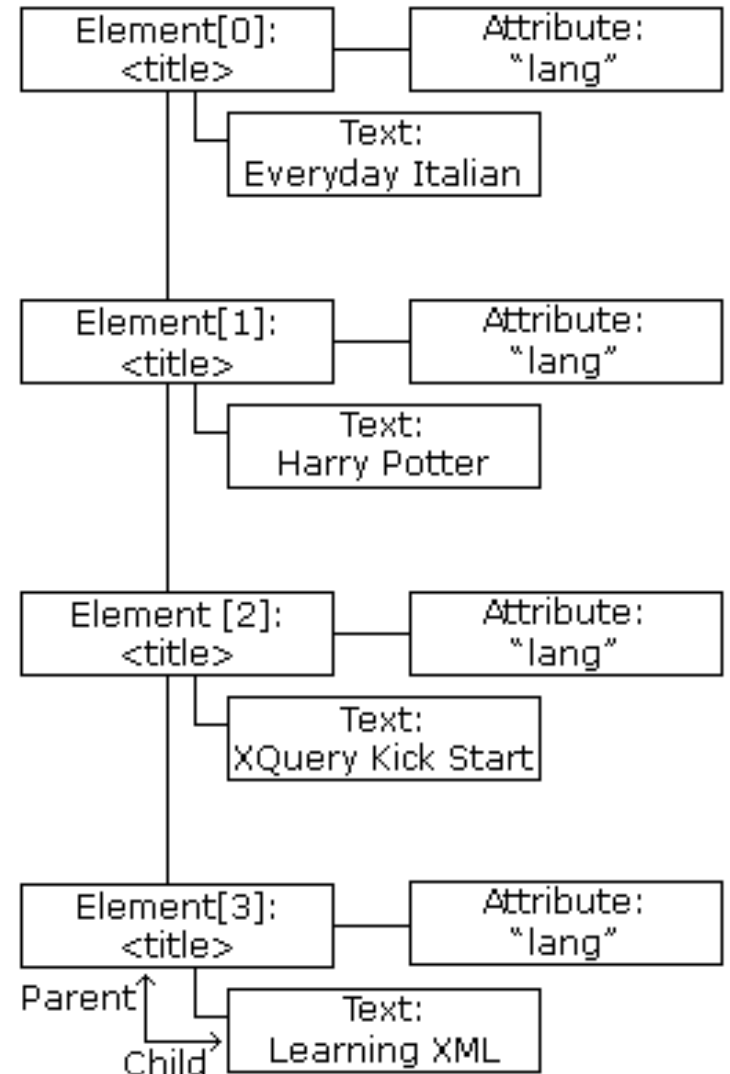


XML DOM Node List

```

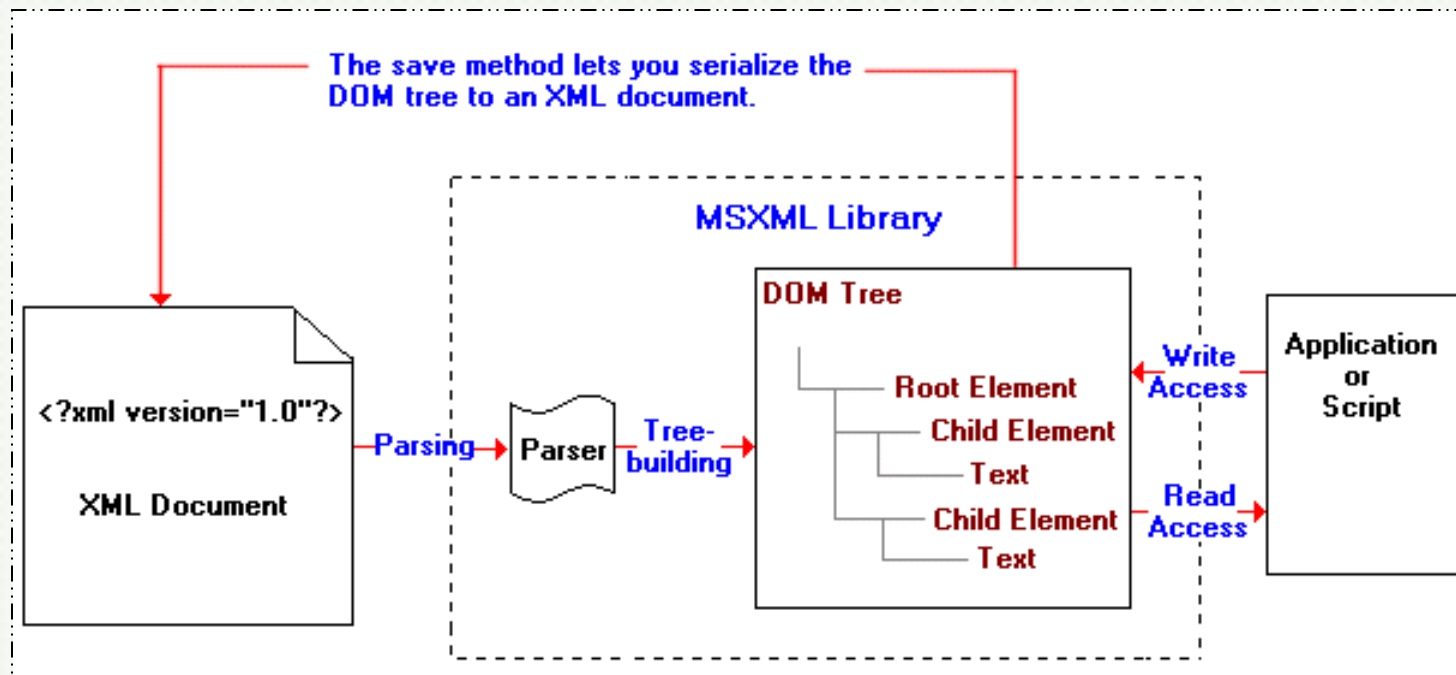
<?xml version="1.0" encoding="ISO-8859-1"
<bookstore>
  <book category="COOKING">
    <title lang="en">Everyday Italian</title>
    .....
  </book>
  <book category="CHILDREN">
    <title lang="en">Harry Potter</title>
    .....
  </book>
  <book category="WEB">
    <title lang="en">Xquery Kick Start</title>
    .....
  </book>
  .....
</bookstore>

```

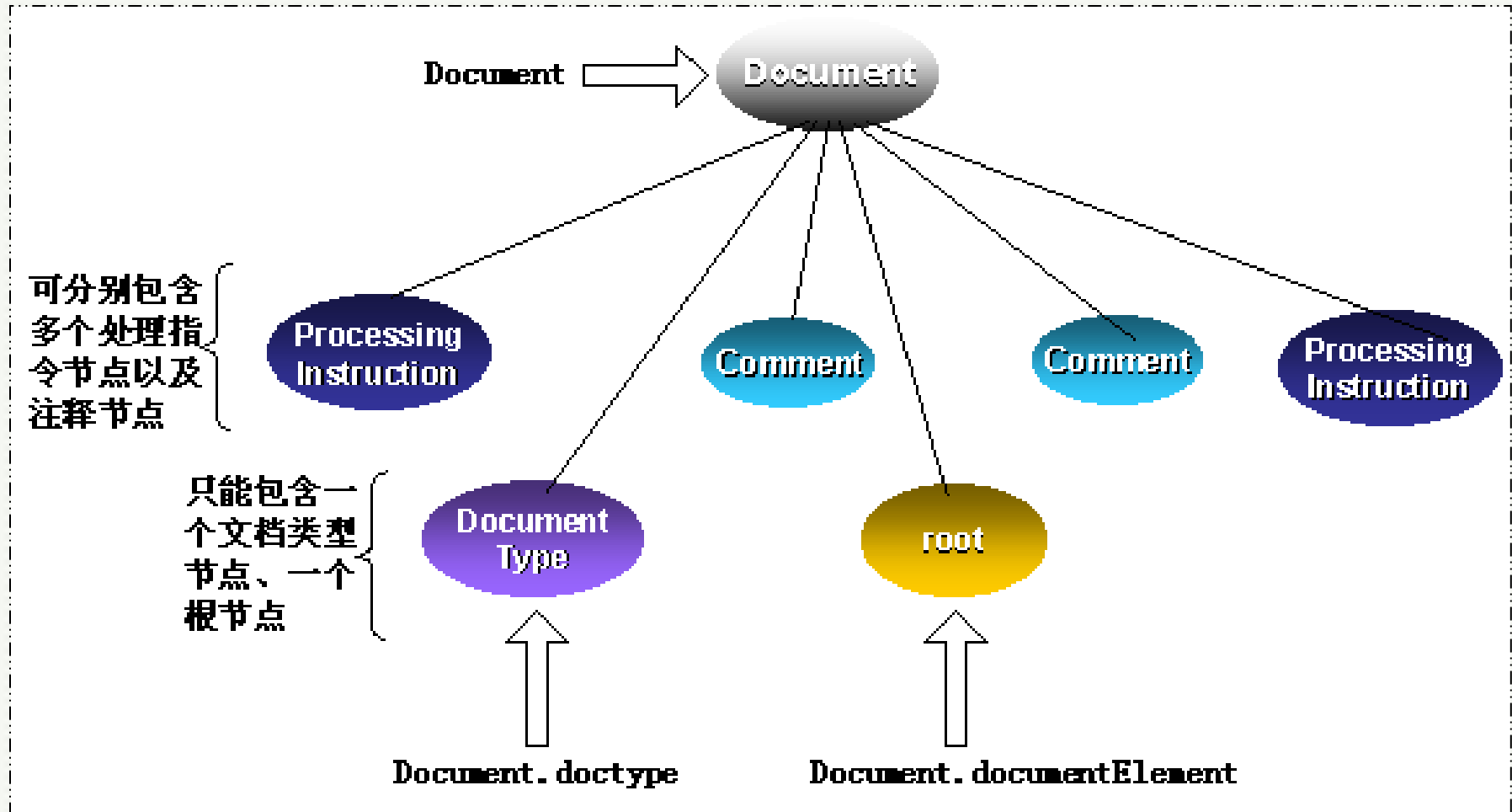


Parsing the XML DOM

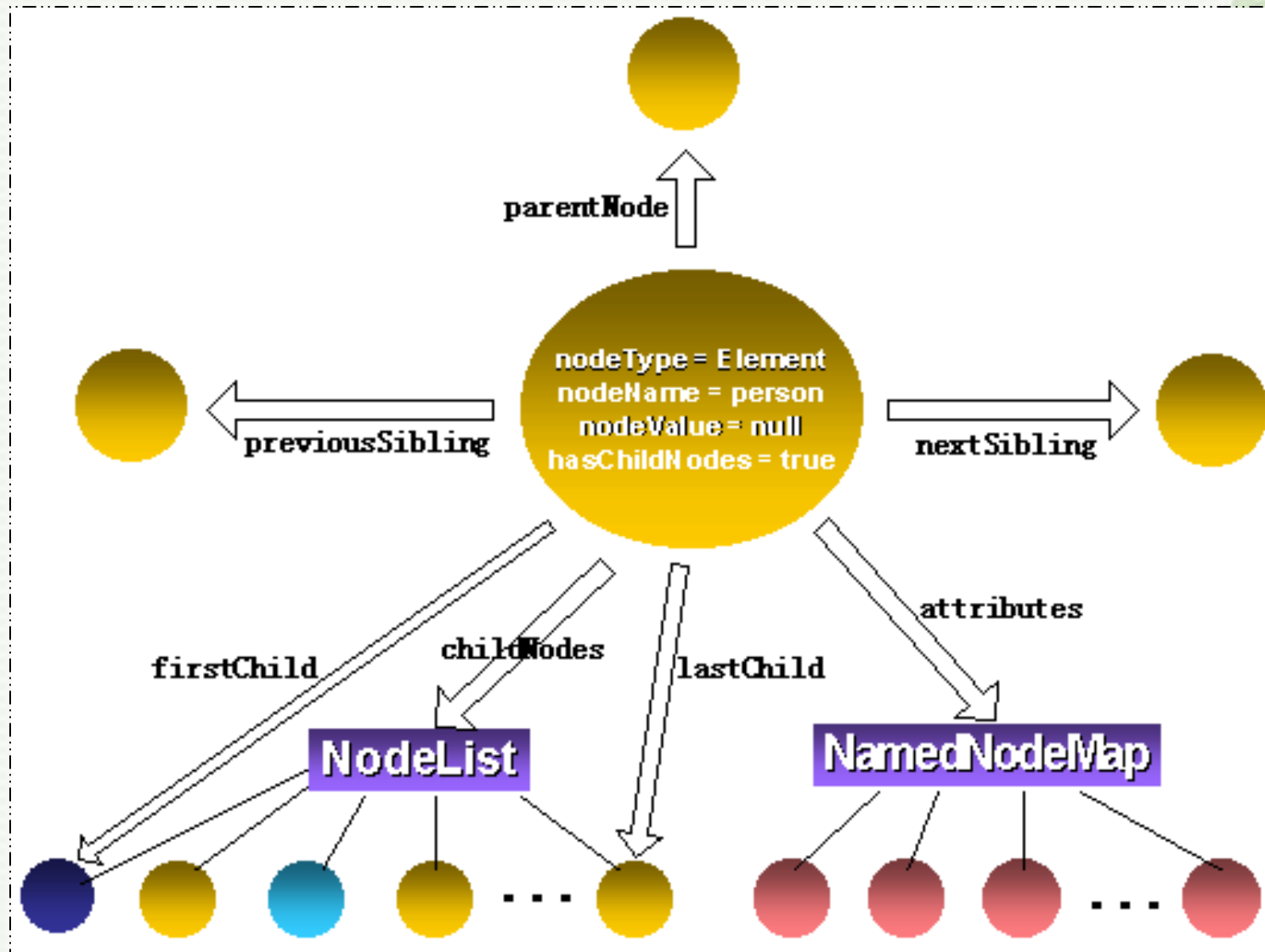
- To manipulate an XML document, you need an XML parser. The parser loads the document into your computer's memory. Once the document is loaded, its data can be manipulated using the DOM. The DOM treats the XML document as a tree.



Document Interface



Node Interface



e.g. XML DOM

```
<?xml version="1.0" encoding="gb_2312" ?>
```

```
<addressbook>
```

```
<person sex = "male">
```

```
<name>张三</name>
```

```
<email>zhs+xml.net.cn</email>
```

```
</person>
```

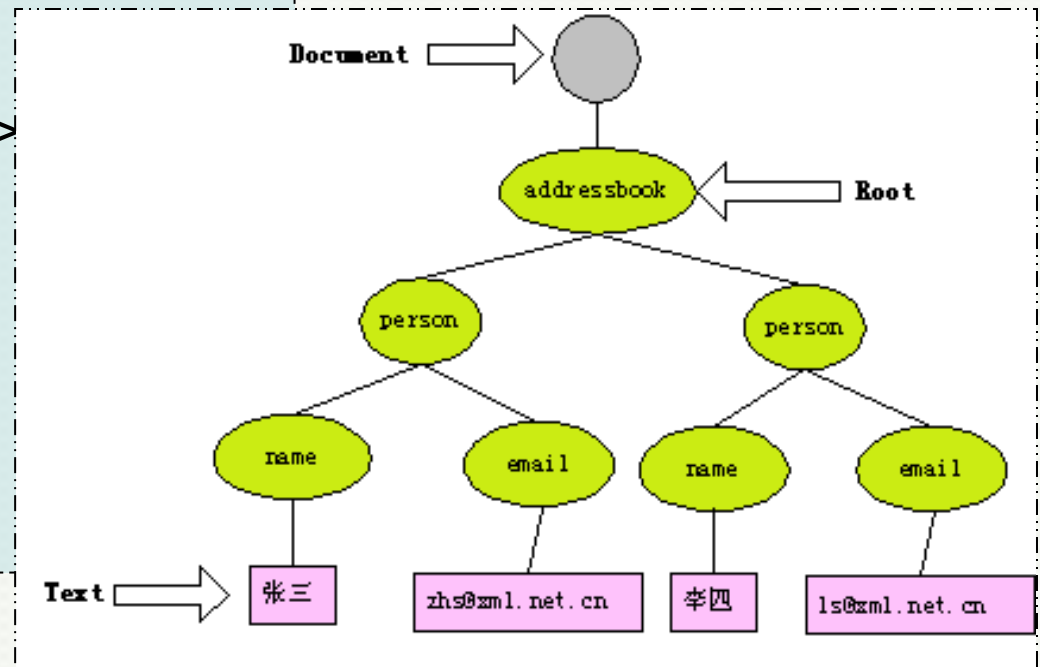
```
<person sex = "male">
```

```
<name>李四</name>
```

```
<email>ls+xml.net.cn</email>
```

```
</person>
```

```
</addressbook>
```



Microsoft's XML Parser

To create an instance of Microsoft's XML parser, use the following code:

Java Script:

```
var doc = new ActiveXObject("Microsoft.XMLDOM")
```

VB Script:

```
set xmlDoc=CreateObject("Microsoft.XMLDOM")
```

ASP:

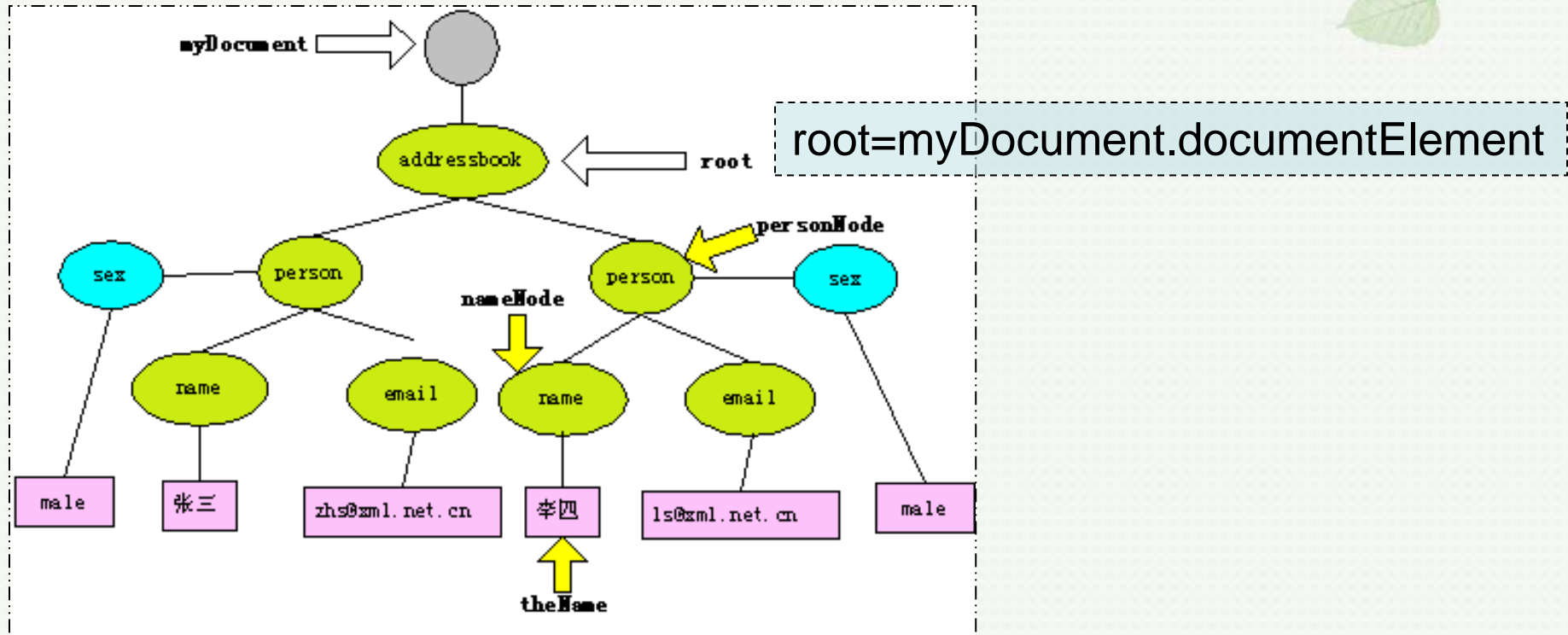
```
set xmlDoc=Server.CreateObject("Microsoft.XMLDOM")
```

Microsoft's XML Parser

The following code fragment loads an existing XML document ("note.xml") into Microsoft's XML parser:

```
var xmlDoc=new ActiveXObject("Microsoft.XMLDOM");  
xmlDoc.async="false";  
xmlDoc.load("note.xml");
```

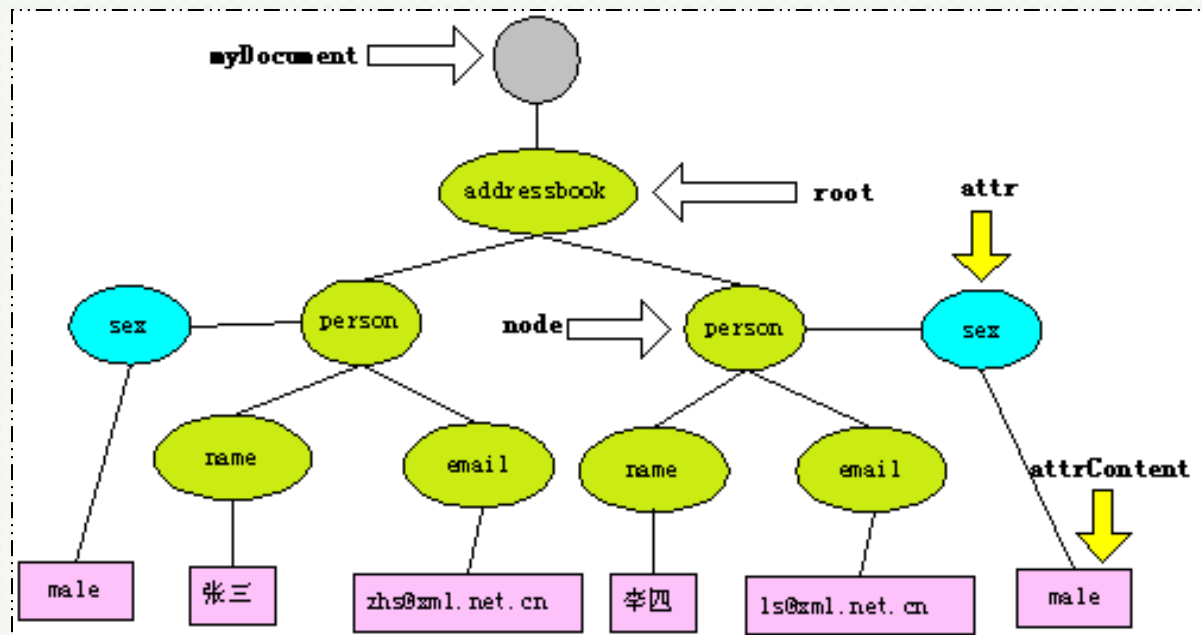
XML DOM Get Element Nodes



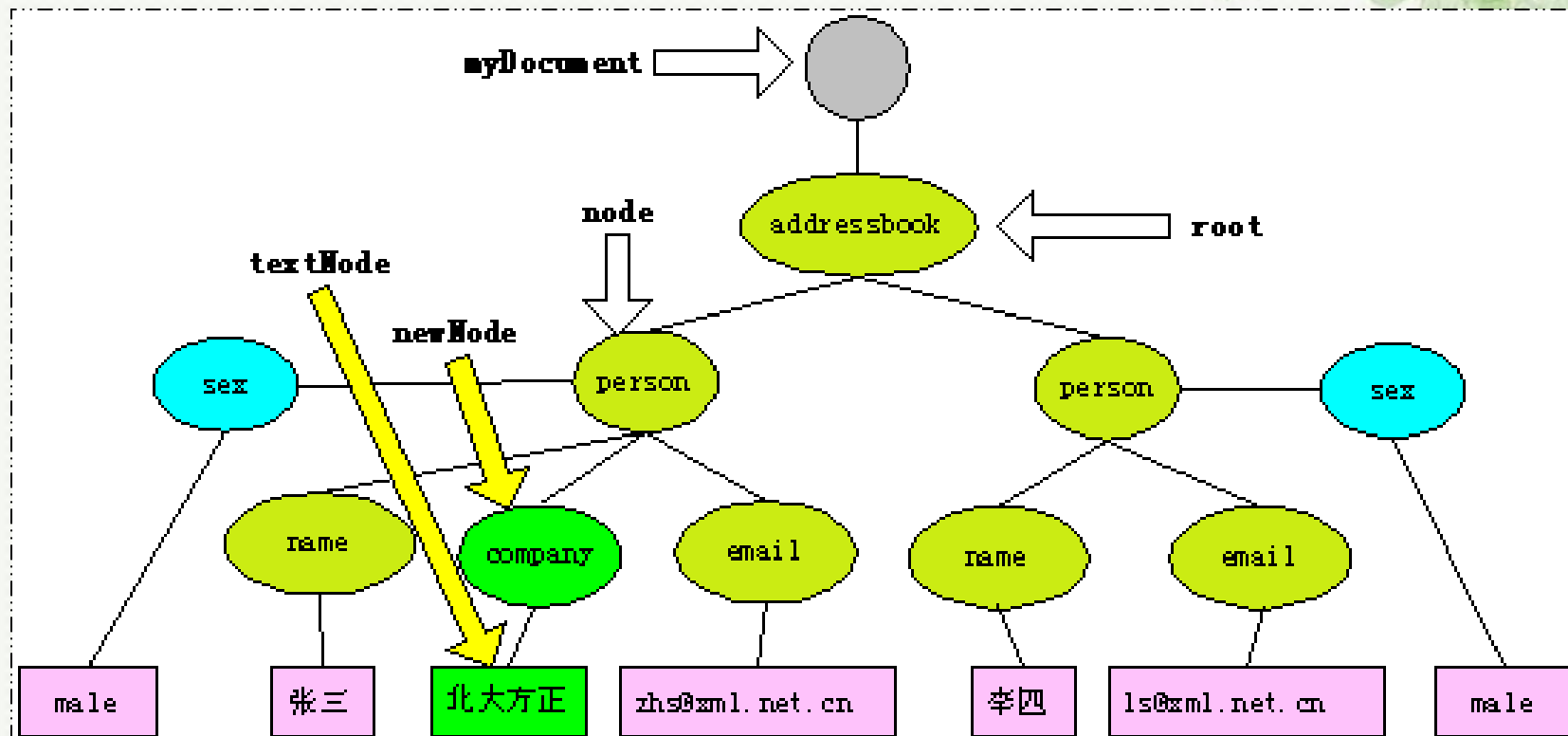
```

personNode = root.childNodes.item(1)
nameNode = personNode.childNodes.item(0)
textNode = nameNode.childNodes.item(0)
theName = textNode.nodeValue
  
```

XML DOM Get Attr Nodes



```
attr = node.attributes.getNamedItem("sex")  
attrContent = attr.nodeValue
```

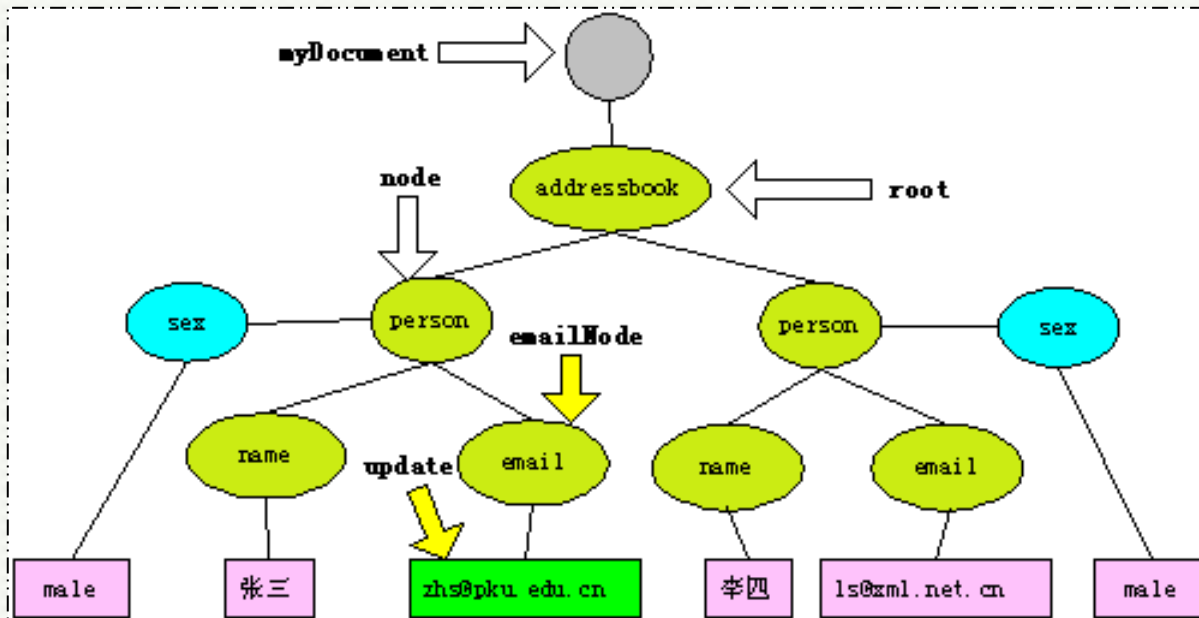


```
node = root.childNodes.item(0)
newNode = myDocument.createElement("company")
node.insertBefore(newNode,node.lastNode)
textNode = myDocument.creatTextNode("北大方正")
node.childNodes.item(1).appendChild(textNode)
```

XML DOM Remove & Modify Nodes

```
node = root.childNodes.item(0)
```

```
oldNode = node.removeChild(node.childNodes.item(1))
```



```
node = root.childNodes.item(0)
```

```
emailNode = node.childNodes.item(1)
```

```
emailNode.childNodes.item(0).nodeValue = zhs@pku.edu.cn
```



The End