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How to create XML file in Java – (DOM Parser)

Published: April 2, 2010 , Updated: August 4, 2011 , Author: mkyong

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DOM provides many handy classes to create XML file easily. Firstly, you have to create a Document with **DocumentBuilder** class, define all the XML content – node, attribute with **Element** class. In last, use **Transformer** class to output the entire XML content to stream output, typically a File.

In this tutorial, we show you how to use DOM XML parser to create a XML file.

DOM Parser Example

At the end of the example, following XML file named “file.xml” will be created.

```
<?xml version="1.0" encoding="UTF-8" standalone="no" ?>
<company>
  <staff id="1">
    <firstname>yong</firstname>
    <lastname>mook kim</lastname>
    <nickname>mkyong</nickname>
    <salary>100000</salary>
  </staff>
</company>
```

File : *WriteXMLFile.java* – Java class to create a XML file.

```
package com.mkyong.core;

import java.io.File;
import javax.xml.parsers.DocumentBuilder;
import javax.xml.parsers.DocumentBuilderFactory;
import javax.xml.parsers.ParserConfigurationException;
import javax.xml.transform.Transformer;
import javax.xml.transform.TransformerException;
import javax.xml.transform.TransformerFactory;
import javax.xml.transform.dom.DOMSource;
import javax.xml.transform.stream.StreamResult;

import org.w3c.dom.Attr;
import org.w3c.dom.Document;
import org.w3c.dom.Element;

public class WriteXMLFile {

    public static void main(String argv[]) {

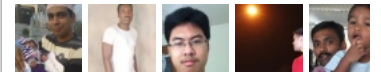
        try {

            DocumentBuilderFactory docFactory = DocumentBuilderFactory.newInstance();
            DocumentBuilder docBuilder = docFactory.newDocumentBuilder();
```


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```

// root elements
Document doc = docBuilder.newDocument();
Element rootElement = doc.createElement("company");
doc.appendChild(rootElement);

// staff elements
Element staff = doc.createElement("Staff");
rootElement.appendChild(staff);

// set attribute to staff element
Attr attr = doc.createAttribute("id");
attr.setValue("1");
staff.setAttributeNode(attr);

// shorten way
// staff.setAttribute("id", "1");

// firstname elements
Element firstname = doc.createElement("firstname");
firstname.appendChild(doc.createTextNode("yong"));
staff.appendChild(firstname);

// lastname elements
Element lastname = doc.createElement("lastname");
lastname.appendChild(doc.createTextNode("mook kim"));
staff.appendChild(lastname);

// nickname elements
Element nickname = doc.createElement("nickname");
nickname.appendChild(doc.createTextNode("mkyong"));
staff.appendChild(nickname);

// salary elements
Element salary = doc.createElement("salary");
salary.appendChild(doc.createTextNode("100000"));
staff.appendChild(salary);

// write the content into xml file
TransformerFactory transformerFactory = TransformerFactory.newInstance();
Transformer transformer = transformerFactory.newTransformer();
DOMSource source = new DOMSource(doc);
StreamResult result = new StreamResult(new File("C:\\file.xml"));

// Output to console for testing
// StreamResult result = new StreamResult(System.out);

transformer.transform(source, result);


System.out.println("File saved!");

} catch (ParserConfigurationException pce) {
    pce.printStackTrace();
} catch (TransformerException tfe) {
    tfe.printStackTrace();
}
}
}

```

A new XML file is created in "C:\\file.xml", with default UTF-8 encoded.

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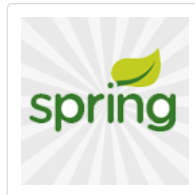
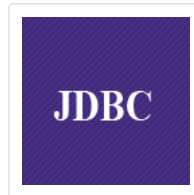


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Note

For debugging, you can change the **StreamResult** to output the XML content to your console.

```
StreamResult result = new StreamResult(System.out);
transformer.transform(source, result);
```

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June 13, 2012 at 1:48 pm

Thank u very much.....for ur assistance!

[Reply](#)**Bryant Castaneda**

May 12, 2012 at 9:29 am

Thanks you so much. This code really helped me. I did run into an IO issue using the following code.

```
// write the content into xml file
TransformerFactory transformerFactory = TransformerFactory.newInstance();
Transformer transformer = transformerFactory.newTransformer();
DOMSource source = new DOMSource(doc);
StreamResult result = new StreamResult(new File("C:\\file.xml"));

// Output to console for testing
// StreamResult result = new StreamResult(System.out);
```

```
transformer.transform(source, result);
```

So I used this code from an earlier project I worked on which really worked for me!

```
OutputFormat format = new OutputFormat(doc);
format.setIndenting(true);

// to generate a file output use fileoutputstream instead of system.out
XMLSerializer serializer =
    new XMLSerializer(new FileOutputStream(newFile("file.xml")), format);
serializer.serialize(doc);
```

Thank you again!

Best regards.

Reply



Cristina

June 4, 2012 at 4:55 pm

Thanks, it was very helpfull

Reply



carl marks

July 5, 2012 at 3:00 am

looks good to me

Reply



Nik

May 4, 2012 at 2:20 pm

This encodes everything except quotes and apostrophes in the resulting XML. Any idea why?

Nice example though, thanks!

Reply



Stephan H. Wissel

May 4, 2012 at 3:29 pm

Inside an XML tag quotes and apostrophs are valid values. You can't use them for element or attribute names and only need to take care inside attribute values.

```
<sometag>It's totally valid to "quote" in XML<sometag>
```

Or did I not understand the question?

Reply


[Stephan H. Wissel](#)

April 28, 2012 at 4:14 pm

Nice article, clearly explained!

The problem with the DocumentBuilder is the memory requirement. So if you have very large XML to be written, you might run out of memory. In this case you can use SAX to write your XML. Opposite to common perception SAX not only can read, but also write an XML file. It automatically takes care of encoding etc.

Sample code:

```
PrintWriter pw = new PrintWriter(out); //out comes from outside and is an OutputStream
StreamResult streamResult = new StreamResult(pw);
// Factory pattern at work
SAXTransformerFactory tf = (SAXTransformerFactory) TransformerFactory.newInstance();
// SAX2.0 ContentHandler that provides the append point and access to serializing options
TransformerHandler hd = tf.newTransformerHandler();
Transformer serializer = hd.getTransformer();
serializer.setOutputProperty(OutputKeys.ENCODING, "UTF-8");// Suitable for all languages
serializer.setOutputProperty(OutputKeys.DOCTYPE_SYSTEM, "myschema.xsd"); //Replace this with something usefull
serializer.setOutputProperty(OutputKeys.DOCTYPE_SYSTEM, "http://schema.notessensei.com/myschema/1.0");
serializer.setOutputProperty(OutputKeys.METHOD, "xml");
serializer.setOutputProperty(OutputKeys.INDENT, "yes"); // So it looks pretty in VI
hd.setResult(streamResult);
// This creates the empty document
hd.startDocument();

//Get a processing instruction
hd.processingInstruction("xml-stylesheet", "type=\"text/xsl\" href=\"mystyle.xsl\"");
// That file needs to exist, or comment out this line

//This creates attributes that go inside the element, all encoding is taken care of
AttributesImpl atts = new AttributesImpl();
atts.addAttribute("", "", "someattribute", "CDATA", "test");
atts.addAttribute("", "", "moreattributes", "CDATA", "test2");

// This creates the element with the previously defined attributes
hd.startElement("", "", "MyTag", atts);

// Now we write out some text, but it could be another tag too
// Make sure there can be only ONE root tag
String curTitle = "Something inside a tag";
hd.characters(curTitle.toCharArray(), 0, curTitle.length());

// End the top element
hd.endElement("", "", "MyTag");

// Closing of the document,
hd.endDocument();
```

Original here: <http://www.wissel.net/blog/d6plinks/SHWL-8B3G7U>

**sima**

April 6, 2012 at 2:12 pm

The attributes of the elements are arranged in alphabetical order. Is there any way to arrange them in the order in which they are created?

[Reply](#)**[Stephan H. Wissel](#)**

April 28, 2012 at 4:06 pm

The XML Specification clearly states that no application shall depend on the sequence of attributes of an XML element. If you do, you better get back to the drawing board.

[Reply](#)**chino khan**

March 14, 2012 at 11:40 pm

hi can you please help me with your example. I am trying to write XML file, in a format listed below. It seem like I can not add second class element. I am missing opening class element

```
?xml version="1.0" encoding="UTF-8" standalone="no"?>abcdsdffggggggdsda
```

```
abcd
dsdff
```

```
gggg
ggdsa
```

```
sasas
ygfr
```

```
import java.io.*;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.xml.parsers.DocumentBuilder;
import javax.xml.parsers.DocumentBuilderFactory;
import javax.xml.parsers.ParserConfigurationException;
import javax.xml.transform.Transformer;
import javax.xml.transform.TransformerException;
import javax.xml.transform.TransformerFactory;
import javax.xml.transform.dom.DOMSource;
import javax.xml.transform.stream.StreamResult;
```

```
import org.w3c.dom.Document;
import org.w3c.dom.Element;
```

```
public class WriteXMLFile {
```

```
/**
 * Creates a new instance of WriteXMLFile
 */
public WriteXMLFile() {
}

/**
 * @param args the command line arguments
 */
```

```

public static void main(String argv[]) {
    readFileAsString rfas = new readFileAsString();
    try {

        DocumentBuilderFactory docFactory = DocumentBuilderFactory.newInstance();
        DocumentBuilder docBuilder = docFactory.newDocumentBuilder();

        // root elements
        Document doc = docBuilder.newDocument();
        Element rootElement = doc.createElement("School");
        doc.appendChild(rootElement);

        // DataItem elements
        Element staff = doc.createElement("class");
        rootElement.appendChild(staff);

        Element Name = doc.createElement("name");
        Name.appendChild(doc.createTextNode("abcd"));
        staff.appendChild(Name);

        Element LastName = doc.createElement("lastname");
        LastName.appendChild(doc.createTextNode("dsdff"));
        staff.appendChild(LastName);

        Element staff1 = doc.createElement("class");
        rootElement.appendChild(staff1);

        Element Name1 = doc.createElement("name");
        Name1.appendChild(doc.createTextNode("gggg"));
        staff.appendChild(Name1);

        Element LastName1 = doc.createElement("lastname");
        LastName1.appendChild(doc.createTextNode("ggdsa"));
        staff.appendChild(LastName1);

        //rootElement.appendChild(staff1);
        // write the content into xml file
        TransformerFactory transformerFactory = TransformerFactory.newInstance();
        Transformer transformer = transformerFactory.newTransformer();
        DOMSource source = new DOMSource(doc);
        StreamResult result = new StreamResult(new File("C:\\file.xml"));

        // Output to console for testing
        //StreamResult result = new StreamResult(System.out);

        /*
        * String resu = result.toString(); System.out.println("TTTTTT
        * "+resu.toString());
        */
        transformer.transform(source, result);
        transformer.toString();
        //String xmlFile = "c:\\file.xml";
        try {
            String kk = rfas.ReadFile("c:\\file.xml");
            System.out.println("TTTTTTTTT" + kk);
        } catch (IOException ex) {
            Logger.getLogger(WriteXMLFile.class.getName()).log(Level.SEVERE, null, ex);
        }

        System.out.println("File saved!");

    } catch (ParserConfigurationException pce) {
        pce.printStackTrace();
    } catch (TransformerException tfe) {

```

```
tfe.printStackTrace();  
}  
  
}  
}
```

[Reply](#)**Philip**

September 8, 2011 at 11:08 pm

I have a string of xml which I would like to be the content of the xml file I am creating, is this posible?
thank you

[Reply](#)**root**

August 16, 2011 at 7:20 pm

i tried the method for my local C:\file.xml.
But i want to create an xml in global server. Do you have any advice?

[Reply](#)**[mkyong](#)**

August 16, 2011 at 9:59 pm

Just replace it with your network drive, and make sure your global server folder is writable.

[Reply](#)**oferchichi**

June 16, 2011 at 2:25 am

hi how to convert an arrayList into xml file ? :)

[Reply](#)**[mkyong](#)**

June 16, 2011 at 5:57 pm

May be just loop through the arrayList, and insert into XML file. What's your stopper?

[Reply](#)**javaseeker**

June 2, 2011 at 4:42 pm

Hi,

have an issue, how to repeat those tags

like i want the output like this

yong
mook kim
mkyong
100000

yong
mook kim
mkyong
200000

yong
mook kim
mkyong
300000

The value of the salary is in a text file .

Please help

[Reply](#)**@SF**

May 16, 2011 at 11:41 am

Hi, thanks for the nice code....

I have one issue with this....I created one .xml file using this code, but when I try to read this xml file from my other application....it says can not read because the file is being used by another process....could you please help me, if I need to close something somewhere at the end of the code.

Thanks & Regards

[Reply](#)**Rahul**

April 6, 2011 at 6:28 pm

Hi,

Can anyone tell me, how to create standalone xml files using the same code???

i mean with attribute standalone ="yes"

[Reply](#)**Pedro**

April 1, 2011 at 10:24 pm

Is there a way to write into the xml file but without erasing the previous existing code.
Because every time I run the already existing xml is erased??

Thanks

[Reply](#)

**Paramesh**

March 16, 2011 at 3:23 pm

Great example yar.. Keep it up...

[Reply](#)**Tony John**

February 13, 2011 at 5:22 am

Can you help me?
I have a problem, this is
How to insert more new node and data of node inside xml file has existed?

Please help me
Thanks so much
Best Regards
Tony John

[Reply](#)**kency**

January 31, 2011 at 4:15 pm

Hi man !
I need write more node to current XML , how i do it?

Thank you

[Reply](#)**Prasath Nadarajah**

October 11, 2010 at 9:47 pm

Thanks for the tutorial
how can i give the file path in ubuntu linux to print the file in the Desktop??

[Reply](#)**[mkyong](#)**

October 12, 2010 at 1:59 pm

Java.IO can get file path in both *nix and Win* easily, see this example,
<http://www.mkyong.com/java/how-to-construct-a-file-path-in-java/>

But what you mean by "print the file in Desktop"?

[Reply](#)**Prasath Nadarajah**

October 14, 2010 at 12:38 am

i mean save the file in Desktop
the file path will be new File("/home/prasath/Desktop/testing.xml")
Thanks for the great writeup!!!

[Reply](#)**[mkyong](#)**

October 15, 2010 at 11:07 am

use java.IO , refer to this tutorial

<http://www.mkyong.com/tutorials/java-io-tutorials/>

[Reply](#)**[Greg](#)**

July 23, 2010 at 5:51 am

Hi again,

As I checked to add attribute you can write just:
`staff.setAttribute("id", "1");` (without `setAttributeNode` method at all).

Currently I am trying to set behaviour of empty elements. In default there are always serialized in short syntax e.g. , but sometimes there is needed to use full syntax .

Also there is another JDOM API (<http://www.jdom.org/>), but it is not included in JDK.

[Reply](#)**[mkyong](#)**

July 23, 2010 at 10:59 pm

Really thanks and appreciated your sharing

[Reply](#)**[Greg](#)**

July 22, 2010 at 9:35 pm

Thanks a lot.

If you want to create XML without standalone attribute, there is easy way:
`doc.setXmlStandalone(true);`

Also you don't have to create new reference for created attribute :)
`staff.setAttributeNode(doc.createAttribute("id"));`
`staff.setAttribute("id", "1");`

Also that I checked output code is not indented (maybe you should correct this, because you provided XML with indentation above), but there is easy way to do that:
`transformer.setOutputProperty(OutputKeys.INDENT, "yes");`

Best Regards

Reply



Pedro

April 1, 2011 at 10:15 pm

Nice, thanks for the tip about indentation. But is there any way to get a better indentation, I mean, like this:

blabla
qaz

because what I got after your tip was:

blabla
qaz

Reply



Pedro

April 1, 2011 at 10:20 pm

Upss, the xml code isn't displayed! I didn't know. What I meant is the the all my xml code is aligned to the left. I was looking for some indentation like the example showing on the top of the page. Thanks

Reply

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