

XSLT for Publishing

6.7.xml: A Brief Procedure Document

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="ex_6.7.xslt"?>
<procedure>
  <title>CNC Router Lubrication</title>
  <author>Don Wallace</author>
  <department>Research & Development</department>
  <revisionDate>2006-04-01</revisionDate>
  <abstract>
    <paragraph>
      The <equipment>Larken&#174; 2424 CNC Router</equipment>
      is a high-speed computer-controlled
      woodworking tool. It was purchased new in 2004 and was fully
      lubricated when purchased. The need for further lubrication
      depends on the number of hours of use as well as the elapsed
      calendar time. With heavy usage, the machine should be
      lubricated every 9 months (lubrication interval should always
      be &lt; 18 months).
    </paragraph>
    <paragraph>
      Each of the three screw drives should be lubricated with a dry
```

6.7.xml: A Brief Procedure Document (cont.)

```
<supply>Teflon spray</supply>. Do not use any wet lubricants,
  as they will
  attract dust and cause fouling. Before applying the lubricant,
  remove dust from screw mechanisms using compressed air
  and a clean brush.
```

```
</paragraph>
```

```
</abstract>
```

```
<details>
```

```
<frequency>Every 9 to 18 months</frequency>
```

```
<duration>1 hour</duration>
```

```
<steps>
```

```
<step name="Determine Need for Lubrication">
```

```
<paragraph>Follow the schedule defined elsewhere in
  this procedure. If the machine should start to make a
  persistent squeaking or howling noise, lubricate the screw
  mechanism causing the noise immediately.</paragraph>
```

```
</step>
```

```
<step name="Procure Supplies">
```

```
<paragraph>Use only dry <supply>Teflon spray</supply>.
```

```
</paragraph>
```

6.7.xml: A Brief Procedure Document (last)

```
</step>
<step name="Clean Machine First">
  <paragraph>Using the shop vac or a fine brush, remove any
  dust or chips from all parts of the router. Pay particular
  attention to removing dust from each screw
  mechanism.</paragraph>
  <paragraph>Take special care not to damage the threads of
  a screw mechanism while cleaning. <warning>Do not use
  any liquid or spray cleaners.</warning>
  </paragraph>
</step>
<step name="Apply Lubricant">
  <paragraph>Spray each screw mechanism lightly with the
  lubricant. Clean any overspray off of visible machine parts
  using a soft damp cloth.</paragraph>
</step>
</steps>
</details>
</procedure>
```

6.7.xslt: Relying On Default Behavior

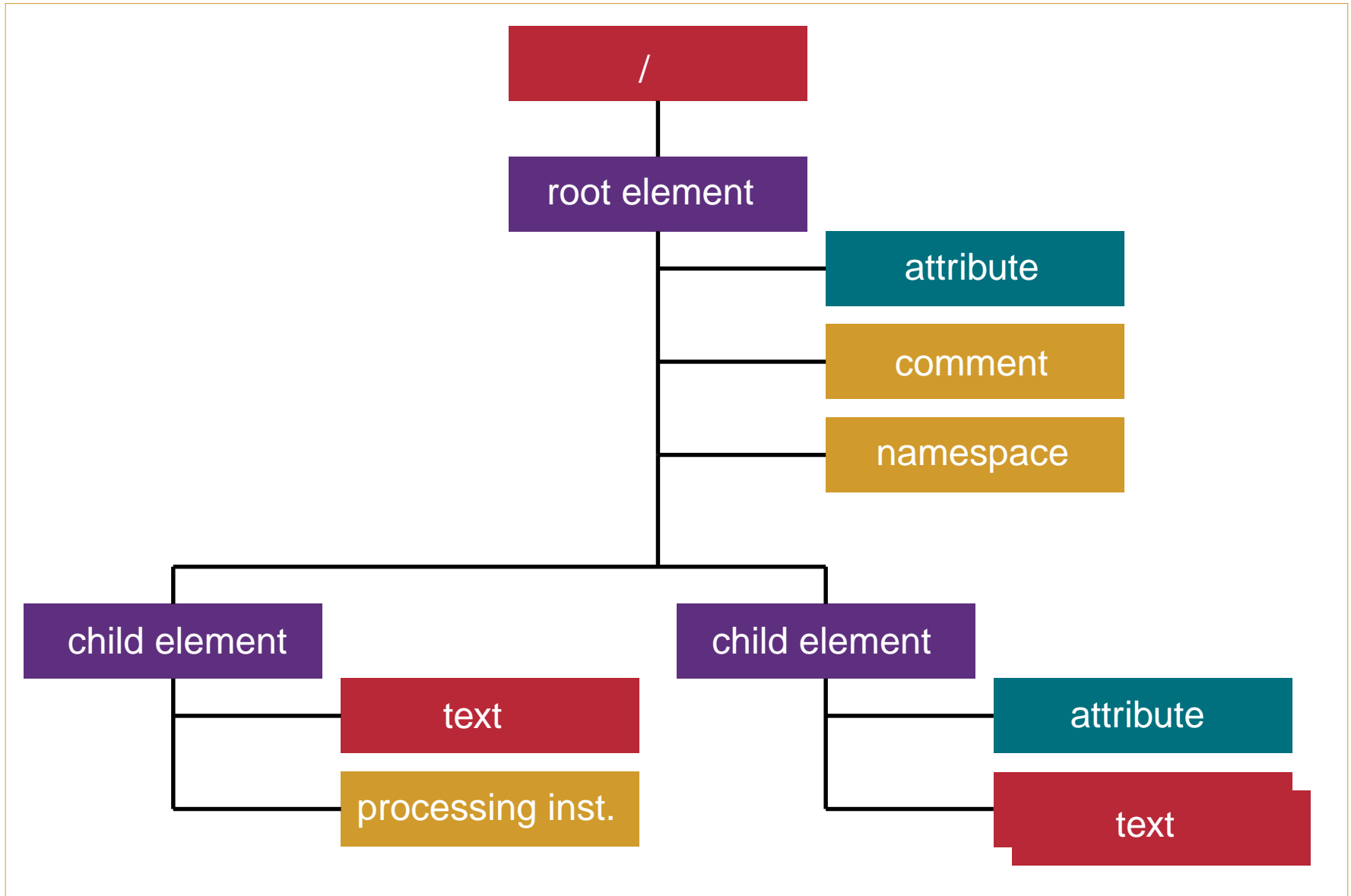
```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0"
  xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="html"
doctype-system="http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd"
  encoding="UTF-8" indent="yes"/>

<xsl:template match="/">
  <html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>Procedure</title>
  </head>
  <body>
    <xsl:apply-templates/>
  </body>
  </html>
</xsl:template>

</xsl:stylesheet>
```

CNC Router Lubrication Don Wallace Research & Development 2006-04-01 The Larken® 2424 CNC Router is a high-speed computer-controlled woodworking tool. It was purchased new in 2004 and was fully lubricated when purchased. The need for further lubrication depends on the number of hours of use as well as the elapsed calendar time. With heavy usage, the machine should be lubricated every 9 months (lubrication interval should always be < 18 months). Each of the three screw drives should be lubricated with a dry Teflon spray. Do not use any wet lubricants, as they will attract dust and cause fouling. Before applying the lubricant, remove dust from screw mechanisms using compressed air and a clean brush. Every 9 to 18 months 1 hour Follow the schedule defined elsewhere in this procedure. If the machine should start to make a persistent squeaking or howling noise, lubricate the screw mechanism causing the noise immediately. Use only dry Teflon spray. Using the shop vac or a fine brush, remove any dust or chips from all parts of the router. Pay particular attention to removing dust from each screw mechanism. Take special care not to damage the threads of a screw mechanism while cleaning. Do not use any liquid or spray cleaners. Spray each screw mechanism lightly with the lubricant. Clean any overspray off of visible machine parts using a soft damp cloth.

The XSLT Tree Model



About Example 6.7

- Note that the XML document for this example uses an `xml-stylesheet` **processing instruction** that binds the document to its XSLT stylesheet.
- This example will follow the **rule-based** design pattern for stylesheets.
- In this design pattern, there is a template rule for all or nearly all element types that exist in the input document.
- The XSLT processor traverses the tree of the input document using its default navigation behavior.
- As it encounters each element, it fires off the best matched template rule for that element.

About Example 6.7 (last)

- Each template rule that matches an element interrupts the flow of navigation to that element's children.
- To resume navigation to the element's children, the `xsl:apply-templates` element is used.
- This example has a rule that matches the tree root.
- It inserts the template text for the Web page into the output tree and resumes navigation to the children of the tree root.
- The result is that the text content of all of the elements in the input document is **burped** into the output document.

6.8.xml: Without Processing Instruction

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

```
<procedure>
```

```
  <title>CNC Router Lubrication</title>
```

```
  <author>Don Wallace</author>
```

```
  <department>Research & Development</department>
```

```
  <revisionDate>2006-04-01</revisionDate>
```

```
  <abstract>
```

```
    <paragraph>
```

```
      The <equipment>Larken® 2424 CNC Router</equipment>
      is a high-speed computer-controlled
      woodworking tool. It was purchased new in 2004 and was fully
      lubricated when purchased. The need for further lubrication
      depends on the number of hours of use as well as the elapsed
      calendar time. With heavy usage, the machine should be
      lubricated every 9 months (lubrication interval should always
      be <lt; 18 months).
```

```
    </paragraph>
```

```
    <paragraph>
```

```
      Each of the three screw drives should be lubricated with a dry
      <supply>Teflon spray</supply>. Do not use any wet lubricants,
```

6.8.xml: Without Processing Instruction (cont.)

as they will attract dust and cause fouling. Before applying the lubricant, remove dust from screw mechanisms using compressed air and a clean brush.

```
</paragraph>
```

```
</abstract>
```

```
<details>
```

```
<frequency>Every 9 to 18 months</frequency>
```

```
<duration>1 hour</duration>
```

```
<steps>
```

```
<step name="Determine Need for Lubrication">
```

```
<paragraph>Follow the schedule defined elsewhere in this procedure. If the machine should start to make a persistent squeaking or howling noise, lubricate the screw mechanism causing the noise immediately.</paragraph>
```

```
</step>
```

```
<step name="Procure Supplies">
```

```
<paragraph>Use only dry <supply>Teflon spray</supply>.
```

```
</paragraph>
```

```
</step>
```

6.8.xml: Without Processing Instruction (last)

```
<step name="Clean Machine First">
  <paragraph>Using the shop vac or a fine brush, remove any
  dust or chips from all parts of the router. Pay particular
  attention to removing dust from each screw
  mechanism.</paragraph>
  <paragraph>Take special care not to damage the threads of
  a screw mechanism while cleaning. <warning>Do not use
  any liquid or spray cleaners.</warning>
  </paragraph>
</step>
<step name="Apply Lubricant">
  <paragraph>Spray each screw mechanism lightly with the
  lubricant. Clean any overspray off of visible machine parts
  using a soft damp cloth.</paragraph>
</step>
</steps>
</details>
</procedure>
```

6.8.xslt: The First Batch of Template Rules

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0"
  xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="html"
doctype-system="http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd"
  encoding="UTF-8" indent="yes"/>

<xsl:template match="/">
  <html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>Procedure</title>
  </head>
  <body>
    <xsl:apply-templates/>
  </body>
  </html>
</xsl:template>

<xsl:template match="procedure">
  <h2>Procedure</h2>
```

6.8.xslt: The First Batch of Template Rules (cont.)

```
<xsl:apply-templates/>
</xsl:template>
```

```
<xsl:template match="title">
  <h3><xsl:value-of select="."/></h3>
</xsl:template>
```

```
<xsl:template match="author">
  by <xsl:value-of select="."/>
  <xsl:text>, </xsl:text>
</xsl:template>
```

```
<xsl:template match="department">
  <xsl:value-of select="."/>
  <xsl:text> </xsl:text>
</xsl:template>
```

```
<xsl:template match="revisionDate">
  (last revised on <xsl:value-of select="."/>)<br/><br/>
</xsl:template>
```

6.8.xslt: The First Batch of Template Rules (last)

```
</xsl:stylesheet>
```

Procedure

CNC Router Lubrication

by Don Wallace, Research & Development (last revised on 2006-04-01)

The Larken® 2424 CNC Router is a high-speed computer-controlled woodworking tool. It was purchased new in 2004 and was fully lubricated when purchased. The need for further lubrication depends on the number of hours of use as well as the elapsed calendar time. With heavy usage, the machine should be lubricated every 9 months (lubrication interval should always be < 18 months). Each of the three screw drives should be lubricated with a dry Teflon spray. Do not use any wet lubricants, as they will attract dust and cause fouling. Before applying the lubricant, remove dust from screw mechanisms using compressed air and a clean brush. Every 9 to 18 months 1 hour Follow the schedule defined elsewhere in this procedure. If the machine should start to make a persistent squeaking or howling noise, lubricate the screw mechanism causing the noise immediately. Use only dry Teflon spray. Using the shop vac or a fine brush, remove any dust or chips from all parts of the router. Pay particular attention to removing dust from each screw mechanism. Take special care not to damage the threads of a screw mechanism while cleaning. Do not use any liquid or spray cleaners. Spray each screw mechanism lightly with the lubricant. Clean any overspray off of visible machine parts using a soft damp cloth.

About Example 6.8

- The processing instruction has been removed from the XML document.
- In each template rule, the code puts the content into the output tree that corresponds to that element.
- If the element has no children, no further action is necessary.
- If the element has children, the template rule must issue an `xs1:apply-templates` in order to resume navigation for the children.
- Since the template rules only fire off when an element matches them, there is no need to make use of

About Example 6.8 (last)

`xsl:if` to prevent too much output when processing optional elements.

6.9.xslt: Making <paragraph> Work

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0"
  xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="html"
doctype-system="http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd"
  encoding="UTF-8" indent="yes"/>

<xsl:template match="/">
  <html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>Procedure</title>
  </head>
  <body>
    <xsl:apply-templates/>
  </body>
  </html>
</xsl:template>

<xsl:template match="procedure">
  <h2>Procedure</h2>
```

6.9.xslt: Making <paragraph> Work (cont.)

```
<xsl:apply-templates/>
</xsl:template>
```

```
<xsl:template match="title">
  <h3><xsl:value-of select="."/></h3>
</xsl:template>
```

```
<xsl:template match="author">
  by <xsl:value-of select="."/>
  <xsl:text>, </xsl:text>
</xsl:template>
```

```
<xsl:template match="department">
  <xsl:value-of select="."/>
  <xsl:text> </xsl:text>
</xsl:template>
```

```
<xsl:template match="revisionDate">
  (last revised on <xsl:value-of select="."/>)<br/><br/>
</xsl:template>
```

6.9.xslt: Making <paragraph> Work (cont.)

```
<xsl:template match="abstract">
  <h3>Abstract</h3>
  <xsl:apply-templates/>
</xsl:template>
```

```
<xsl:template match="paragraph">
  <p>
    <xsl:apply-templates/>
  </p>
</xsl:template>
```

```
<xsl:template match="equipment">
  <span style="color: blue; font-weight: bold;">
    <xsl:value-of select="."/>
  </span>
</xsl:template>
```

```
<xsl:template match="supply">
```

6.9.xslt: Making <paragraph> Work (last)

```
<span style="color: green; font-weight: bold;">
  <xsl:value-of select="."/>
</span>
</xsl:template>
```

```
<xsl:template match="warning">
  <span style="color: red; font-weight: bold;">
    <xsl:value-of select="."/>
  </span>
</xsl:template>
```

```
</xsl:stylesheet>
```

Procedure

CNC Router Lubrication

by Don Wallace, Research & Development (last revised on 2006-04-01)

Abstract

The **Larken® 2424 CNC Router** is a high-speed computer-controlled woodworking tool. It was purchased new in 2004 and was fully lubricated when purchased. The need for further lubrication depends on the number of hours of use as well as the elapsed calendar time. With heavy usage, the machine should be lubricated every 9 months (lubrication interval should always be < 18 months).

Each of the three screw drives should be lubricated with a dry **Teflon spray**. Do not use any wet lubricants, as they will attract dust and cause fouling. Before applying the lubricant, remove dust from screw mechanisms using compressed air and a clean brush.

Every 9 to 18 months 1 hour

Follow the schedule defined elsewhere in this procedure. If the machine should start to make a persistent squeaking or howling noise, lubricate the screw mechanism causing the noise immediately.

Use only dry **Teflon spray**.

Using the shop vac or a fine brush, remove any dust or chips from all parts of the router. Pay particular attention to removing dust from each screw mechanism.

Take special care not to damage the threads of a screw mechanism while cleaning. **Do not use any liquid or spray cleaners.**

About Example 6.9

- The mixed content in the `paragraph` element requires special treatment.
- This element forces its own text into the output tree and resumes default navigation to its children by using the `xs1:apply-templates` element.
- Note the styling that is done with the `span` tags.

6.10.xslt: Finishing Touches

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0"
  xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:output method="html"
doctype-system="http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd"
  encoding="UTF-8" indent="yes"/>

<xsl:template match="/">
  <html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>Procedure</title>
  </head>
  <body>
    <xsl:apply-templates/>
  </body>
  </html>
</xsl:template>

<xsl:template match="procedure">
  <h2>Procedure</h2>
```

6.10.xslt: Finishing Touches (cont.)

```
<xsl:apply-templates/>
</xsl:template>
```

```
<xsl:template match="title">
  <h3><xsl:value-of select="."/></h3>
</xsl:template>
```

```
<xsl:template match="author">
  by <xsl:value-of select="."/>
  <xsl:text>, </xsl:text>
</xsl:template>
```

```
<xsl:template match="department">
  <xsl:value-of select="."/>
  <xsl:text> </xsl:text>
</xsl:template>
```

```
<xsl:template match="revisionDate">
  (last revised on <xsl:value-of select="."/>)<br/><br/>
</xsl:template>
```

6.10.xslt: Finishing Touches (cont.)

```
<xsl:template match="abstract">
  <h3>Abstract</h3>
  <xsl:apply-templates/>
</xsl:template>
```

```
<xsl:template match="paragraph">
  <p>
    <xsl:apply-templates/>
  </p>
</xsl:template>
```

```
<xsl:template match="equipment">
  <span style="color: blue; font-weight: bold;">
    <xsl:value-of select="."/>
  </span>
</xsl:template>
```

```
<xsl:template match="supply">
  <span style="color: green; font-weight: bold;">
```

6.10.xslt: Finishing Touches (cont.)

```
    <xsl:value-of select="."/>  
  </span>  
</xsl:template>
```

```
<xsl:template match="warning">  
  <span style="color: red; font-weight: bold;">  
    <xsl:value-of select="."/>  
  </span>  
</xsl:template>
```

```
<xsl:template match="details">  
  <h3>Details</h3>  
  <xsl:apply-templates/>  
</xsl:template>
```

```
<xsl:template match="frequency">  
  <p>Frequency: <xsl:value-of select="."/></p>  
</xsl:template>
```

```
<xsl:template match="duration">
```

6.10.xslt: Finishing Touches (last)

```
<p>Duration: <xsl:value-of select="."/;></p>
</xsl:template>
```

```
<xsl:template match="step">
  <h4>Step <xsl:number/>: <xsl:value-of select="@name"/;></h4>
  <xsl:apply-templates/>
</xsl:template>
```

```
</xsl:stylesheet>
```

Each of the three screw drives should be lubricated with a dry **Teflon spray**. Do not use any wet lubricants, as they will attract dust and cause fouling. Before applying the lubricant, remove dust from screw mechanisms using compressed air and a clean brush.

Details

Frequency: Every 9 to 18 months

Duration: 1 hour

Step 1: Determine Need for Lubrication

Follow the schedule defined elsewhere in this procedure. If the machine should start to make a persistent squeaking or howling noise, lubricate the screw mechanism causing the noise immediately.

Step 2: Procure Supplies

Use only dry **Teflon spray**.

Step 3: Clean Machine First

Using the shop vac or a fine brush, remove any dust or chips from all parts of the router. Pay particular attention to removing dust from each screw mechanism.

Take special care not to damage the threads of a screw mechanism while cleaning. **Do not use any liquid or spray cleaners.**

Step 4: Apply Lubricant

Spray each screw mechanism lightly with the lubricant. Clean any overspray off of visible machine parts using a soft damp cloth.

About Example 6.10

- Note the use of `xsl:number` to generate the step number from the XSLT.
- This allows the author to insert new steps and have the numbers that come out of the transformation automatically adjusted.
- Note that the rule-based design pattern is particularly effective for publishing applications.
- It is especially effective is generating useful output from mixed content in the input document.