

Processing Instruction

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A **Processing Instruction (PI)** is an SGML and XML node type, which may occur anywhere in the document, intended to carry instructions to the application.^{[1][2]}

Processing instructions are exposed in the Document Object Model as `Node.PROCESSING_INSTRUCTION_NODE`, and they can be used in XPath and XQuery with the 'processing-instruction()' command.

Contents

- 1 Syntax
- 2 Examples
- 3 References
- 4 External links

Syntax

An SGML processing instruction is enclosed within `<?` and `>`.^[3]

An XML processing instruction is enclosed within `<?` and `?>`, and contains a *target* and optionally some content, which is the node value, that cannot contain the sequence `?>.`^[4]

```
<?PITarget PIContent?>
```

The XML Declaration at the beginning of an XML document (shown below) is **not** a processing instruction, however its similar syntax has often resulted in it being referred to as a processing instruction.^[5]

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

Examples

The most common use of a processing instruction is to request the XML document be rendered using a stylesheet using the 'xml-stylesheet' target, which was standardized in 1999.^[6] It can be used for both XSLT and CSS stylesheets.

```
<?xml-stylesheet type="text/xsl" href="style.xsl"?>
```

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

The DocBook XSLT stylesheets understand a number of processing instructions to override the default behaviour.^[7]

A draft specification for Robots exclusion standard rules inside XML documents uses processing instructions.^[8]

References

1. Chapter 9. Customization methods: Processing instructions (<http://www.sagehill.net/docbookxsl/ProcessingInstructions.html>)
2. Comparison of SGML and XML; World Wide Web Consortium Note, 15 December 1997 (<http://www.w3.org/TR/NOTE-sgml-xml-971215>)
3. Bryan, Martin (1997). *SGML and HTML Explained*. Addison Wesley Longman. ISBN 0-201-40394-3.
4. Hossein Bidgoli (2004). *The Internet encyclopedia, Volume 3*. John Wiley and Sons. p. 877. ISBN 0-471-22203-8.
5. Elliotte Rusty Harold, W. Scott Means. *XML in a nutshell*. p. 23. ISBN 978-0-596-00764-5.
6. <http://www.w3.org/TR/xml-stylesheet/>
7. <http://docbook.sourceforge.net/release/xsl/current/doc/pi/pi-fo.html>
8. http://www.atrus.org/writings/technical/robots_pi/

External links

- XML specification section: Processing Instructions (<http://www.w3.org/TR/REC-xml/#sec-pi>)
- XSLT FAQ: Processing Instructions (<http://www.dpawson.co.uk/xsl/sect2/N6145.html>), Dave Pawson
- xslt:processing-instruction (<https://developer.mozilla.org/en/XSLT/processing-instruction>), Mozilla

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