Standards - Specialised Mark Up Languages

DocBook

DocBook is a markup language for publishing computing and other technical complex scientific documents including books. It allows you to convert one source format into multiple target formats.

PreTeXt

PreTeXt is a markup language that captures the structure of textbooks and research papers in the mathematical sciences. PreTeXt documents serve as a single source which can be easily converted to multiple other formats, current and future. The best of DocBook, LaTeX, and HTML. Before June 2017, PreTeXt was called “MathBook XML.”

MathML ISO/IEC 40314:2016

ISO/IEC 40314:2016 also known as MathML, MathML is a markup language for describing mathematical notation and capturing both its structure and content. The goal of MathML is to enable mathematics to be served, received, and processed on the World Wide Web, just as HTML has enabled this functionality for text.

LaTeX

LaTeX is a typesetting system which includes features designed for the production of technical and scientific documentation. It is widely used in academia for the communication and publication of scientific documents and technical note-taking in many fields, owing partially to its support for complex mathematical notation. LaTeX is available as free software.

The Difference Between MathML and LaTex

LaTeX is an input format. It is how we mathematicians write our articles, books, webpages, and anything else where mathematics is involved. (And often anything where mathematics isn't involved.) It is not designed to be read as-is. It is intended to be processed into a suitable output format and then read.

MathML is an output format. It is not designed to be written directly, but it is designed to be read. Of course, one needs a suitable renderer: a browser for the sighted and something like MathPlayer for those who want their mathematics read aloud, but then the same is true of any output format.

It is possible, though not always straightforward, to convert LaTeX to MathML. The main difficulty is that most websites don't bother with this route. They convert the LaTeX mathematics to a graphic which is then displayed, with the original LaTeX as the alt text. Because of how it is produced, the LaTeX is usually very simple (no complicated macros), and so it may be possible to get by with reading the alt text.

So if you want to read mathematics, look for MathML. If you want to write mathematics, learn LaTeX (or another TeX variant).

Source: https://www.access2science.com/latex/StaceyLatexNote.html

MusicML

Music Markup Language (MML) is an attempt to mark music objects and events with an XML-based language. Marking such objects should enable managing music documents for various purposes, ranging from music theory and notation to practical performance. This project is not complete and a work in progress. The first draft of a possible DTD is available and a few examples are provided of music pieces marked with MML that result in well-formed as well as valid documents. The approach is modular. Many modules are still incomplete and need more research and attention.

TTML

Timed Text Markup Language provides a standard markup language for synchronising text with media, for example for captions and subtitles. It is widely supported, unifies the increasingly divergent set of existing caption formats, and offers more control over subtitles than simpler formats.

SVG

Scalable Vector Graphics is a language for describing two-dimensional graphics in markup on a web page. This can be advantageous for inclusive design because vector graphics can be easily resized, and scaled up or down to different resolutions without loss of quality. SVG can also be augmented with additional semantics that make them compatible with assistive technologies such as screen readers.

VoiceXML

Voice Extensible Markup Language is a markup language for structuring interactive voice response applications and specifying interactive media and voice dialogs between humans and computers. It is used for developing audio and voice response applications In order to make these applications accessible to users who are deaf or hard of hearing, the language provides a mechanism for including text alternatives to audio content.

DTBook

DTBook or DAISY XML is a markup language used in DAISY Digital Talking Books.

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