Open textbooks in MathBook XML

organized by
Rob Beezer, David Farmer, and Kent Morrison

Workshop Summary

During the workshop the morning hours were generally devoted to presentations on major topics to the entire group of participants, while the afternoon hours were reserved for parallel sessions on more specialized topics.

FULL GROUP PRESENTATIONS AND ACTIVITIES

The workshop began with all participants introducing themselves. Authors described the status and progress of their books and the technical experts described what they were experts in and how they thought they could help the authors.

Rob Beezer gave an overview of Mathbook XML, showing what it can do and explaining the philosophy behind the separation of logical structure from details about the visual appearance of the rendered documents. Then everyone logged into SageMathCloud, created a simple MathBook XML document and rendered it into HTML.

David Farmer gave an introduction to git and GitHub. In order to have a common working environment, everyone used the terminal capabilities of SageMathCloud. There was a group exercise in which each person had to correct a part of a LaTeX math paper and submit a pull request.

Tom Judson described the LaTeX package Tikz for drawing figures and diagrams directly within the LaTeX. He has used it extensively for the figures in his abstract algebra book, whose source is now completely in MathBook XML.

Alex Jordan explained how to use WebWork with MathBook XML.

Rob Beezer discussed the actual MBX script (in Python) for image generation.

Rob Beezer led a group discussion on various print on demand possibilities. Several participants were authors who related their experiences and offered advice.

We held a group discussion on choosing an open license that began with Rob Beezer describing the GNU Free Documentation License and the Creative Commons Licenses. This was followed by a panel with Kent Morrison giving the AIM Editorial Board recommendation, and Matt Boelkins and Greg Hartman describing how they chose licenses as lead authors on calculus texts. Then a lively and wide-ranging discussion took place. An important point that was raised is that authors do not need to protect themselves with a "NC Non-Commercial" license, because they are capable of doing everything a publisher does, and at a cheaper price.

Kent Morrison led a panel with Loek Helminck and Steven Schlicker to discuss the problem and question of tenure and promotion credit for work on open textbooks by junior faculty. The three panel members were former department chairs and their advice depended on the nature of the institution and the culture of the department.

We had a group discussion on the nuts and bolts of file management and workflow strategies for large projects with one or more authors. This included advice on using makefiles for greater efficiency.

On the last morning the organizers led a group discussion on the next steps for the authors and developers of open math books.

Several authors expressed their intention to convert their books to MBX and incorporate new features, such as WeBWorK problems, into the online versions.

SMALL GROUPS, SPECIALIZED SESSIONS

Two sessions on git for more hands-on practice.

Incorporating WebWork problems into XML source.

Sage for novices.

Converting parts of existing books or writing in MathBook XML.

Configuring a Windows environment for using a terminal and editor for writing and processing MathBook XML.

Converting PDF images to SVG to be used in HTML versions produced by MathBook XML.

Using Sublime Text as an editor for XML.

Primer on XSL and XSLT.

Discussion of different numbering schemes for math documents.

Discussion of MathObjects, such as WebWork has, with the aim of making them useful more generally for interactive items in web pages.

Best practices for writing in LaTeX with the goal of conversion to XML being easy.

Discussion of how to structure exercises, e.g., with or without solutions as part of their structure.