Multiple Simultaneous Galleys:  
A Simpler Model for Electronic Documents

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Abstract

We present a general model for electronic documents supporting parallel containers of content, tied together through link components. This model is usable for a wide range of documents, including simple textual documents with footnotes and floats, complex critical editions with multiple levels of footnotes and critical apparatus, maps with multiple layers of visual presentation, and music scores.

This model is inspired from the C++ Standard Template Library, whose basis is that Containers + Iterators + Algorithms = Programs. In our approach, the “iterators” are pointers into the parallel containers, keeping track of callouts for notes, floats, and parallel links.

The data structures required for this model are remarkably simple, and will allow the rapid development of many different kinds of algorithms.