What Is TeX?

Prelude. The Eiffel Tower is perhaps the world's most beautiful radio tower. It adds beauty to a utilitarian function to such a degree that most of us don't consider its role in radio transmission. And indeed, it was created to be the world's tallest building for Paris' Exposition Universelle in 1889. It is an example of the fusion of modern industrial design, a open steel structure, with the human need to create beautiful objects. At a different scale, the Eighteenth Century Windsor chair combines a light, strong beautiful structure to fulfill an everyday need.

Books share both the public nature of the Eiffel Tower and the personal aspect of a Windsor chair. Whether a book's typography transparently supports the text or burdens readability with excess decoration depends on both the designer and the capability of her typesetting system. TeX offers the designer the capability to create beautiful books that are also highly readable.

Getting Started. I had known about TeX for twenty years before I used it for a project. And for years, I could produce documents that were attractive and useful with a word processor—*PC-Write*, *MS Word*, *OpenOffice*—but did not need the capability to produce books or pamphlets. After my wife and I became docents at the Los Angeles Zoo and Botanical Gardens (`http://www.lazoo.org`), we became involved in various specialities within the docent program. I joined the Botany Committee, a small group of docents whose goal is to present the Zoo's varied plant collection to patrons. The Committee's chairman mentioned that she and another docent had written a self-guided botanical tour complete botanical illustrations. "How do I get *Word* to include my drawings and turn this into a booklet?" she asked. "You don't," I told her. "You need a typesetting system."

Off and Running. I bought Kopka and Daly's *Guide to LaTeX*[1], installed TeX and LaTeX from the enclosed CD and tried a few of the book's exercises. I also licensed *WinEdt* for editing LaTeX documents. This combination was sufficient for several projects and only upgraded when I joined the TeX Users Group (TUG) and received updated versions TeX.

I saved the *Word* files of the botanical tour as plain text files and opened them in *WinEdt*. Next, I scanned the botanical illustrations and then edited them. With text and illustrations available to *WinEdt*, I did a first run and showed the results to the Botany Committee. "This looks so professional," was the initial reaction. Having seen what was possible, expectations rose and we generated several alternatives for the page layout, fonts, table of contents and index.

Looking at design alternatives helped me clarify my own values. The Eiffel Tower and Windsor chair are metaphors of what I find attractive: the structure itself should be beautiful and useful. On a printed page, this means the placement of text, fonts, titles and illustrations without extraneous elements. Viewed as rectangles on the page, the arrangement should be balanced and harmonious. Readability is the primary measure of quality. While layouts are matters of personal taste, there are many helpful references. The documentation for Peter Wilson's memoir class[2] is an excellent overview of book design.

Finale. After weeks of editing and experimenting with layouts, we settled on a final design. TeX is not a monolithic system and can evolve as design goals change. This is done by changing document classes and calling various software packages. There seems to be a package for anything I need, but it's important to know that developers are often revising and writing new packages that add features.

A Botanical Tour of the Los Angeles Zoo and Botanical Gardens was published in November 2004 and is available in the Zoo's gift shops. Many docents are using it as part of the tours for schools and other groups. Earlier this spring, a Botany Committee colleague showed me a botanical tour booklet from another organization. She pointed to the excellent color photographs, but mentioned that the coated paper used for the booklet made it heavier than she liked. She pointed to the page breaks, the index and other features that her now-critical eye immediately spotted. I suspect the source of her comments came from the awareness she developed by seeing what TeX could do when applied as intended. Bravo *Panthera leo*!

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References

[1] Helmut Kopka and Patrick Daly. Guide to LaTeX. Tools and Techniques for Computer Typesetting. Addison-Wesley, Boston, MA, USA, 4th edition, 2004. ISBN 0-201-17385-6.

[2] Peter Wilson. The Memoir Class for Configuarable Typesetting User Guide. The Herries Press, Normandy Park, WA, USA, 6th edition, 2004. Available at `http://tug.org/tex-archive/macros/latex/contrib/memoir/memman.pdf`.