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Making a Booklet

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Background. In May 2004, I became a docent at the Los Angeles Zoo and Botanical Gardens and joined the Docent Botany Committee. The Zoo has a valuable collection of plants distributed throughout the Zoo, and two Botany Committee members had written a self-guided tour of this collection. One of the authors created botanical illustrations that she wanted to include in the tour booklet. The draft of the booklet was in a Microsoft *Word* file and the drawings were in the artist's notebook.

Feasibility. I decided to use TEX to typeset the booklet since I knew TEX could produce a high-quality product. I purchased a copy of Kopka and Daley's *Guide to LATEX*[1], and used the fpTEX software from the book's enclosed CD to typeset the botanical tour booklet and several other projects.

We outlined the project's timetable and budget, getting preliminary estimates of printing costs from four printers for initial runs of 500, 1,000 and 2,000 copies. We estimated that the booklet would be no longer than 40 pages and, based on unit costs for each run level, decided that 1,000 copies gave us the right balance between unit cost and the number of copies we thought might sell. Burbank Printing Center, with whom we worked, recommended printing the body of the booklet in black and white and reserving color for the cover in order to keep costs down. To further manage costs, I agreed to typeset and deliver the booklet as a pdf file. The printer agreed to perform the imposition step since he wanted the flexibility to choose the paper size for his offset press. The plate would be created directly from the imposed pdf file. The binding would be saddle stitched using metal staples.

The budget guidelines translated directly into design guidelines which, if followed, would allow us to have an economically feasible project. It was important to have these guidelines at the beginning because many times during the editing

and typesetting steps, we considered changes to the booklet that, if adopted, could easily have made the project uneconomic. What we learned at this step helped keep us on course.

First Steps. With a preliminary estimate of costs and an notion of how the final product might look, I started the typesetting process. I saved the *Word* file as plain text and opened it in the *WinEdt* editor I licensed for this project. I scanned the botanical illustrations and selected twenty-two for the booklet with the goal of placing one or two illustrations per page next to the text discussing those plants.

While this article presents the typesetting steps as a sequential process, the actual process included many discussions of style and a great deal of editing and experimenting with TEX and various packages. The level of team effort was high and all of us were committed to the project's success.

Page Layout. Our conversation with the printer indicated that a page size of 8.5 inches high and 6.5 inches wide might be economical for the printer and work for the text and graphics. The draft text had several short chapters, some no more than one or two pages of this size. A text block five inches wide gave comfortable left and right margins of 0.75 inches. I wanted the graphics to be less than half the width of the text block and placed on either the right or left side of the page with text wrapping around the graphics. I decided to make all drawings 1.75 inches wide with light gray backgrounds to create a mat effect. This set off the pen and ink drawings from the text while balancing the color weight between text and graphics.

I used the `report` document class for the booklet since I needed a separate title page and chapter headings. I thought I might use section headings, but did not in the final draft. The text was straightforward and the chapters short. There was no need for running headers or footers. A simple page number in the middle of the footer was enough. After a few tests with various fonts, we decided on 10 point Computer Modern for the body text.

The graphics were placed on the page using the **picins** package. This package has many options for fine-tuning the placement of the graphic and generally worked well. Nevertheless, **picins** seems to force more than a normal amount of space between paragraphs. I'll discuss a work-around for this in the section on final tuning.

All chapters but the last described plants in a particular geographic area of the Zoo. These geographical areas are identified by the names of continents since

animals and plants from those areas of the world are displayed in these areas of the Zoo. The last chapter contained a bloom calendar and was organized in a list environment.

I tried to have all chapters start on the right page of a spread. Occasionally, I would need to insert a blank page, for which I used the **nextpage** package.

At this stage, the body of the booklet was largely done and contained twenty-four pages.

Navigation. We used both botanical names and common names for plants throughout the text, and there were various categories and concepts we wanted readers to find easily. The index was developed using the **makeidx** package. In addition to indexing the names of plants, we added categories such as: food for: (e.g., koalas); food, source of: (e.g., chocolate); ancient plants (e.g., cycads); commercial plants (e.g., carob tree); and California native plants (e.g., California lilac). The index in the final version is five pages.

There are twenty-two botanical drawings in the body plus a map of the Zoo. TEX provides the capability for a List of Figures, but we thought that was overkill for such a short work. Nevertheless, we wanted the reader to be able to see the list of illustrations and find one of particular interest. The solution was to integrate the Table of Contents and the List of Figures using the **tocbibind** package. Figures are numbered consecutively, but fall under the appropriate chapter headings in the Table of Contents.

Every chapter and figure has its own text or caption. To avoid the repetition of the words, "Chapter" and "Figure" in the Table of Contents and text, I suppressed the chapter numbering and only included the number of the figure and the name of the plant illustrated in the figure caption. Chapter numbers and numbering of the top level of the list environment of the bloom calendar were suppressed using the `\setcounter{secnumdepth}{-2}` command.

The default figure captions were altered using features of the **caption** package.

```
\usepackage[font={small,it},labelsep=period]{caption}
\DeclareCaptionLabelFormat{numOnly}{#2}
\captionsetup{labelformat=empty}
```

These commands set the illustrations' titles in a small, italic font. An illustration's number is printed and separated from the illustration's title by a period.

Front and Back Matter. The first few pages of the booklet included Welcome, Remembrance, and Acknowledgments pages plus the Table of Contents. The Index and a map of the Zoo followed the text. The map was created in GIMP and printed inside the back cover. I edited the Table of Contents file to remove the page number for the inside of the back cover and substituted the phrase, "Inside Back Cover." Also, column breaks in the Index did not always occur where I wanted them to. I inserted the `\newpage` command to adjust this. After these changes, I ran `pdflatex` one time to get a correct Table of Contents and Index.

Cover. I created the cover in Macromedia *Fireworks* using botanical drawings for the front and back outside cover pages. All graphics in the booklet were saved in a portable network graphics (png) file format. Including the cover pages, we managed to keep the booklet length to forty pages.

Final Tuning. To add visual interest to the first page of each chapter, I added a relevant quotation at the top of the page using the **quotchap** package and a dropped capital letter, using the **lettrine** package, at the start of the chapter text. Readers have enjoyed the quotations.

In a few instances, TEX was unable to correctly hyphenate some of the botanical names. This was easy to fix by manually adding the correct hyphenation to a list processed with the `\hyphenation` command in the preamble. A few other instances required minor editing to let TEX correctly break a line.

I mentioned above that the **picins** package seems to add more space than normal between the paragraph in which it is used and the previous paragraph. I tried to correct this by fiddling with the parameters in the package, but was unsuccessful. The best solution I came up with is a brute-force solution. Between the paragraphs affected, I added a `\vspace{-0.375\baselineskip}` command. That reduced the excess spacing to approximate a normal break.

Comments. Using the `report` document class made typesetting the booklet easier than custom designing all features of the page layout. Nevertheless, I often felt I would have benefited from the advice of a professional book designer.

A Botanical Tour of the Los Angeles Zoo and Botanical Gardens was published November 2004 and Zoo docents are using it as a manual to add botanical comments to their public tours. The booklet is on sale at the Zoo's gift shops.

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.

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