

Minutes in Less Than Hours: Using $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ Resources

Jim Hefferon

Email ftpmaint@tug.ctan.org

Abstract Building a new $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ document class is illustrated by developing a class for minutes of meetings.

1 Introduction

Having a reputation of knowing $\text{T}_{\text{E}}\text{X}$ is not like being maitre d' at Le Cirque, exactly, but it does get me phone calls from people that I've never met, and who want me to do something for them. I try to tell them that I am not an expert, but they will have none of that. In the end I can usually help them, but not with tricky macros. Instead, I show them something else: I show them how to break their job into parts for which there is an existing solution.

To explain what this means in practice, I'll walk through the steps that I took recently to develop a small package, a document class. I was able to convince $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ to meet my needs with very little work, by gluing together standard solutions.

2 What I needed

A few weeks ago I was asked to keep the minutes for a committee. I was given some documents from last year and told to use them as models.

The layout was simple. Each model document had an opening and a body. Each opening had two parts. The first part was a document title giving the committee name and the date. The second was a header listing who was at the meeting and who was not. (The ending page of this article has an example document.)

In the body there were a number of list environments. The main one was *Business*, a list of items that the committee took up on that day, which looked like a L^AT_EX enumeration list. There were also a few others, including *Old Business* and *Announcements*.

Finally, the bodies of the model documents contained a few more things such as *Next Meeting* that were not lists, but rather were one-off parts.

3 First, try CTAN

The place to look for solutions to T_EX problems is the Comprehensive T_EX Archive Network (CTAN).¹ So I went to <http://www.ctan.org/search.html> and submitted minutes and a few similar phrases. I got a number of hits but after some browsing I found that none of them met my needs.

Like most people, I use L^AT_EX. So I decided to write a L^AT_EX class `mins.cls`.

4 Second, hit the books

There are many fine books on L^AT_EX but I happen to rely on Lamport's *L^AT_EX: a Users Guide and Reference Manual* and Mittelbach et al.'s *L^AT_EX Companion*. The *Companion* describes the standard packages (and has an awesome index) and it was my main source of ideas for this class.

5 The class framework

The *Companion* describes, in Appendix A.4, how to make a L^AT_EX class file. In particular, its Figure A.1 lists what to do (subsection 5.2 below shows most of the code). Since I planned to work by cribbing all that I could, the most important line would be the one that says `\LoadClass{article}`. This would start my class off with all of Lamport's features, so that I needed only to tweak or add a few behaviors.

1. Full disclosure: I run a node of CTAN.

5.1 Class options

The only problem that I had with the *Companion's* code involved handling class options.

I wanted the flexibility to have my source files contain class options, as here

```
\documentclass[11pt]{mins}
```

where the option calls for 11 point type. So, I needed that any such options get passed in when the class executes `\LoadClass{article}`. The *Companion* explains how to do this: before the `\LoadClass` line, include this line.

```
\DeclareOption*{\PassOptionsToClass{\CurrentOption}{article}}
```

But I wanted option handling that was even fancier. Minutes have text that repeats, for instance, the names of committee members. So I wanted the ability to have an extra file that could contain a line like `\setmembers{A~Baker, ..}`. And I wanted that, where this extra file is named `cepc.min`, using the document option `cepc` would cause my class to input the file.

The *Companion* explains this also: I changed the body of the `\DeclareOption*` command to instead use the `\InputIfFileExists` command. This command has the form `\InputIfFileExists{filename}{then part}{else part}` and if it finds a file with that name then it reads the file contents and runs the *then* code, otherwise it runs the *else* code.

In summary, if the first line of my \LaTeX source says

```
\documentclass[11pt,cepc]{mins}
```

and my class contains the line

```
\DeclareOption*{\InputIfFileExists{\CurrentOption.min}{}{%  
  \PassOptionsToClass{\CurrentOption}{article}}}
```

then the two options will be handled in this way: for `11pt` it finds no file `11pt.min` and so it passes the option to the `article` class, for `cepc` it finds the file `cepc.min` and loads it.

5.2 Class code

Here is my class code, adapted from Figure A.1 in the *Companion*. The opening part identifies the class (this is handy to have in the log file, for one thing).

```

% mins.sty
% Take minutes of meetings
% 2005-Sept-01 Jim Hefferon jhefferon (at) smcvt.edu

% --- Class structure: identification part
% ---
\ProvidesClass{mins}[2005/09/01 version 1.00 Minutes of meetings]
\NeedsTeXFormat{LaTeX2e}

```

Next comes some some “initial code” that is about minutes of meetings, not about the structure of the L^AT_EX class, so I will pass over it for the moment. The rest of the class structure is as described above, in subsection 5.1.

```

% --- Class structure: declaration of options part
% ---
% This class extends the article class
% Read all the documentclass options; pass them to article,
% unless the file "<currentoption>.min" exists, then it is loaded
\DeclareOption*{\InputIfFileExists{\CurrentOption.min}{\%
    \PassOptionsToClass{\CurrentOption}{article}}}{%
% --- Class structure: execution of options part
% ---
\ProcessOptions \relax

% --- Class structure: declaration of options part
% ---
\LoadClass{article}

```

So, with the *Companion*'s help, I had the basic structure of my L^AT_EX class.

6 Page layout

I next needed to set the page size and to have appropriate headers and footers. Both of these are things that authors need to do all the time, so you might expect that there are packages to accomplish the jobs that are both powerful and easy. You'd be right.

6.1 Page size

For setting a L^AT_EX page size, use the *geometry* package.² Going with the description in the *Companion*, I included this line.

```
% Page layout
\RequirePackage[left=1in,right=1in,top=1in,bottom=1in]{geometry}
```

(Some people like the left and right margins to be bigger so they get shorter lines, for better readability. But committee minutes are not going to be read anyway, so I decided to save paper by making the margin small.)

6.2 Headers and footers

As with page dimensions, there is a canonical package for page headers and footers, *fancyhdr*.³ You can set six fields on each page—the left, right, and center of each of the head and foot. It is quite flexible; for instance, the code below sets the headers on the right side of the even-numbered pages to be the same as the headers on the left side of the odd-numbered pages (both are the committee’s name followed by the date). The code below also allows the first page to be different than the following pages.

```
\RequirePackage{fancyhdr}
\fancypagestyle{firstpage}{%
  \fancyhf{} % clear all six fields
  \renewcommand{\headrulewidth}{0pt}
  \renewcommand{\footrulewidth}{0pt}
}
\fancypagestyle{followingpage}{%
  \fancyhf{} % clear all six fields
  \fancyhead[RE,LO]{\show@committee, \show@date}
  \fancyhead[LE,RO]{page \thepage}
  \renewcommand{\headrulewidth}{0.7pt}
  \renewcommand{\footrulewidth}{0pt}
}
\pagestyle{followingpage}
\AtBeginDocument{\thispagestyle{firstpage}}
```

2. <http://www.ctan.org/tex-archive/macros/latex/contrib/geometry>

3. <http://www.ctan.org/tex-archive/macros/latex/contrib/fancyhdr>

The `\headrulewidth` and `\footrulewidth` need some explaining. The package puts a horizontal line (a rule) across the page, whose thickness is given by the command. Setting it to a width of 0 point makes it disappear.

7 Code

Now I was stuck: I had cribbed all of the code that I could, and I finally had to write some of my own.

7.1 Definitions of lists

First I thought to define the membership of the committee, to go in the extra file. After it is defined, it can be printed out later.

Luckily, I was familiar with the technique. The second line below defines a command `\setmembers` that saves the list as `\@members` (the at-sign is a L^AT_EX convention to keep ordinary users from making a variable of the same name). Its matching command `\show@members` shows the list.

```
% who is meeting?
\def\@members{None}
\newcommand{\setmembers}[1]{\def\@members{#1}}
\newcommand{\show@members}{\@members}
```

This technique allows me to set in the document preamble who is absent, etc.

```
% who is absent?
\global\let\@absent\@empty
\newcommand{\setabsent}[1]{\def\@absent{#1}}
\let\absent\setabsent %
\newcommand{\show@absent}{\@absent}

% who is also present?
\global\let\@alsopresent\@empty
\newcommand{\setalsopresent}[1]{\def\@alsopresent{#1}}
\let\alsopresent\setalsopresent %
\newcommand{\show@alsopresent}{\@alsopresent}

% what day is it?
```

```

\def \@date{\today}
\newcommand{\setdate}[1]{\def \@date{#1}}
\newcommand{\show@date}{\@date}

```

I also wanted a standard way of referring to the committee chair, etc.

```

% what role do they have (e.g., chair)
\newcommand{\role}[2]{#1~(#2)}
\newcommand{\chair}[1]{\role{#1}{Chair}}
\newcommand{\secretary}[1]{\role{#1}{Secretary}}

```

It is then that I realized why the L^AT_EX₂_ε class structure has its “initial code” part. To use these function definitions in the `cepc.min` file, I need for this code to appear before the file is read in. Ah, I get it!

7.2 Document body

As I’ve mentioned, the main part of the sample documents that I was given consisted of an enumeration list labeled “Business” and there were a number of similar lists. I decided to make a single environment, which I could specialize to suit the desired list.

```

% environments inside the minutes
\newenvironment{businesslist}[1]{%
%\renewcommand\theenumi{\alph{\enumi}}
\vspace{2ex}\par\noindent\textbf{#1}\par
\begin{enumerate}
}{%
\end{enumerate}
}

\newenvironment{business}{%
\begin{businesslist}{Business}
}{%
\end{businesslist}
}

```

This simply prints “Business” and makes a list, with a bit of vertical space between. (It does not, as shown, suppress a page break.) I also added similar environments for “New Business,” “Old Business,” and “Announcements.”

7.3 Document opening

The last part was the only part that gave me any trouble. I expected that document source files would be structured like this.

```
\documentclass[11pt,cepc]{mins}
\setabsent{J~Hef{}feron}
\setdate{2005-Sept-01}
\begin{document}
\begin{minutes}
  .. stuff like the Business environment ..
\end{minutes}
\end{document}
```

Thus, the `minutes` environment should produce both the part naming the committee, and the part listing the committee members, etc.

```
% basic definition of the minutes environ
\newenvironment{minutes}{%
\begin{center}
  {\large\textbf{Minutes, \show@committee}} \\[1ex]
  \show@date
\end{center}
\vspace{1.5ex}
\opening@list
\vspace{1ex}
}{%
}
```

Here is my first try at the opening.

```
% material heading the minutes; first try
\newcommand{\opening@list}{
\begin{description}
\item[Members:] \show@members
\item[Absent:] \show@absent
\item[Also present:] \show@alsopresent
\end{description}
}
```


But — and this is the bane of all software — I decided to add a feature. I decided that if no one was absent then I wanted the `\item[Absent:] \show@absent` part left out.

Getting this to work is a question of finding the right kind of *if* statement. I struggled with it for a while, I admit. A little spelunking on the Internet and in the *TEXbook* yielded the magic incantation.

```
% material heading the minutes; final version
\newcommand{\opening@list}{
\begin{description}
\item[Members:] \show@members
\ifx\@absent\@empty
\relax
\else
\item[Absent:] \show@absent
\fi %
\ifx\@alsopresent\@empty
\relax
\else
\item[Also present:] \show@alsopresent
\fi %
\end{description}
}
```

8 Conclusion

I have seen on the Internet (credited to different people) the two Laws of Program Writing.

The First Law is: don't. Instead, see if someone has already written a version of the program that you can crib. If not, see if someone has written a program like what you need that you can adapt.

The Second Law is: if no one has ever written a program anything like what you need, and you really must write it fresh, then spend a lot of time and effort on it so that your program can be adopted or adapted by people who come along later trying to follow the First Law.

This may be intended as a joke but there is some truth in it, and I have tried above to show how to follow it in a T_EX context.

The result is that for this project I did very little work. Most of my class's functionality is inherited from Lamport's `article`. Of what I changed, customizing the page size and the headers and footers was a question of looking up the right tools in the *Companion*. Consequently, the total time spent on the class was only perhaps 3 hours, and I end with a usable, and reusable, piece of software.

I sometimes suspect, when I respond to people who call me with T_EX problems, that my advice might be not entirely welcome. Sure, it solves the problem that they said they had, but I wonder: maybe they are not really glad to get my advice, maybe they are having fun playing with T_EX and now they have to go back to writing!

You know, I've hardly ever gotten two calls from the same person

A Exercises

Here are a few easy extensions of the ideas above.

1. Change the style here to have the opening text "Members", "Absent", etc., print in small caps. (*Answer:* The *Companion* shows that you can add

```
\renewcommand{\descriptionlabel}[1]%  
  {\hspace{\labelsep}\textsc{##1}}
```

between the `\newcommand{\opening@list}{` line and the `\begin{description}` line.)

2. Adapt `mins.cls` to make a simple memo class. Put your organization's logo on the first page. (*Hint:* in the header of your first page, use L^AT_EX's `picture` environment to place your graphic.)

B Example output

The next page shows the source and output for a sample two-page document. (It uses the `lipsum` package to generate nonsense text.)

```

\documentclass[11pt, test, twoside]{mins}
\usepackage{lipsum} % produces dummy text

\setdate{1958-Oct-12}
\absent{I-Juliet}
\alsopresent{}

% file test.min says:
%\setcommittee{Totally Trivial Matters Committee}
%\setmembers{\secretary{A-Bravo},
% \role{C-Delta}{President, \textit{ex officio}}, E-Foxtrot,
% \chair{G-Hotel}, I-Juliet, K-Lima, M-November, O-Papa}

\begin{document}
\begin{minutes}
\begin{announcements}
\item
\lipsum[1]

\item
\lipsum[2]

\item
\lipsum[3]

\end{announcements}

\begin{business}
\item
\priormins

\item
\lipsum[4-5]

\item
\lipsum[6]

\item
\lipsum[7-8]

\end{business}

\begin{newbusiness}
\item
\lipsum[9]
\end{newbusiness}

\nextmeeting{Monday, Oct 19, at 11:30.}

\end{minutes}
\end{document}

```

Minutes, Totally Trivial Matters Committee
1958-Oct-12

Members: A Bravo (Secretary), C Delta (President, *ex officio*), E Foxtrot, G Hotel (Chair), I Juliet, K Lima, M November, O Papa

Absent: I Juliet

Announcements

1. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.
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Business

1. The minutes of the last meeting were approved.
2. Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

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New Business

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Next Meeting: Monday, Oct 19, at 11:30.