Minutes in less than hours: Using LaTeX resources

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Abstract

To illustrate how to build a new LaTeX document class, we develop a class for minutes of meetings.

1 What I needed

Having a reputation of knowing TeX is not like being maitre d' at Le Cirque, exactly, but it does get me phone calls from people that I have never met, and who want me to do something for them. Telling them that I am not an expert TeX coder does not dissuade them. In the end I can usually help, but not with tricky macros. Instead, 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 document class.

I was asked to keep minutes for a committee, and given some samples from the prior year as models. The layout of these models was simple. Each 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 part was a header listing who was at the meeting and who was not. (The last page of this article has an example.)

In the body of the samples were a number of environments. The main one was *Business*, a list of items that the committee took up on that day, which looked like a LaTeX `enumerate` list. There were also some similar environments, including *Old Business* and *Announcements*. Finally, each sample body contained a few more sections, such as *Next Meeting*, that were not lists.

2 First, hit CTAN

The place to look for solutions to TeX problems is the Comprehensive TeX 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 responses but after browsing I found that none of them met my needs.

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

Editor's note: This article was originally published in *The PracTeX Journal*, issue 2005-4, `http://tug.org/pracjourn`. Reprinted, with additions, by permission.

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

3 Second, hit the books

There are many fine books on LaTeX but I happen to rely on Lamport's *LaTeX: A Users Guide and Reference Manual* and Mittelbach et al.'s *LaTeX Companion*.

4 The class framework

The *Companion* describes how to make a LaTeX class file, in particular in its Figure A.1. For a slight modification of that code see Section 4.2 below. Since I planned to work by cribbing all that I could, the most important line says `\LoadClass{article}`. This started my class off with all of the features of Lamport's article class, and from there I just needed to tweak a few behaviors.

4.1 Class options

The only problem that I had with the *Companion*'s Figure A.1 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. The *Companion* explains how to do this; before the `\LoadClass` command, include this line.

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

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

The *Companion* explains this also: I changed the body of the `\DeclareOption*` command to use `\InputIfFileExists`. This command has three arguments: if it finds a file with the name given in the first argument then it reads the file contents and runs the code given as the second argument, otherwise it runs the code given as the third argument.

In summary, if my class contains the line

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

then the options in this first line of LaTeX source

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

will be handled as: for `11pt` it finds no file `11pt.min` and so it passes the option to the `article` class, and for `ttm` it finds the file `ttm.min` and loads it.

4.2 Class code

Here is my class code, adapted from Figure A.1 in the *Companion* (some lines have been edited for presentation). The opening part identifies the class; this is good to have in the log file.

```
% mins.cls
%  Take minutes of meetings
% 2005-Sept-01 Jim Hefferon

% --- Class structure: identification part
% ---
\ProvidesClass{mins}[2005/09/01 v1.00 ...]
\NeedsTeXFormat{LaTeX2e}
```

Next comes some some "initial code" that is about minutes of meetings, not about the structure of the LaTeX class, so I will pass over it until Section 6.1. The rest of the class structure is as we saw in Section 4.1.

```
% --- Class structure: declaration of options
% ---
% This class extends the article class
% Read the documentclass options and pass
% them to article, unless the file
% "<currentoption>.min" exists, then load it
\DeclareOption*{\InputIfFileExists
    {\CurrentOption.min}
    {}
    {\PassOptionsToClass{\CurrentOption}
                        {article}}}

% --- Class structure: execution of options
% ---
\ProcessOptions \relax

% --- Class structure: package loading
% ---
\LoadClass{article}
```

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

5 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 to accomplish these jobs there are packages that are both powerful and easy. You'd be right.

5.1 Page size

To set a LaTeX page size, use the *geometry* package.[2] The *Companion* describes this package, and based on that 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, making shorter lines, for increased readability. But I decided to save paper by making the margin small — no one reads minutes, anyway!

5.2 Headers and footers

As with page dimensions, there is a canonical package for 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. The code below blanks the headers and footers of the first page, and on the following pages 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).

```
\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}}
```

The `\headrulewidth` and `\footrulewidth` need some explaining. By default, *fancyhdr* puts a horizontal line (a rule) across the top and bottom of the page, whose thickness is given by the command. Setting the rule to a thickness of zero points makes it disappear.

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[2] http://www.ctan.org/tex-archive/macros/latex/contrib/geometry

[3] http://www.ctan.org/tex-archive/macros/latex/contrib/fancyhdr

6 Code

At this point, I was stuck. I had cribbed all that
I could and I finally had to write some code of my
own.

6.1 Definitions of lists

First I thought to define the membership of the com-
mittee, to go in the extra file. This is the contents
of the file `ttm.min`.

```
\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}
```

That's when I realized why the LaTeX 2_ε class
structure contains the initial code part that I passed
over in Section 4.2. To have the `\setcommittee` and
`\setmembers` commands available, I needed to define
them before `\InputIfFileExists` reads in the file.
Ah, I get it!

Luckily, I was familiar with the technique needed
to define these two commands. Below, the second
line has `\setcommittee` save the list as `\@committee`
(the at-sign is a LaTeX convention to keep ordinary
users from using the same name). Its matching com-
mand `\show@committee` produces the list.

```
% what is meeting?
\def\@committee{}
\newcommand{\setcommittee}[1]{%
  \def\@committee{#1}}
\newcommand{\show@committee}{%
  \@committee}

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

I use the same technique for some similar functions.

```
% 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 to define 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}}
```

6.2 Document body

As I've mentioned, the main part of the sample doc-
uments that I was given consisted of an enumeration
list *Business* and there were a number of similar
lists. I decided to make a single environment, which
I could specialize from list to list.

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

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

This simply prints "Business," puts a bit of vertical
space, and makes a list (it does not, as shown, sup-
press a page break). I added similar environments
for *Old Business*, *Future Business*, and *Announce-
ments*.

6.3 Document opening

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

```
\documentclass[11pt,ttm]{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 was my first try at the opening's listing.

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

That worked, but — the bane of all software — I decided to add a feature. I wanted that if no one was absent then the `\item[Absent:] \show@absent` line would be left out.

This is a question of finding the right kind of `if` statement. I struggled with it, but some 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}
}
```

7 Conclusion

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

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

The Second Law is: if, truly, no one has ever written a program anything like what you need, and you simply must write it fresh, then put a lot of effort into it, so your program can be cribbed by people following the First Law.

Like many jokes, there is some truth in this, and I have tried here to show how to follow it in a TEX 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 just involved looking up the right tools in the *Companion*. The only real work that I did was in defining the `minutes` environment. Consequently, the total time I spent on the class was only about three hours, and I ended with a usable, and reusable, piece of software (and this nice article).

I sometimes suspect, when I respond to people who call me with TEX 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 TEX and now they have to go back to writing!

You know, I hardly ever get two calls from the same person . . . .

8 Exercises

1. Have the opening text "Members", "Absent", etc., come out in small caps. (*Answer:* Add

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

   between the `\newcommand{\opening@list}{` line and the `\begin{description}` line.)
2. Make a simple memo class. Put your organization's logo on the first page. (*Hint:* in the header of your first page, use LATEX's `picture` environment to place your graphic. Look up how to adjust the header height.)

9 Example output

The next page shows a sample two-page minutes document, along with its LATEX source. (It uses the `lipsum` package to generate text.)

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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, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer 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.

2. Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

3. Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

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, consectetuer 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.

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

3. Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

4. Sed commodo posuere pede. Mauris ut est. Ut quis purus. Sed ac odio. Sed vehicula hendrerit sem. Duis non odio. Morbi ut dui. Sed accumsan risus eget odio. In hac habitasse platea dictumst. Pellentesque non elit. Fusce sed justo eu urna porta tincidunt. Mauris felis odio, sollicitudin sed, volutpat a, ornare ac, erat. Morbi quis dolor. Donec pellentesque, erat ac sagittis semper, nunc dui lobortis purus, quis congue purus metus ultricies tellus. Proin et quam. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos hymenaeos. Praesent sapien turpis, fermentum vel, eleifend faucibus, vehicula eu, lacus.

Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Donec odio elit, dictum in, hendrerit sit amet, egestas sed, leo. Praesent feugiat sapien aliquet odio. Integer vitae justo. Aliquam vestibulum fringilla lorem. Sed neque lectus, consectetuer at, consectetuer sed, eleifend ac, lectus. Nulla facilisi. Pellentesque eget lectus. Proin eu metus. Sed porttitor. In hac habitasse platea dictumst. Suspendisse eu lectus. Ut mi mi, lacinia sit amet, placerat et, mollis vitae, dui. Sed ante tellus, tristique ut, iaculis eu, malesuada ac, dui. Mauris nibh leo, facilisis non, adipiscing quis, ultrices a, dui.

New Business

1. Morbi luctus, wisi viverra faucibus pretium, nibh est placerat odio, nec commodo wisi enim eget quam. Quisque libero justo, consectetuer a, feugiat vitae, porttitor eu, libero. Suspendisse sed mauris vitae elit sollicitudin malesuada. Maecenas ultricies eros sit amet ante. Ut venenatis velit. Maecenas sed mi eget dui varius euismod. Phasellus aliquet volutpat odio. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Pellentesque sit amet pede ac sem eleifend consectetuer. Nullam elementum, urna vel imperdiet sodales, elit ipsum pharetra ligula, ac pretium ante justo a nulla. Curabitur tristique arcu eu metus. Vestibulum lectus. Proin mauris. Proin eu nunc eu urna hendrerit faucibus. Aliquam auctor, pede consequat laoreet varius, eros tellus scelerisque quam, pellentesque hendrerit ipsum dolor sed augue. Nulla nec lacus.

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

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

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

% file ttm.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}
```