

```
\begin{here}
```

```
\title{Sujet du jour:  
Creating my first LATEX article, Partie 2}
```

```
\author{Tim Null}
```

```
\input{LATEX Survivor's Guide}
```

### Abstract

This is the second in a series of [columns](#) on the preparation of a simple and short L<sub>A</sub>T<sub>E</sub>X article. The main topic of discussion is techniques for avoiding and resolving L<sub>A</sub>T<sub>E</sub>X errors. It is proposed that working to minimize risk is a good strategy for new L<sub>A</sub>T<sub>E</sub>X users. Techniques for reducing risk are offered. The topic for the simple example article will be introduced, and the topic will be related to the philosophy of risk minimization. The information presented in the first `\begin{here} column` is reviewed in an included appendix. This material is re-presented in a different and, *hopefully*, clearer format.

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`\begin{here}` Col. #2: Topic #1, Part #2

Tim Null is a semi-*tired* Technical Editor. Recently he's been keeping himself occupied doing copyediting and figure "repair"; that is, when he's not busy watching his old [Marcus Welby](#) tapes.

# 1 Introduction

The `\begin{here} column` is for L<sup>A</sup>T<sub>E</sub>X newbies and wannabes. I happen to be a L<sup>A</sup>T<sub>E</sub>X rube myself, so I am personally looking forward to learning lots of good stuff. I come from a family of teachers, and they say the best way to learn a subject is to *teach* it. I guess this column will put that theory to the test, even though I don't consider myself much of a teacher. I missed out on the family's teacher gene, but that's OK. I'm not looking to use the `\begin{here} column` to become a L<sup>A</sup>T<sub>E</sub>X instructor. I consider myself more like the guy in the next cubicle who happened to get hired a couple months before the other recent hires. I've had some time to scope the place out; for example, I know where the johns are, and, perhaps just as important, I know which Coke<sup>®</sup> machines *actually* work.

## 1.1 Today's topic: It's a mistake, right?

I must be an idiot to discuss L<sup>A</sup>T<sub>E</sub>X errors in my second `\begin{here} column`. If you look at a typical L<sup>A</sup>T<sub>E</sub>X book you might find that detailed mention of errors is put off until one of the final chapters, stuffed away into an appendix, or omitted altogether. There's a reason for this. Most authors feel that L<sup>A</sup>T<sub>E</sub>X error messages are too confusing and debugging L<sup>A</sup>T<sub>E</sub>X code is too complicated for new users.

So then why am I devoting my second `\begin{here} column` to L<sup>A</sup>T<sub>E</sub>X errors?

When I started using L<sup>A</sup>T<sub>E</sub>X, I started having errors right away. The errors didn't wait for me to read to the end of a book. Perhaps I'm the exception that makes the rule, but I had more errors my first twenty minutes as a L<sup>A</sup>T<sub>E</sub>X user, than I typically have now in a two week period. If I hadn't been required to learn L<sup>A</sup>T<sub>E</sub>X for my work, I would have thrown in the towel after that first twenty minute session.

I suspect, like me, other new L<sup>A</sup>T<sub>E</sub>X users need techniques and strategies to deal with L<sup>A</sup>T<sub>E</sub>X errors, and they need them from virtually minute one.

## 1.2 Cards and letters...

After you read this `\begin{here} column` in this issue of *The PracT<sub>E</sub>X Journal*, please let me know what you think of the `\begin{here} column` so far. I welcome your ideas and suggestions. And do let me know what topics you would like me to cover in future `\begin{here} columns`.

It's very easy to contact me. Just [click](#) on the [Comment on this paper](#) link in this [folder](#), or, if you prefer, e-mail me at [tim@timnull.com](mailto:tim@timnull.com).

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Smiley says: When you send an e-mail, use a Subject relevant to this column, so your message isn't mistaken for spam.

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This is a *special* Collector's Golden Edition PDF file. It is divided into three parts. The first part is the main topic. The second part includes exciting contests not included in the original PDF file. The third part contains scenes, which were deleted from the original PDF file. The author, editor and staff hope you enjoy this special collector's edition, which is provided at no extra charge.

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## Part I

# Sujet du jour<sup>1</sup>

## 2 The beat goes on...<sup>2</sup>

It has been said many times, by many people, that we should *hope for the best, but prepare for the worse*. In this section I will discuss (a) how to avoid trouble, but also (b) prepare for those times when things *do* go wrong—when, as the bumper sticker says, “Stuff Happens!” Then perhaps, after all is said and done, we can all learn to develop contingencies to deal with adversity.

### 2.1 Handling errors

I admit I am more maladroit than adroit, when it comes to  $\LaTeX$  coding. I’m also *not* deft at finding or fixing  $\LaTeX$  errors. But—to my credit, I guess—I have learned to work within my limitations. I keep things simple. I take baby steps. I pray like a premed student taking a chem exam! In other words, I do what I can to avoid errors, but, if that fails, I try to avoid those humongous/gargantuan errors that eat up a half-days work for sport.

Below I will review some methods I have used

1. to avoid  $\LaTeX$  errors, and
2. to fix and find  $\LaTeX$  errors.

#### 2.1.1 Avoid errors like the plague

**Special characters.** “Special” characters “cause” *special* problems!

$\TeX$  and  $\LaTeX$  have what are called “special characters.” They’re called special characters, because they are reserved by  $\LaTeX$  and  $\TeX$  for *special* purposes. We have already seen one example. Recall the commands:

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<sup>1</sup>According to [Babelfish](#) “Sujet du jour” is the French translation for “The subject of the day.”

<sup>2</sup>...preparing yourself for those pounding headaches.

```
\documentclass{article}
\begin{document}
\end{document}
```

Notice that all three of the above commands began with a [backslash](#) (i.e., “\”). In  $\LaTeX$  and  $\TeX$  all commands start with a “\”—the backslash tells  $\LaTeX$  and  $\TeX$  that a command is beginning.

$\LaTeX$  has other special characters. The special characters are:

\   &   \$   %   ~   \_   {   }   #   ^

From left to right, the special characters listed above are: backslash, ampersand, dollar sign, percent sign, tilde, underscore (or “underline,” if you prefer), left curly brace, right curly brace, hash mark (AKA as the “pound sign” in the U.S.), and the “hat” symbol (the uppercase character above the “6” on a computer keyboard).

The special characters are reserved by  $\LaTeX$  for  $\LaTeX$  commands and  $\TeX$  commands. These commands are the only way  $\LaTeX$  can tell what you want it to do, so it has to be very fussy about how these special (or *command*) characters are used. If you use one of these characters, and its not being used as part of a  $\LaTeX$  or  $\TeX$  command, then  $\LaTeX$  is going to give you an error message, when you typeset your file. (The exception is the tilde, i.e., “~”. In my experience, a “nude” tilde will typically just produce a blank space. In fact, more often than not, I completely forget that the tilde is a *special* character, and I immediately begin speaking the tongues of my ancestors, when I notice all my tildes have disappear into the mist. It’s a *scunner* I have for that, I do.)

This doesn’t mean you can never use these characters in your text, because there is a way to “tell”  $\LaTeX$  to “ignore” the special command properties of these characters, and just treat them as “normal” characters. With the exception of the backslash itself (i.e., \), this is accomplished by immediately preceding the special character with a backslash; that is, use `\&` for `&`, `\$` for `$`, `\%` for `%`, `\~{ }` or `\textasciitilde` for `~`, `\~ n` or `\~{n}` for `ñ`, `\_` for `_`, `\{` for `{`, `\}` for `}`, `\#` for `#`, and use `\^{_}` for `^` (where “\_” is a space). If you need to reproduce a backslash character, this can be done with either the `\verb=\=`<sup>3</sup>, `\textbackslash`, or

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<sup>2</sup>What’s a “scunner”? [E-mail](#) me the answer.

<sup>3</sup>I’d explain how the `\verb` command works, and why the second command needs dollar signs, but I don’t want us to get off course. We’ll come back to these things in a later session as part of another column.

the `\backslash` command.

### What's the difference between `\~`, `\~{n}`, and `\~{ }`?

- `\~` generates a tilde over whatever character that immediately follows; for example, `"\~ u"` will result in "ũ."
- `\~{n}` generates a tilde over whatever character is inserted between the two curly braces; for example, `"\~{u}"` will result in "ũ."  
Note: Although the first and second items ended up with the same result, the latter is considered better coding—among other reasons, it's immediately clear what letter is to be accented with a tilde. I'm not a programmer, so I like to think of it as good punctuation. Good coding, like good punctuation, helps you understand meaning and purpose; that is, it helps you "read" your own code. It saves time, when you come back to code you wrote months before. Of course, good coding helps prevent errors. If you like me, you may not always be able to tell good coding practices from cold spaghetti. That's why I usually take someone's word for it, when they tell this or that is good coding; but I wouldn't expect you to necessarily do the same—you may be from [Missouri](#).
- `\~{ }` generates a tilde over an *empty* space, not a character (notice there's no space between the curly braces); for example, `"\~{ }"` will result in "˜". (Let me enlarge the tilde, so you can see it better: "˜".)

**Comment about the % symbol.** If you put a percent sign (i.e., "%") in front of a line in your  $\LaTeX$  file (also called your "source" file) the line won't be typeset (AKA processed, compiled) by `latex` and sent to your viewable output (e.g., PDF, dvi, printed pages). When the % character is in front of a line, it is said that the line is "commented out" or that the line is a "comment line." Although the line will not be viewable in your output, be aware, of course, that anyone viewing your source file will be able to read your comment lines. Note that comment lines are a great way to put notes to yourself in your file; for example, the source for a tricky  $\LaTeX$  command, reminders of research needing to be completed for your current article, etc.

## Warning!

If (a) you use a  $\LaTeX$  special character in your  $\LaTeX$  file, and (b) it isn't part of a  $\LaTeX$  command, then (c) when you typeset your  $\LaTeX$  file, you'll get an error message and no viewable output (dvi, PDF, PS) will be created.

Smiley says: **If you want to use a  $\LaTeX$  special character in your text, precede the character with a backslash (i.e., “\”). For example, if you want to use an ampersand, type `\&`.**



**Typos and Forget Me Nots.** Plain old “silly” unintentional mistakes are a major source of  $\LaTeX$  errors. I have composed a partial list of common mistakes. Avoid these *fellows*, and you can avoid lots of frustration. Conversely, if you have an error, and you cannot figure out what is wrong, it could be that one of these bugaboos is bugging you.

- **Start commands with a backslash (i.e., “\”).** I'm a touch-typist, and hitting the backslash-key can be a rather awkward pinky-finger motion. It is easy to “reach and miss” without knowing it.
- **Begin and end arguments.** I've already beat-up this *horse* pretty badly. Just remember, if you have something like a `\begin{center}`, make sure you also have an `\end{center}`.
- **Match braces and brackets:** `{...}...[...]`. I don't know if this is a problem for *non* touch-typist, but frequently on a closing curly brace, my left pinky will let up on the **Shift** key before my right pinky hits the curly brace key. The end result is a bracket (i.e., `]`) rather than a curly brace (i.e., `}`), and I end up with a non-matching pair (e.g., `{...]`). In  $\LaTeX$  all braces and brackets must come in sets of two, that is, matching pairs.  
Be sure to remember that braces and brackets are *not* interchangeable.  $\LaTeX$  is *extremely* fussy about when it will accept braces and when it will except brackets. (I will discuss the reason for this in a later column.)
- **Braces and brackets come in pairs.** “Opening” braces and brackets must have a “closing” brace or bracket. This is similar to the preceding item, except this is a situation where you fail to include a closing brace or bracket (e.g., `{... [...]`).
- **Put a “\” immediately before each special character.** When I copyedit files, the reference sections are often incomplete, so I'll end up pasting information I've obtained from web pages and other non- $\TeX$ ie sources. Invariably this pasted information will contain ampersands and possibly other special characters that would cause

havoc, if the file was typeset. That's why when I paste or import text, I always check the pasted and imported text carefully for special characters, before I typesetting my file again.

Smiley says: **Babies are short, so when they fall,  
they don't have far to go.**



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My wife frequently works at home, and on occasion I hear her scream, "I just lost 30 minutes worth of work!"

Compulsively, and without regard for life and limb, I will invariably ask, "Did you save a copy of your file?"<sup>4</sup>

I then receive a curt reply full of **baneful** tones, "Yes, about a half hour ago."

Needless to say, if my wife had saved her file twenty minutes before, she would only have lost twenty minutes of work. If she had saved her file ten minutes before, she would have only lost ten minutes of work. *Et cetera and so forth.*

*The story continues on and on, until it ends.*

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**Take baby steps.** Experience has taught me that it's important not to gamble with one's work. Because of my desire to diminish the risk of losing one's work to disaster, I've been developing what I originally called the "Baby-Step Method for L<sup>A</sup>T<sub>E</sub>X Users." The "method" is a work in progress. After it matured slightly, I changed the name to "Basic L<sup>A</sup>T<sub>E</sub>X Survival Techniques." As things progress with the `\begin{here} column`, (a) I will offer examples illustrating how these techniques can work, and (b) hopefully readers of the column will offer their own personal techniques for our "L<sup>A</sup>T<sub>E</sub>X Survival Kit." As time goes on, I will probably also make numerous additions and revisions.

My personal approach to survival is based on three main principles.

- Minimize risk.
- Build on what you already know.
- Work in small "typesettable" increments.

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<sup>4</sup>I don't know why, but my query is never received in the loving spirit that it is offered.

We will frequently return to these three principles in future `\begin{here} columns`. The first two probably don't need any explanation at this point. The third item, perhaps, might need a short explanation. When I refer to a small typesettable increment or *building block*, I am referring to the smallest amount of code necessary to complete a command, so that the file can once again be "typeset" (i.e., compiled or processed using `latex`) without any errors being generated. (I'll discuss the advantages of working in small increments in one of the items below.)

### Some Basic L<sup>A</sup>T<sub>E</sub>X Survival Techniques

1. **Save often.** Save your L<sup>A</sup>T<sub>E</sub>X file frequently (or use an editor that automatically saves your file on a regular basis).
2. **Typeset often.** When you are doing "command-intensive" work, save and typeset your work frequently.
3. **Keep it simple.** Focus on content, not formatting. (We will revisit this point in future `\begin{here} columns`.)
4. **Use white space—it's free!** You can use vertical and horizon space in your L<sup>A</sup>T<sub>E</sub>X file to visually organize your L<sup>A</sup>T<sub>E</sub>X commands and environments, so that when you come back to them, it is easier to reconstruct what's happening with the code. (We will revisit this point in future `\begin{here} columns`.)
5. **Use L<sup>A</sup>T<sub>E</sub>X commands—don't reinvent the wheel.** Novice users frequently have an impulse to change the way L<sup>A</sup>T<sub>E</sub>X does things, but this introduces a chance for errors, if you don't yet know what you're doing. I'd suggest that you resist this impulse. You can learn all the ends and outs of nuanced L<sup>A</sup>T<sub>E</sub>Xing later. (I was 3½ when I discovered I could go faster and farther, if I left my pride at home, and rode my tricycle, rather than riding a bicycle smack into a tree. That lesson left a lasting impression on me.)
6. **Use "building blocks"** When trying something new in L<sup>A</sup>T<sub>E</sub>X, start with a "piece" that you have used before, and you know that it works. You can then add and test little blocks of code one at a time. When you test your code frequently, it is easier to locate and debug errors, and, if need be, remove items that don't work. I have seen situations where people have mangled their L<sup>A</sup>T<sub>E</sub>X file so badly, they've had to go back to a version of the file that was a several days old. If you test your code frequently, and you can't get something to work, you will know where the problem is, and you can delete the offending code. You can then work on some

other portion of your file, until you've had a chance to research the solution to your current problem. (We will revisit this point in future `\begin{here} columns`.)

7. **Stand on the shoulders of giants: STEAL!** I'm not suggesting plagiarism here. I'm suggesting you look at other people's code for examples that you can use as mini-templates (i.e., *hunks* of reusable code) in your own work. You can find examples in other people's paper's and in the many books and writings on L<sup>A</sup>T<sub>E</sub>X.

### 2.1.2 Correcting errors

I've been stressing the best defense is a good offense; that is, first (a) practice "safe" typesetting, and do your best to avoid errors, and (b) typeset frequently so that when errors occur, you have a good idea where they are.

But we all know errors happen. I will briefly introduce the topic of error correction. This obviously will be a topic that we will come back to in future `\begin{here} columns`.

**L<sup>A</sup>T<sub>E</sub>X log file.** When L<sup>A</sup>T<sub>E</sub>X processes or typesets a file, it creates a number of intermediary files to store information until it is ready to create its output file (e.g., dvi or PDF). One of these files is the log file. This file keeps a transcript of all the messages that L<sup>A</sup>T<sub>E</sub>X sends to the "console" while L<sup>A</sup>T<sub>E</sub>X is processing the file. The log file has an "log" extension, so if your main L<sup>A</sup>T<sub>E</sub>X file is named `hello.tex`, the log file will be named `hello.log`.

If an error occurs while the file is being typeset, L<sup>A</sup>T<sub>E</sub>X will attempt to describe the error at the end—or near the end—of the log file.

For example, when I put `\begin{center}` in my file, but I didn't include a `\end{center}` I got the following message at the end of my log file:

```
!LaTeX Error: \begin{center} on input line 664 ended by \end{document}.
```

```
See the LaTeX manual or LaTeX companion for an explanation.
```

```
Type H<return> for immediate help
```

```
...
```

```
1.693 \end{document}
```

```
?
```

In the above example, the important information, is on the line that begins with **!LaTeX Error**. I intentionally inserted a `\begin{center}` and left out the `\end{center}`. In the log file, we can see that L<sup>A</sup>T<sub>E</sub>X tells us that the `\begin{center}` was terminated by a `\end{document}` command, and we should be smart enough to figure out that it should have been terminated by a `\end{center}` command. Notice that L<sup>A</sup>T<sub>E</sub>X also attempts to give us the line number where the error occurs. Quite often L<sup>A</sup>T<sub>E</sub>X will have a pretty good idea where the error happened. Other times, like when there are several errors, L<sup>A</sup>T<sub>E</sub>X won't be so certain. In the later case, L<sup>A</sup>T<sub>E</sub>X will likely given you the line number "just before things started to go South." If you have code that's been OK for 30 minutes, and suddenly L<sup>A</sup>T<sub>E</sub>X starts saying it's bad, start looking at the code that immediately follows. You'll probably find an error or two in the next paragraph or so.

If you're using a text editor designed to be used with L<sup>A</sup>T<sub>E</sub>X, it should have the option to either display the log file automatically when a file is typeset, or it should have a command to open the log file, so you can see error statements, when they occur.

### **You're thinkin' HELP isn't helpful?: Here's hefty heapfuls of help.**

New L<sup>A</sup>T<sub>E</sub>X users frequently complain that L<sup>A</sup>T<sub>E</sub>X help isn't helpful. Doug and I discussed available resources to obtain help in the first `\begin{here} column`, but, again because some people found that presentation confusing, I'll give an abbreviated version here.

- I think every new L<sup>A</sup>T<sub>E</sub>X user should download the following two introductory L<sup>A</sup>T<sub>E</sub>X books (they're free PDF files):
  - [The Not So Short Introduction to L<sup>A</sup>T<sub>E</sub>X2e](#) by Tobias Oetiker.
  - [Formatting Information](#) by Peter Flynn. (Flynn's book is also available in [html](#).)

I suggest you take a couple hours to print copies, punch holes, and load them in loose-leaf notebooks. (You can buy or borrow hole punches that nicely punch three holes to a page.)

- There are also two commercial books that I can recommend for new L<sup>A</sup>T<sub>E</sub>X users. One to get you going, and one to keep you going. The Griffiths and Higham book listed below is a nice short book to work through cover to cover to give yourself a nice beginners range of L<sup>A</sup>T<sub>E</sub>X skills. The Kopka and Daly book listed below is an excellent L<sup>A</sup>T<sub>E</sub>X desk reference. (Many people recommend *The L<sup>A</sup>T<sub>E</sub>X Companion* by Mittelbach and Goossens. In fact, Doug Waud and I recommended the book in our

first `\begin{here} column`, but after that column was published a reader suggested that *The L<sup>A</sup>T<sub>E</sub>X Companion* was too difficult of a book for a novice. Upon consider, and after a re-look at the book, I have to agree. Virtually every page of the book assumes a good L<sup>A</sup>T<sub>E</sub>X background, and therefore it is clearly a book best suited for intermediate and advanced L<sup>A</sup>T<sub>E</sub>X users.)

- Helmut Kopka and Patrick W. Daly. (2004). *Guide to L<sup>A</sup>T<sub>E</sub>X* (4th ed.). Boston, MA: Addison-Wesley Professional.
  - David F. Griffiths and Desmond J. Higham. (1997). *Learning L<sup>A</sup>T<sub>E</sub>X*. Philadelphia, PA: SIAM.
- 
- Check out the [T<sub>E</sub>X FAQ](#) first, when you have a question. The odds are, someone else, has already asked and answered the question for you.
  - Search and/or ask the [comp.text.tex](#) list at [Google.com](#).
  - [Search](#) or join the [texhat](#) mailing list.
  - Join a user group such as [TUG](#).
  - Continue to read [The PracT<sub>E</sub>X Journal](#) and the `\begin{here} column`.

## Part II

# Attaque des lapins de la poussière<sup>5</sup>

## 3 Housekeeping

**Future `\begin{here}` columns.** I have been doing a lot of thinking about what I hope the `\begin{here} column` might be able to accomplish over the next few years, and I've been working on a statement of my plans for the `column`. If you have ideas, comments, suggestions on what you like to this accomplished within the framework of this column, please let me know.

I have included some of my current thoughts below.

### 3.1 Elvis has left the building<sup>6</sup>

There have been changes since the first `\begin{here} column`.

- [Douglas Waud](#) has passed the baton to me.

I didn't choose to become a `\begin{here}` columnist. It just seemed to happen. When, [Douglas Waud](#)<sup>7</sup> became seriously ill, the editor of The `PracTeX` Journal (TPJ) asked me to step in and help get Doug's first `\begin{here} column` ready for publication. Later on, when we all learned Doug could't resume authorship of the column, I was asked to takeover as the `\begin{here}` columnist. The downside is I'm *not* a `TeX` guru. The upside is... Well, I've yet to discover the upside.

### 3.2 `LATEX` by any other name<sup>8</sup>,...

In the first column it was stated that the `\begin{here} column` was for both `TeX` and `LATEX` users. I have decided to narrow the focus.

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<sup>5</sup>According to [Babelfish](#) "Attaque des lapins de la poussière" is the French translation for "Attack of the dust bunnies"—wasn't that the name of a Star Wars movie?

<sup>6</sup>[What? You were expecting Elvis Costello?](#)

<sup>7</sup>PDF file download.

<sup>8</sup>... would be spelled differently.

- The `\begin{here} column` will focus on  $\LaTeX$ <sup>9</sup>.

There are times when  $\TeX$  commands are effective and efficient solutions to problems. In other words, they *can* save our cute little patooties. So, from time-to-time, I may throw in some  $\TeX$  commands, but, for the most part, I plan on limiting the discussion to  $\LaTeX$  (i.e.,  $\LaTeX 2_{\epsilon}$ ) and its related packages and “friends.” (In the friends category I include [pdf \$\LaTeX\$](#) .)

Exciting things are happening in the  $\TeX$  world, but “bleeding-edge” stuff falls outside the purview of this column (e.g., [Con \$\TeX\$ t](#)). To learn what’s new and hot, check out other columns and papers in [The Prac \$\TeX\$  Journal](#), or browse the web pages of [TUG.org](#).

### 3.3 Change #3: Independence Day, *every* day

To the extent it is feasible and reasonable to do so

- I will keep the `\begin{here} column` OS independent.

When Operating System (OS) independence isn’t practical, I will attempt to confine myself to [Pro \$\TeX\$ t](#) (i.e., Microsoft Windows<sup>®</sup>, [MiK \$\TeX\$](#) , [Ghostscript/GSView](#), &  [\$\TeX\$ nicCenter](#)). In the first `\begin{here} column`, my efforts to include information about  $\TeX$  running on the Mac<sup>®</sup> and Linux<sup>®</sup> was criticized. My jumbled job was a muddled mess; so I’m told.

**Smiley says:** If you would like Mac and/or Linux information included in future `\begin{here} columns`, please send me an e-mail message.



### 3.4 The $\LaTeX$ Survival Guide

I’ve thinking about putting together a  $\LaTeX$  Survival Guide. You know, something like The Hichhiker’s Guide, except less like a bible, and more like a pamphlet. I’d love to know what you think should go into such a guide. Please contact [me](#), and let me know.

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<sup>9</sup>So you say you’re not clear on the difference between  $\TeX$  and  $\LaTeX$ . Well, fear not. You’re not alone. We’ll discuss this topic in a future `\begin{here} column`. If you can’t wait, a support group meets weekly at the “Y.”

## 4 Yard Work

### 4.1 Concours faux

I'm having four fake contests<sup>10</sup> relating to the #2 `\begin{here}` column appearing in the April 2005 issue of [The PracTeX Journal](#). I'm calling the contests "fake" because (a) there will be no prize other than the possibility of favorable mention in a future `\begin{here}` column, and (b) there won't be any attempt at fair and unbiased judging. I'll be the sole judge with the absolute and final say, and that's as unbiased and fair as it's going to get. But this is a democracy, so you should be accustomed to rules like these.

Two rules apply to all contests:

1. The determination of the [Judge](#) is final.
2. A short questionnaire contained in the contest submission file must be completed, so we know your name, e-mail address, level of  $\LaTeX$  skill, and whether you're declaring yourself a  $\LaTeX$  survivor or casualty.<sup>11</sup>

**Concours faux numéro un:** This fake contest is for novice  $\LaTeX$ ers *only*.

In the appendix on [installing TeX](#) I used a two-level outline to list some  $\TeX$  installation options (bullets at the top level, "en" dashes at the next). Your task will be to create a similar list. The rules for this fake list contest follow:

- You must be a  $\LaTeX$  novice, and this must be your first two-level  $\LaTeX$  list.
- You must complete and submit your own work. (After you have completed your submission, you can check my [source file](#), or other  $\LaTeX$  resources, but if you then alter your submission, your Karma will rust and peel.)
- You must have at least two top level items, and each top level item must have at least two sub-items.
- Use the [list template](#) shown below.

---

<sup>10</sup>*Concours faux* means "fake contest" according to [Babelfish](#).

<sup>11</sup>It's optional, but if you'd like, you can also provide your bank routing number, SSN, DOB, hometown, Mother's maiden name, and name of childhood pet.

## List template: [list.tex](#)

```
\documentclass{article}
% My name is:
% My email address is:
% My level of LaTeX experience is (mark):
% __novice
% I am a LaTeX (mark one):
% __survivor __casualty
% The original LaTeX 2-level LIST is coded below:
%% % % % % % % % % % % % % % % %
\begin{document}

\end{document}
```

**Concours faux numéro deux: Errors.** This second fake contest is geared towards novice  $\text{\LaTeX}$  users, but is also open to intermediate and advanced users.

I have posted a file online called [errors.tex](#), which novice `\begin{here} column` readers are invited to download. The file is—as the file name suggests—full of  $\text{\LaTeX}$  coding errors. I have attempted to keep the errors in line with the types of errors I have discussed in this `\begin{here} column`, so I hope you will be able to successfully correct the errors without any particular difficulty. Please complete the short questionnaire at the top of the [errors.tex](#) file. If the questionnaire isn't completed, I won't be able to include you in the contest. The first novice, intermediate user, and advanced user to return a corrected [errors.tex](#) file will be listed as the winner in a future `\begin{here} column`. Be sure to honestly complete the question that asks if you are a novice, intermediate, or advanced  $\text{\LaTeX}$  user. Besides mention in a future `\begin{here} column`, the winners will sense an aura of good will for several minutes.

The [errors.tex](#) file can be downloaded [here](#).

## Concours faux numéro trois: Smiley.

This third fake contest is to create a Smiley face using only  $\text{\LaTeX}$  code. The contest is open to all levels of users. The rules follow:

- You must do original work. If your code ends up being a duplication of code available on CTAN or elsewhere, you must (i) provide a note from your mother stating

you did original work, (ii) convince the judge through the use of persuasion or gratuity that you did original work, or (iii) withdrawn your entry.

- Only L<sup>A</sup>T<sub>E</sub>X code can be used. For example, no graphic images can be included as any part of your smiley face entry.
- The `\input`, `\include`, or any similar commands that now exist, or may be devised, cannot be used in this contest.
- Use the Smiley face [template](#) (shown below). No additional packages can be used; that is, you can only use the `color` and `rotating` packages.

### Smiley face template: [smiley.tex](#)

```
\documentclass{article}
\usepackage{color}
\usepackage{rotating}
% My name is:
% My email address is:
% My level of LaTeX experience is (mark one):
% __novice __intermediate __advanced.
% I am a LaTeX (mark one):
% __survivor __casualty
% The original LaTeX code for my Smiley Face is listed below:
%% %% %% %% %% %% %% %% %% %% %% %% %% %% %% %%
\begin{document}

\end{document}
```

**Concours faux numéro quatre.** This fake contest is for all levels of users.

The fourth fake contest has to do with the source code for this [column](#). The source code, or original L<sup>A</sup>T<sub>E</sub>X file, can be downloaded from:

<http://tug.org/pracjourn/2005-2/null-bh02/null-bh02.tex>

I usually don't show people my L<sup>A</sup>T<sub>E</sub>X code for the same reason I don't wear a Speedo at the beach—I don't like to embarrass myself! I'm providing my source code for this column—and hopefully all future `\begin{here}` [columns](#), so that we both can learn from this experience.

I invite you to look over the source file, and let me know if you can improve upon my code—devise more efficient and elegant ways of accomplishing the same things. Just send me your comments and suggestions. What I deem to be the best ideas will be published in future columns.

The rules for this fake contest are as follows:

- There's no prize other than possible publication of your idea.
- I and the editor of The PracTeX Journal are the only and final judges on an idea's worth and suitability for publishing.
- Submissions that are deemed offensive will be disqualified.
- Entries must be related to the L<sup>A</sup>T<sub>E</sub>X commands used in the #2 `\begin{here} column`, and not to the content or opinions expressed in the `\begin{here} column`.
- The `\usepackage`, `\input`, `\include`, or any similar commands that now exist, or may be devised, cannot be used in this contest.
- Use the [source code template](#) (shown below).

### Source code template: [source.tex](#)

```
\documentclass{article}
% My name is:
% My email address is:
% My level of LaTeX experience is (mark one):
% __novice __intermediate __advanced.
% I am a LaTeX (mark one):
% __survivor __casualty
% The original LaTeX code for my suggested
%     source code revisions are listed below:
%% % % % % % % % % % % % % % % %
\begin{document}

\end{document}
```

**Preview of upcoming fake contests.** You'll want to stay tuned for future exciting fake contests being held right [here](#) at the `\begin{here} column`.

- There are two future fake contests I am really excited about:  
[The \begin{here} column Logo & Motto Contests](#).  
**Entries for these contests can focus on one of three themes:**  
**(i)  $\LaTeX$  begins here, (ii) I am a  $\LaTeX$  survivor, or (iii) I am a  $\LaTeX$  casualty.**  
I am giving you an advance peek, so you can start to think about your entries.
- Another future `\begin{here} column` fake contest will be:  
[The \begin{here} column Online  \$\LaTeX\$  Scavenger Hunt](#).  
**Contestants will have to search websites such as the  [\$\LaTeX\$  FAQ website](#), [CTAN](#), and [TUG.org](#) in order to solve a series of  $\LaTeX$  related problems.**

## 5 Concluding remarks

We covered a lot of ground this time around. You may have thought we got off on several digressions, or we put the cart before the horse a couple times. Maybe so, but I felt we needed to start thinking like  $\LaTeX$ ers, before we could really do  $\LaTeX$ , and that was the main point of this column—to get us all thinking like  $\LaTeX$ ers.

Next time we'll discuss the title page and the preamble of the  $\LaTeX$  document. My brief closing remarks follow...

## References

- [1] Eckert, Alan W. (1995). *That dark and bloody river: Chronicles of the Ohio River Valley*. New York, NY: Bantam Books.
- [2] Flynn, Peter. (2003). *Formatting information: A beginner's introduction to typesetting with L<sup>A</sup>T<sub>E</sub>X*. *Tugboat*, 23(2), 115–218.  
<http://www.tug.org/tex-archive/info/beginlatex/>
- [3] Kopka, Helmut, and Patrick W. Daly. (2004). *Guide to L<sup>A</sup>T<sub>E</sub>X* (4th ed.). Boston, MA: Addison-Wesley Professional.
- [4] Mittelbach, Frank, Michel Goossens, Johannes Braams, David Carlisle, and Chris Rowley. (2004). *The L<sup>A</sup>T<sub>E</sub>X Companion* (2nd ed.). Boston, MA: Addison-Wesley Professional.
- [5] Oetiker, Tobias, Hubert Partl, Irene Hyna, and Elisabeth Schlegl. *The Not So Short Introduction to L<sup>A</sup>T<sub>E</sub>X2<sub>ε</sub>*. Unpublished manuscript.  
<http://www.tug.org/tex-archive/info/lshort/english/lshort.pdf>

## Part III

# Scènes supprimées<sup>12</sup>

## A `\remember{what?}`: A quick review

### A.1 Installing T<sub>E</sub>X

Since my original T<sub>E</sub>X installation instructions were certified as *whacked*, I feel duty-bound to try again. This time I will attempt to distill my instructions into just a few short lines. That might eliminate some confusion. Nonetheless, be sure to watch for some thoroughly illuminating papers on the subject of T<sub>E</sub>X installation in the July 2005 issue of The PracT<sub>E</sub>X Journal. But let's get back to my revised installation instructions. Here goes:

- If you are using Microsoft Windows:
  - Go to the [ProT<sub>E</sub>Xt](#) page on [TUG.org](#), and follow the installation instructions for ProT<sub>E</sub>Xt<sup>13</sup>.
  - Install Adobe [Acrobat Reader](#), if you don't currently have Acrobat Reader or some other version of Adobe Acrobat installed on your system already.
- If you use a Mac:
  - Read the [Schremmer paper](#) in the 2005(2) issue of [The PracT<sub>E</sub>X Journal](#).
  - Go to the [T<sub>E</sub>XShop](#) website, and read their instructions on how to install T<sub>E</sub>XShop and T<sub>E</sub>X on a Mac.
- Linux users:
  - If you're switching to Linux, and you are new to L<sup>A</sup>T<sub>E</sub>X, I suggest you pick a Linux distribution that includes T<sub>E</sub>X.

---

<sup>12</sup>According to [Babelfish](#) “Scènes supprimées” is the French translation for “Deleted scenes”—these “scenes” are only included in the special collector's [Golden Edition](#) PDF file.

<sup>13</sup>ProT<sub>E</sub>Xt includes [MiK<sub>T</sub><sub>E</sub>X](#), [Ghostscript/GSView](#), and [T<sub>E</sub>XnicCenter](#).

- If you're already using Linux, you may already have T<sub>E</sub>X (and therefore L<sup>A</sup>T<sub>E</sub>X). Check to see if T<sub>E</sub>X has been installed, or if the T<sub>E</sub>X packages are on your installation discs (look for a `tex` directory or files with `tetex` in the name); otherwise, check to see if the T<sub>E</sub>X installation packages are available for download from your distribution's website.
  - If you are an experienced Linux user, you should consider using [T<sub>E</sub>XLive](#).
  - A reviewer of this paper mentioned that the Red Hat and Fedora teT<sub>E</sub>X RPMs are out-of-date; therefore, if you're using a Linux distribution based on Red Hat or Fedora, you should probably be using [T<sub>E</sub>XLive](#).
- If all else fails, go to the [TUG.org](#) website, and find out how you can obtain a copy of [T<sub>E</sub>XLive](#).
  - If you are interested in commercial implementations of T<sub>E</sub>X, you can find a [vendor list](#) on the [TUG.org](#) website.

People frequently ask me what T<sub>E</sub>X implementation (or implementations) I use, so I might as well beat you all to the punch, and go ahead and answer that question here and now. I'm not providing this information with the purpose or intent of recommending any particular products. I'm providing this information so that you can better understand my background and possible bias. In other words, so you can be a more informed reader.

- When I edit other people's work, I usually use WinEdt and MiK<sub>T</sub><sub>E</sub>X on a PC. I like using [MiK<sub>T</sub><sub>E</sub>X](#) in this situation, because compatibility issues are almost nil. Most files I receive compile the first time, without any editing. I like [WinEdt](#) in this situation, because the tabbed windows enable me to switch quickly between numerous open files, and WinEdt has many other features to recommend it. WinEdt does have a quirky side (from an occasionally non-standard *Windoze* point-of-view). Probably because it is the product of one man's imagination. I've been tempted to switch to [T<sub>E</sub>XnicCenter](#), and that is why I might give T<sub>E</sub>XnicCenter a *test drive* in a future column.
- When I do my own work, I use either [PCT<sub>E</sub>X](#) on my desktop PC or [T<sub>E</sub>XShop](#) on my PowerBook Mac.

**Smiley says:** **Do you have questions? If you do, you can check out the list of available resources at [TUG.org](#). And, of course, I'm always tickled to share my neolithic opinion, just send me an e-mail.**



## A.2 Exercise #1: The “Hello World!” file

If you read the first `\begin{here} column`, you may recall that in Exercise #1<sup>14</sup> we created a  $\text{\LaTeX}$  file that contained the text “Hello World!”; and in the process of creating that file, we learned some important stuff about  $\text{\LaTeX}$ .

- First, we learned the essential three commands required in every  $\text{\LaTeX}$  file<sup>15</sup>.

```
\documentclass{article}
\begin{document}
\end{document}
```

- Then we learned that to create content (text, math, graphics, etc.) we type text and commands between the `\begin{document}` and the `\end{document}` commands.

For example, as you can see below, in our hello document, we typed `Hello World!` between `\begin{document}` and `\end{document}`.

```
\documentclass{article}
\begin{document}
  Hello World!
\end{document}
```

- We learned that after editing a  $\text{\LaTeX}$  file, we need to compile the file either using a `latex` command in a command window, or using a built in menu command or keystroke command in our text editor. This process is frequently called “typesetting” the file.
- We also discovered that every  $\text{\LaTeX}$  *argument* has a beginning and an end.

```
\begin{argument}
\end{argument}
```

---

<sup>14</sup>In the first `\begin{here} column` the first  $\text{\LaTeX}$  file created was in fact called *Project #1*, not *Exercise #1*. I took it upon myself—hopefully with your permission—to revise history, and *pretend* that the `hello.ltx` file created in the first `\begin{here} column` was actually called *Exercise #1*.

<sup>15</sup>*Sharpshooters* might say, “Whoa, *Pard*, `article` class isn’t required. Other  $\text{\LaTeX}$  classes—such as `book`, `letter`, or `report`—can also be used. Right you are there, *Tex*, but you might as well put that six-shooter back in its holster. I’m only *gonna* haul out one target at a time.

**What is an *argument*?** Well, take my wife<sup>16</sup>. I remember one of the first times my wife and I did laundry together. It was way back when we were a young married couple living in married housing at **Michigan State University**.

On a cool fall Sunday afternoon, we loaded up the back of our Ford Pinto hatchback with buckets of dirty clothes, and took off for the nearest laundromat. After we arrived at the laundromat, I dutifully helped my wife load and start several washers—probably about four or five. I then told my wife I had a couple errands I wanted to run. I said I'd be right back. I kissed her on the cheek, and left. When I returned, all the clothes was in dryers. In fact, a couple loads had finished drying, and my wife was standing by a table folding clothes. She didn't look up, when I walked over. I realized I had perhaps stayed away too long. I earnestly asked her what I could do to help. My wife curtly replied that everything was under control.

My wife gave me the *silent treatment*, until we got home.

When we got back, I parked the Pinto in our parking spot by the front door to our apartment. My wife virtually leaped from the car, and slammed the door. Although she's a small woman, she threw the car door shut with such a jolt she managed to make the poor Pinto sway and shake so badly, I almost thought I was in a small boat hitting a big wake. As I got out of the car, I felt the reverberations from the front door of the apartment being slammed shut.

Things were looking bleak.

I opened up the hatchback door, and carried a bucket of clothes into the apartment. When I first entered the apartment, it was like walking through the eye of the storm. All was calm for about six feet, then I stepped into a whirlwind.

My wife explained my transgressions with great clarity. I immediately saw the error of my ways, admitted my unworthiness, and beseeched forgiveness.

Silly me, I thought that would be the end of it, but my wife came from a family that didn't know how to end arguments. My wife didn't just reject my offer to end the argument, she ignored it. I suppose I shouldn't have been surprised. Every time her parents had a disagreement about something, they'd spend hours hashing over old business, and they'd never get around to any new items on the agenda—Heaven knows they could wait their turn.

About this time I decided my wife was carrying on just fine without me, so I decided to bring in the rest of the clean laundry. I turned and went back out to the car. I had barely reached our Grabber Green Pinto, when I heard this dreadful noise, not unlike a punctured tire.

I turned, and my wife was running towards me. Her arms were raised above her head,

---

<sup>16</sup>*Please!*

and when she reached me, she began to bang her fists repeatedly against my chest with all the force her *might* could muster. Fortunately, she is a small woman, and all her *might* didn't amount to *much*.

I looked down at these fists flailing against my chest with no discernible effect, and I couldn't help, but find humor in the situation.

I laughed. My wife cried. We hugged. My beating ceased. The argument ended.

Unfortunately my wife's parents never did learn how to end arguments, and they eventually got divorced. But even that didn't end their arguments.

### What is my point?

I guess I have digressed more than just a little bit, haven't I? My point is this:

If *you* don't end the **argument**, L<sup>A</sup>T<sub>E</sub>X never will.

---

Smiley asks: **What is an argument?**



An **argument** is a *variable* or *value* that is passed to a software *routine* for processing. In the case of L<sup>A</sup>T<sub>E</sub>X, as I have mentioned, the user must tell L<sup>A</sup>T<sub>E</sub>X, when the routine is to *begin* and *end*. If you don't, you will get an error message, when you use L<sup>A</sup>T<sub>E</sub>X to typeset your file (i.e., compile or process using the **latex** software). Note: Brackets and curly braces must also have proper *beginnings* and *ends*; that is, matching pairs: [...], { ... }.

---

### A.3 Thus endeth the review for

`\begin{here} column#1`

Smoke ‘em if you have ‘em<sup>17</sup>...

Normally I won’t write such a lengthy review of the material covered in a previous `\begin{here} column`<sup>18</sup>. In the future, when material in two or more `\begin{here} columns` is cumulative, I will (a) just mention that fact, and (b) I will provide “mini-refreshers” regarding specific details, if and when it is needed.

---

<sup>17</sup>... and you live in a state where *they* are legal.

<sup>18</sup>It’s just that now that the “house” has been sold and remodeled—more or less speaking metaphorically—as the new “owner” I feel compelled to rearrange all the furniture, and have a “house-warming” party.

## B A short sojourn down the “bloody” Ohio

Smiley asks: Do bears have contingency plans?



---

Proverb to ponder:

Sometimes you eat the bear; sometimes the bear eats you.

---

As I alluded to earlier, I will use a faux-article to demonstrate the use of  $\LaTeX$  in the writing of a non-mathematical article. The subject I have chosen for this faux-article is the migratory history of the Levi Null Clan; that is, the migration of the ancestors and descendants of Levi Null (1794–1875) in North America. The migration we are focusing on began after 1830 and ended prior to 1900, it involved several generations, and it took members of the Null family from Western Pennsylvania to North-Eastern Kansas (with stops in Ohio, Indiana, and Illinois to develop farmland and raise children).

I mention them now, because my ancestors lived in a dangerous world, and by looking at their migratory behavior, we can learn the actions they took to diminish their risk, and in a *minute* we’re going to consider risk management as a strategy for dealing with  $\LaTeX$  errors.

First, let’s look at the risky behavior of my ancestors.

- In order to escape religious persecution, they emigrated to the Shenandoah Valley of Virginia—probably sometime between 1780 and 1820—from a section of Europe that is now part of Switzerland. (The Shenahdoah Valley was fertile farm land at the edge of the western frontier, that is, Kentucky.)
- After the “second generation” of North American Nulls become Methodists, they migrated from Virginia to the southwestern corner of Pennsylvania (what was then the edge of the frontier) to escape religious “shunning.”
- Over the years, a good number, if not most, of the Null children followed the National Road, and moved West, when they came of age. (Over time the edge of the frontier “jumped” from Western Pennsylvania to central Ohio, then on to central Indiana, north-central Illinois, and northeast Kansas. And no matter where the “Edge of the Frontier” might have been currently located, there were Nulls nearby farming fields. Civilization moved westward, and Levi Null’s children and grandchildren “lead” the second wave.)

Now consider Null Family “safe” behavior practices.

- They weren’t *Beta testers*. They may have lived at the “Edge of the Frontier,” but they didn’t crossover into the Frontier.
- They may have been *early adopters*, but they didn’t buy versions ending in *zero*. They were never the first settlers to the latest valley that was rumored to be Nirvana. They’d let friends and cousins go first, then if word came back that the land was indeed good, they would organize their own move to the next promised land.
- Even though they were *dirt* poor, and there weren’t enough hours in the day to finish a day’s work, they took the time to teach their kids to read, write, and do “their numbers”—reading was for the Bible, writing was for letters to family and friends, and numbers were to keep the storekeepers “honest.”

Smiley asks:

What can 19<sup>th</sup> century settlers teach us about problem-solving?



---

Nineteenth century American settlers focused their lives on minimizing risk, and maximizing their capacity to respond to adversity. They did this by working diligently, by taking great care to avoid danger, and by keeping friends and family nearby.

We can develop a similar strategy as L<sup>A</sup>T<sub>E</sub>Xers to minimize our errors, and maximize our ability to fix them.

---

When you match-up the *risky* and *safe* behavior lists next to each other, it’s obvious my ancestors understood the risks of living in the territories, but they tried to live life in such a way that made the risks “acceptable” in light of the benefits they obviously felt they enjoyed from their life-choices.

As I mentioned above, when the Nulls first came to this continent, Kentucky was the *frontier*. At that time Kentucky may have been the closest thing to a *true* Garden of Eden that man has ever known. It was such a rich, fertile land with so much bounty and game, all the “Indian” nations had agreements that no one could live there—the various nations would take “turns” hunting and harvesting in Kentucky.

For a long time Kentucky was considered to be an *urban legend* amongst the white settlements, but eventually word came back from frontiersmen that Kentucky was for real. Not too long after that white settlers moved into the Kentucky territory, and shortly after that a Balkan-style conflict of “tribal” warfare and genocide was initiated in the Ohio river valley that lasted for several decades.

Early settlers knew they had to travel down the *bloody* Ohio to get to Kentucky. I see similarity with L<sup>A</sup>T<sub>E</sub>X; that is, the road to beautiful typesetting can be filled with puzzling error statements. Like river ambushes, we should try to avoid L<sup>A</sup>T<sub>E</sub>X errors, if we can; and deal with them, when we must.

## C Pronounces le *Lah-Tech*

If you go to the [TeX FAQ](#) page, you will find the following guidance on how to pronounce “ $\LaTeX$ ”:

[Leslie] Lamport never recommended how one should pronounce LaTeX, but a lot of people pronounce it ‘Lay TeX’ or perhaps ‘Lah TeX’ (with TeX pronounced as the program itself; see the [rules for TeX](#)). It is definitely not to be pronounced in the same way as the rubber-tree gum.

And this is how the [TeX FAQ](#) page tells us to pronounce “TeX” (i.e., the [rules for TeX](#) mentioned above):

The ‘X’ is “really” the Greek letter Chi, and is pronounced by English-speakers either a bit like the ‘ch’ in the Scots word ‘loch’ ([x] in the IPA) or like ‘k’. It definitely is not pronounced ‘ks’ (the Greek letter with that sound doesn’t look remotely like the Latin alphabet ‘X’).

This curious usage derives from Knuth’s explanation in the TeX-book that the name comes from the Greek word for ‘art’ or ‘craft’ (‘techni’), which is the root of the English word ‘technology’; the logo TeX is merely the uppercase version of the first three (Greek) letters of the word.

In saying that “Lay”-TeX and “Lah”-TeX are equally correct, the [TeX FAQ](#) page overlooks the fact that “Lah”-TeX has gradually become accepted as the “correct” pronunciation by most people active in the TeX community. Therefore, I would recommend the following to new users:

- When you are with local TeX users, pronounce  $\LaTeX$  as per the local custom.
- If you prefer avoiding jaundice-stares, when you travel into *unfamiliar* terrain, I suggest you use the “Lah”-TeX pronunciation.

**How do I say “ $\LaTeX$ ”?**

*Je suis silencieux en dehors de la chambre de l’amour.*