

# Our First L<sup>A</sup>T<sub>E</sub>X Files\*

Boris Veytsman

February 2009

*A Simple File*

*The Basics*

*White Space, Etc.*

*Breaks*

*Special Symbols*

*Dashes etc.*

*Comments*



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## 1. A Simple File

```
simple.tex
\documentclass[12pt]{article}

\begin{document}

Hello, World!

This is our first document. We would like to tell the world two
interesting facts: first, that  $2 \times 2 = 4$ , and second, that
\begin{equation}
E=mc^2
\end{equation}

\end{document}
```

**Exercise 1.** Compile the file `simple.tex` and view the results.



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Hello, World!

This is our first document. We would like to tell the world two interesting  
facts: first, that  $2 \times 2 = 4$ , and second, that

$$E = mc^2 \qquad (1)$$

## 2. The Basics

Most of letters you type will be typeset “as is”. There are several exceptions:

1. “White space” symbols: space, tab, new line.
2. Special symbols: `~ # $ % ^ & _ { } \ < > "`



### 3. White Space, Etc.

#### 3.1. White Spaces Do Not Matter (Much)

L<sup>A</sup>T<sub>E</sub>X “eats” white spaces:

```
I   want   to have   many
spaces
and line breaks
      here.
```

is typeset as



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```
I   want   to have   many
spaces
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      here.
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I want to have many spaces and line breaks here.



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## 3.2. Paragraphs And Indentation

*Two line breaks* mean new paragraph:

```
First paragraph. First paragraph. First paragraph. First
paragraph. First paragraph.
```

```
    Second paragraph. Second paragraph. Second paragraph. Second
paragraph. Second paragraph. Second paragraph. Second paragraph.
    Second paragraph.
```

is typeset as



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## 3.2. Paragraphs And Indentation

*Two line breaks* mean new paragraph:

First paragraph. First paragraph. First paragraph. First paragraph. First paragraph.

Second paragraph. Second paragraph. Second paragraph. Second paragraph. Second paragraph. Second paragraph. Second paragraph. Second paragraph. Second paragraph.

is typeset as

First paragraph. First paragraph. First paragraph. First paragraph. First paragraph.

Second paragraph. Second paragraph. Second paragraph. Second paragraph. Second paragraph. Second paragraph. Second paragraph. Second paragraph. Second paragraph.

You cannot “simulate paragraph indentation” by tabs or spaces! L<sup>A</sup>T<sub>E</sub>X will do a better job!

(Of course you may *tell* L<sup>A</sup>T<sub>E</sub>X how much indentation you want!)





### 3.3. Spacings And Periods

“The old typist’s rule”: the spacing after a period (.) is larger. L<sup>A</sup>T<sub>E</sub>X does it for you (unless told otherwise).

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L<sup>A</sup>T<sub>E</sub>X thinks that a dot after a *lowercase* letter ends sentence, and after an *uppercase* letter ends abbreviation. Sometimes it is wrong:

Dr. Smith visited us.

The paper by Smith et al. was very interesting.

The wiretapping was performed by NSA. Its legality is questionable.



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able.

You can advise L<sup>A</sup>T<sub>E</sub>X with *commands*: ~ (non-breaking space), \\_ (normal space), \@ (next period ends a sentence).

Dr.~Smith visited us.

The paper by Smith et al.\ was very interesting.

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questionable.

## 4. Breaks

Linebreak: `\newline` or `\\`:

```
Let us break \newline  
this line many\\  
times
```

gives

Let us break  
this line many  
times

Page break: `\newpage` or, better, `\clearpage` & `\cleardoublepage`. The last commands output all *floats*: tables and figures.



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## 5. Special Symbols

Most of special symbols are entered as `\symbol`: `\#` gives `#`, `\$` gives `$`, `\%` gives `%`, `\&` gives `&`, `\_` gives `_`, `\{` & `\}` give `{` & `}`.

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Most of special symbols are entered as *\symbol*: \# gives #, \\$ gives \$, \% gives %, \& gives &, \\_ gives \_, \{ & \} give { & }.

Important exceptions: \\ is *line break*, and \^ & \~ are accents:

t\^ete-\'a-t\^ete	tête-à-tête
Ma\~nana	Mañana



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Important exceptions: `\\` is *line break*, and `\^` & `\~` are accents:

```
t\^ete-\'a-t\^ete    tête-à-tête
Ma\~nana             Mañana
```

There are commands `\textbackslash` (`\`), `\textasciicircum` (`^`), `\textasciitilde` (`~`). Probably you will never need them. If you do need them and many other—see The Comprehensive L<sup>A</sup>T<sub>E</sub>X Symbol List<sup>1</sup>.

<sup>1</sup>Scott Pakin, The Comprehensive L<sup>A</sup>T<sub>E</sub>X Symbol List, September 2008, <http://ctan.tug.org/tex-archive/info/symbols/comprehensive>.



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Most of special symbols are entered as *\symbol*: \# gives #, \\$ gives \$, \% gives %, & gives &, \\_ gives \_, \{ & \} give { & }.

Important exceptions: \\ is *line break*, and \^ & \~ are accents:

```
t\^ete-\'a-t\^ete    tête-à-tête
Ma\~nana             Mañana
```

There are commands \textbackslash (\), \textasciicircum (^), \textasciitilde (~). Probably you will never need them. If you do need them and many other—see The Comprehensive L<sup>A</sup>T<sub>E</sub>X Symbol List<sup>1</sup>.

There are many other special symbols: Polish Ł (\L), Scandinavian Ø & Å (\O, \AA), Greek Œ & Æ (\OE, \AE). Consult the List<sup>2</sup> if you need them.

<sup>1</sup>Scott Pakin, The Comprehensive L<sup>A</sup>T<sub>E</sub>X Symbol List, September 2008, <http://ctan.tug.org/tex-archive/info/symbols/comprehensive>.

<sup>2</sup>*Idem*



## 6. Dashes, Quotes, Accents

### 6.1. Dashes

In good typography there are several dashes:

**Small Hyphen:** -. X-ray.

**Medium Dash, En-Dash:** --. I have 3–4 days to finish this.

**Large Dash, Em-Dash:** ---. I know this—or not?



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### 6.2. Quotes

Good typography does *not* use ". In the British-American tradition there are two quote symbols:

**Singular Quotes:** ‘...’. This is known as ‘gnu’.

**Double Quotes:** “...”. “Awesome,” said Bill.



## 6.3. Accents

Commands like `\'`, `\^`, `\~` are used to produce *accents*. “PdfT<sub>E</sub>X was written by Hàn Thệ Thành” is entered as<sup>3</sup>

```
Pdf\TeX{} was written by H\'an Th\'\^e Th\'anh
```

See the Comprehensive List<sup>4</sup> for full list of accents.



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<sup>3</sup>You need `\usepackage[T1]{fontenc}` for the composite accent `é` to work

<sup>4</sup>Pakin, *op. cit.*

## 7. Comments

Good programs have comments: something that is not part of the program.  
T<sub>E</sub>X comments are made by percent character: \%

```
This will be typeset % This is just a comment
```

During troubleshooting you can *comment out* an offending part of a file:

```
%  
% \sectin{Introduction}  
%  
Here we want to present the introduction...
```



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During troubleshooting you can *comment out* an offending part of a file:

```
%  
% \section{Introduction}  
%  
Here we want to present the introduction...
```

**Exercise 2.** Can you guess where is the error in the example above?



**Exercise 3.** Take the following file:

```
_____ typography.tex _____  
  
\documentclass{article}  
  
\begin{document}  
  
%  
% This is an example.  
%  
We do not know  
whether the great mathematician P\'al Erd\"os  
read and  
loved {\AE}schylus---but some people  
would like to know.  
  
\end{document}
```

Guess the result of typesetting. Then check yourself.



## References

Pakin, Scott. The Comprehensive L<sup>A</sup>T<sub>E</sub>X Symbol List. September 2008.  
<http://ctan.tug.org/tex-archive/info/symbols/comprehensive>.

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