

# Module 8: Creating documents with L<sup>A</sup>T<sub>E</sub>X

## Overview

$\text{\LaTeX}$  (<http://latex-project.org>) is a typesetting system for producing scientific and technical documents, that behaves like a programming language such as HTML.

## Availability

$\text{\LaTeX}$  is available for free for all systems (<http://latex-project.org/ftp.html>) and can also be accessed through the cloud, for example by using <https://www.sharelatex.com>.

## Help!

For comprehensive and accessible documentation, see <https://www.sharelatex.com/learn>

L<sup>A</sup>T<sub>E</sub>X has *commands* for formatting and displaying text and *environments* that create blocks of texts (such as tables) that consist of pairs of tags

In any document, a command such as

```
\documentclass{article}
```

defines the class while the commands

```
\begin{document}
```

```
...
```

```
\end{document}
```

defines the environment that is the document.

# Mathematical Notation

L<sup>A</sup>T<sub>E</sub>X makes it very easy to use mathematical notation:

Command	Output
<code>\mu</code>	$\mu$
<code>\sigma</code>	$\sigma$
<code>x^2</code>	$x^2$
<code>n_i</code>	$n_i$
<code>\frac{1}{2}</code>	$\frac{1}{2}$

Inline mathematical notation must be enclosed within \$ signs.

In some cases, mathematical environments are created. For example,

```
\[  
ax^2 + bx^2 + c = 0  
\]
```

produces the output

$$ax^2 + bx^2 + c = 0$$

To number an equation, use an equation environment specified by

```
\begin{equation}  
...  
\end{equation}
```

# Tables

In order to create the table

Name	Age
Joe	21
Amy	19
Bill	19

we use the  $\text{\LaTeX}$ code

```
\begin{center}  
\begin{tabular}{c|c}  
Name & Age\\\hline  
Joe & 21\\  
Amy & 19\\  
Bill & 19\\  
\end{tabular}  
\end{center}
```