

Understanding Rmd -> Latex -> PDF

Raw Rmd

```
# Section Heading
```

```
## Subsection Heading
```

This is normal text in a paragraph. This text is **bold**, and this text is in *italics*.

Here is more text. Let's also make a list

- First item
- Second item

This time let's make the list numbered instead of bullet points:

1. First item
2. Second item

The best use of \LaTeX is for math. We can make really fancy equations, that center on the page with:

```
$$\hat{\beta}_1=\frac{\displaystyle\sum_{i=1}^n(X_i-\bar{X})(Y_i-\bar{Y})}{\displaystyle\sum_{i=1}^n(X_i-\bar{X})^2}$$
```

We can also put math into the same line as text with dollar signs $\frac{2}{3} \times \pi^2$.

Latex also is useful for creating tables and figures, both are called "float" environments that must be initiated with a "`\begin{floattype}`" and ended with a "`\end{floattype}`", e.g.:

```
\begin{table}[h!] % h! places the table here in the doc, instead of where latex optimizes the location
  \centering % you often want your table in the center of the document
  \begin{tabular}{lcr} %to create three columns, the first left-aligned (l), the second center-aligned
    Left & Center & Right \\ \hline % hline creates a horizontal line
    Example 1 & Example 2 & Example 3\\
    44 & 66 & 88 \\ \hline
  \end{tabular}
\end{table}
```

Converts to Latex in the Intermediate Step

```
\section{Section Heading}
```

This is normal text in a paragraph. This text is **\textbf{bold}**, and this text is in *\emph{italics}*.

```
\subsection{Subsection Heading}
```

Here is more text. Let's also make a list:

```
\begin{itemize}
  \item First item
  \item Second item
\end{itemize}
```

This time let's make the list numbered instead of bullet points:

```
\begin{enumerate}
  \item First item
  \item Second item
\end{enumerate}
```

The best use of `\LaTeX{}` is for math. We can make really fancy equations, that center on the page with:

```
\begin{equation}
  \hat{\beta}_1 = \frac{\displaystyle \sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\displaystyle \sum_{i=1}^n (X_i - \bar{X})^2}
\end{equation}
```

We can also put math into the same line as text with dollar signs $\frac{2}{3} \times \pi^2$.

Latex also is useful for creating tables and figures, both are called "float" environments that must be initiated with a "`\begin{floattype}`" and ended with a "`\end{floattype}`", e.g.:

```
\begin{table}[h!] % h! places the table here in the doc, instead of where latex optimizes the location
  \centering % you often want your table in the center of the document
  \begin{tabular}{lcr} %to create three columns, the first left-aligned (l), the second center-aligned
    Left & Center & Right \\ \hline % hline creates a horizontal line
    Example 1 & Example 2 & Example 3 \\
    44 & 66 & 88 \\ \hline
  \end{tabular}
\end{table}
```

Final Product

Section Heading

This is normal text in a paragraph. This text is **bold**, and this text is in *italics*.

Subsection Heading

Here is more text. Let's also make a list:

- First item
- Second item

This time let's make the list numbered instead of bullet points:

1. First item
2. Second item

The best use of L^AT_EX is for math. We can make really fancy equations, that center on the page with:

$$\hat{\beta}_1 = \frac{\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\sum_{i=1}^n (X_i - \bar{X})^2} \quad (1)$$

We can also put math into the same line as text with dollar signs $\frac{2}{3} \times \pi^2$.

Latex also is useful for creating tables and figures, both are called “float” environments that must be initiated with a “`\begin{floattype}`” and ended with a “`\end{floattype}`”, e.g.:

Left	Center	Right
Ex 1	Ex 2	Ex 3
44	66	88