Summary of LaTeX

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0 Introduction

LaTeX is a document preparation system, which results in very high quality text output. Unlike Microsoft Office, or LibreOffice, or any of the document editing suites, LaTeX is not a WYSIWYG (what you see is what you get) editor, and writing a document in LaTeX is more like coding a program. This brings in two things:

1. Uniformity in document looks, and

2. Abstraction and automation of unimportant tasks like text alignment and font sizes

Both of these tasks invariably take up a large amount of our productivity in WYSIWYG editors, hence LaTeX is used a lot in scientific publications and is considered a de-facto standard. Here's the LaTeX website.

In this document, I plan to show how to make the following:

1. Numbered and Bulleted lists

2. Tables

3. Equations

4. Citations (using bibtex)

5. Hyperlinks (using hyperref)

6. Figures (using graphicx)

1 Numbered and Bulleted Lists

1.1 Numbered List

An example numbered list:

```
\begin{enumerate}
\item Item 1
\item Item 2
\item Item 3
\end{enumerate}
```

This is rendered in LaTeX as:

1. Item 1

2. Item 2

3. Item 3

1.2 Bulleted List

An example bulleted list:

```
\begin{itemize}
\item Item 1
\item Item 2
\item Item 3
\end{itemize}
```

This is rendered in LaTeX as:

- Item 1

- Item 2

- Item 3

2 Tables

An example table:

```
\begin{tabular}{l r|c|p{2cm}|}
\hline
Column left & Column right & Column centre & Column Fixed Width \\
\hline
Text & Number & Anything & Fixed width data \\
\hline
Cats \& Dogs & 10 & Meow & Woof \\
Cows & Sheep (No \textbackslash hline above) & 9 & Moo & Baa \\
\hline
\end{tabular}
```

This is rendered in LaTeX as:

Column left	Column right	Column centre	Column Fixed Width
Text	Number	Anything	Fixed width data
Cats & Dogs	10	Meow	Woof
Cows & Sheep (No \hline above)	9	Moo	Baa

3 Equations

To insert an equation in LaTeX, we surround it by $ $ to make an inline equation, while we surround it with $$ $$ to make it a separate equation.

For example:

$\Box$