Introduction to

LaTeX

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First things first!

- LaTeX pronounced as "**tech**"
  - not like *latex* gloves!
- LaTeX is typeset like LaTeX

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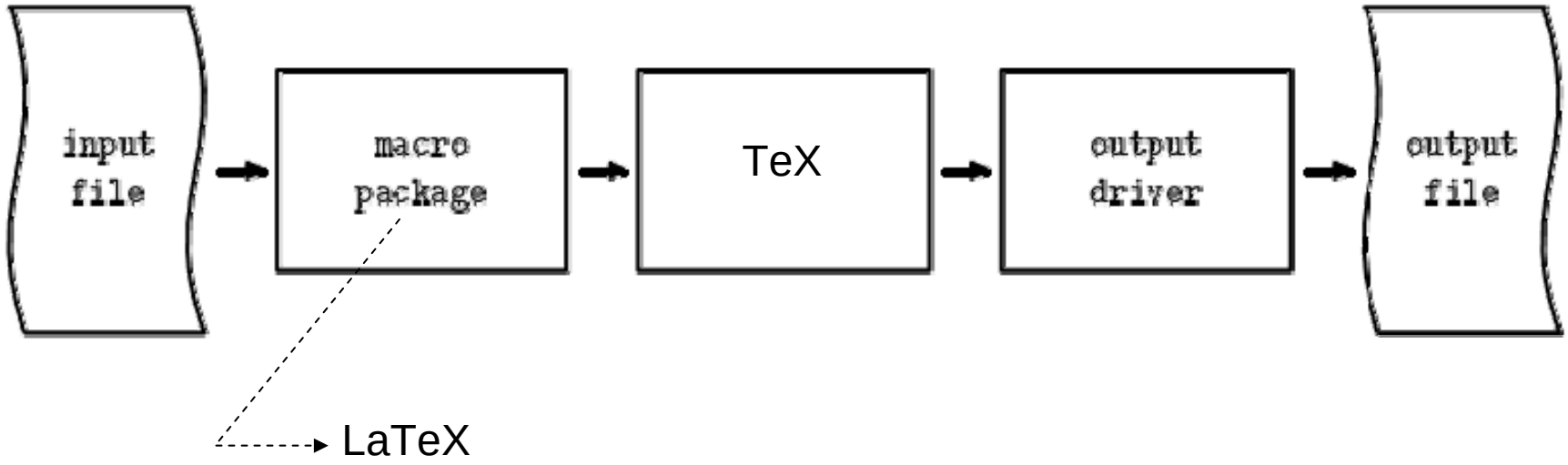
What is LaTeX?

- TeX is a typesetter
  - You write and TeX will place it on the page



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Unique Advantages of LaTeX

- Professional typesetting
  - Best output
- It is the standard for scientific documents
- Processing Mathematical (& other) symbols
- Meaning based structuring (rather than appearance)
- Knowledgeable and helpful user group
- Its FREE!
- Platform independent

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Disadvantages of using LaTeX

- "Hard to write disorganized documents"*
- Learning Curve
- Customizing is tedious.

* Taken verbatim from Not so short introduction to LaTeX

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A Simple LaTeX Document

```
\documentclass{article}
  \begin{document}
      This is some sample text.
  \end{document}
```

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Parts of a LaTeX Document: \documentclass

\documentclass

{article}
{report}
{book}
{letter}

→ **Basic Classes**

- First line of all LaTeX documents
- Specifies the type of the document

\documentclass[aae]{puthesis}

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Parts of a LaTeX Document: Environment

Start with **\begin{. . .}**

End with **\end{. . .}**

```
\begin{document}
    \begin{equation}
        …
    \end{equation}
\end{document}
```

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Parts of a LaTeX Document: Preamble

- Everything between **\documentclass** and **\begin**{document}

- Use for customizing the formatting

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Sections

\section{Section Title}

\subsection{Title}

\subsubsection{Title}

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Mathematics

Calculus

\int_0^\infty ⟶ $\int_0^\infty$

\int{\int} ⟶ $\int\int$

\frac{\partial u}{\partial x} ⟶ $\frac{\partial u}{\partial x}$

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Mathematics Continued . . .

x = \frac{-b \pm \sqrt{b^2-4ac} } {2a}

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

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Figures and Tables

- Figures & Tables cannot be broken between pages

- They are "**floated**"

```
\begin{figure}
    \includegraphics{sample}
    \caption{A sample figure.}
\end{figure}
```

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Cross-referencing

\label{marker} **\ref**{marker} **\pageref**{marker}

\section{Introduction}

\label{intro}

...

As mentioned in section **\ref**{intro} in page **\pageref**{intro}

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Getting Started

- AAE Computers
  - Use TeXnicCenter – Preinstalled (Windows)
  - Use Emacs – Preinstalled (Unix)
- Personal Computers
  - Windows
    - TeXnicCenter
    - proTeXt
  - Linux
    - TeXLive
  - Mac
    - LyX & MacTeX

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Output Formats

- **.dvi** Device Independent
- **.ps** Post Script
- **.pdf** PDF
- **.rtf** Rich Text Format
- **.html** HTML
- **.xml** XML

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Final Words: Try it …

- You have already taken your first step by attending this session.
- Enjoy writing with LaTeX
- Spread the joy of using LaTeX.

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