A Document Preparation System
LATEX

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Outline

1. What’s LATEX
   (a) History
   (b) Architecture

2. Why LATEX
   (a) Features
   (b) Comparing with "WORD" and "POWERPOINT"

3. Interface & Demo
What is the LATEX?

LaTeX is a powerful tool for writing and formatting the document.

–The inventor of LATEX is Donald E. Knuth

• LaTeX is a TEX macro package, written by Leslie Lamport.

• LaTeX is supported by every journal and conference.

goal of inventor: To solve the format problems encountered by "word" before
History

• Donald can’t bear the low quality of format that original computer can provide

• He decided to develop high quality documents preparation system

• First Edition was launched at 1978

• Second Edition was launched at 1982

• Almost all operating systems have corresponding software to TeX
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Architecture

Auxiliary files

\LaTeX \ .\tex \quad \text{TEX}

Style files

• style files (*.sty, *.cls)
• auxiliary files (*.aux, *.idx, ...)

DVI file \quad .pdf \text{ or } .ps \text{ file}
Why LATEX?
Features

• Format
Features

- Format
- PC without Office
Features

- Format
- PC without Office
- Save the file in .pdf
Features

- Format
- PC without Office
- Save the file in .pdf
- It’s FREE!!
Features

• Format
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• It’s FREE!!
• Everyone can develop packages and improve it’s function!
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**If you like programming!!**
LATEX V.S. Word and Power-point

• Advantage
  1. LATEX can be used in any OS with wordpad or any thing that can edit document
  2. LATEX can easily make the document formatted...if we use word that will take effort
  3. LATEX can make many kinds of files without importing the other files so you don’t have to setup a lot of software...
LATEX V.S. Word and PowerPoint

- Disadvantage
  1. Of course you have to be familiar with LATEX, then you can make thing faster...
  2. You can not see what you will get directly...
Interface and Demo

- math equation
- music score
- checker board
Use latex to write the math equation

\[
\left( \int_{-\infty}^{\infty} e^{-r^2} \right) dr = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} e^{-(x^2 + y^2)} dx, dy
\]
Use latex to write the math equation

\[
\left( \int_{-\infty}^{\infty} e^{-r^2} \right) \, dr = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} e^{-(x^2+y^2)} \, dxdy
\]

But now we already have equation editor!
• Music score
• Checker board