Tripitaka Koreana

- Palman Daejanggyeong ("Eighty-Thousand Tripitaka")
- South Korean collection of Buddhist scriptures
- Carved onto 81,258 wooden printing blocks in the 13th century
- The world's most comprehensive and oldest intact version of Buddhist canon in Hanja script, with no known errors or errata in the 52,382,960 characters
World Heritage Site
Haeinsa - UNESCO
Gutenberg

- Johannes Gutenberg
- Introduced movable metal type to Europe (in around 1439)
- Invented the printing press
- Started a revolution in printing in Europe
Gutenberg Bible

Gutenberg demonstrated his printing technology by printing a complete bible.

The Gutenberg bible was produced at a significantly lower cost than hand copying.

Still, cost: about 3 years salary of a clerk per bible.

1978: Copy sold for $2.2 million
Sicut in hacth que nos genisi dierunt.
A principio creavit deus celum. tab pae
et terram. Terra autem erat inanis et
vacua; et terra erat sup facie abisit;
et spiritus de terra batur super aquas.
Disit deus. Fiat lux. Et fata est lux.
Et vidit deus lucenty esse bona: et
dividit lucenty et terrae-appellavit;
lucenty die est et terrae noctem. Factu
et est vestre et main dier dies omn. Dixit
quod deus. fiat firmamentum in me-
dio aquarum: et dividat aquas ab a-
quas. Et fecit deus firmamentum: di-
visit aquas quae erant sub firmamen-
tum ab his quae erant super firmament-
um: factum est ita. Vocavit deus
firmamentum celum: factum est vestre
eet main dier dies secundus. Dixit vero de-
us. Congregavit aquae quae sub celo
fuit in locum unius apparat arida.
Et factum est ita. Et vocavit deus ari-
dam terram congregat: aquas
appellavit maria. Et vidit deus ey el-
ser boni. et ait. Dehinc set terra herba
virentem et facientes semen: et ligni
pomiferi facientes fructum ixius gener
liui: cuius semen in semipio super
terram. Et factum est ita. Et produi
pessent dier ac nodi: z dividere lucent
et terrae. Et vidit deys ey esser boni;
et factu et vespere et main dier dies quart.
Disit etiam deus. Producar aquae
reple animae viventes et volantiae sup-
teram: sub firmamento celum. Creatit
deus etc grandia: et omn anima vi-
vivente ayt: notabilem quae produ-
xerant aquae in species suas: zo omn e
volantiae secundus genus humi. Et vidit de-
us ey esser boni: benedixit et dierens.
Lesit et multiplicamini: et reple a-
quas maris: aetet multiplicetur
super terram. Et factu et vespere et main
dier dies quintus. Dixit quod deus. Pro-
ducit terram animae viventes in gene-
re suum: inmurna z reptilia: z bestias ter-
re secundu species suas. Factor est ita.
Et fecit deus bestias terre iuxta species su-
as: inmurna z omn e reptile terre in ge-
nere suum. Et vidit deus ey esser boni:
et ait. Faciam homine ad imaginem z
studiine nocte: z plis pilsbs maris-
z volantiae cel: z bestis-uniteq: terre:
diurq reptili qd moque tterra. Et crea-
uit deus homine ad imaginem et simi-
litubine suam: ad imaginem de crea-
uit illum malsculi et feminam creavit eg.
Fast Forward to 1974

<table>
<thead>
<tr>
<th>Chapter 2: Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>F. L. DeRemer</td>
</tr>
<tr>
<td>REVIEW OF FORMALISMS AND NOTATION</td>
</tr>
<tr>
<td>1. Terminology and Definitions of Grammars</td>
</tr>
<tr>
<td>1.1. Unrestricted Rewriting Systems</td>
</tr>
</tbody>
</table>

- Academic books often a mix of handwritten symbols (e.g. formulas) and typeset symbols.
- Note the arrows...
Fast Forward to 2011

(Homework Submission)

The scan is a faithful reproduction of the submission! It remains a mystery how the TA was able to read it.
2 Features

Both \TeX{} and \LaTeX{} allow for àççéênts, and excel at typesetting mathematical equations, in-line or displayed on a line by itself. For instance, an article on quadratics may need

\[ ax^2 + bx + c = 0 \implies x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}, \]

or an article on complex analysis may include \( e^{i\theta} = \cos \theta + i \sin \theta \).
Don Knuth illustrates the mathematical typesetting with TeX by writing the bible of computer programming:

Four volumes published so far:
1984: \LaTeX

In 1984, Leslie Lamport writes the markup language \LaTeX{} that makes TeX particularly easy to use.

Key feature: The document is organized according to its structure (e.g. Title, Chapter, Sections, etc.)

The language is easy to learn

Available on virtually all computing platforms
LaTeX

- Computer programmers will feel right at home: The document is produced by a program.

- The language can be customized with macros.

- Typesetting of formulas is easy: Once you understand the main features, most formulas are quickly written in LaTeX.

- Much faster than any formula editor.
Structure of a LaTeX Document

\documentclass{article}
% macro definitions
\begin{document}
% text comes here
\end{document}

Comments begin with %

Commands start with \
LaTeX Example

\documentclass[12pt]{article}
\usepackage{amsmath}
\title{\LaTeX}
\date{}
\begin{document}
  \maketitle
  \LaTeX{} is a document preparation system for the \TeX{} typesetting program. It offers programmable desktop publishing features and extensive facilities for automating most aspects of typesetting and desktop publishing, including numbering and cross-referencing, tables and figures, page layout, bibliographies, and much more. \LaTeX{} was originally written in 1984 by Leslie Lamport and has become the dominant method for using \TeX{}; few people write in plain \TeX{} anymore. The current version is \LaTeXe.  

% This is a comment; it will not be shown in the final output.
% The following shows a little of the typesetting power of \LaTeX:
\begin{align}
E &= mc^2 \\
 m &= \frac{m_0}{\sqrt{1-\frac{v^2}{c^2}}} \\
\end{align}
\end{document}
Emphasizing Text

This is a \textbf{bold} text \textbackslash\textbackslash
This is a \textit{text} in italics \textbackslash\textbackslash
This is a \textsl{slanted} text

This is a bold text
This is a text in italics
This is a slanted text
Inline Mathematics

You can write a text and within the text you can have inline mathematical formulas, such as $\sqrt{x^2+1}$, that are simply enclosed in single dollar signs.

You can write a text and within the text you can have inline mathematical formulas, such as $\sqrt{x^2 + 1}$, that are simply enclosed in single dollar signs.
Displayed Mathematics

Important equations can be set in double dollar signs, for example
$$ y = \sqrt{x^2+1}, $$
and will be displayed as a centered equation.

\[ y = \sqrt{x^2 + 1}, \]

and will be displayed as a centered equation.
Numbering Equations

A numbered equation
\begin{equation}\label{eqn}
z^2 = x^2 + y^2.\end{equation}
It follows from equation (\ref{eqn}) that ...

A numbered equation
\[ z^2 = x^2 + y^2. \] (1)

It follows from equation (??) that ...

Run LaTeX twice to resolve references
Suppose you have written a LaTeX document, say homework.tex

Compiling the document, typesetting, and creating a pdf file:
pdflatex homework.tex

View your document homework.pdf with some pdf viewer (e.g., ghostview homework.pdf, preview homework.pdf, ...)

Compiling LaTeX Documents
LaTeX Distributions

Windows: MikTeX

Mac: MacTeX

Unix: Tex Live

Further information: http://www.ctan.org/

Already installed on linux.cse.tamu.edu
Homework

- Our problem sets will be assigned using a LaTeX file, say hw1.tex
- The file will typically contain 10 problems
- You add the solutions, your name, and all the resources that you have used
- Submit your homework solution to ecampus: hw1.tex and hw1.pdf (BOTH!!!)