Introduction of LaTeX

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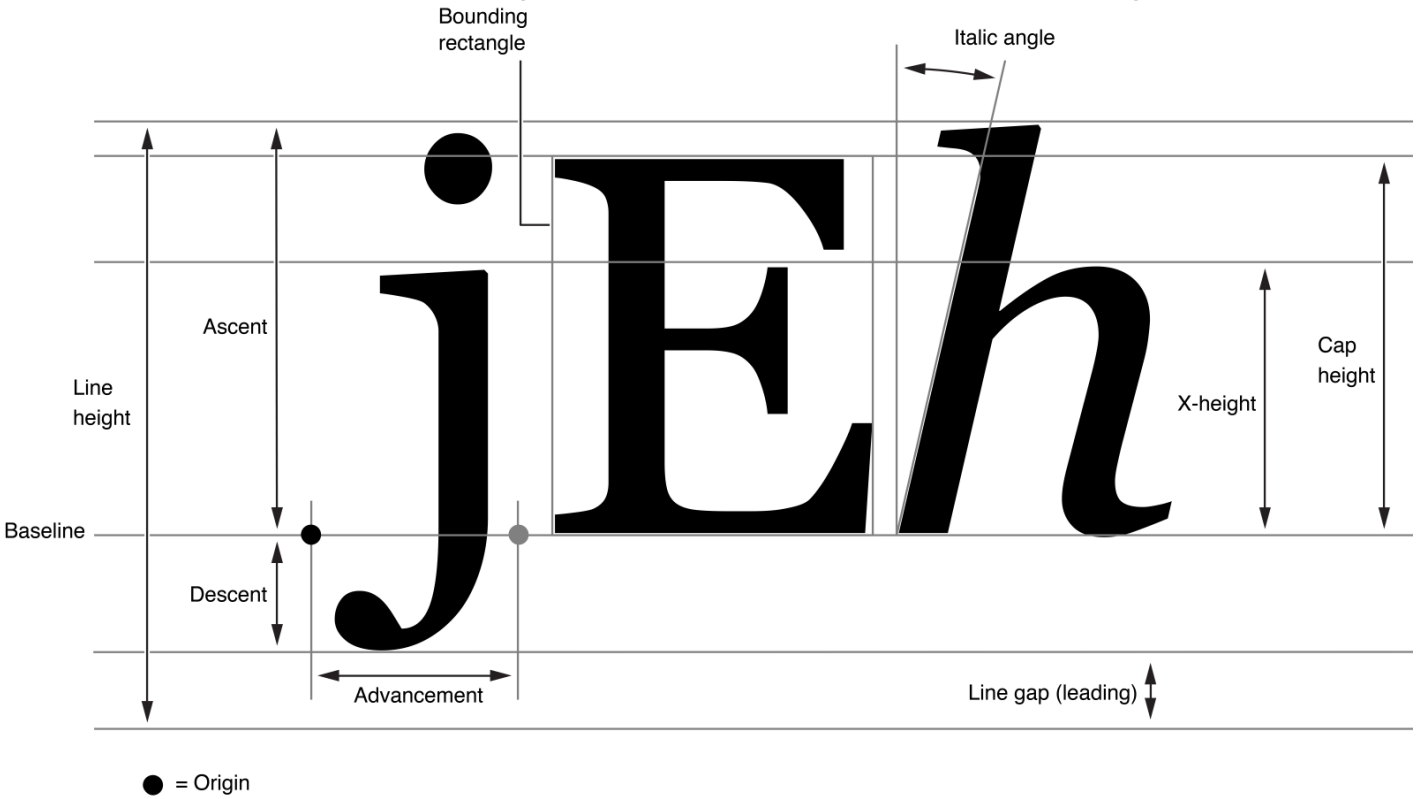
OUTLINE

- What is LaTeX
  - LaTeX is a document preparation system for high-quality typesetting. It is most often used for medium-to-large technical or scientific documents but it can be used for almost any form of publishing.
  - TeX (/tx/ tekh as in Greek, but often pronounced /tk/ tek in English) is a typesetting system designed and mostly written by Donald Knuth and released in 1978.(From Wikipedia)
- Syntactic structure of LaTeX
  - Macro and Environment
  - Math environment
  - Chinese support

RESOURCES

- Charset
- Typeface information (Metrics, Kerning, Ligature)



- LaTeX font encodings

PARSING ALGORITHM

In LaTeX [$x = \frac{-b \pm \sqrt{b \wedge 2 - 4ac}}{2a}$] As an example:

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

- Atomization

  We got a sequence of all atomic elements, $x, =, -, \ldots$

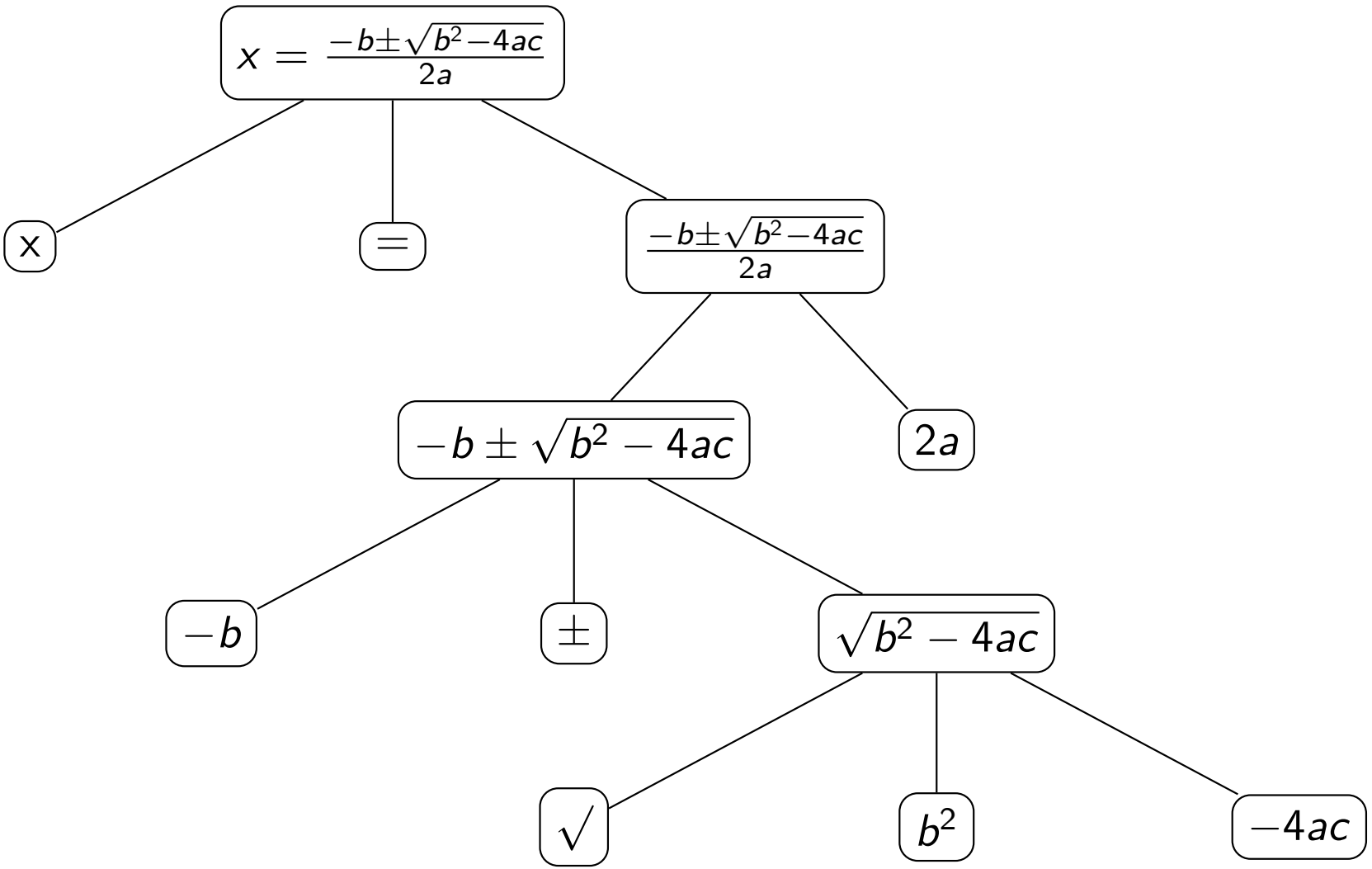
- Generate syntax tree

  We got all information we need to place the atomic elements

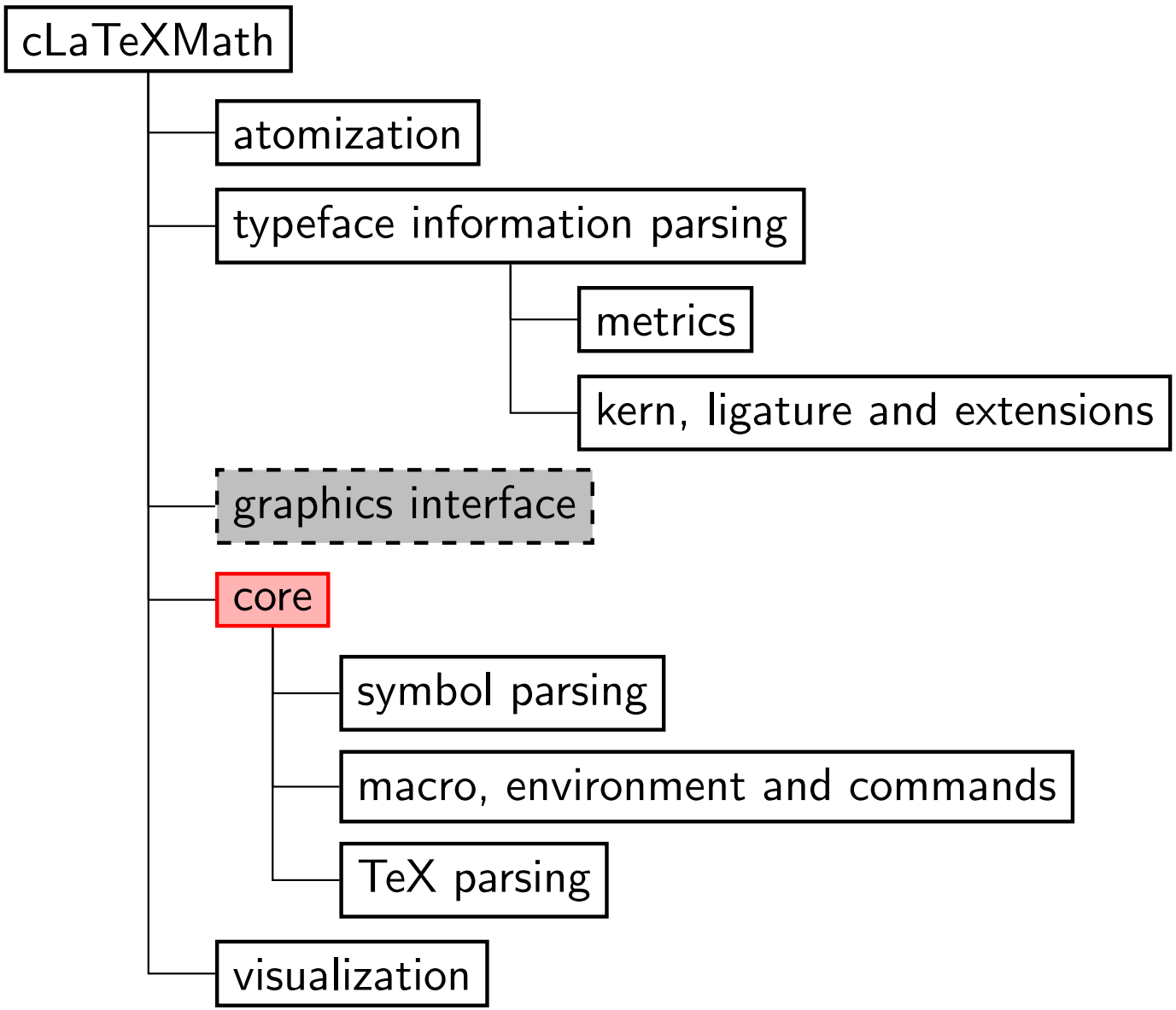
- Visualize

  Inflate the generated tree and draw

SYNTAX TREE


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

PROGRAM FRAME



EXTENSIONS

- Linux
- Windows
- Android
- Rich text
- ...

References

[1] http://www.sharelatex.com

[2] http://www.latex-project.org

[3] http://www.texample.net

[4] https://github.com/NanoMichael/cLaTeXMath

Thank You ...