Which Success for TEX as an Old Program?

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GuIT

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Separation of *form* and *substance*.

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Included into some *curricula* $\Longleftarrow$ GUIT 2019.

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- TEX's 1st version $\Longleftarrow$ 1978.

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- TEX's 1st version $\Longleftarrow$ 1978.
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- TEX's 1st version $\Longleftarrow$ 1978.
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TEX, the Program — LATEX, the Format

- TEX's 1st version $\Longleftarrow$ 1978.
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- LATEX 3 $\Longrightarrow$ intended to replace LATEX 2_ε.

Another format $\Longleftarrow$ ConTEXt (come out *ca* 1990).

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Still widespread $\Longleftarrow$ very long lifetime.

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Still widespread $\Longleftarrow$ very long lifetime.
Has incorporated modern requirements, e.g.:

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Has incorporated modern requirements, e.g.:

- i18n,

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Still widespread $\Longleftarrow$ very long lifetime.
Has incorporated modern requirements, e.g.:

- i18n,
- new schemes for font management.

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Still widespread $\Longleftarrow$ very long lifetime.
Has incorporated modern requirements, e.g.:

- i18n,
- new schemes for font management.

Much synergy among users, especially if you are interested in writing new commands.

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Still widespread $\Longleftarrow$ very long lifetime.
Has incorporated modern requirements, e.g.:

- i18n,
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Much synergy among users, especially if you are interested in writing new commands.
LaTeX 3 $\Longrightarrow$ better for such a task,

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Still widespread $\Longleftarrow$ very long lifetime.
Has incorporated modern requirements, e.g.:

- i18n,
- new schemes for font management.

Much synergy among users, especially if you are interested in writing new commands.
LaTeX 3 $\Longrightarrow$ better for such a task, but not finished yet.

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TEX's implementation:

- very old-fashioned language (based on Pascal)

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TEX's implementation:

- very old-fashioned language (based on Pascal)
- monolithic program

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(LA)TEX's commands implemented by *macros*:

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- very old-fashioned language (based on Pascal)
- monolithic program
- no one but D. Knuth can change it!

(LA)TEX's commands implemented by *macros*:

```
f(2019 + 1)      m(2019 + 1)
```


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Computer Science is. . .

. . . *a science*!

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Computer Science is. . .

. . . *a science*! $\Longleftarrow$ *Techniques* and *methods*, but also some *History*.

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Computer Science is. . .

. . . *a science*! $\Longleftarrow$ *Techniques* and *methods*, but also some *History*.
But many students do not perceive this point.

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‘Modern’ languages $\Longleftarrow$ reserved words.

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‘Modern’ languages $\Longleftarrow$ reserved words.
Lexical + syntactical analysis

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'Modern' languages $\Longleftarrow$ reserved words.
Lexical + syntactical analysis $\Longrightarrow$ result in *trees*.

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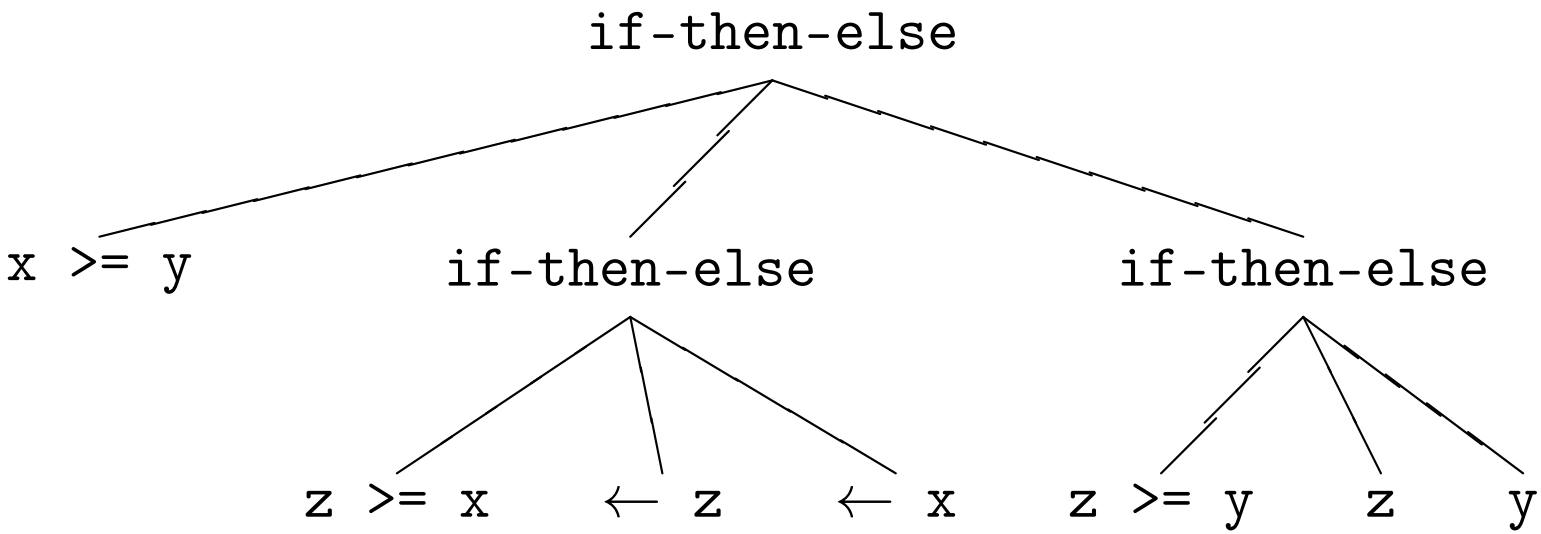
‘Modern’ languages $\Longleftarrow$ reserved words.
Lexical + syntactical analysis $\Longrightarrow$ result in *trees*.



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No reserved keyword in the present sense.

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One analyser:

```
Typing \frac12 with \LaTeX\ is easy!
```


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In TEX

No reserved keyword in the present sense.
One analyser:

```
Typing \frac12 with \LaTeX\ is easy!
```

Dynamic search for '`\fi`' associated with '`\if...`' (show).

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$\mathcal{NTS}$ vs TEX.

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Cross references (compare with ConTEXt's `texexec` command).

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Overfull boxes caused by wrong hyphenation.

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Marginal notes.

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Cross references (compare with ConTEXt's `texexec` command).
Overfull boxes caused by wrong hyphenation.
Marginal notes.
Working on final and irrevocable versions $\Longleftarrow$ commands such as `\sloppy`, `\newpage`, and some commands originating from the microtype package.

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LaTeX's end-users should not use constructs from *Plain TeX*.
`\newcommand` instead of `\def`, ifthen package, etc.
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LaTeX's services are added to TeX's, without hiding the latter.
Example $\Longleftarrow$ conventions for the `\input` command.

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'`$$...$$`' vs '`\[...\]`'.

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LaTeX's services are added to TeX's, without hiding the latter.
Example $\Longleftarrow$ conventions for the `\input` command.
'`$$...$$`' vs '`\[...\]`'.
Some commands—e.g., `\xspace`—are not guaranteed 100%.

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What is sure

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(La)TeX's language is a good example for a *simple* and *specialised* language for *simple* commands.
Alternative conventions, even if they are quite obsolete.

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We can teach LaTeX as an unrivalled type setting system whereas we can express that TeX is a kind of *legacy program*. It should be able to provide new services because of some powerful features such as LuaTeX and LaTeX 3.

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We can teach LaTeX as an unrivalled type setting system whereas we can express that TeX is a kind of *legacy program*.
It should be able to provide new services because of some powerful features such as LuaTeX and LaTeX 3.
Its qualities supersede its defects. The latter are in connection with implementation $\Longrightarrow$ Computer Science students. They can learn from these weaknesses.

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