The \texttt{l3benchmark} package

Experimental benchmarking

The \LaTeX3 Project*

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1 Additions to \texttt{l3sys}: elapsed time

\begin{verbatim}
\sys_gzero_timer:
\sys_gzero_timer:
Resets the timer to zero.

\sys_timer: *
\sys_timer:
Expands to the current value of the engine’s timer clock, a non-negative integer. In engines without clock support this expands to 0 after an error. In \LaTeXe only the CPU time is measured, while in other engines real time is measured (including time waiting for user input).
\end{verbatim}

2 Benchmark

\begin{verbatim}
\g_benchmark_duration_target_fp

This variable (default value: 1) controls roughly for how long \texttt{benchmark:n} will repeat code to more accurately benchmark it. The actual duration of one call to \texttt{benchmark:n} typically lasts between half and twice \texttt{\g_benchmark_duration_target_fp} seconds, unless of course running the code only once already lasts longer than this.

\benchmark_once:n {⟨code⟩}
Prints to the terminal the time taken by \TeX{} to run the \texttt{⟨code⟩}, and an estimated number of elementary operations. The \texttt{⟨code⟩} is run only once so the time may be quite inaccurate for fast code.

\benchmark:n {⟨code⟩}
Prints to the terminal the time taken by \TeX{} to run the \texttt{⟨code⟩}, and an estimated number of elementary operations. The \texttt{⟨code⟩} may be run many times and not within a group, thus code with side-effects may cause problems.
\end{verbatim}

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When it is not possible to run the \benchmark:n (e.g., the code is part of the execution of a package which cannot be looped) the tic/toc commands can be used instead to time between two points in the code. When executed, \benchmark_tic: will print a line to the terminal, and \benchmark_toc: will print a matching line with a time to indicate the duration between them in seconds. These commands can be nested.

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