The l3benchmark package
Experimental benchmarking

The LaTeX3 Project[*]

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1 Additions to l3sys: elapsed time

\sys_gzero_timer:

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Resets the timer to zero.

\sys_timer: ⋆

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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 LuaTeX only the CPU time is measured, while in other engines real time is measured (including time waiting for user input).

2 Benchmark

\g_benchmark_duration_target_fp

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

\benchmark_once:n

\benchmark_once:n {⟨code⟩}

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

\benchmark:n

\benchmark:n {⟨code⟩}

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

`\benchmark_tic:`
`\benchmark_toc:`

`\benchmark_tic:` ⟨*slow code*⟩ `\benchmark_toc:`

When it is not possible to run `\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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The italic numbers denote the pages where the corresponding entry is described, numbers underlined point to the definition, all others indicate the places where it is used.