

The `l3benchmark` package

Experimental benchmarking

The L^AT_EX Project*

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1 Additions to `l3sys`: elapsed time

`\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 Lua_TE_X 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 T_EX 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 T_EX 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.

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`\benchmark_tic:` `\benchmark_tic: (slow code) \benchmark_toc:`
`\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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