

The **l3benchmark** package

Experimental benchmarking

The L^AT_EX3 Project*

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1 Additions to **l3sys**: elapsed time

<code>\sys_gzero_timer:</code>	<code>\sys_gzero_timer:</code>
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Resets the timer to zero.

<code>\sys_timer: ★</code>	<code>\sys_timer:</code>
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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.

2 Benchmark

<code>\g_benchmark_duration_target_fp</code>
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This variable 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.

<code>\g_benchmark_time_fp</code>
<code>\g_benchmark_ops_fp</code>

Functions such as `\benchmark:n` store the measured time in `\g_benchmark_time_fp` (in seconds). Functions such as `\benchmark_normalized:n` store the estimated number of operations in `\g_benchmark_ops_fp`.

<code>\benchmark_display:</code>
<code>\benchmark_display_in_ops:</code>

`\benchmark_display:`

Prints the time `\g_benchmark_time_fp` (in seconds) or the estimated number of operations `\g_benchmark_ops_fp` to the terminal. These functions are called by functions such as `\benchmark:n` and can be redefined by the user.

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<code>\benchmark_once:n</code>	<code>\benchmark_once:n {<code>}</code>
<code>\benchmark_once_in_ops:n</code>	Measures the time taken by T _E X to run the <i><code></i> once, sets <code>\g_benchmark_time_fp</code> and <code>\g_benchmark_ops_fp</code> , and calls <code>\benchmark_display:.</code> The <i><code></i> is run only once so the time may be quite inaccurate for fast code. The <code>\benchmark_once_silent:n</code> function omits the call to <code>\benchmark_display:</code> , while <code>\benchmark_once_in_ops:n</code> calls <code>\benchmark_display_in_ops:</code> instead.
<code>\benchmark_once_silent:n</code>	
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<code>\benchmark:n</code>	<code>\benchmark:n {<code>}</code>
<code>\benchmark_in_ops:n</code>	Measures the time taken by T _E X to run the <i><code></i> , sets <code>\g_benchmark_time_fp</code> and <code>\g_benchmark_ops_fp</code> , and calls <code>\benchmark_display:.</code> The <i><code></i> may be run many times and not within a group, thus code with side-effects may cause problems. The <code>\benchmark_silent:n</code> function omits the call to <code>\benchmark_display:</code> , while <code>\benchmark_in_ops:n</code> calls <code>\benchmark_display_in_ops:</code> instead.
<code>\benchmark_silent:n</code>	
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<code>\benchmark_tic:</code>	<code>\benchmark_tic: {<slow code>}</code>
<code>\benchmark_toc:</code>	When it is not possible to run <code>\benchmark:n</code> (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, <code>\benchmark_tic:</code> will print a line to the terminal, and <code>\benchmark_toc:</code> will print a matching line with a time to indicate the duration between them in seconds. Note that these commands can be nested.

Index

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.

B	
benchmark commands:	
<code>\benchmark:n</code>	<i>1, 1, 1, 2, 2</i>
<code>\benchmark_display:</code>	<i>1, 2, 2</i>
<code>\benchmark_display_in_ops:</code> . .	<i>1, 2, 2</i>
<code>\g_benchmark_duration_target_fp</code> . .	<i>1</i>
<code>\benchmark_in_ops:n</code>	<i>2</i>
<code>\benchmark_normalized:n</code>	<i>1</i>
<code>\benchmark_once:n</code>	<i>2</i>
<code>\benchmark_once_in_ops:n</code>	<i>2</i>
	S
sys commands:	
<code>\sys_gzero_timer:</code>	<i>1</i>
<code>\sys_timer:</code>	<i>1</i>
	<code>\benchmark_once_silent:n</code> <i>2</i>
	<code>\g_benchmark_ops_fp</code> <i>1, 1, 2, 2</i>
	<code>\benchmark_silent:n</code> <i>2</i>
	<code>\benchmark_tic:</code> <i>2</i>
	<code>\g_benchmark_time_fp</code> <i>1, 1, 2, 2</i>
	<code>\benchmark_toc:</code> <i>2</i>