

The `l3intarray` package: low-level arrays of small integers

The L^AT_EX3 Project*

Released 2017/05/13

1 `l3intarray` documentation

This module provides no user function: at present it is meant for kernel use only.

It is a wrapper around the `\fontdimen` primitive, used to store arrays of integers (with a restricted range: absolute value at most $2^{30} - 1$). In contrast to `l3seq` sequences the access to individual entries is done in constant time rather than linear time, but only integers can be stored. More precisely, the primitive `\fontdimen` stores dimensions but the `l3intarray` package transparently converts these from/to integers. Assignments are always global.

While LuaT_EX’s memory is extensible, other engines can “only” deal with a bit less than 4×10^6 entries in all `\fontdimen` arrays combined (with default T_EXLive settings).

1.1 Internal functions

<code>__intarray_new:Nn</code>	<code>__intarray_new:Nn <intarray var> {<size>}</code>
---------------------------------	---

Evaluates the integer expression `<size>` and allocates an `<integer array variable>` with that number of (zero) entries.

<code>__intarray_count:N</code> ★	<code>__intarray_count:N <intarray var></code>
------------------------------------	---

Expands to the number of entries in the `<integer array variable>`. Contrarily to `\seq_count:N` this is performed in constant time.

<code>__intarray_gset:Nnn</code>	<code>__intarray_gset:Nnn <intarray var> {<position>} {<value>}</code>
<code>__intarray_gset_fast:Nnn</code>	<code>__intarray_gset_fast:Nnn <intarray var> {<position>} {<value>}</code>

Stores the result of evaluating the integer expression `<value>` into the `<integer array variable>` at the (integer expression) `<position>`. While `__intarray_gset:Nnn` checks that the `<position>` is between 1 and the `__intarray_count:N` and that the `<value>`’s absolute value is at most $2^{30} - 1$, the “fast” function performs no such bound check. Assignments are always global.

*E-mail: latex-team@latex-project.org

<code>__intarray_item:Nn</code>	★	<code>__intarray_item:Nn <intarray var> {(position)}</code>
<code>__intarray_item_fast:Nn</code>	★	<code>__intarray_item_fast:Nn <intarray var> {(position)}</code>

Expands to the integer entry stored at the (integer expression) *<position>* in the *<integer array variable>*. While `__intarray_item:Nn` checks that the *<position>* is between 1 and the `__intarray_count:N`, the “fast” function performs no such bound check.

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.

I		S	
intarray internal commands:		seq commands:	
<code>__intarray_count:N</code> 1, <i>1</i> , 1, <i>2</i>	<code>\seq_count:N</code> <i>1</i>
<code>__intarray_gset:Nnn</code> 1, 1, <i>1</i>		
<code>__intarray_gset_fast:Nnn</code> 1, <i>1</i>		
<code>__intarray_item:Nn</code> <i>2</i> , <i>2</i> , <i>2</i>		
<code>__intarray_item_fast:Nn</code> <i>2</i> , <i>2</i>		
<code>__intarray_new:Nn</code> <i>1</i> , 1		
		T	
		T _E X and L ^A T _E X 2 _ε commands:	
		<code>\fontdimen</code> 1, 1, 1