

The `l3sort` package

Sorting lists*

The L^AT_EX3 Project[†]

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1 `l3sort` documentation

L^AT_EX3 comes with a facility to sort list variables (sequences, token lists, or comma-lists) according to some user-defined comparison. For instance,

```
\clist_set:Nn \l_foo_clist { 3 , 01 , -2 , 5 , +1 }
\clist_sort:Nn \l_foo_clist
{
  \int_compare:nNnTF { #1 } > { #2 }
    { \sort_reversed: }
    { \sort_ordered: }
}
```

will result in `\l_foo_clist` holding the values `{ -2 , 01 , +1 , 3 , 5 }` sorted in non-decreasing order.

The code defining the comparison should perform `\sort_reversed:` if the two items given as `#1` and `#2` are not in the correct order, and otherwise it should call `\sort_ordered:` to indicate that the order of this pair of items should not be changed.

For instance, a *comparison code* consisting only of `\sort_ordered:` with no test will yield a trivial sort: the final order is identical to the original order. Conversely, using a *comparison code* consisting only of `\sort_reversed:` will reverse the list (in a fairly inefficient way).

T_EXhackers note: Internally, the code from `l3sort` stores items in `\toks`. Thus, the *comparison code* should not alter the contents of any `\toks`, nor assume that they hold a given value.

<code>\seq_sort:Nn</code>	<code>\seq_sort:Nn <sequence> {<comparison code>}</code>
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<code>\seq_gsort:Nn</code>	Sorts the items in the <i><sequence></i> according to the <i><comparison code></i> , and assigns the result to <i><sequence></i> .
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<hr/> <code>\tl_sort:Nn</code> <hr/>	<code>\tl_sort:Nn <tl var> {<comparison code>}</code>
<code>\tl_gsort:Nn</code>	Sorts the items in the <code><tl var></code> according to the <code><comparison code></code> , and assigns the result to <code><tl var></code> .
<hr/> <code>\clist_sort:Nn</code> <hr/>	<code>\clist_sort:Nn <clist var> {<comparison code>}</code>
<code>\clist_gsort:Nn</code>	Sorts the items in the <code><clist var></code> according to the <code><comparison code></code> , and assigns the result to <code><clist var></code> .
<hr/> <code>\tl_sort:nN</code> ★ <hr/>	<code>\tl_sort:nN {<token list>} <conditional></code>
	Sorts the items in the <code><token list></code> , using the <code><conditional></code> to compare items, and leaves the result in the input stream. The <code><conditional></code> should have signature <code>:nnTF</code> , and return true if the two items being compared should be left in the same order, and false if the items should be swapped.
	T_EXhackers note: The result is returned within <code>\exp_not:n</code> , which means that the token list will not expand further when appearing in an x-type argument expansion.

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.

C		T
<code>\clist_gsort:Nn</code>	<u>2</u>	T _E X and L ^A T _E X 2 _ε commands:
<code>\clist_sort:Nn</code>	<u>2</u>	<code>\toks</code> 1
		<code>\tl_gsort:Nn</code> <u>2</u>
S		<code>\tl_sort:Nn</code> <u>2</u>
<code>\seq_gsort:Nn</code>	<u>1</u>	<code>\tl_sort:nN</code> <u>2</u>
<code>\seq_sort:Nn</code>	<u>1</u>	