

## IList

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Display a list in an Ibuffer way.

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# 1 About

This is a little library package that can *display a list in an Ibuffer fashion*. The core functionality it provides is a function that can accept a list, and produce a string showing the contents of the list according to the specifications of columns, groups, and sorters.

## 2 Entry point

The one main function this package provides is `ilist-string`. It is called as follows.

```
(ilist-string LIST COLUMNS GROUPS
  &optional DISCARD-EMPTY-P SORTER NO-TRAILING-SPACE)
```

**LIST**            This denotes the list that the user wants to display.

**COLUMNS**

**GROUPS**        See Section 2.1 [Columns], page 2, and Section 2.2 [Groups], page 2.

**DISCARD-EMPTY-P**

This determines whether to display empty groups or not.

**SORTER**

This is either nil, or a function with two arguments which returns non-nil if and only if the first argument should be sorted before the second argument. This is used to sort the elements in the list, before grouping happens. To sort groups, see Section 2.2 [Groups], page 2.

**NO-TRAILING-SPACE**

If this is non-nil then there will be no trailing whitespaces in the resulting string.

### 2.1 Columns

Like in `Ibuffer`, the user can specify columns to display. Each column comprises the following specifications:

**NAME**            The name to display in the header.

**FUN**            A function that will be given the elements of the list (one at a time) that should return a string as the representation of that element in this column.

**MIN**

**MAX**            The minimal (resp. maximal) width this column takes.

**ALIGN**          Either `:left`, `:right`, or `:center`. How the contents of the column are aligned.

**ELIDE**          If the content of an element takes more space than the **MAX**, whether to substitute the last few characters of that content by a fixed *eliding string*. If this **ELIDE** is not a string, then it means not to elide, but to truncate the contents.

### 2.2 Groups

There are two types of filter groups: the fixed and the automatic filter groups.

#### 2.2.1 Fixed groups

Like in `Ibuffer`, we can group elements together in the display. One difference with `Ibuffer` is that elements that are not in any group are ignored. If one wants a "default" group, specify that explicitly. The specifications of **GROUPS** are as follows.

**NAME**            The name of the group. This will be enclosed in square brackets and displayed on a separate line.

**FUN**            A function with one argument. If the function returns non-nil, then that element is considered to pertain to the group.

So a default group just uses a function that always returns `t`, and is put at the end of the list `GROUPS`.

Empty groups might or might not be displayed, depending on the value of `DISCARD-EMPTY-P`.

### 2.2.2 Automatic groups

An automatic filter group is a function that can give labels to elements in a list. These labels will be used to group elements automatically: the elements with the same label will be grouped together, automagically. Besides, an automatic filter group is also responsible for sorting group labels, and for giving a default label, if no labels are specified for some element.

To be precise, an automatic filter group is a function with the signature: `(ELEMENT &optional TYPE)`. The optional argument `TYPE` says what the caller wants from the function:

**nil**            If it is omitted or nil, the function should just return the label for `ELEMENT`.  
**default**       If it is the symbol `default`, the function should return a default label.  
**sorter**        If it is the symbol `sorter`, the function should return a function with two arguments, `X` and `Y`. This returned function should return a non-nil value if and only if group `X` should be placed earlier than group `Y`.

So, for example, the call `(FUN t 'default)` should produce the default label, `(FUN t 'sorter)` should return the function used to sort groups, and `(FUN ELEMENT)` should return the label for `ELEMENT`, where `FUN` is an automatic filter group.

### 2.2.3 Define automatic filter groups

If one wants to define one's own automatic filter group, then the macro `ilist-define-automatic-group`, or the shorter alias `ilist-dag`, might come in handy.

In case you wonder, this *dag* has nothing to do with an *directed acyclic graph*; it is just an abbreviation to save some typing. The coincidence of the names is a misfortune.

This macro is called as follows.

```
(ilist-dag NAME DEFAULT SORTER &rest BODY)
```

**NAME**            This is a string. The resulting function defined by this macro will be named as `ilist-automatic-group-NAME`.

**DEFAULT**        This is also a string. It is used to label elements for which this automatic group returns nil as its label.

Why not just let the automatic group function give the default label instead of nil, then? Well, people make mistakes all the time, at least I do. So I think this mechanism can help people to remember give a default label for elements.

**SORTER**        This can be a symbol, or an s-expression.

If it is a symbol, it will be used as the sorting function of the group labels. Note that one does not have to quote this symbol, though you can still quote it.

If it is an s-expression., it will be used to define a function `ilist-automatic-group-NAME-sorter`, which then becomes the sorting function. The variables `X` and `Y` are bound to the labels to sort in this expression. The sorter function should return a non-nil value if and only if the group labelled `X` should be displayed before the group labelled `Y`.

### 3 Mapping over lines

For the convenience of package-users, this package also provides some auxiliary functions to operate on the displayed list. One is `ilist-map-lines`. Its return value is the list of execution results on the lines over which the function is executed. By default it skips invisible lines, but this behaviour can be altered.

It is called as follows.

```
(ilist-map-lines FUN &optional PREDICATE START END NO-SKIP-INVISIBLE)
```

**FUN**           The function to execute on each matching line.

**PREDICATE**       This should be a function with no arguments. It will be executed on each line.  
If it returns non-nil, that line is considered to be matched.

**START**

**END**           They limit the range of the mapping.

**NO-SKIP-INVISIBLE**

If non-nil, then we don't skip invisible lines.



## 4 Moving

It might be desired to move between the displayed list items in a *cyclic* manner, that is, assuming the top of the buffer is identified with the bottom of the buffer. So the package provides four functions for moving. These functions all have an argument `NO-SKIP-INVISIBLE`; if that argument is non-nil, then invisible lines won't be skipped.

`ilist-backward-line`

`ilist-forward-line`

Move between lines. One can control whether to skip group headers or to move cyclicly, through the function parameters.

`ilist-backward-group-header`

`ilist-forward-group-header`

Move between group headers.

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