identify {graphics} R Documentation

Identify Points in a Scatter Plot

Description

`identify` reads the position of the graphics pointer when the (first) mouse button is pressed. It then searches the coordinates given in `x` and `y` for the point closest to the pointer. If this point is close enough to the pointer, its index will be returned as part of the value of the call.

Usage

```
identify(x, ...)

## Default S3 method:
identify(x, y = NULL, labels = seq_along(x), pos = FALSE,
         n = length(x), plot = TRUE, atpen = FALSE, offset = 0.5,
         tolerance = 0.25, ...)
```

Arguments

`x, y`
: coordinates of points in a scatter plot. Alternatively, any object which defines coordinates (a plotting structure, time series etc: see `xy.coords`) can be given as `x`, and `y` left missing.

`labels`
: an optional character vector giving labels for the points. Will be coerced using `as.character`, and recycled if necessary to the length of `x`. Excess labels will be discarded, with a warning.

`pos`
: if `pos` is `TRUE`, a component is added to the return value which indicates where text was plotted relative to each identified point: see Value.

`n`
: the maximum number of points to be identified.

`plot`
: logical: if `plot` is `TRUE`, the labels are printed near the points and if `FALSE` they are omitted.

`atpen`
: logical: if `TRUE` and `plot = TRUE`, the lower-left corners of the labels are plotted at the points clicked rather than relative to the points.

`offset`
: the distance (in character widths) which separates the label from identified points. Negative values are allowed. Not used if `atpen = TRUE`.

`tolerance`
: the maximal distance (in inches) for the pointer to be ‘close enough’ to a point.

`...`
: further arguments passed to `par` such as `cex`, `col` and `font`.

Details

identify is a generic function, and only the default method is described here.

identify is only supported on screen devices such as X11, windows and quartz. On other devices the call will do nothing.

Clicking near (as defined by tolerance) a point adds it to the list of identified points. Points can be identified only once, and if the point has already been identified or the click is not near any of the points a message is printed immediately on the R console.

If plot is TRUE, the point is labelled with the corresponding element of labels. If atpen is false (the default) the labels are placed below, to the left, above or to the right of the identified point, depending on where the pointer was relative to the point. If atpen is true, the labels are placed with the bottom left of the string's box at the pointer.

For the usual X11 device the identification process is terminated by pressing any mouse button other than the first. For the quartz device the process is terminated by pressing either the pop-up menu equivalent (usually second mouse button or Ctrl-click) or the ESC key.

On most devices which support identify, successful selection of a point is indicated by a bell sound unless options(locatorBell = FALSE) has been set.

If the window is resized or hidden and then exposed before the identification process has terminated, any labels drawn by identify will disappear. These will reappear once the identification process has terminated and the window is resized or hidden and exposed again. This is because the labels drawn by identify are not recorded in the device's display list until the identification process has terminated.

If you interrupt the identify call this leaves the graphics device in an undefined state, with points labelled but labels not recorded in the display list. Copying a device in that state will give unpredictable results.

Value

If pos is FALSE, an integer vector containing the indices of the identified points, in the order they were identified.

If pos is TRUE, a list containing a component ind, indicating which points were identified and a component pos, indicating where the labels were placed relative to the identified points (1=below, 2=left, 3=above, 4=right and 0=no offset, used if atpen = TRUE).

Technicalities

The algorithm used for placing labels is the same as used by text if pos is specified there, the difference being that the position of the pointer relative the identified point determines pos in identify.

For labels placed to the left of a point, the right-hand edge of the string's box is placed offset units to the left of the point, and analogously for points to the right. The baseline of the text is placed below the point so as to approximately centre string vertically. For labels placed above or below a point, the string is centered horizontally on the point. For labels placed above, the baseline of the text is placed offset units above the point, and for those placed below, the baseline is placed so that the top of the string's box is approximately offset units below the point. If you want more precise placement (e.g., centering) use plot = FALSE and plot via text or points: see the examples.

References

Becker, R. A., Chambers, J. M. and Wilks, A. R. (1988) *The New S Language*. Wadsworth & Brooks/Cole.

See Also

`locator`, `text`.

`dev.capabilities` to see if it is supported.

Examples

```
## A function to use identify to select points, and overplot the
## points with another symbol as they are selected
identifyPch <- function(x, y = NULL, n = length(x), pch = 19, ...)
{
    xy <- xy.coords(x, y); x <- xy$x; y <- xy$y
    sel <- rep(FALSE, length(x)); res <- integer(0)
    while(sum(sel) < n) {
        ans <- identify(x[!sel], y[!sel], n = 1, plot = FALSE, ...)
        if(!length(ans)) break
        ans <- which(!sel)[ans]
        points(x[ans], y[ans], pch = pch)
        sel[ans] <- TRUE
        res <- c(res, ans)
    }
    res
}
```

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