pandas.DataFrame.plot

`DataFrame.plot(*args, **kwargs)` [source]

Make plots of Series or DataFrame.

Uses the backend specified by the option `plotting.backend`. By default, matplotlib is used.

Parameters:

data : *Series or DataFrame*

The object for which the method is called.

x : *label or position, default None*

Only used if data is a DataFrame.

y : *label, position or list of label, positions, default None*

Allows plotting of one column versus another. Only used if data is a DataFrame.

kind : *str*

The kind of plot to produce:

- ‘line’ : line plot (default)
- ‘bar’ : vertical bar plot
- ‘barh’ : horizontal bar plot
- ‘hist’ : histogram
- ‘box’ : boxplot
- ‘kde’ : Kernel Density Estimation plot
- ‘density’ : same as ‘kde’
- ‘area’ : area plot
- ‘pie’ : pie plot
- ‘scatter’ : scatter plot (DataFrame only)
- ‘hexbin’ : hexbin plot (DataFrame only)

ax : *matplotlib axes object, default None*

An axes of the current figure.

Skip to main content

Whether to group columns into subplots:

- `False` : No subplots will be used
- `True` : Make separate subplots for each column.
- sequence of iterables of column labels: Create a subplot for each group of columns. For example *[('a', 'c'), ('b', 'd')]* will create 2 subplots: one with columns 'a' and 'c', and one with columns 'b' and 'd'. Remaining columns that aren't specified will be plotted in additional subplots (one per column).

> ***New in version 1.5.0.***

sharex : *bool, default True if ax is None else False*

In case `subplots=True`, share x axis and set some x axis labels to invisible; defaults to True if ax is None otherwise False if an ax is passed in; Be aware, that passing in both an ax and `sharex=True` will alter all x axis labels for all axis in a figure.

sharey : *bool, default False*

In case `subplots=True`, share y axis and set some y axis labels to invisible.

layout : *tuple, optional*

(rows, columns) for the layout of subplots.

figsize : *a tuple (width, height) in inches*

Size of a figure object.

use_index : *bool, default True*

Use index as ticks for x axis.

title : *str or list*

Title to use for the plot. If a string is passed, print the string at the top of the figure. If a list is passed and *subplots* is True, print each item in the list above the corresponding subplot.

grid : *bool, default None (matlab style default)*

Axis grid lines.

legend : *bool or {'reverse'}*

Place legend on axis subplots.

style : *list or dict*

The matplotlib line style per column.

logx : *bool or 'sym', default False*

Skip to main content

logy : *bool or 'sym' default False*

Use log scaling or symlog scaling on y axis.

loglog : *bool or 'sym', default False*

Use log scaling or symlog scaling on both x and y axes.

xticks : *sequence*

Values to use for the xticks.

yticks : *sequence*

Values to use for the yticks.

xlim : *2-tuple/list*

Set the x limits of the current axes.

ylim : *2-tuple/list*

Set the y limits of the current axes.

xlabel : *label, optional*

Name to use for the xlabel on x-axis. Default uses index name as xlabel, or the x-column name for planar plots.

> ***Changed in version 1.2.0:*** Now applicable to planar plots (*scatter*, *hexbin*).

> ***Changed in version 2.0.0:*** Now applicable to histograms.

ylabel : *label, optional*

Name to use for the ylabel on y-axis. Default will show no ylabel, or the y-column name for planar plots.

> ***Changed in version 1.2.0:*** Now applicable to planar plots (*scatter*, *hexbin*).

> ***Changed in version 2.0.0:*** Now applicable to histograms.

rot : *float, default None*

Rotation for ticks (xticks for vertical, yticks for horizontal plots).

fontsize : *float, default None*

Font size for xticks and yticks.

Skip to main content

colormap : *str or matplotlib colormap object, default None*

Colormap to select colors from. If string, load colormap with that name from matplotlib.

colorbar : *bool, optional*

If True, plot colorbar (only relevant for 'scatter' and 'hexbin' plots).

position : *float*

Specify relative alignments for bar plot layout. From 0 (left/bottom-end) to 1 (right/top-end). Default is 0.5 (center).

table : *bool, Series or DataFrame, default False*

If True, draw a table using the data in the DataFrame and the data will be transposed to meet matplotlib's default layout. If a Series or DataFrame is passed, use passed data to draw a table.

yerr : *DataFrame, Series, array-like, dict and str*

See Plotting with Error Bars for detail.

stacked : *bool, default False in line and bar plots, and True in area plot*

If True, create stacked plot.

secondary_y : *bool or sequence, default False*

Whether to plot on the secondary y-axis if a list/tuple, which columns to plot on secondary y-axis.

mark_right : *bool, default True*

When using a secondary_y axis, automatically mark the column labels with "(right) in the legend.

include_bool : *bool, default is False*

If True, boolean values can be plotted.

backend : *str, default None*

Backend to use instead of the backend specified in the option `plotting.backend`. For instance, 'matplotlib'. Alternatively, to specify the `plotting.backend` for the whole session, set `pd.options.plotting.backend`.

****kwargs**

Options to pass to matplotlib plotting method.

Skip to main content

`matplotlib.axes.Axes` **or numpy.ndarray of them**

If the backend is not the default matplotlib one, the return value will be the object returned by the backend.

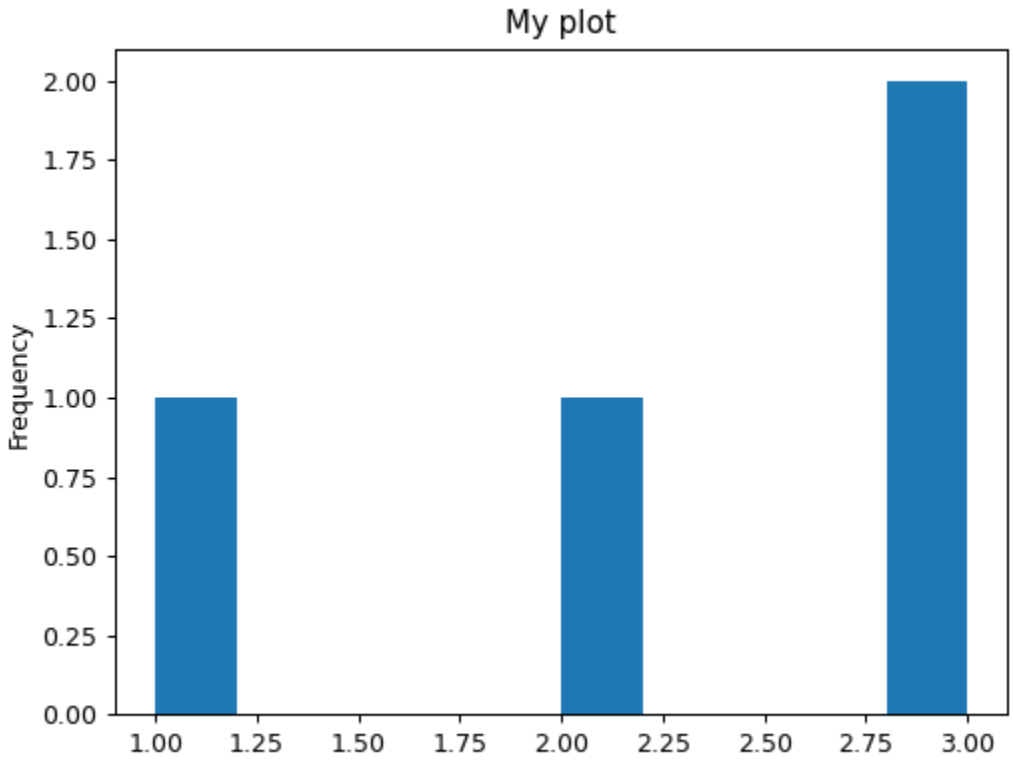
Notes

- See matplotlib documentation online for more on this subject
- If *kind* = 'bar' or 'barh', you can specify relative alignments for bar plot layout by *positio* keyword. From 0 (left/bottom-end) to 1 (right/top-end). Default is 0.5 (center)

Examples

For Series:

```
>>> ser = pd.Series([1, 2, 3, 3])
>>> plot = ser.plot(kind='hist', title="My plot")
```



For DataFrame:

```
>>> df = pd.DataFrame({'length': [1.5, 0.5, 1.2, 0.9, 3],
...                    'width': [0.7, 0.2, 0.15, 0.2, 1.1]},
```

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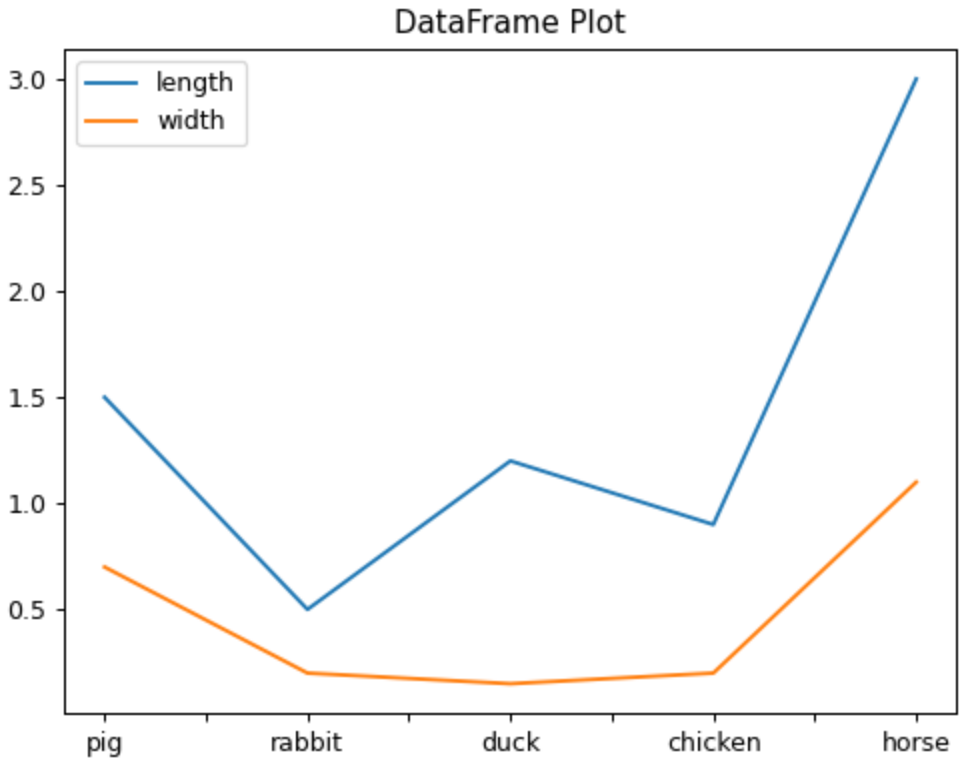
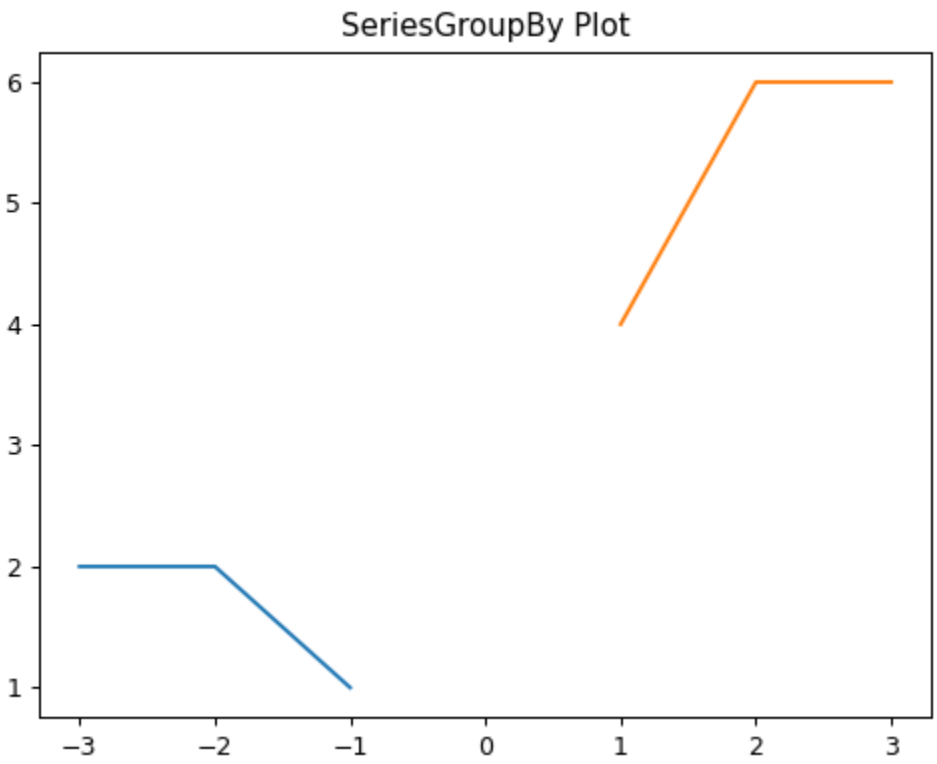
```
...                   index=['pig', 'rabbit', 'duck', 'chicken', 'horse'])
>>> plot = df.plot(title="DataFrame Plot")
```



For SeriesGroupBy:

```
>>> lst = [-1, -2, -3, 1, 2, 3]
>>> ser = pd.Series([1, 2, 2, 4, 6, 6], index=lst)
>>> plot = ser.groupby(lambda x: x > 0).plot(title="SeriesGroupBy Plot")
```

Skip to main content



For DataFrameGroupBy:

```
>>> df = pd.DataFrame({"col1" : [1, 2, 3, 4],
...                    "col2" : ["A", "B", "A", "B"]})
>>> plot = df.groupby("col2").plot(kind="bar", title="DataFrameGroupBy Plot")
```

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