# pandas.DataFrame.plot.hexbin

`DataFrame.plot.hexbin(x, y, C=None, reduce_C_function=None, gridsize=None, **kwargs)` [source]

Generate a hexagonal binning plot.

Generate a hexagonal binning plot of *x* versus *y*. If *C* is *None* (the default), this is a histogram of the number of occurrences of the observations at `(x[i], y[i])`.

If *C* is specified, specifies values at given coordinates `(x[i], y[i])`. These values are accumulated for each hexagonal bin and then reduced according to *reduce_C_function*, having as default the NumPy's mean function (`numpy.mean()`). (If *C* is specified, it must also be a 1-D sequence of the same length as *x* and *y*, or a column label.)

**Parameters:**

**x** : *int or str*

The column label or position for x points.

**y** : *int or str*

The column label or position for y points.

**C** : *int or str, optional*

The column label or position for the value of *(x, y)* point.

**reduce_C_function** : *callable, default np.mean*

Function of one argument that reduces all the values in a bin to a single number (e.g. *np.mean*, *np.max*, *np.sum*, *np.std*).

**gridsize** : *int or tuple of (int, int), default 100*

The number of hexagons in the x-direction. The corresponding number of hexagons in the y-direction is chosen in a way that the hexagons are approximately regular. Alternatively, gridsize can be a tuple with two elements specifying the number of hexagons in the x-direction and the y-direction.

****kwargs**

Additional keyword arguments are documented in `DataFrame.plot()`.

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**Returns:**

**matplotlib.AxesSubplot**

The matplotlib `Axes` on which the hexbin is plotted.

See also

`DataFrame.plot`

Make plots of a DataFrame.

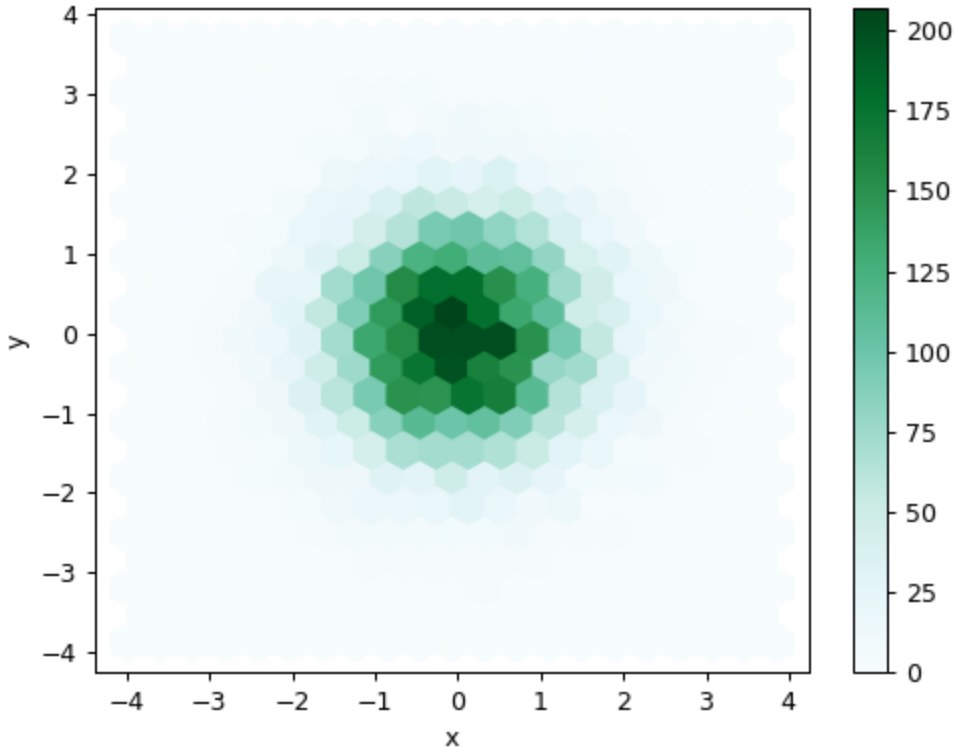
`matplotlib.pyplot.hexbin`

Hexagonal binning plot using matplotlib, the matplotlib function that is used under the hood.

## Examples

The following examples are generated with random data from a normal distribution.

```
>>> n = 10000
>>> df = pd.DataFrame({'x': np.random.randn(n),
...                    'y': np.random.randn(n)})
>>> ax = df.plot.hexbin(x='x', y='y', gridsize=20)
```

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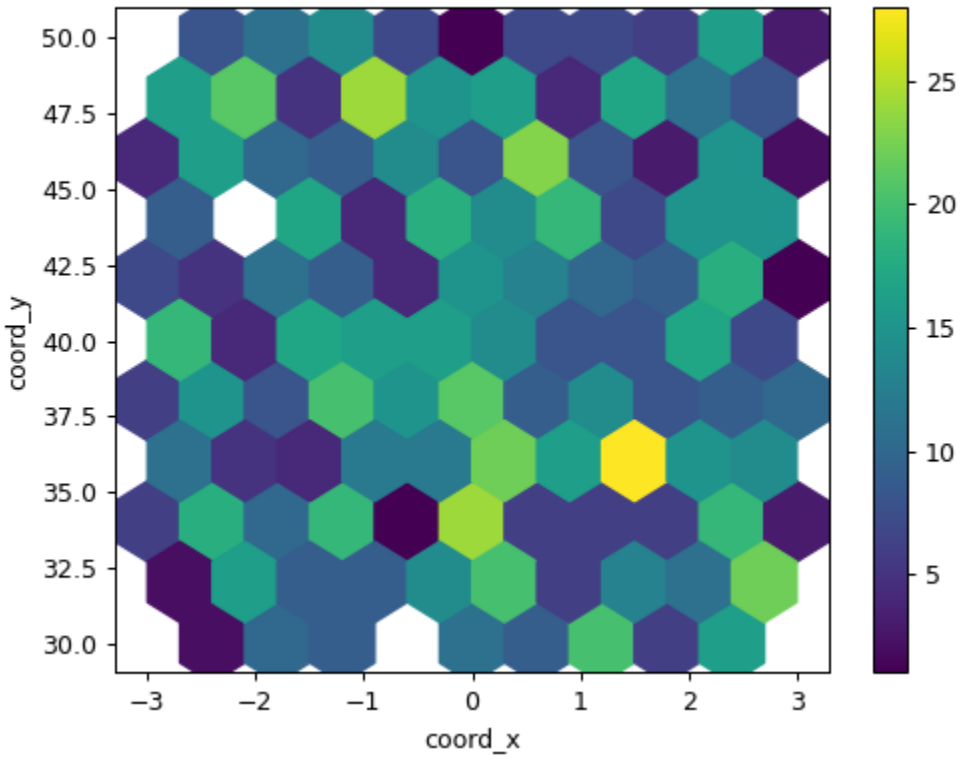
The next example uses *C* and *np.sum* as *reduce_C_function*. Note that *'observations'* values ranges from 1 to 5 but the result plot shows values up to more than 25. This is because of the *reduce_C_function*.

```
>>> n = 500
>>> df = pd.DataFrame({
...     'coord_x': np.random.uniform(-3, 3, size=n),
...     'coord_y': np.random.uniform(30, 50, size=n),
...     'observations': np.random.randint(1,5, size=n)
...     })
>>> ax = df.plot.hexbin(x='coord_x',
...                     y='coord_y',
...                     C='observations',
...                     reduce_C_function=np.sum,
...                     gridsize=10,
...                     cmap="viridis")
```

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