scipy.stats.describe

scipy.stats.**describe**(*a*, *axis=0*, *ddof=1*, *bias=True*, *nan_policy='propagate'*) [source] (https://github.com/scipy/scipy/blob/v1.1.0/scipy/stats/stats.py#L1165-L1240)

Compute several descriptive statistics of the passed array.

Parameters:

a : *array_like*

Input data.

axis : *int or None, optional*

Axis along which statistics are calculated. Default is 0. If None, compute over the whole array *a*.

ddof : *int, optional*

Delta degrees of freedom (only for variance). Default is 1.

bias : *bool, optional*

If False, then the skewness and kurtosis calculations are corrected for statistical bias.

nan_policy : *{'propagate', 'raise', 'omit'}, optional*

Defines how to handle when input contains nan. 'propagate' returns nan, 'raise' throws an error, 'omit' performs the calculations ignoring nan values. Default is 'propagate'.

Returns:

nobs : *int or ndarray of ints*

Number of observations (length of data along *axis*). When 'omit' is chosen as nan_policy, each column is counted separately.

minmax: tuple of ndarrays or floats

Minimum and maximum value of data array.

mean : *ndarray or float*

Arithmetic mean of data along axis.

variance : *ndarray or float*

Unbiased variance of the data along axis, denominator is number of observations minus one.

skewness : *ndarray or float*

Skewness, based on moment calculations with denominator equal to the number of observations, i.e. no degrees of freedom correction.

kurtosis : *ndarray or float*

Kurtosis (Fisher). The kurtosis is normalized so that it is zero for the normal distribution. No degrees of freedom are used.

See also:
skew (scipy.stats.skew.html#scipy.stats.skew), **kurtosis** (scipy.stats.kurtosis.html#scipy.stats.kurtosis)

Examples

```
>>> from scipy import stats
>>> a = np.arange(10)
>>> stats.describe(a)
DescribeResult(nobs=10, minmax=(0, 9), mean=4.5, variance=9.16666666666666,
               skewness=0.0, kurtosis=-1.2242424242424244)
>>> b = [[1, 2], [3, 4]]
>>> stats.describe(b)
DescribeResult(nobs=2, minmax=(array([1, 2]), array([3, 4])),
               mean=array([2., 3.]), variance=array([2., 2.]),
               skewness=array([0., 0.]), kurtosis=array([-2., -2.]))
```


Previous topic

scipy.stats.zipf (scipy.stats.zipf.html)

Next topic

scipy.stats.gmean (scipy.stats.gmean.html)