|  |  |  |
| --- | --- | --- |
| In | [1]: | **import** numpy |
|  |  | speed **=** [99,86,87,88,111,86,103,87,94,78,77,85,86] |
|  |  | x **=** numpy.mean(speed) |
|  |  | print(x) |
|  |  | 89.76923076923077 |
| In | [2]: | **import** numpy |
|  |  | speed **=** [99,86,87,88,111,86,103,87,94,78,77,85,86] |
|  |  | x **=** numpy.median(speed) |
|  |  | print(x) |
|  |  | 87.0 |
| In | [7]: | **import** numpy |
|  |  | speed **=** [99,86,87,88,86,103,87,94,78,77,85,86] |
|  |  | x **=** numpy.median(speed) |
|  |  | print(x) |
|  |  | 86.5 |
| In | [8]: | **from** scipy **import** stats |
|  |  | speed **=** [99,86,87,88,111,86,103,87,94,78,77,85,86] |
|  |  | x **=** stats.mode(speed) |
|  |  | print(x) |
|  |  | ModeResult(mode=array([86]), count=array([3])) |
| In | [9]: | n\_num **=** [1, 2, 3, 4, 5]  n **=** len(n\_num) |
|  |  | get\_sum **=** sum(n\_num) mean **=** get\_sum**/**n |
|  |  | print("Mean / Average is : " **+** str(mean)) |
|  |  | Mean / Average is : 3.0 |

|  |  |  |  |
| --- | --- | --- | --- |
| In [10]: | | n\_num **=** [1, 2, 3, 4, 5]  n **=** len(n\_num) n\_num.sort()  **if** n **%** 2 **==** 0:  median1 **=** n\_num[n**//**2] median2 **=** n\_num[n**//**2**-**1]  median **=** (median1 **+** median2)**/**2  **else**:  median **=** n\_num[n**//**2] | |
|  |  | print("Median is : " **+** str(median)) | |
|  |  | Median is : 3 | |
| In | [16]: | **from** collections **import** Counter | |
|  |  | n\_num **=** [1, 2, 3, 4, 5, 5]  n **=** len(n\_num) | |
|  |  | data **=** Counter(n\_num) get\_mode **=** dict(data)  mode **=** [k **for** k, v **in** get\_mode.items() **if** v **==** max(list(data.values()))] | |
|  | | **if** len(mode) **==** n:  get\_mode **=** "No mode found"  **else**: | |
|  |  | get\_mode **=** "Mode is/are : " **+** ', '.join(map(str,mode))  print(get\_mode) | |
|  |  | Mode is/are : 5 | |
| In | [17]: | **import** pandas **as** pd | |
|  |  | df **=** pd.DataFrame({'A' : ['a', 'b', 'c', 'c', 'a', 'b'],  'B' : [0, 1, 1, 0, 1, 0]}, dtype **=** "category") | |
|  | | df.dtypes | |
| Out[17]: | | A | category |
|  | | B | category |

dtype: object

In [18]:

print(df)

print(df.groupby(['A']). count().reset\_index())

A B

1. a 0
2. b 1
3. c 1
4. c 0
5. a 1
6. b 0

A B

1. a 2
2. b 2
3. c 2

In [19]:

**import** pandas **as** pd

df **=** pd.DataFrame({'A' : ['a', 'b', 'c', 'c', 'a', 'b'],

'B' : [0, 1, 1, 0, 1, 0],

'C' : [7, 8, 9, 5, 3, 6]})

df['A'] **=** df['A'].astype('category') print(df)

print(df.groupby(['A', 'B']).mean().reset\_index())

A B C

0 a 0 7

1 b 1 8

2 c 1 9

1. c 0 5
2. a 1 3
3. b 0 6 A B C

0 a 0 7

1 a 1 3

2 b 0 6

3 b 1 8

4 c 0 5

5 c 1 9

In [22]:

**import** pandas **as** pd

data **=** pd.read\_csv(r"D:\College\TE\SEM-2\Practical\DSBDA\3\Iris.csv") print('Iris-setosa')

setosa**=** data['Species'] **==** 'Iris-setosa' print(data[setosa].describe())

print('\nIris-versicolor')

versicolor**=** data['Species'] **==** 'Iris-versicolor' print(data[versicolor].describe())

print('\nIris-virginica')

virginica **=** data['Species'] **==** 'Iris-virginica' print (data[virginica].describe())

Iris-setosa

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Id | SepalLengthCm | SepalWidthCm | PetalLengthCm | PetalWidthCm |
| count | 50.00000 | 50.00000 | 50.000000 | 50.000000 | 50.00000 |
| mean | 25.50000 | 5.00600 | 3.418000 | 1.464000 | 0.24400 |
| std | 14.57738 | 0.35249 | 0.381024 | 0.173511 | 0.10721 |
| min | 1.00000 | 4.30000 | 2.300000 | 1.000000 | 0.10000 |
| 25% | 13.25000 | 4.80000 | 3.125000 | 1.400000 | 0.20000 |
| 50% | 25.50000 | 5.00000 | 3.400000 | 1.500000 | 0.20000 |
| 75% | 37.75000 | 5.20000 | 3.675000 | 1.575000 | 0.30000 |
| max | 50.00000 | 5.80000 | 4.400000 | 1.900000 | 0.60000 |

Iris-versicolor

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | Id | SepalLengthCm | SepalWidthCm | PetalLengthCm | PetalWidthCm |
| count | | 50.00000 | 50.000000 | 50.000000 | 50.000000 | 50.000000 |
| mean | | 75.50000 | 5.936000 | 2.770000 | 4.260000 | 1.326000 |
| std | | 14.57738 | 0.516171 | 0.313798 | 0.469911 | 0.197753 |
| min | | 51.00000 | 4.900000 | 2.000000 | 3.000000 | 1.000000 |
| 25% | | 63.25000 | 5.600000 | 2.525000 | 4.000000 | 1.200000 |
| 50% | | 75.50000 | 5.900000 | 2.800000 | 4.350000 | 1.300000 |
| 75% | | 87.75000 | 6.300000 | 3.000000 | 4.600000 | 1.500000 |
| max | | 100.00000 | 7.000000 | 3.400000 | 5.100000 | 1.800000 |
| Iris-virginica | | | | | | |
|  |  | Id | SepalLengthCm | SepalWidthCm | PetalLengthCm | PetalWidthCm |
|  | count | 50.00000 | 50.00000 | 50.000000 | 50.000000 | 50.00000 |
|  | mean | 125.50000 | 6.58800 | 2.974000 | 5.552000 | 2.02600 |
|  | std | 14.57738 | 0.63588 | 0.322497 | 0.551895 | 0.27465 |
|  | min | 101.00000 | 4.90000 | 2.200000 | 4.500000 | 1.40000 |
|  | 25% | 113.25000 | 6.22500 | 2.800000 | 5.100000 | 1.80000 |
|  | 50% | 125.50000 | 6.50000 | 3.000000 | 5.550000 | 2.00000 |
|  | 75% | 137.75000 | 6.90000 | 3.175000 | 5.875000 | 2.30000 |
|  | max | 150.00000 | 7.90000 | 3.800000 | 6.900000 | 2.50000 |
| In [ ]: |  |  |  |  |  |  |