

Measure of Central tendency

February 12, 2025

1 Statistics with Python

<https://www.geeksforgeeks.org/statistical-functions-python-set-1averages-measure-central-location/>

1.1 Measure of Central Tendency

1.1.1 Mean()

```
[5]: # Python code to demonstrate the
      # working of mean() function

      import statistics

      li = [1,2,3,4,5,6,7,8]

      print("The average of list values is : ",statistics.mean(li))
```

The average of list values is : 2

1.1.2 Median()

```
[7]: # Python code to demonstrate the
      # working of median() function

      import statistics

      li = [1,2,3,4,5,6,7,8]

      print("The median of the values is : ",statistics.median(li))
```

The median of the values is : 4.5

median_low()

```
[8]: # Python code to demonstrate the
      # working of median_low() function

      import statistics
```

```
li = [1,2,3,4,5,6,7,8]

print("The low median of the values is : ",statistics.median_low(li))
```

The median of the values is : 4

median_high()

```
[10]: # Python code to demonstrate the
      # working of median_high() function

import statistics

li = [1,2,3,4,5,6,7,8]

print("The high median of the values is : ",statistics.median_high(li))
```

The median of the values is : 5

median_grouped()

```
[14]: # Python code to demonstrate the working of
      # median_grouped()

# importing statistics to handle statistical operations
import statistics

# initializing list
li = [1,2,3,4,5,6,7,8]

# using median_grouped() to calculate 50th percentile
print ("The 50th percentile of data is : ",end="")
print (statistics.median_grouped(li))
```

The 50th percentile of data is : 4.5

1.1.3 Mode()

```
[12]: # Python code to demonstrate the
      # working of mode() function
      # on a various range of data types

# Importing the statistics module
from statistics import mode

# Importing fractions module as fr
# Enables to calculate harmonic_mean of a
# set in Fraction
from fractions import Fraction as fr
```

```

# tuple of positive integer numbers
data1 = (2, 3, 3, 4, 5, 5, 5, 5, 6, 6, 6, 7)

# tuple of a set of floating point values
data2 = (2.4, 1.3, 1.3, 1.3, 2.4, 4.6)

# tuple of a set of fractional numbers
data3 = (fr(1, 2), fr(1, 2), fr(10, 3), fr(2, 3))

# tuple of a set of negative integers
data4 = (-1, -2, -2, -2, -7, -7, -9)

# tuple of strings
data5 = ("red", "blue", "black", "blue", "black", "black", "brown")

# Printing out the mode of the above data-sets
print("Mode of data set 1 is % s" % (mode(data1)))
print("Mode of data set 2 is % s" % (mode(data2)))
print("Mode of data set 3 is % s" % (mode(data3)))
print("Mode of data set 4 is % s" % (mode(data4)))
print("Mode of data set 5 is % s" % (mode(data5)))

```

```

Mode of data set 1 is 5
Mode of data set 2 is 1.3
Mode of data set 3 is 1/2
Mode of data set 4 is -2
Mode of data set 5 is black

```

[]: