

# ドキュメント

2023 年 4 月 11 日

まずは import

```
[4]: import random
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import matplotlib.ticker as ticker
```

配列の作成

```
[5]: digit = 9
# 10^9 個の列を作成
list = [0] * 10**digit
# データを格納する配列
data = []
# 1000 個のデータの平均を取り、ヒストグラムに加える、という操作を 10000 回繰り返す
for i in range(0, 10000):
    x_mean = 0
    N = 1000
    for n in range(0, N-1):
        # 0~1 の
        a = random.random()
        x_mean += a
    x_mean /= N
    num = int(x_mean*10**digit)
    list[num] += 1
    data.append(num)
plt.hist(data, bins=100)
```

```
[5]: (array([ 1.,  1.,  2.,  0.,  2.,  0.,  1.,  2.,  5.,  3.,  7.,
            4.,  2.,  8.,  8.,  9., 17., 19., 19., 29., 31., 33.,
```

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    35., 51., 62., 55., 74., 80., 86., 95., 107., 105., 131.,
    159., 155., 164., 181., 194., 196., 215., 233., 262., 236., 258.,
    239., 305., 279., 277., 285., 327., 251., 298., 279., 280., 298.,
    272., 260., 274., 219., 213., 215., 219., 207., 176., 176., 149.,
    153., 128., 132., 105., 73., 83., 77., 72., 47., 54., 36.,
    21., 26., 27., 15., 24., 14., 16., 14., 15., 4., 7.,
    5., 4., 1., 3., 3., 0., 0., 1., 2., 0., 1.,
    2.]),
array([4.65421000e+08, 4.66106649e+08, 4.66792298e+08, 4.67477947e+08,
    4.68163596e+08, 4.68849245e+08, 4.69534894e+08, 4.70220543e+08,
    4.70906191e+08, 4.71591840e+08, 4.72277489e+08, 4.72963138e+08,
    4.73648787e+08, 4.74334436e+08, 4.75020085e+08, 4.75705734e+08,
    4.76391383e+08, 4.77077032e+08, 4.77762681e+08, 4.78448330e+08,
    4.79133979e+08, 4.79819628e+08, 4.80505276e+08, 4.81190925e+08,
    4.81876574e+08, 4.82562223e+08, 4.83247872e+08, 4.83933521e+08,
    4.84619170e+08, 4.85304819e+08, 4.85990468e+08, 4.86676117e+08,
    4.87361766e+08, 4.88047415e+08, 4.88733064e+08, 4.89418713e+08,
    4.90104361e+08, 4.90790010e+08, 4.91475659e+08, 4.92161308e+08,
    4.92846957e+08, 4.93532606e+08, 4.94218255e+08, 4.94903904e+08,
    4.95589553e+08, 4.96275202e+08, 4.96960851e+08, 4.97646500e+08,
    4.98332149e+08, 4.99017798e+08, 4.99703446e+08, 5.00389095e+08,
    5.01074744e+08, 5.01760393e+08, 5.02446042e+08, 5.03131691e+08,
    5.03817340e+08, 5.04502989e+08, 5.05188638e+08, 5.05874287e+08,
    5.06559936e+08, 5.07245585e+08, 5.07931234e+08, 5.08616883e+08,
    5.09302532e+08, 5.09988180e+08, 5.10673829e+08, 5.11359478e+08,
    5.12045127e+08, 5.12730776e+08, 5.13416425e+08, 5.14102074e+08,
    5.14787723e+08, 5.15473372e+08, 5.16159021e+08, 5.16844670e+08,
    5.17530319e+08, 5.18215968e+08, 5.18901617e+08, 5.19587265e+08,
    5.20272914e+08, 5.20958563e+08, 5.21644212e+08, 5.22329861e+08,
    5.23015510e+08, 5.23701159e+08, 5.24386808e+08, 5.25072457e+08,
    5.25758106e+08, 5.26443755e+08, 5.27129404e+08, 5.27815053e+08,
    5.28500702e+08, 5.29186350e+08, 5.29871999e+08, 5.30557648e+08,
    5.31243297e+08, 5.31928946e+08, 5.32614595e+08, 5.33300244e+08,
    5.33985893e+08]),
<BarContainer object of 100 artists>)
```

