A5_python

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차 례

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```
import numpy as np

N=1000
u=np.random.rand(N)
x=-np.log(1-u)/3
x[:6]
```

```
## array([0.4571064 , 0.36758198, 0.01238446, 0.5117984 , 0.18783719,
##        1.43679734])
```

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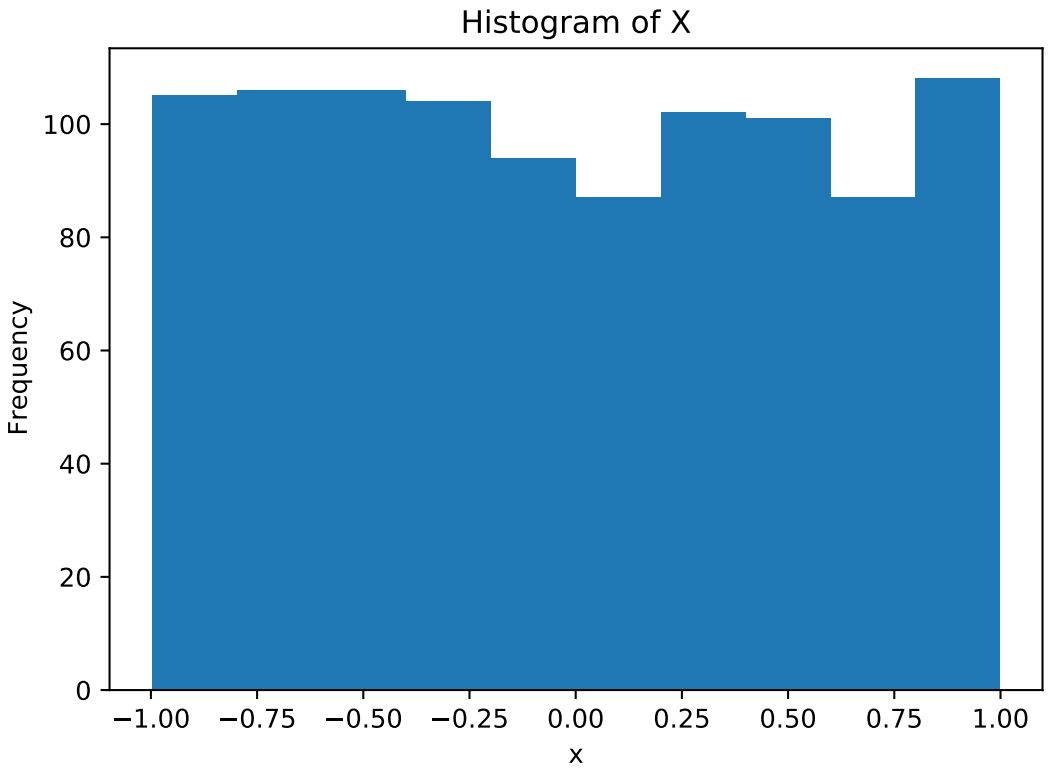
```
import numpy as np
import matplotlib.pyplot as plt

x=np.random.rand(1000)*2-1
plt.hist(x)
```

```
## (array([105., 106., 106., 104.,  94.,  87., 102., 101.,  87., 108.]), array([-9.97513585e-
01, -7.97850772e-01, -5.98187959e-01, -3.98525146e-01,
##        -1.98862333e-01,  8.00479773e-04,  2.00463293e-01,  4.00126106e-01,
##       5.99788919e-01,  7.99451732e-01,  9.99114545e-01]), <BarContainer object of 10 artists>)
```

```
plt.title('Histogram of X')
plt.xlabel('x')
plt.ylabel('Frequency')
plt.show()
```



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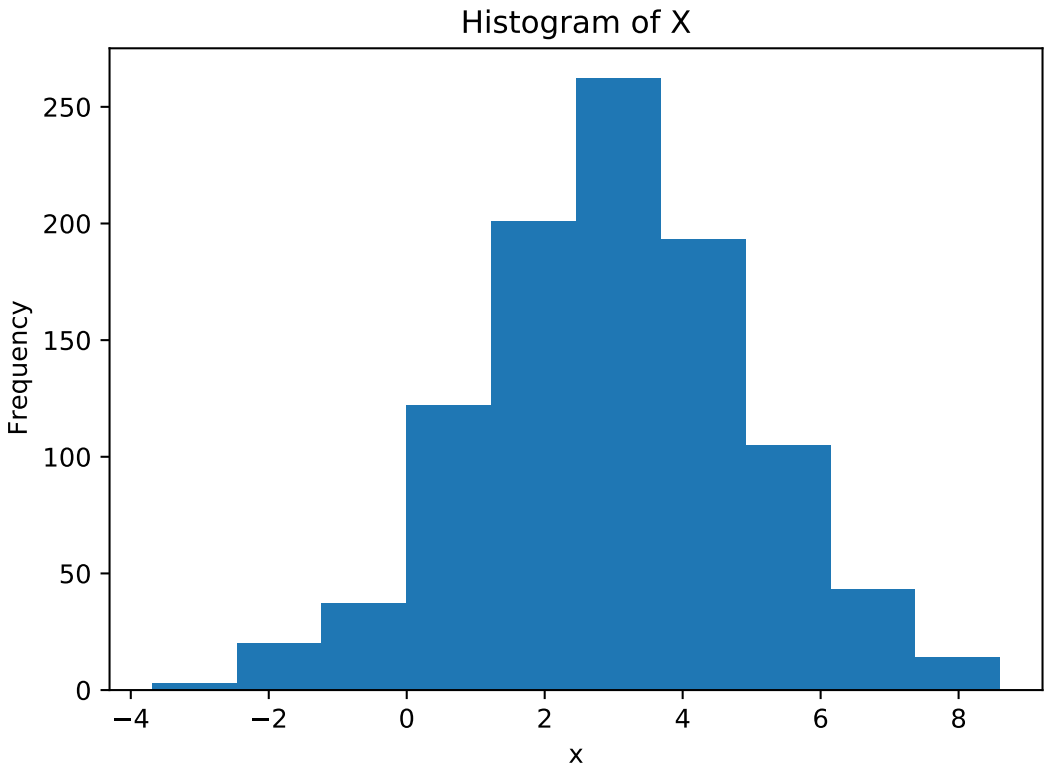
```
import numpy as np
import matplotlib.pyplot as plt

x=np.random.normal(3,2,size=1000)
plt.hist(x)
```

```
## (array([  3.,  20.,  37., 122., 201., 262., 193., 105.,  43.,  14.]), array([-3.69323006e+00, -
2.46372501e+00, -1.23421995e+00, -4.71490193e-03,
##         1.22479015e+00,  2.45429520e+00,  3.68380025e+00,  4.91330530e+00,
##       6.14281036e+00,  7.37231541e+00,  8.60182046e+00]), <BarContainer object of 10 artists>)
```

```
plt.title('Histogram of X')
plt.xlabel('x')
plt.ylabel('Frequency')
plt.show()
```



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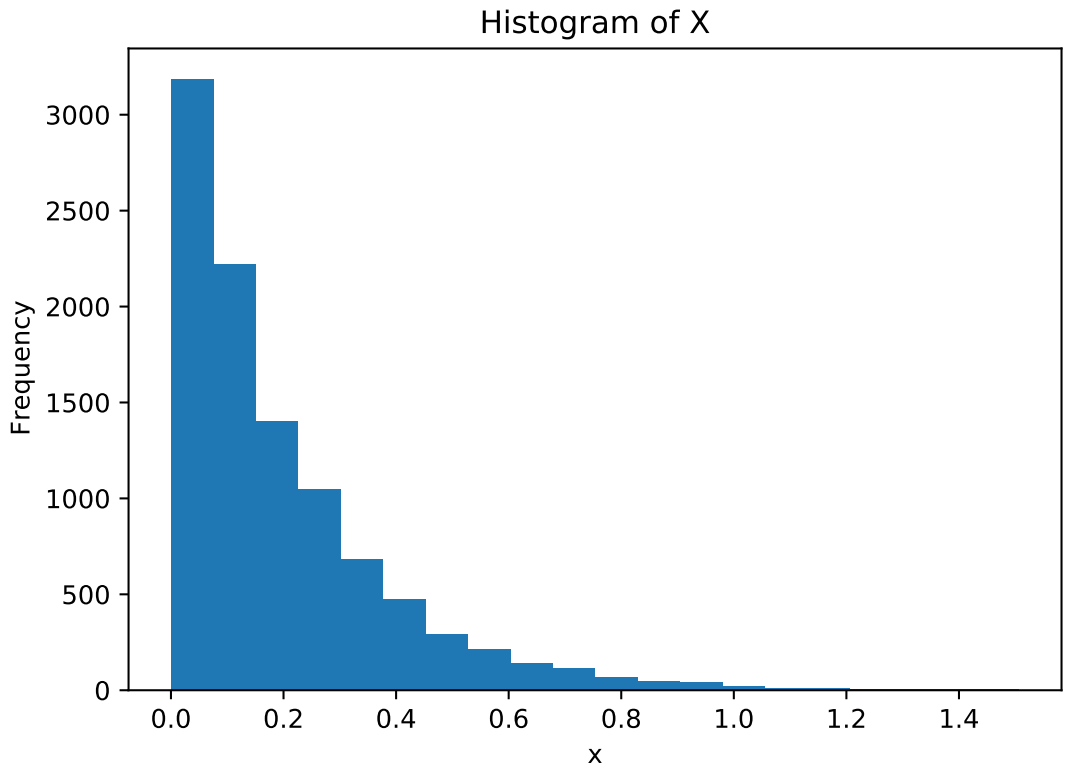
```
import numpy as np
import matplotlib.pyplot as plt

x=np.random.exponential(1/5,size=10000)
plt.title('Histogram of X')
plt.xlabel('x')
plt.ylabel('Frequency')
plt.hist(x,bins=20)
```

```
## (array([3186., 2222., 1400., 1048.,  683.,  474.,  291.,  216.,  141.,
##         113.,   70.,   49.,   43.,   23.,    8.,    8.,    6.,    7.,
##          6.,    6.]), array([3.08189164e-06, 7.53459547e-02, 1.50688827e-01, 2.26031700e-01,
##        3.01374573e-01, 3.76717446e-01, 4.52060318e-01, 5.27403191e-01,
##        6.02746064e-01, 6.78088937e-01, 7.53431810e-01, 8.28774682e-01,
##        9.04117555e-01, 9.79460428e-01, 1.05480330e+00, 1.13014617e+00,
##        1.20548905e+00, 1.28083192e+00, 1.35617479e+00, 1.43151766e+00,
##        1.50686054e+00]), <BarContainer object of 20 artists>)
```

```
plt.show()
```



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```
import numpy as np
import matplotlib.pyplot as plt

x=np.random.poisson(5, size=10000)
plt.hist(x,bins=20)
```

```
## (array([8.500e+01, 3.900e+02, 8.640e+02, 1.351e+03, 1.803e+03, 1.707e+03,
##         0.000e+00, 1.460e+03, 1.004e+03, 6.720e+02, 3.690e+02, 1.660e+02,
##         7.700e+01, 0.000e+00, 2.900e+01, 1.200e+01, 8.000e+00, 1.000e+00,
##       0.000e+00, 2.000e+00]), array([ 0.  ,  0.85,  1.7 ,  2.55,  3.4 ,  4.25,  5.1 ,  5.95,  6.8 ,
##          7.65,  8.5 ,  9.35, 10.2 , 11.05, 11.9 , 12.75, 13.6 , 14.45,
##         15.3 , 16.15, 17.  ]), <BarContainer object of 20 artists>)
```

```
plt.title('Histogram of X')
plt.xlabel('x')
plt.ylabel('Frequency')
plt.show()
```