A4 python ver

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page 10 Exercise 1

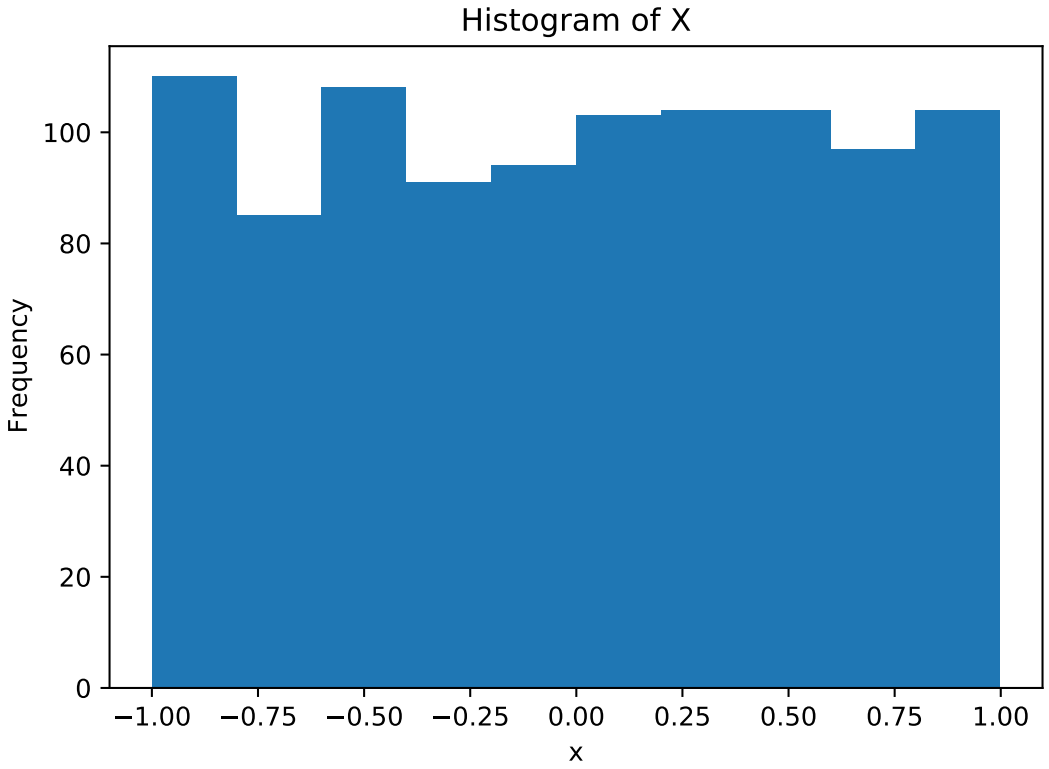
```
import numpy as np
N = 1000
u = np.random.rand(N)
x = -np.log(1-u)/3
x[:6]
```

```
## array([0.36940418, 0.00774292, 0.40693352, 0.1375488 , 0.24950896,
##        0.81414332])
```

page 15 Uniform random number

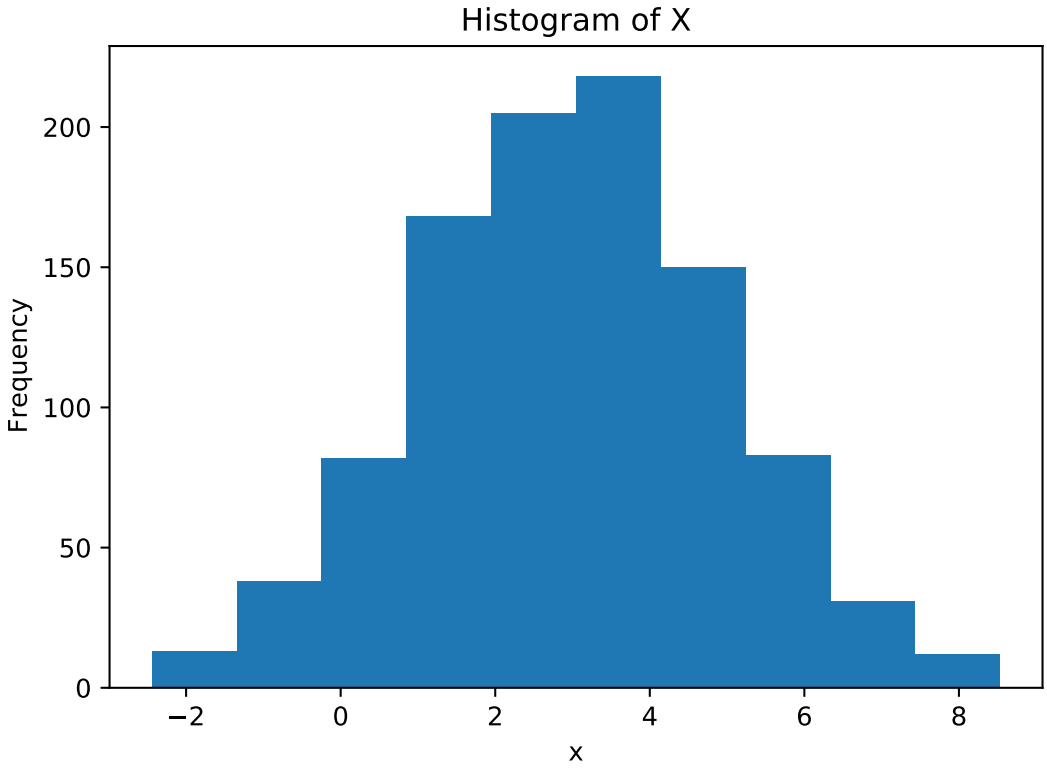
```
import numpy as np
import matplotlib.pyplot as plt

X = np.random.rand(1000)*2-1
temp = plt.hist(X)
plt.title('Histogram of X')
plt.xlabel('x')
plt.ylabel('Frequency')
plt.show()
```



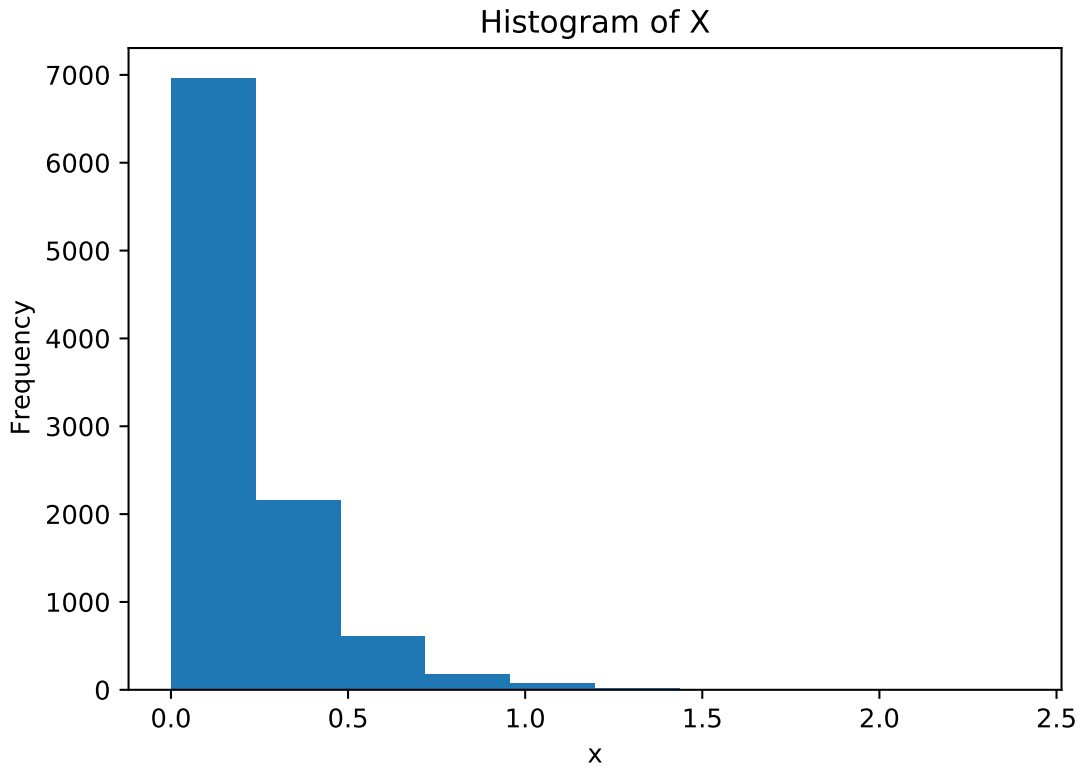
page 16 Normal random numbers

```
X = np.random.normal(3,2,size=1000)
temp = plt.hist(X)
plt.title('Histogram of X')
plt.xlabel('x')
plt.ylabel('Frequency')
plt.show()
```



page 17 Exponential random numbers

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



page 18 Poisson random numbers

```
X = np.random.poisson(5, size=10000)
temp = plt.hist(X)
plt.title('Histogram of X')
plt.xlabel('x')
plt.ylabel('Frequency')
plt.show()
```