Box-Muller Method

1 Python Script

```
import random
import matplotlib.pyplot as plt
from numpy import sin,cos, pi
from math import log,sqrt

u = []
v = []

x = []
y = []

for i in range(1000):

  random_num_u = random.uniform(0, 1)
  u.append(random_num_u)

  random_num_v = random.uniform(0, 1)
  v.append(random_num_v)

  x_0 = sqrt(-2*log(random_num_v)) * cos(2*pi*random_num_u)
  x.append(x_0)

  y_0 = sqrt(-2*log(random_num_v)) * sin(2*pi*random_num_u)
  y.append(y_0)

plt.scatter(x,y)

plt.xlabel("random num x")
plt.ylabel("random num y")
plt.show()
```