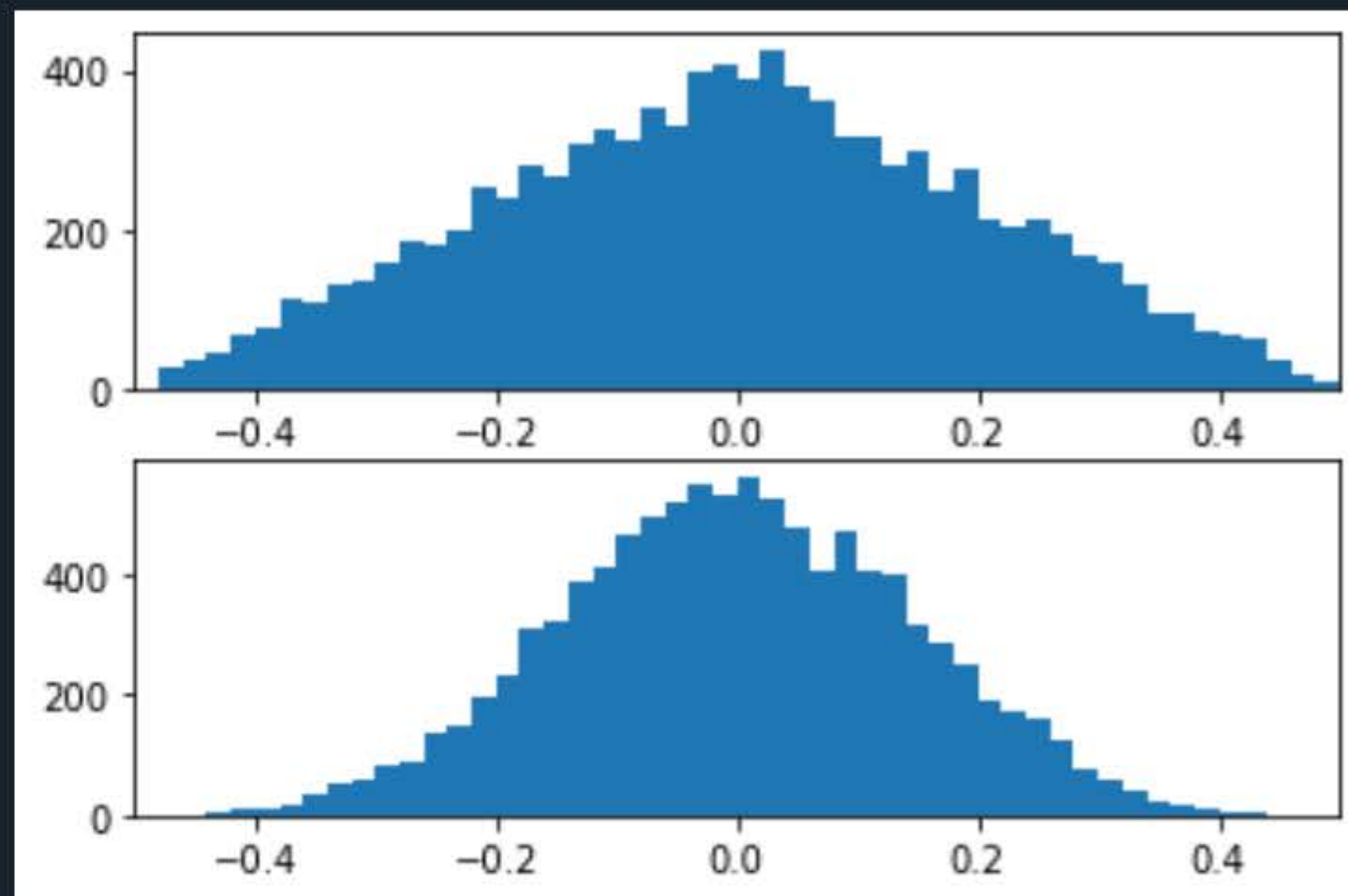


```
MECH6325-HW1.py
2 """
3 Created on Fri Sep 11 07:17:41 2020
4
5 @author: Jonas
6 """
7
8 import numpy as np
9 import matplotlib.pyplot as plt
10
11 # Problem 16
12
13 k = 2
14 n = 10000
15 X_1 = np.zeros(n)
16
17 for i, x in enumerate(X_1):
18     j = 0
19     temp = 0
20     while j < k:
21         temp += np.random.uniform(-0.5, 0.5)
22         j += 1
23     X_1[i] = temp / k
24
25 k = 4
26 n = 10000
27 X_2 = np.zeros(n)
28
29 for i, x in enumerate(X_2):
30     j = 0
31     temp = 0
32     while j < k:
33         temp += np.random.uniform(-0.5, 0.5)
34         j += 1
35     X_2[i] = temp / k
36
37 fig, (ax1, ax2) = plt.subplots(2, 1)
38
39 x_min = -0.5
40 x_max = 0.5
41
42 ax1.set_xlim(x_min, x_max)
43 ax2.set_xlim(x_min, x_max)
44
45 ax1.hist(X_1, 50, range = (x_min, x_max))
46 ax2.hist(X_2, 50, range = (x_min, x_max))
47
48
```



The main difference is the closer resemblance to a gaussian distribution. This makes sense as distributions grow they tend towards a normal curve.

Usage

Here you can get help of any object by pressing **Ctrl+I** in front of it, either on the Editor or the Console.