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from inspect import EndOfBlock
import numpy as np
import scipy.stats as st
import matplotlib.pyplot as plt
import seaborn as sns
#from scipy import stats
#1. Analytic approach with large n and or known SD
mean = 10
SD = 2
n=[5, 10, 20, 40, 80, 160, 1000]
for size in n:
    SEM = SD/np.sqrt(size)
    print('95% CI done with method 1 is: ' + str(mean) + '-' + str(SEM*1.96) + ',' + str(mean) + '+' + str(SEM*1.96)

st.t.ppf(1-0.025, 10)
#2. Analytic approach with small n and or known SD
mean1 = 10
SD = 2
n2=[5, 10, 20, 40] # Samples with values less than 50

for size in n2:
    SEM = SD/np.sqrt(size)
    print('95% CI done with method 2 is: ' + str(mean1) + '-' + str(st.t.ppf(1-0.025, size)*1.96) + ',' + str(mean1)

#3. Bootstrapping
mean = 10
SD = 2
n3=[5, 10, 20, 40, 80, 160, 1000]

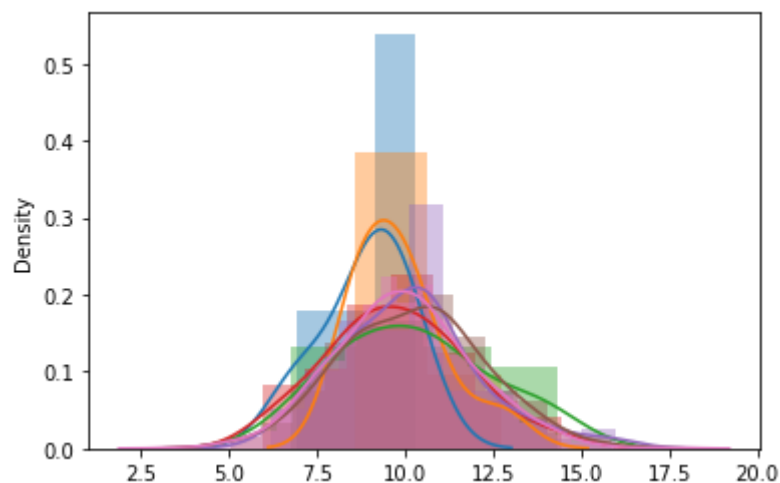
for size in n3:
    bs_distr = np.random.normal(mean, SD, size)
    sns.distplot(bs_distr)
```



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95% CI done with method 1 is: 10-1.753077294359835,10+1.753077294359835
95% CI done with method 1 is: 10-1.2396128427860047,10+1.2396128427860047
95% CI done with method 1 is: 10-0.8765386471799175,10+0.8765386471799175
95% CI done with method 1 is: 10-0.6198064213930023,10+0.6198064213930023
95% CI done with method 1 is: 10-0.43826932358995874,10+0.43826932358995874
95% CI done with method 1 is: 10-0.3099032106965012,10+0.3099032106965012
95% CI done with method 1 is: 10-0.12396128427860045,10+0.12396128427860045
95% CI done with method 2 is: 10-5.0383403997648895,10+5.0383403997648895
95% CI done with method 2 is: 10-4.36715214985128,10+4.36715214985128
95% CI done with method 2 is: 10-4.088488356641039,10+4.088488356641039
95% CI done with method 2 is: 10-3.961307750670861,10+3.961307750670861
/usr/local/lib/python3.7/dist-packages/seaborn/distributions.py:2619: FutureWarning: `distplot` is a deprecate
warnings.warn(msg, FutureWarning)
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