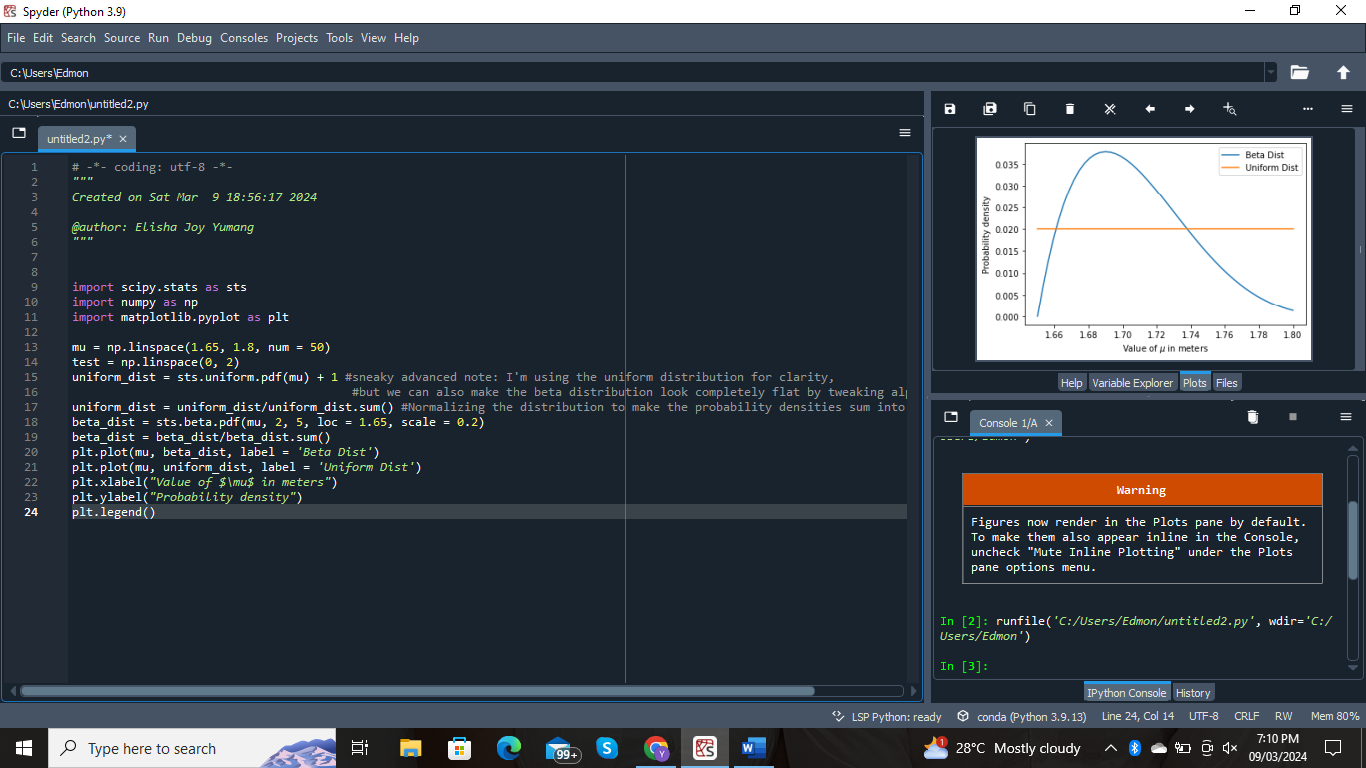
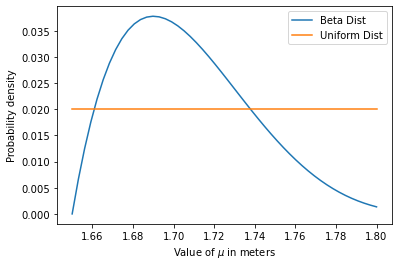
Elisha Joy R. Yumang

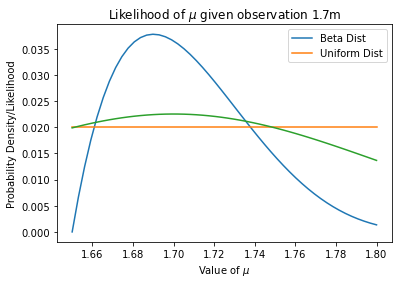
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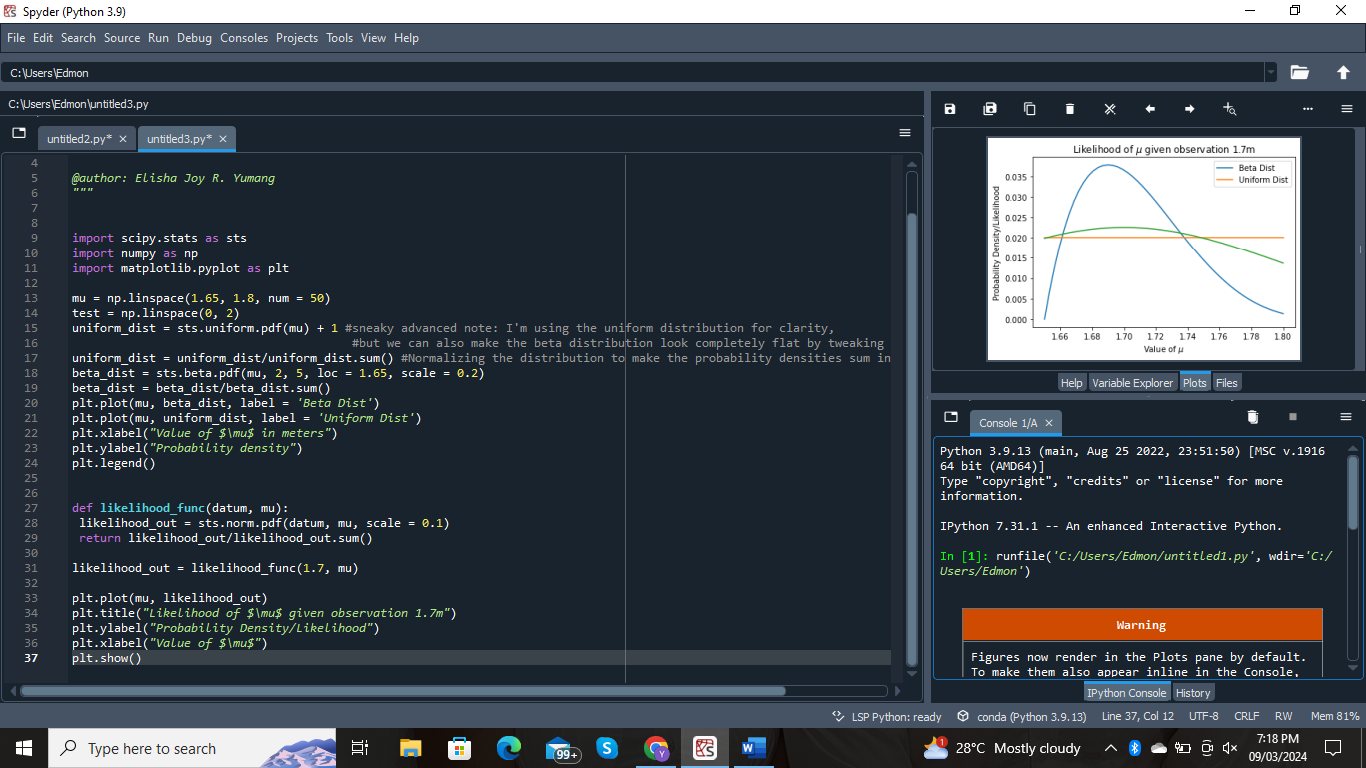
ACTIVITY 5

import scipy.stats as sts import numpy as np import matplotlib.pyplot as plt mu = np.linspace(1.65, 1.8, num = 50) test = np.linspace(0, 2) uniform\_dist = sts.uniform.pdf(mu) + 1 #sneaky advanced note: I'm using the uniform distribution for clarity, #but we can also make the beta distribution look completely flat by tweaking alpha and beta! uniform\_dist = uniform\_dist/uniform\_dist.sum() #Normalizing the distribution to make the probability densities sum into 1 beta\_dist = sts.beta.pdf(mu, 2, 5, loc = 1.65, scale = 0.2) beta\_dist = beta\_dist/beta\_dist.sum() plt.plot(mu, beta\_dist, label = 'Beta Dist') plt.plot(mu, uniform\_dist, label = 'Uniform Dist') plt.xlabel("Value of $\mu$ in meters") plt.ylabel("Probability density") plt.legend() def likelihood\_func(datum, mu): likelihood\_out = sts.norm.pdf(datum, mu, scale = 0.1) return likelihood\_out/likelihood\_out.sum() likelihood\_out = likelihood\_func(1.7, mu) plt.plot(mu, likelihood\_out) plt.title("Likelihood of $\mu$ given observation 1.7m") plt.ylabel("Probability Density/Likelihood") plt.xlabel("Value of $\mu$") plt.show()

1ST CODE



2ND CODE



3rd CODE

