Stochastic Programming and Applications-Computational Techniques

Assignment 1! Use python and show scripts. Deadline 10th March by Midnight.

Question: Supply Chain Optimization under Demand Uncertainty

Consider Supply Chain Optimization under Demand Uncertainty. Demand for electronic supply in Nairobi in the past two weeks together with their respective probability is given below

Number	255	302	270	317	285	332	300	347	315	362	330	262	309	277
Prob	0.03	0.15	0.04	0.1	0.05	0.05	0.09	0.01	0.09	0.03	0.2	0.07	0.05	0.04

Consider constraints = [supply >= 120, supply <= 330]. Compute the optimal supply.

Question 2: Healthcare Resource Allocation with Uncertain Demand

Consider ICU Bed Allocation under Uncertain Patient Arrivals. Number of unscheduled arrivals at Kenyatta National Hospital in the last 10 days has been 25, 20, 30, 50, 27, 39, 42, 29, 35, 42 patients with assigned probabilities 0.1, 0.1, 0.08, 0.15, 0.09, 0.05, 0.1, 0.1, 0.13, 0.1respectively. Consider bed constraints = [beds >= 17, beds <= 55]. Compute the Optimal number of ICU beds allocation.