

IE 324 SIMULATION

SPRING 2020 LAB STUDY 3

Procedure:

- Download the excel file from the course web site.
- Feel free to ask the TA about any part you did not understand.
- This lab study will not be graded.

INPUT MODELING

1) INTERARRIVAL TIMES

Suppose that you work for the sales department of a paper company, Dunder Mifflin Incorporated. The company introduces a new sales method which improves the purchasing process of the customers. As an engineer working in the sales department, your manager wonders what the distribution of the time between sales arrivals is and in order to find out, you measure the time between 50 consecutive arrivals and label them as Dataset 1. For the analysis, you decide to perform the following steps:

- Draw the histogram of the data and try to visually determine the family of the distribution (Hypothesized Distribution).
- Calculate the parameters of this hypothesized distribution.
- Draw a quantile-quantile plot of the dataset to check the goodness of fit.
- Do chi-square test to check the goodness of fit (Use 7 intervals).
- Since you are an engineer who is not easily convinced you also conduct Kolmogorov-Smirnov test to check the goodness of fit.

2) PROCESSING TIMES FOR SALES

Your manager, Michael, really liked your analysis on the interarrival times and asks you to conduct a similar one for the process times of phone sales. You measure the times of sales calls (Dataset 2) and conduct the same analysis on the processing times this time.

3) INPUT ANALYZER

Michael realizes that there is a tool called “Input Analyzer” available with the Arena Software Package. He asks you to utilize the “Input Analyzer” to perform the analysis of parts (1) and (2) to validate your results.