**Assignment 1**

**Instructions**You should submit two files:

1. A pdf document that provides the solutions and discussion (if any) for each question. You should provide the formulas that you used and/or the optimization model you formulated. You should also briefly show/explain your calculations.
2. An Excel file that shows your workings (e.g., calculations, optimization result). The file should be clearly understandable to the TA. (You can provide brief comments/notes in the Excel worksheets if necessary.)

**Questions** (Total 100 points)

1. [20 pts] This question is based on the financial data on p. 82 of the textbook (Case study for Walmart and Macy’s in Chapter 3):
   1. [14 pts] Provide the following performance metrics for Walmart and Macy’s: ROE, ROA, APT, ART, INVT, PPET, and C2C. (Use 35% for the tax rate.)
   2. [6 pts] We have already computed these metrics for Amazon and Nordstrom in class. Based on these metrics, discuss the similarities and differences in the supply chain strategies and performance of these 4 companies (i.e., Walmart, Macy’s, Amazon, and Nordstrom).
2. [40 pts] Exercises 1.a. and 1.b. on p. 143 in Chapter 5 about SC Consulting. (You don’t have to do 1.c.)
   1. [20 pts] Exercise 1.a
   2. [20 pts] Exercise 1.b
3. [40 pts] Case study on CoolWipes (“Designing the production network at CoolWipes”) on p.148-149 in Chapter 5. Answer all three questions at the end.
   1. [10 pts] Question 1
   2. [15 pts] Question 2
   3. [15 pts] Question 3