Module 02 – Transportation Modeling

Exploratory Data Analysis

In this section, you should perform some data analysis on the data provided to you. Please format your findings in a visually pleasing way and please be sure to include these cuts:

- *The locations involved in the analysis (id -> name) and specify if they are a source or a destination*
- *A table of the average cost between source and destination (for the sake of this assignment, we are dealing with sugar-miles similar to the bushel-mile example from the textbook)*

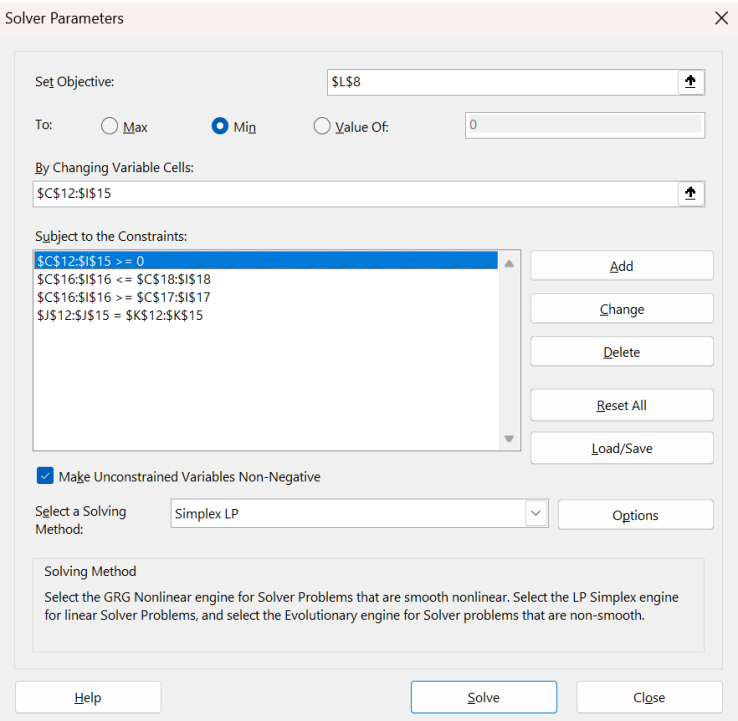
Model Formulation

Write the formulation of the model into here prior to implementing it in your Excel model. Be explicit with the definition of the decision variables, objective function, and constraints

Decision Variable: f15:K18

Objective: =SUMPRODUCT(C3:I6,C12:I15)

Constraints: =



Model Optimized for Profit

Implement your formulation into Excel and be sure to make it neat. This section should include:

- *A screenshot of your optimized final model (formatted nicely, of course)*
- *A text explanation of what your model is recommending*

	Tacoma	San Diego	Dallas	Denver	St.Louis	Tampa	Baltimore
Macon	$ 2.50	$ 2.75	$ 1.75	$ 2.00	$ 2.10	$ 1.80	$ 1.65
Louisville	$ 1.85	$ 1.90	$ 1.50	$ 1.60	$ 1.00	$ 1.90	$ 1.85
Detriot	$ 2.30	$ 2.25	$ 1.85	$ 1.25	$ 1.50	$ 2.25	$ 2.00
Phoenix	$ 1.90	$ 0.90	$ 1.60	$ 1.75	$ 2.00	$ 2.50	$ 2.65
Demand	8500	14000	13500	13400	18000	15000	9000

Min Demand	0.8
Objective	109,840

	Tacoma	San Diego	Dallas	Denver	St.Louis	Tampa	Baltimore	Sent	Capacity
Macon	-	-	-	-	-	12,000	6,000	18,000	18,000
Louisville	600	-	-	-	14,400	-	-	15,000	15,000
Detriot	-	-	10,800	13,000	-	-	1,200	25,000	25,000
Phoenix	6,200	13,800	-	-	-	-	-	20,000	20,000
Received	$6,800.00	$13,800.00	$10,800.00	$13,000.00	$14,400.00	$12,000.00	$7,200.00	78,000	
Min To Send	6800	11200	10800	10720	14400	12000	7200		
Max To Send	8500	14000	13500	13400	18000	15000	9000		

Model with Stipulation

*Please copy the tab of your original model before continuing with the next part to avoid messing up your original solution. What happens if you add an additional constraint to the model such that all demand **MUST** be met. Is the solution still feasible? If not, please explain why.*