Valeria Santoni

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

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*
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		Source			
		Lava Lollipop Land	Fruit Chew Fjords	Fruity Gusher Geyser	Caramel Corn Caverns
Destination	Vanilla Valley	0.140000058	0.13000002	0.139999953	0.149999968
	Peanut Butter Parlor	0.114102564	0.170000004	0.070000033	0.09774772
	Vanilla Chai Vortex	0.070000038	0.070000046	0.089999988	0.07999995
	Meringue Mountains	0.140000086	0.159999995	0.05000001	0.137075236
	Sour Patch Prairie	0.100000008	0.10075	0.11794353	0.080000016
	Tartberry Thicket	0.139999988	0.16999998	0.081280259	0.132468193

	Lava Lollipop Land	Fruit Chew Fjords	Fruity Gusher Geyser	Caramel Corn Caverns	Sum	Demand
Vanilla Valley	0	105	0	0	105	105
Peanut Butter Parlor	100	0	0	4	104	104
Vanilla Chai Vortex	58	62	0	0	120	120
Meringue Mountains	0	0	110	0	110	110
Sour Patch Prairie	0	0	0	118	118	118

Tartberry Thicket	12	0	58	0	70	111
	170	167	168	122		
Capacity	170	167	168	122		

Optimal cost is 55.18551
- Vanilla Valley is the source provider Fruit Chew Fjords (105)
- Peanut butter Parlor is the source provider of both Lava Lollipop Land (100) and Caramel Corn Cavers (4)
- Vanilla Chai Vortex is the source provider for both Lava Lollipop Land(58) and Fruit Chew Fjords (62)
- Meringue Mountains provides Fruity Gusher Geyser (110)
- Sour Patch prairie is the source provider for Caramel Corn Cavers (118)
- Tartberry Ticket is the source provider for both Lava Lollipop Land (12) and Fruity Gusher Geyser (58)

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.*