MP-1 TUTORIAL-5
PRELAB

Problem 1:

The Amulya Milk Company has three plants located throughout a state with production capacity 50, 75 and 25 gallons. Each day the firm must furnish its four retail shops R_1, R_2, R_3& R_4 with at least 20, 20, 50, and 60 gallons respectively. The transportation costs (in Rs.) are given below.

Plant	**Retail Shop**				**Supply**
	R_1	**R_2**	**R_3**	**R_4**	
P_1	3	5	7	6	50
P_2	2	5	8	2	75
P_3	3	6	9	2	25
Demand	20	20	50	60	

The economic problem is to distribute the avaiSESSIONle product to different retail shops in such a way so that the total transportation cost is minimum.

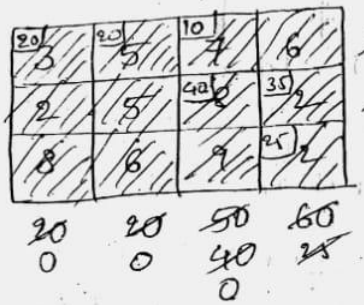
MP-1
Tutorial-5
prelab

190031187
Radhakrishna

1.

plant	Retail Shop				supply
	R_1	R_2	R_3	R_4	
P_1	3	5	7	6	50
P_2	2	5	8	2	75
P_3	8	6	9	2	25
Demand	20	20	50	60	150

By using NW Method



50 30 10 0
75 35 0
25

20 20 50 60
0 0 40 25
0

Minimum Transportation cost =

20*3 + 20*5 + 10*7 + 40*8 + 35*2 + 25*2

60 + 100 + 70 + 320 + 70 + 50

670

INLAB

Problem 1:

Luminous lamps have three factories - F_1, F_2, and F_3 with production capacity 30, 50, and 20 units per week respectively. These units are to be shipped to four warehouses W_1, W_2, W_3, and W_4 with requirement of 20, 40, 30, and 10 units per week respectively. The transportation costs (in Rs.) per unit between factories and warehouses are given below.

Factory	Warehouse				Supply
	W_1	W_2	W_3	W_4	
F_1	1	2	1	4	30
F_2	3	3	2	1	50
F_3	4	2	5	9	20
Demand	20	40	30	10	

Inlab

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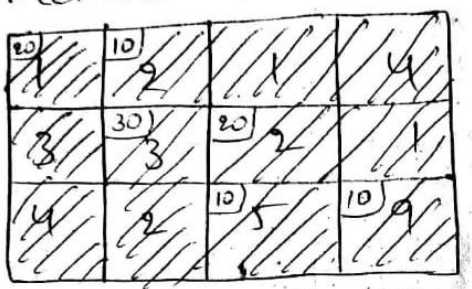
Factory	W_1	W_2	W_3	W_4	Supply
F_1	1	2	1	4	30
F_2	3	3	2	1	50
F_3	4	2	5	9	20
Demand	20	40	30	10	

using NW method



30 10 0
50 20 0
20 10 0

20 40 30 10
0 30 10 0
0 0

Minimum Transportation Cost

$20 * 1 + 10 * 2 + 30 * 3 + 20 * 2 + 10 * 5 + 10 * 9$

$20 + 20 + 90 + 40 + 50 + 90$

310

190031187 **NERELLA VENKATA RADHAKRISHNA**

POSTLAB

Problem 1:

GM Textiles units located at Chennai, Coimbatore and Madurai. GM Textiles produces ready-made garments at these locations with capacities 6000, 5000 and 4000 units per week at Chennai, Coimbatore and Madurai respectively. The textile unit distributes its ready-made garments through four of its wholesale distributors situated at four locations Bangalore, Hyderabad, Cochin and Goa. The weekly demand of the distributors is 5000, 4000, 2000 and 4000 units for Bangalore, Hyderabad, Cochin and Goa respectively.
The cost of transportation per unit varies between different supply points and destination points. The transportation costs are given in the network diagram.
The management of GM Textiles would like to determine the number of units to be shipped from each textile unit to satisfy the demand of each wholesale distributor. The supply, demand and transportation cost are as follows:

Production Capacities

Supply	Textile Unit	Weekly Production (Units)
1	Chennai	6000
2	Coimbatore	5000
3	Madurai	4000

Demand Requirements

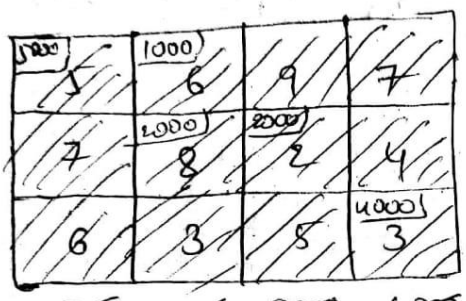
Destination	Wholesale Distributor	Weekly Demand (Units)
1	Bangalore	5000
2	Hyderabad	4000
3	Cochin	2000
4	Goa	4000

Transportation cost per unit

Supply	Destination			
	B'lore	Hyderabad	Cochin	Goa
Chennai	5	6	9	7
Coimbatore	7	8	2	4
Madurai	6	3	5	3

postlab

	Banglore	Hyd	Cochin	Goa	
chennai	5	6	9	7	6000
coimbatore	7	8	2	4	5000
Madurai	6	3	5	3	4000
	1000	4000	2000	4000	



6000 1000 0

5000 2000 0

4000 0

5000 4000 2000 4000

0 3000 0 0

0

$5000 * 5 + 1000 * 6 + 2000 * 8 + 2000 * 2 + 4000 * 3$

$15000 + 6000 + 16000 + 7000 + 12000$

54000