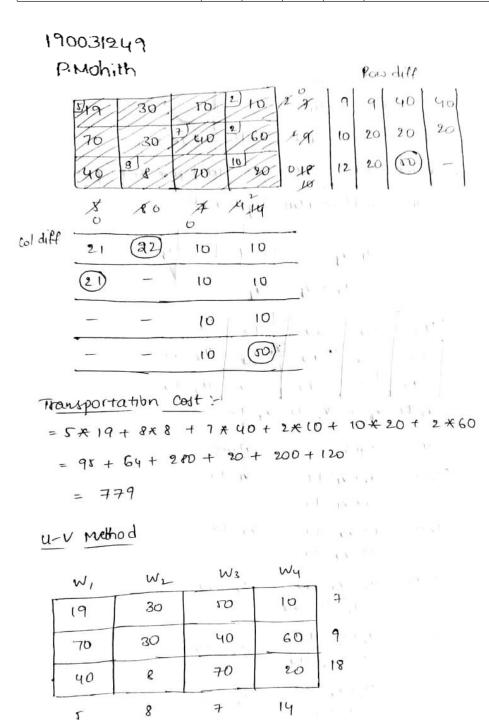
MP-1 TUTORIAL-10

1. Demonstrate the Initial Basic Solution in Transportation problem using Vogel method in Linear Programming (U-V method)., Least time Transportation problem.

QUESTION:

Factory/Warehouse	W_1	W_2	W_3	W_4	Factory Capacity
F_1	19	30	50	10	7
F_2	70	30	40	60	9
F_3	40	8	70	20	18
Warehouse Requirement	5	8	7	14	



M= no of oligins = 3.

n= no of destinations = 4

m+n-1=6 =) no of allocation = 6

And the allocations are independent positions is

The problem non-degenerate

1+cp: 2

1111111

1	5)19	30	50	2 10	4/=0
	70	30	7) 40	60	u2=50
	40	8	70	20	u3=10

$$V_1 = 19$$
 $V_2 = -2$ $V_3 = -10$ $V_4 = 10$

$$(24)$$
 $42 + 4 = 60$ $42 = 50$ $42 + 10 = 60$

$$(7,3)$$
 $u_1+v_3=40$ $v_3=-10$

$$(3,4)$$
 $u_3 + v_4 = 20$ $u_3 = 10$

19	(31) 30	(60) SO	2 10
^(') 70	(10)	1 40	1 60
⁽¹⁾ 40	8	(70)	10)

50

0

u;

10

Cell (911)
$$30 - (41+V_2)$$
 32 $30 - (41+V_2)$ 32 $30 - (0-2)$ 60 $(7,1)$ $70 - (41+V_2)$ 1 -19 $(7,2)$ $30 - (41+V_2)$ 11 $(3,1)$ $40 - (43+V_1)$ 11 $(3,3)$ $70 - (43+V_3)$ 70

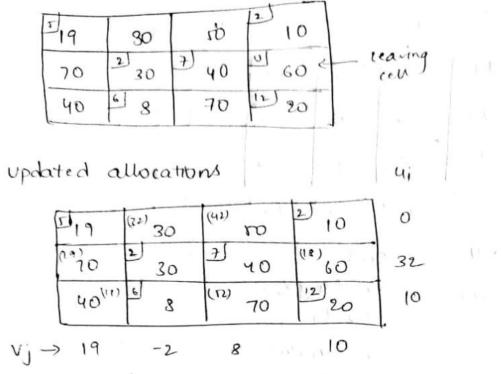
If all the cells evaluations are non-negative then the solution is optimal The cell coaluation -18 is negative so sol is not optimal

.. Intering cell (2,2)

			(2)
19	30	20	10
70	30	7 40	> 60
40	8 8	70	1010

form a loop starting from cell (2,2) 0 = min { 2-0, 8-0} 2-0 - 0 0 = 2

(3,3)



Now all the cell evaluations are non-negative Transportation cost