Subject 1-OR Rollno: - 41310 Konny \* Assignment 1 \* Title: The teanspostation problem. problem statement: MIK in a milk shed orea is Callected on 3 20 wers DiBic. There are 4 Chilling Centres P. Q.R.S where milk is kept before transporting it to a milk Center- each fouteis able to supply on an avg. one thousand litter of milk per day. The supply of milk on lower A1B, 6. are 150, 160, 90 thousand litger sesp. The Cost of transporting thousand litter of milk from each towe to each chilling Centers differs. according to distance Cost in RS in shown in table below. Chilling Centery. Routes 17 19 14 13 32 11 15 10 Minimize the total transportation Cogt. \* Objective: fo understand the implementation methods like north-west Corner, least Cost, Voggle's appeaximation method. \* 51 w & HIW requirements: Visual studio Code 240B RAM, 5000B HDD, Windows 09, 15 processé.

Out Comes: After Completion of this assistate of various methods the student will be able to Calculate the minimum teansportation Cost.

Theory!

North-west Corner method:

This is a method adapted to Compute the initial Cost of Feasible Solution to the teanspostation peoblem. The name is given to this method because the basic Votiables are selected from extreme left Corner.

Code:

der north-west-Corner (Supply, demand)
Supply-Copy = Supply. Copy ()
demand-Copy = demand. Copy ()
j= 0

while len (bfs) Clen (54pp1q)+lender

S = 54pp1y-Copy(i)

d = demand-Copy [i]

V= min (31d)

Supply.Copy(i)==V

demand.Copy(i) -=V

bfs.append (((i,i),v))

elif demand-Copyli]==08 ic len (supply)-1

elif demand-Copyli]==08 ic len(demand)-1

setwon bfs:

the least Cost method:

The least Cost method is another method used to obtain the initial reasible solution for the transportation problem. Here, the allo Cation begins with the Cell which has the minimum Cost. The lower Cost Cells are chosen over the higher Cost Cells with the objective to have the least Cost of transportation

\* Algorithm:

Step 1: Select the Cell having minimum unit Cost Cij and allocate as much as possible i.e. min (Si. di)

Step 2: (a) Subteact this minimum value

from Supply Si and demand di

(b) If the Supply Si is a then Ctoss

that sow and if demand di is a then

Closs the Column.

Closs the Column.

(c) If min unit Cost Cellis not unique,

then select the Cell where maximum allo cation can be possible.

steps: Repeat above steps for au uncrossed rows & columns until supply and demand values are zero.

## \* Voger's Appeaximation Method:

Calculated to find out the initial feasible solution of the teonsportation peoplem like least cell method, here also the shipping cost is taken into Consideration but in relative sense.

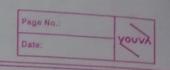
## \* Algorithm:

to smallest Cost in Each rowl w
the difference along the side of
the table in row property, penalty.

Step2: Find the ceus having smallert ast Cach Column and write the different along the side of the table in each Column penalty.

Step 3:- select the 2000 or Column withten maximum penalty and find cell the has least Cost in selected for Gradus Allo Cate as much as possible in this

Step 4: Adjust the supply and demand Cross-out the satisfied row or



steps: Repeat this step until all supply and demand values area.

conclusion:

I have Successfully studied and implement the north-west Corner.

I east Cost and Vogel's approximation method for Calculating the transportation Cost. Where VAM gave the least Cost among the 3 Gosts for transportation.