112 ft)
TRAVELLING SALESPERSON PROBLEM USING DYNAMIC PROGRAMMING
30 (2)
3 9 13 8 10
Step 1:- Distance matrix
1 0 10 15 20 2 5 0 9 10 3 6 13 0 12 4 8 8 9 0
g(i, 2s3) = min (Cik+g(k, S-2k3)) kes
$g(2, 0) = C_{21} = 5$ $g(3, 0) = C_{31} = 6$ $g(4, 0) = C_{41} = 8$
g(2, 943) = g(24 + g(4, 4-843)) = $618 + g(4, \phi)$ = $10+8$
ig (8) = -157 = 18

g(2, 233) = (23 + g(3, 3 - 233)) = 9+ g(3, $\phi$ )
= 9+9(3,0) $= 9+6$ $= 9+6$ $= 9+6$ $= 15(108.0)[181)[181]$
781+21, 81+81, and
$g(3, \{2\}) = (32 + g(2), 2-\{2\})$ = 13+ g(2, $\phi$ )
9(2) 1345 = 13+5 (2) f (2) (2) (3) (4) (2) (3) (4) (2) (4) (2) (4) (2) (4) (2) (4) (2) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4
9(3, 844) = (34 + 9 (349 4 - 843)
= 12+9(4,0) $= 12+8$
= 20 $= (4, 223) = (42 + 9 (4, 2, 2 - 223)$
2 OF CONTRACTOR SAIN S
= 1381 + 1 , 31 + 8 f mint = = 1381 + 1 , 31 + 8 f mint = = = = = = = = = = = = = = = = = = =
123, 237 and

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	acu 534) = Cu2 + 9 (3, 3- 337)
	g(4, 233) = (43 + g(3, 3 - 233)) = 9+ g(3, 0)
	= 9+6
	= 15

 $9(3, 22, 43) = \min\{C_{32} + g(2, 32, 43 - 323)\}$   $C_{34} + g(4, 52, 43 - 343)$ min  $\frac{5}{2}$  (13+9(2,  $\frac{5}{4}$ )), (12+9(4,  $\frac{5}{2}$ ))  $\frac{3}{2}$ = min  $\frac{5}{2}$  13+18, 12+13 $\frac{5}{2}$ =  $\frac{25}{25}$  $\frac{2, \{3,4\}}{[C_{23}+g(3, \{3,4\}-\{3\})]}$   $\frac{[C_{24}+g(4, \{3,4\}-\{4\})]}{[C_{24}+g(3, \{4\}, \{3\}, 4\}-\{4\})]}$   $\frac{2}{[C_{24}+g(3, \{4\}), 10+g(4, \{3\})]}$ = min 29+20, 10+15} 2 min 3 29, 25}  $(4, \frac{9}{2}, 3)$ = min  $\frac{9}{5}$   $(2, \frac{9}{2}, \frac{3}{2}, \frac{3}{2}, \frac{3}{2}, \frac{3}{2})$   $(2, \frac{9}{2}, \frac{3}{2}, \frac{3}{2}, \frac{3}{2})$ =  $\min\{8+g(2,33\}), 9+g(3,22\})$ =  $\min\{8+15, 9+18\}$ = min { 23, 27}  $g(1, \frac{2}{2}, \frac{3}{4}; \frac{4}{1}) = \min_{x} \left[ \left( \frac{1}{2} + \frac{1}{2} \left( \frac{2}{2}, \frac{2}{2}, \frac{3}{4}; \frac{4}{3} - \frac{5}{2}, \frac{2}{3} \right) \right], \left( \frac{1}{3} + \frac{1}{2} \left( \frac{3}{4}, \frac{5}{4}; \frac{2}{3}, \frac{3}{4}; \frac{4}{3} - \frac{5}{4}, \frac{2}{3} \right) \right]$   $= \min_{x} \left[ \frac{1}{2} + \frac{1}{2} \left( \frac{1}{2}, \frac{2}{3}, \frac{4}{4}; \frac{1}{3} \right) + \frac{1}{2} + \frac{1}{2} \left( \frac{3}{4}, \frac{2}{4}, \frac{2}{4}; \frac{3}{4}; \frac{1}{3} \right) \right]$   $= \min_{x} \left[ \frac{1}{2} + \frac{1}{$ min { 35, 40, 43}

