Saúl Emmanuel Carreón Abarís 1901555 TSO Midterm Exam (57)

25 + 31.5

2: Search the fasible solution of a problem (min, max)
+1

2: Solving a optimization problem without use any methode heuristic
+2 or exact optimization how?

3: found a nearest factible solution without this be always
+4 the factible solution

4: +3 When is a lot ~~data~~ size is large or if not be a optimization problem linea

5: is solving at problem with any heuristics and after comparative all
+2 result and select the best factible solution + hard problem

		↓				1	↓
		1	2	3	4	5	6	7
	-1	0	2	3	4	6	7	8
	-2		0	8	3	6	4	2
	3				0	6	3	2	4
	4								
	5					0	8	7	2
→	6							0	28
→									0	2
										0

6:
+6

1: select a random city (1)

2: select the nearest city after the first city (1-2-1)

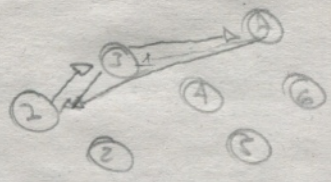
3: Do again but with 2
(1-2-6-1)

4: add any nearest city of next to for to completed

5: finaly sumy all city add
(1-2-6 .) = 2+4 = 6

7: is same +6 of before but select the position with this $C_{ik} + C_{jk} - i_j$

	1	2	3	4	5	6	7
1	0	3	2	5	6	7	6
2		0	5	7	8	9	5
3			0	4	5	7	2
4				0	7	5	6
5					0	6	5
6						0	3
7							0



$C_{17} + C_{73} - C_{13} = 6 + 3 - 2 = 7$

1-7-3-1

2 select a random vertice

2: after select the nearest vertice of first select (2-3-2)

3: Do this for select the position of vertice (city) $C_{ik} + C_{jk} - C_{ij}$

4 Do this for any city add that exist for complete

5 and final sum all city for the cost = (optimal solution)

8

14

a) (1,2) (3,8) (7,12) (5,9) (10,11)

14 + 21 + 28 + 30 + 29 = 125

is feasible because all city exist and the same is longer as possible and no reapete node

Not perfect!!

2
30
29
28
21
17
125

+5

b) (7,10) (11,12) (4,8) (2,3) (1,5) (6,9)

26 + 18 + 15 + 21 + 14 + 22 = 116

no because edges (1,5) and (5,6) share the node 5.

2
26
18
15
21
14
22
116

c) +4.5

$M^3 = (1,5)\ (2,6)\ (3,7)\ (4,8)\ (7,11)\ (9,10)$ worst $< \inf$.
$14 + 14 + 16 + 15 + 14 + 18 =$

$M^4 = (1,2)\ (5,9)\ (6,10)\ (3,7)\ (4,8)\ (11,12)$
$17 + 30 + 19 + 16 + 15 + 18 =$ best

$M^5 = (1,5)\ (2,6)\ (9,10)\ (3,4)\ (7,11)\ (8,12)$
$14 + 14 + 18 + 19 + 14 + 26 =$

$M^2 = M^4$ is best because is nearest of perfect matching and M^3 is worst because is farthest of perfect matching

3	17	3
14	30	14
14	19	14
16	16	18
15	15	19
14	18	14
18	115	26
91		105

d) start +10 too vague

$M \leftarrow (i,j)$

take (i,j) random

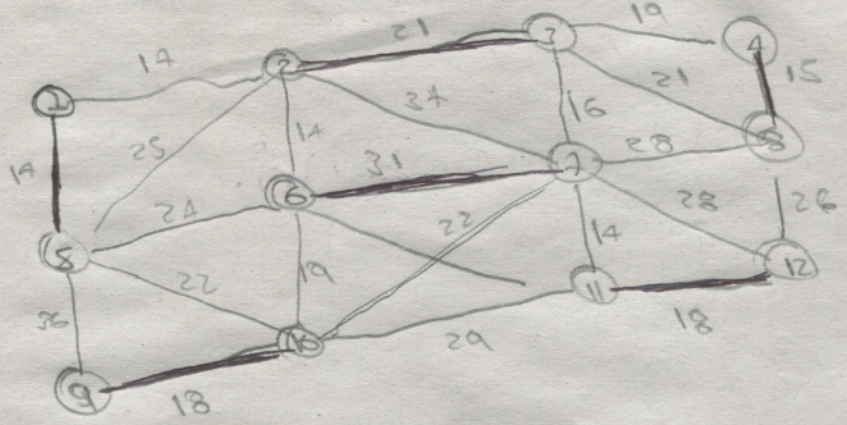
Do i,j if the node is no

share

Do the large sum while no share node

sum all $w = ij$ = result

e)



select random node and cancel

Do the before with the edges no share node

sum w(M)

result

M $w_{1,5} + w_{2,3} + w_{6,7} + w_{1,8} + w_{9,10} + w_{11,12} = 117$

+8 show step by step