K.G.C.E. Page No.: Karjat - Raigad Date: ASSIGNMENT 1A

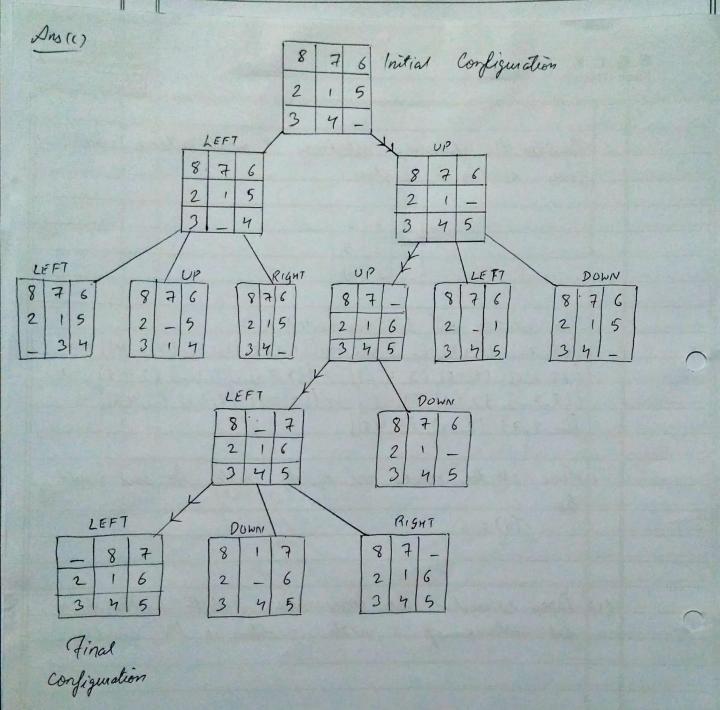
MAME: Ajay Kumar Brasad BATESH: ROLL NO: 49 SUBJECT: AI SIGNI MARKS DOP DOC

Date:

KGCEKGCEKGCE	KGCEKGCEK	GCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEK
		ARSIGNMENT IA
	19-27	Consider following instance of 8 puzzle problem:
		876 -87
		2 1 5 2 1 6
		3   4   5
		Initial Final configuration
		The second of th
		Corrider Hervistic functions defined below: h1: Misplaced tiles court except space
_		101: Misplace & Alla court source source
		1 - 1 asparen wes consign spine
-		h2: Correctly placed tiles court except space
		h3: sum of Manhattan distance between current and
		and the second second
-		correct position of all times except space.
		Anships the dellaring question:
		Answer the following questions:
	1(9)	In 8 russ le problem we are concerned with getting to
		goal configuration within least number of step. All
		mones are thus equally with Define g(n) in your
		mines we pas equality wing pegine gint in your
		own words. What will be the cost of 6 step
(		solution to some arbitrary 8 puzzle instance?
		army the same way
1	AM:	
		The lowest path wit g(n) can be the cost to reach
		the goal configuration in least steps.
-	11	the year configuration in way signs.
		In our case, we can reach the final configuration
		in min at least 4 mones: UP, UP, LEFT, LEFT.
		P. A. II
	1	Since all the moves are equally worthy, we conjucte
		g(n) as
A THE RESERVE		
-		g(n) = 1 + 1 + 1 + 1
		$g(\eta) = 4$

Date:

KGCEKGCEKGC	Consider the following arbitrary & puzzle instance which gives solution in 6 steps:
	8 7 6 2 1 5
	_ 3 4
	The solution can be presented as: $\{\{8,7,6\}, \{2,1,5\}, \{-,3,4\}\} \rightarrow \{\{8,7,6\}, \{2,1,5\}, \{3,-,4\}\} \rightarrow \{\{8,7,6\}, \{2,1,5\}, \{3,4,5\}\} \rightarrow \{\{8,7,6\}, \{2,1,-3,\{3,4,5\}\} \rightarrow \{\{8,7,-3\}, \{2,1,6\}, \{3,4,5\}\} \rightarrow \{\{8,7,-3\}, \{2,1,6\}, \{3,4,5\}\} \rightarrow \{\{8,-,7\}, \{2,1,6\}, \{3,4,5\}\} \rightarrow \{\{1,8,7\}, \{2,1,6\}, \{3,4,5\}\}$ Since all the moves are equally costly, the cost would be $g(n) = 6$
	(c) Draw exhaustive state space tree of don't limited to 4  Jes invance of 8-puzzle problem in the question.



Date:

		Date.
KGCEKGCEKGC	EKGCEK	GCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEK
	(e)	Compute h; (n) where i= 1,2,3 and no initial state,
		line / a of the form
		final/soal state from question
	Ars:	1
		For i=1, n=initial state
		hy (initial) = Misplace lives court except space
		h (-it a) - 4
		hy (initial) = 4
		n=goal state
		h, (goal) = 0
		112 (par)
		For i=2, n= initial state
		h2 (initial) = Correctly placed lifes went except space
		hr (initial) = 4
		1 as and state
		yer n=god vale
		h2 (goal) = 8
		101 **
		For i=3, n=initial state
		1 ( sure a) - en l Machattan distance beveen current
-		and correct position of all times except space
_		and consist framen of a
_		hz(initial) = 0+0+0+0+1+1+1+1
		= 4
		The man could state
		For $n = goal$ state $b_3(goal) = 0$
		b3(goal)=0