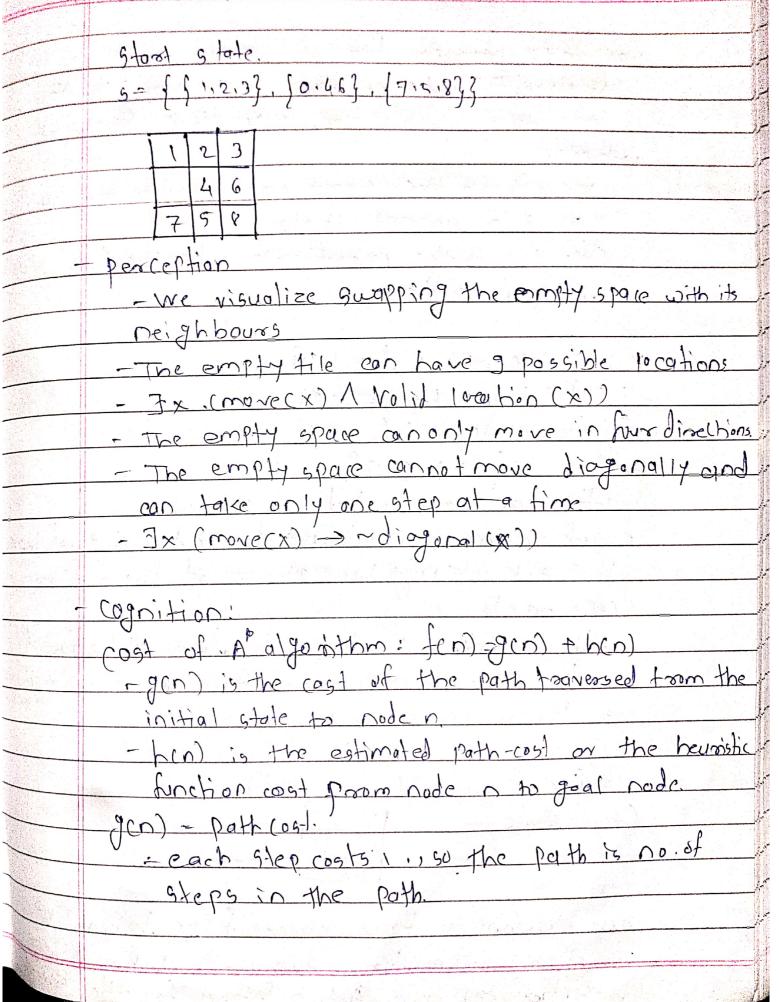
	Assignment-A1 41403
	Title: 8 puzzle using A Algorithm
	- problem definition: solve 8-puzzle problem using
	AP Algorithm. Assume any initial configuration
	& define good configuration closely.
	- Learning Objectives: - learn informed search algorithms
	- learn At algorithm & its app
	- Learn about 8 puzzle problem
	- to define perception, cognition, Action & Goal
	clearly.
	Outcomes: T will be able to design At algorithm to
	solve the & puzzle problem.
	- 9/w 8 H/w: 05 64 bit, Python 3, Jupyter envisor
	mathematical model:
	S= {s; e: x; Y; Fme; Ff; DD; NDD}
	5 = start state
Maria II	» { [1,2,3}, {0,4,6}, {7,5,8}}
- 4	
0	e = end state
	D { {1,2,3}, {2,5,6}, {7,8,0}}
	$\chi = \{\chi_1^{\alpha}\}$
	* X1 = 5



4= 7413 Fre = { to}

fo = function to perform A searching  $F_{\downarrow} = \{f_1, f_2, f_3, f_4, f_5\}$ to for to ford cost for to find states for - fun to display good 4 - Jun to generate next possible set of moves 5 - fin to validate moves DD - 3x3 good of puzzle NDD - No non deterministic data. Concept related theory. p-puzzle problem. - 8 puzzle is a popular puzzle that consists of 8 files & one empty space - The puzzle is divided into 3 sows & 3 Columns - The other & files have numbers Ithrough & anit. - The puzzle can be solved by moving the hieson by one in the gingle empty space & thus achieving the goal state





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	for ontr-puzzle's tie
	- roign la ced (i) = d ((x1; = x2;) & (4; = 42;)) }
	x, 4, x, 42 € (011,73)
	where,
	(xing) is the coordinate of the file with a
	al in wrocont state
	(42.42) is the coordinate of the Ale with:
	in goal state
	- X1, J, 1 x272 E [0,1,2]
	- i E 2011, 23, 4, 5, 6, -), p?
Jaki Marii a ga afi	- (den) = misplaced(i) for osiso
	Action - [VILIDIR]
	- action can represented as set of 4
	- each action sepresents the interchanging of Hank
	fie with the reighbour o's one of the 5 director
	- constacints
NATE OF	- the neighbory should not be diagonally adjacent
	- the edge positions can interchange in unit three
	- the comer in 2 positions
	fmin = min(finite for)
	Goal State [1] 2 3
	456
	178
	conclusion: I have quecessoully designed AD
	Search algorithm for a puzzle li le from
	Search algorithm dor & puzzle & defined perception cognition, Action & Goal for the same.
	Coopered with Company

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