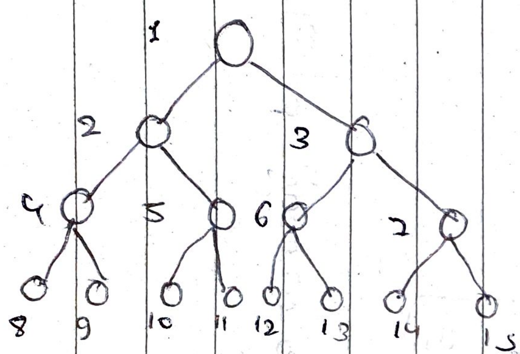
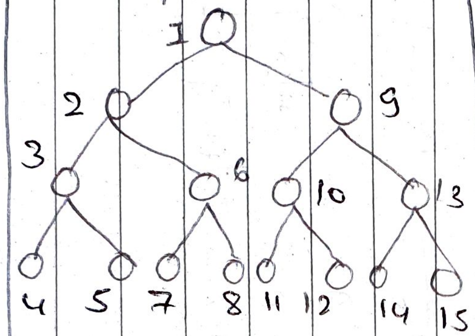
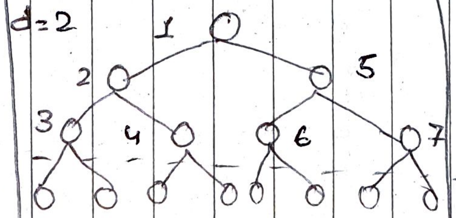
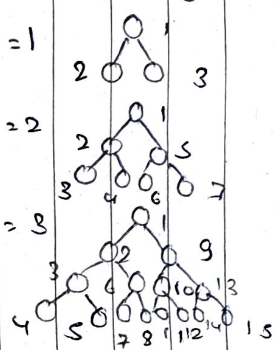
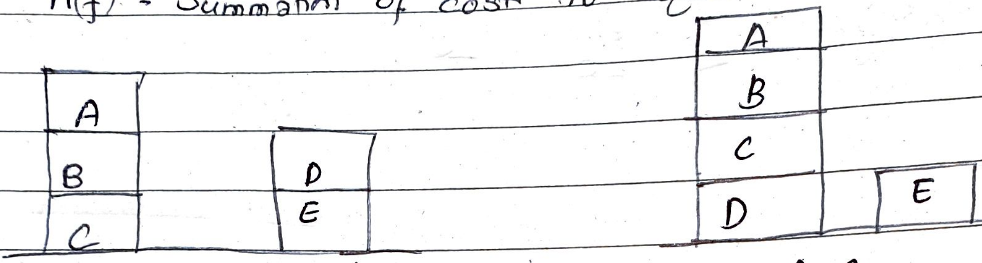
Chapter 3: Searching Technique [Uninformed / Informed .

	Breadth First Search	Depth first search	Depth limited Search	Depth First Iterative deeping
			d=2 	d=1, d=2, d=3 
Parameter:				
Complete	Yes	No (If loop is present)	No	Yes.
Memory	$1+b^1+b^2+b^3+\cdots b^d$ $= b \cancel{*} b^d$ $= b^{d+1}$	$b \times d$	$b \times l$	$b \times d$
Time	b^{d+1}	b^d	b^l	b^d
Optimal	Yes	No	No	Yes.

Informed search

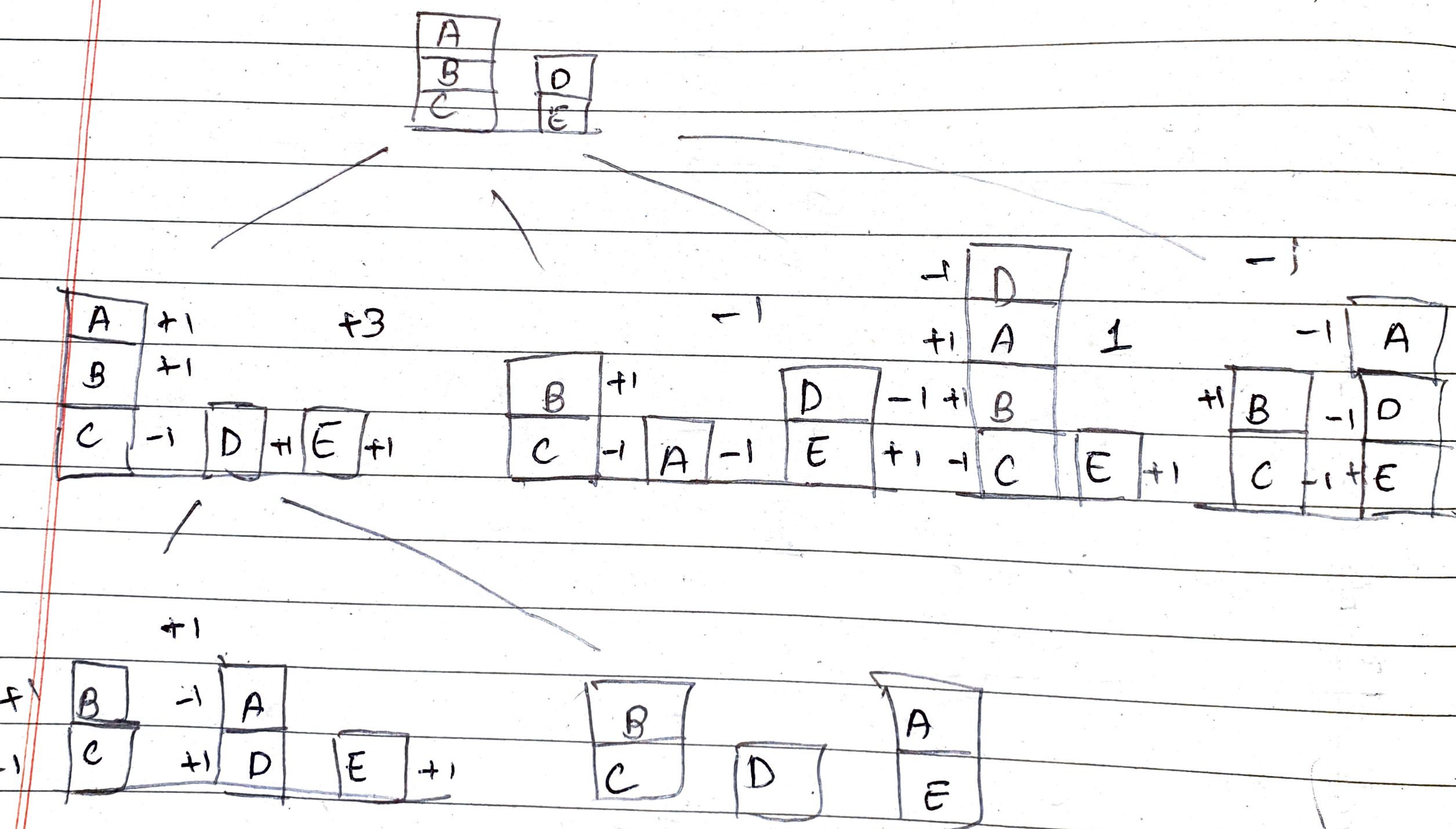
↳ Heuristic function

h(f) = Summation of cost to Goal node



C.S. G.S.

h(f) = If the block is on the correct block then +1 else -1



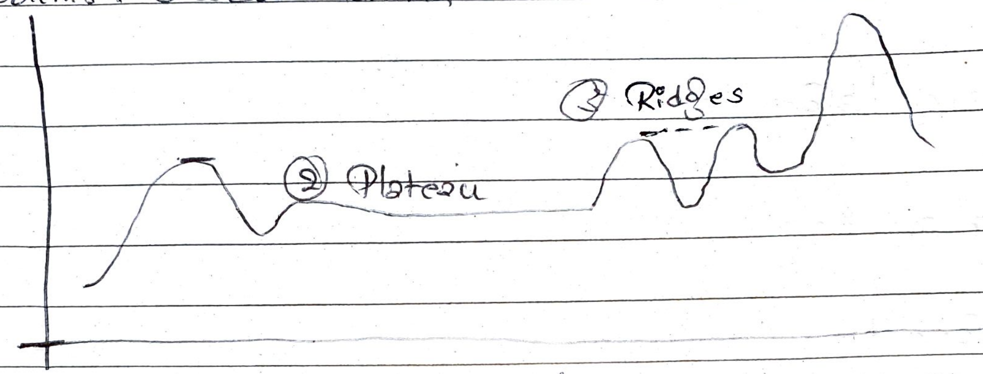
h(f) = -Level from base if in a wrong position

Else +level.

Date
Page

(1) Hill climbing search.

Problems: (1) Local maxima



Solution: Using efficiant Heuristic function

Heuristic function:

Heuristic is a rule of thumb that may help to solve a given problem. The purpose of a Heuristic function is to guide such process in the most profitable direction by suggesting which path to follow first when more than one path is available.

Hill climbing algorithm

Algorithm:

I. Evaluate the initial state if it is goal state then quit otherw make current state as initial state.

II. Select a new operator or function that could be applied to this state & generate a new state.

III. Evaluate the new state.

IV. If this new state is closer to the the current state then make the new state as current state if it is not better then ignore this state & proceed with the curren state.

V. If the current state is not the goal state & no n

operator or function are available then quit otherwise
goto step 2.

A* search / algorithm.

Min-max algorithm

α-β algorithm:

If $\alpha \geq \beta$ then prun.

max min

$\alpha = -\infty$ $\beta = \infty$