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Class :- BEIT

Roll No :- 31

Subject :- IS lab

D.O.P	D.O.P	Remark	Sign.

Alpha - Beta Pruning :-

Alpha - beta pruning :- Alpha beta purning is a modified version of the min max algorithm It is an optimization technique for the minmax algorithm.

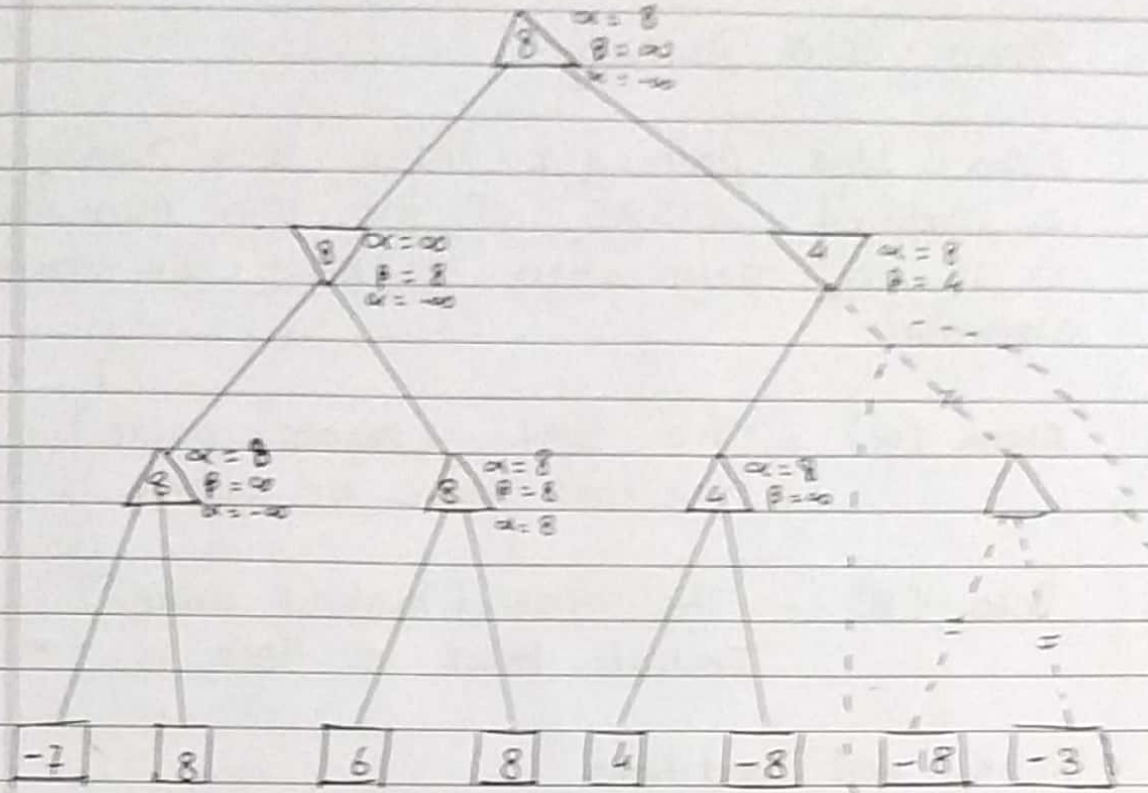
Alpha (α) = The best (highest value)
= Initial value of alpha is $-\infty$

Beta (β) = The best (highest value)
Initial value is Beta is $+\infty$

Rules and Conditions.

1) The max player will only update the value of alpha.
2) The min player will only update the value of B.
3) we will only pass the alpha, beta values th to the child nodes.
4) Node values will be ~~th~~ passed to upper node insted of values of alpha and beta.

- Condition to prune : $a \geq b$ or $b \leq a$
- When alpha is greater than or equal to beta.



1) $\alpha(-\infty, -7) = -7$
$\alpha(-\infty, 8) = 8$
$\alpha(-7, 8) = 8$
- Max (Bottom left)

2) $\beta(\infty, 8) = 8$
- Min left

3) $\alpha(-\infty, 6) = 6$
$\alpha(-\infty, 8) = 8$
$\alpha(6, 8) = 8$
- Max (Bottom left (left node)

4) $\alpha = (8, 4)$
Top (max)

5) $\beta(8, 8) = 8$
Min right

6) $\beta(-\infty, 8) = 8$ Max (Bottom right (right node)

7) $\alpha(8, 4) = 8$
$\alpha(8, -8) = 8$
$\alpha(4, -8) = 4$

8) $\beta(\infty, -8.) = -8$
$\alpha = 8$
$\beta = 4$
$\alpha \geq \beta$ so the next node is pruned.

9) $\alpha = 8$ Max
$\beta = \infty$

$\alpha(8, 4) = 8$ Solution.