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DOP DOA MARKS SIGN.

KONKAN GYANPEETH
॥ ज्ञानदीपेन भास्वता ॥
ज्ञानदीप शैक्षणिक संकुल

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Alpha - Beta pruning:

→ Alpha beta pruning = Alpha beta pruning is a modified version of the min max algo It is an optimization techinique for the minmax algo.

- Alpha (α) = The best (hight-value)
  = Intial value of alpha is $-\infty$

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

- Rules & condition

1) The max player will only update the value of alpha

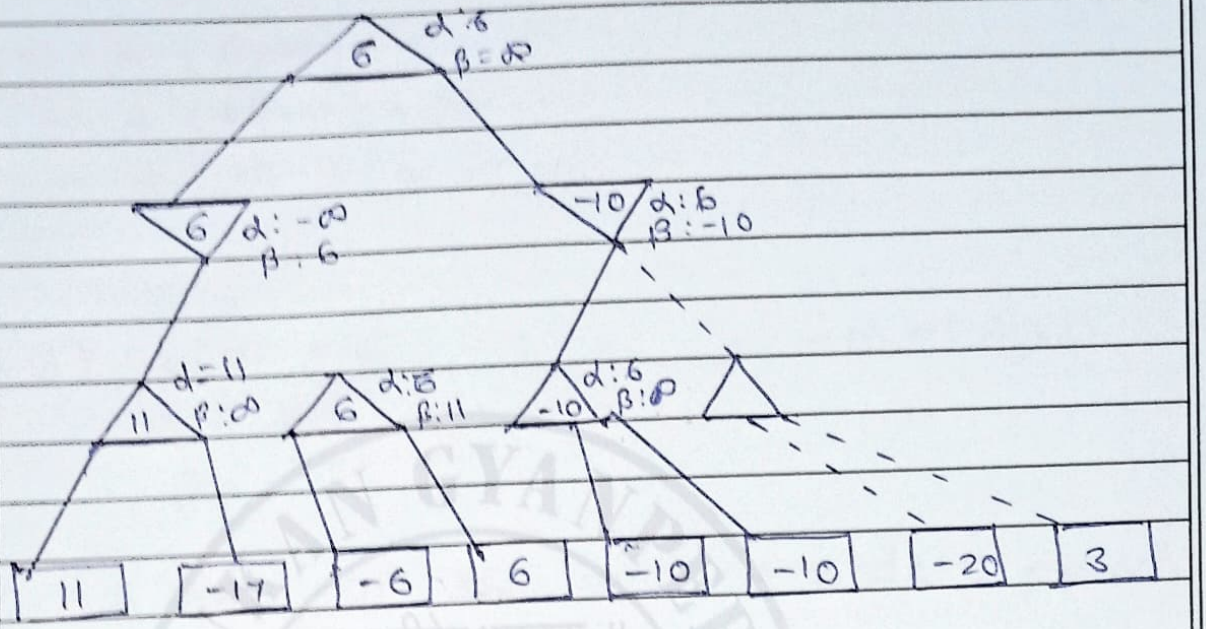
2) The min player will only update the value of β.

3) We will only pass the alpha, beta value to the child notes

4) Node values will be passed to upper nods instead of value of alpha & beta.

- condition to prune: $a \geq b$ or $b \leq a$.

- When alpha is greater than or equal to.



1) $\alpha(-\infty, 11) = 11$
$\alpha(-\infty, -17) = -17$ - Max (Bottom left)
$\alpha(11, -17 = 11$

2) $\beta(\infty, 11) = 11$ - Min (left)

3) $\alpha(-\infty, -6) = -6$ - Max (Bottom left) (left node)
$\alpha(-\infty, 6) = -7$
$\alpha(-6, -7) = -6$

4) $\alpha(6, -10)$ - Top (max)

5) $\beta(11, 6) = 6$ - Min (right)

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

7) $\alpha(0, -10) = 6$

$\alpha(\infty, -10) = \infty$

$\alpha(20, -10) = 20$

8) $\beta(\infty, -10) = -10$ — min (right)

$\alpha = \infty$

$\beta = 20$

$\beta > \alpha$ so the next node is pruned

9) $\alpha = 6$ Max

$\beta = \infty$

$\alpha(6, 20) = 20$ solution.