

Alpha - Beta pruning :-

Alpha - beta pruning = Alpha beta pruning is a modified version of the min max algo. It is an optimization technique for the minimax algo.

- Alpha (α) = The best (High value)
= Initial value of alpha is $-\infty$
- Beta (β) = The Best (Highest value)
= Initial value is Beta is $+\infty$

Rules & Conditions :-

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 values to the child nodes

4) Node values will be passed to upper nodes instead 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

6) $\beta(-\infty, 4) = 4$ - Max (Bottom right
(right node))

$$\gamma \alpha(4, -\infty) = 4$$

$$\alpha(4, -16) = 4$$

$$\alpha(-4, -16) = -4$$

8) $\beta(\infty, -16) = -16$

- Min (left)

$$\alpha = 4$$

$$\beta = -4$$

$\alpha \geq \beta$ so the next node is pruned.

$$\alpha \gamma \alpha = 4$$

max

$$\beta = \infty$$

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

solution

