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Batch: I3

Sem: 7/ IT

Subject: ISLAB.

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Alpha- Beta pruning :-

Alpha-beta planning ⇒ Alpha beta planning is a modified reason of the min Max algo.
It is an optimization technique for the MinMax algo.

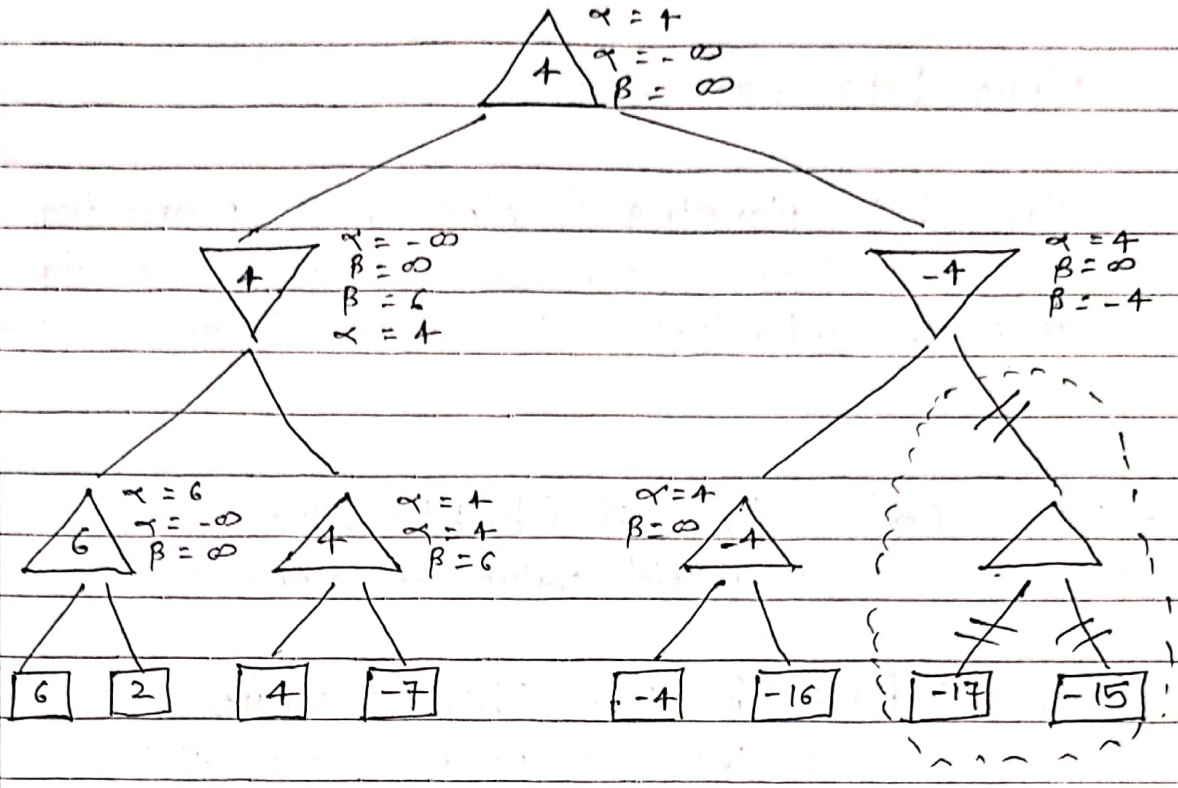
- Alpha (α) = The test (hight-value)
  = Initial value of alpha is $-\infty$.

- Beta (β) = The test (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 β.
  3] We will only the alpha, beta values to the child nodes.
  4] Mode values will be passed to upper node instead of values of alpha and beta.

- Condition to : $a \geq b$ or $b \leq a$.

- when alpha is greater than or equal to beta.



1] $\alpha(-\infty, 6) = 6$
$\alpha(-\infty, 2) = 2$ - Max (Bottom left)
$\alpha(6, 2) = 6$

2] $\beta(\infty, 6) = 6$ - Min (left)

3] $\alpha(-\infty, 4) = 4$ - Max (Bottom left)
$\alpha(-\infty, -7, = -7$ (left
$\alpha(4, -7) = 4$ node)

4] $\alpha(4, -4)$ - Top (Max)

5] $\beta(6, 4) = 4$ - Min (right)

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

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

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

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

8] $\beta(\infty, -16) = -16$ - Min (right)

$\alpha = 4$

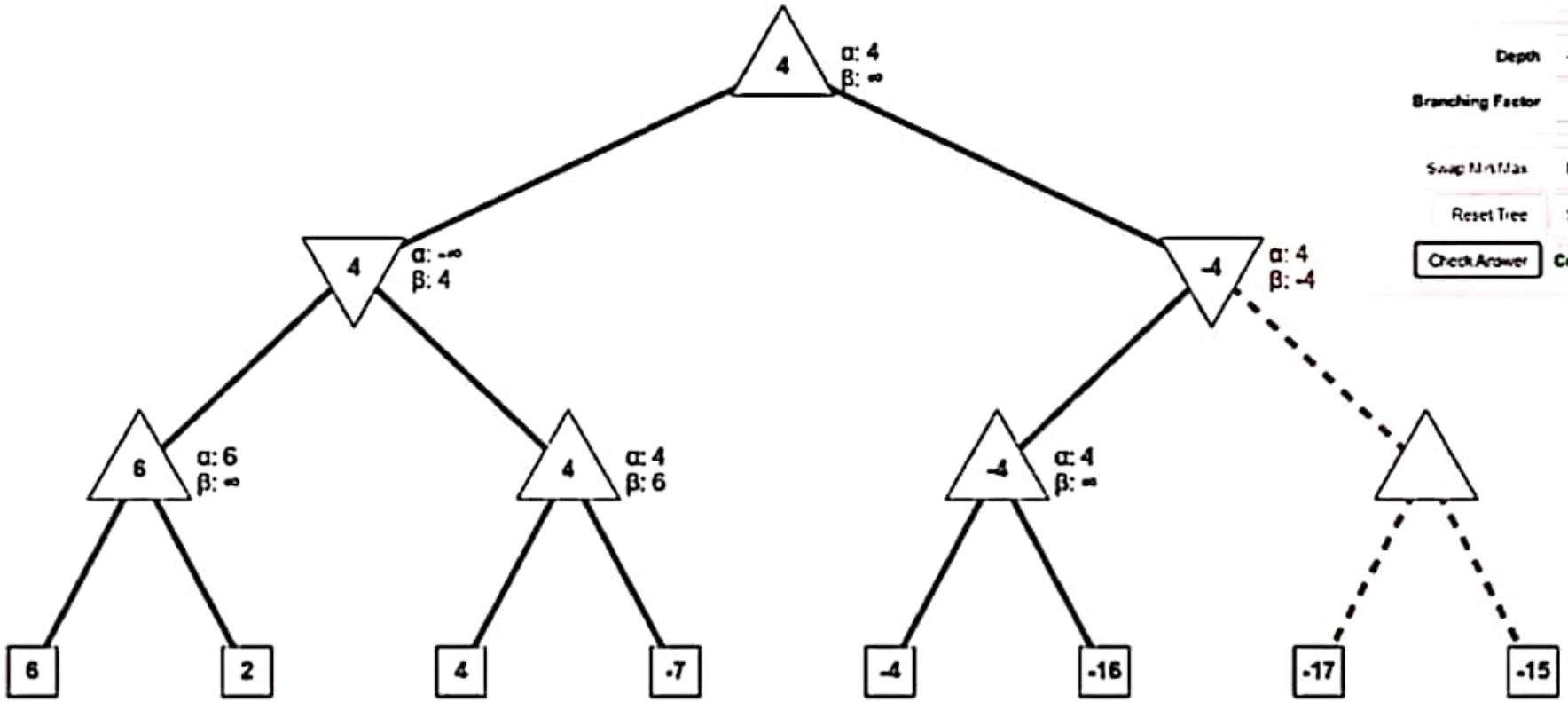
$\beta = -4$

$\alpha \geq \beta$

9] $\alpha = 4$ Max

$\beta = \infty$

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



Start Animation

Depth - +

Branching Factor +

Swap Min/Max | Regenerate Tree

Reset Tree | Show Solution

Check Answer | Correct!

Nodes are pruned when β ≤