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Class :- BE-IT

Roll No :- 71

Subject :- Is Lab

DOP	DOM	Remark	Sign

Alpha- Beta Puning :-

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Alpha- Beta Puning = Alpha beta puning is a modified version of the min max algorithm It is a optimigation technique for the minmax algo.

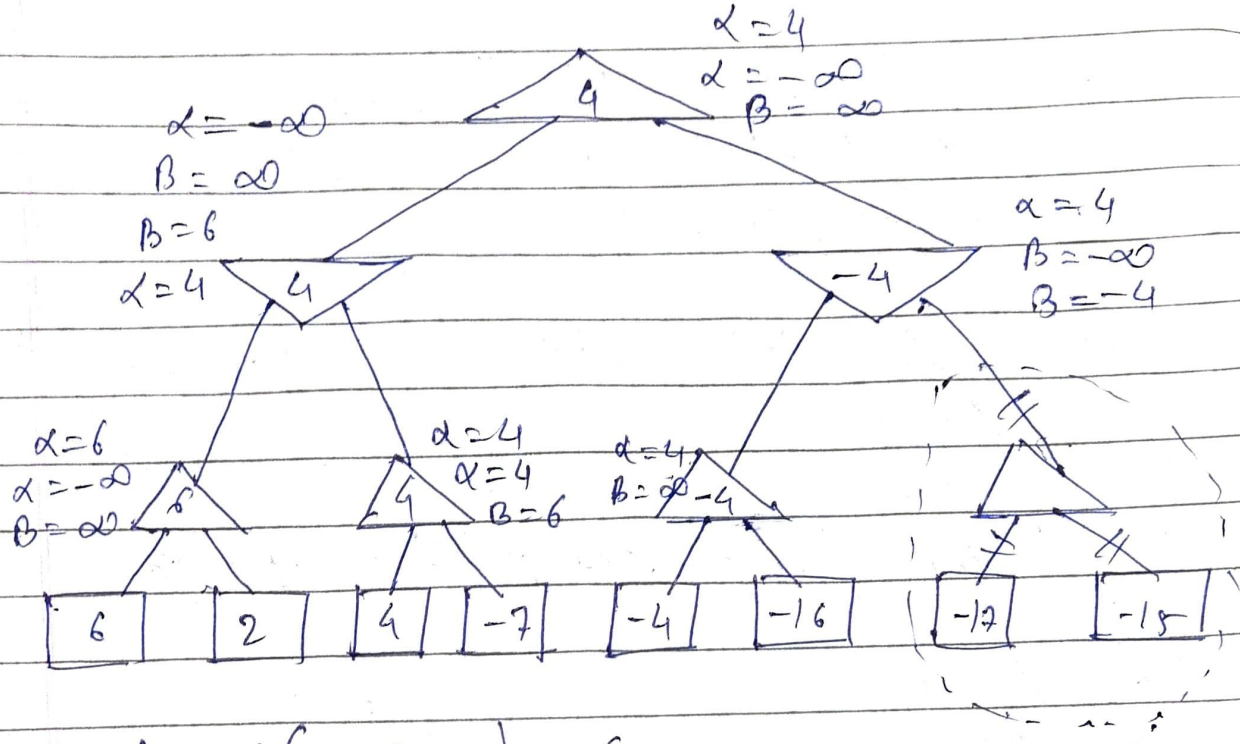
- Alpha (α) : the best (high value)
  = Initial value of alpha is $-\infty$

- 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 alpha & beta

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

- when alpha is greater than or equal to beta.



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

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

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

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

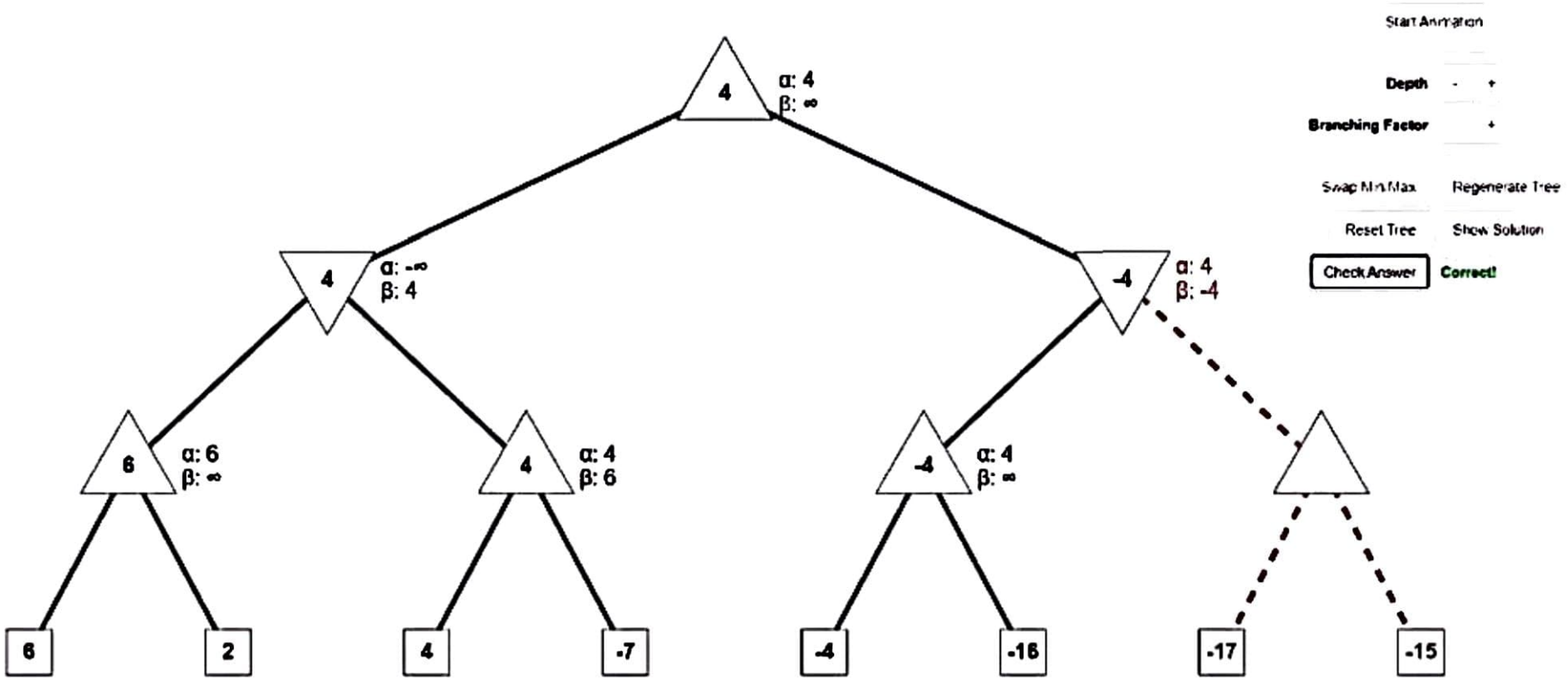
5) $\beta(6, 4) = 4$ - min (right)

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

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

8) $\beta(\infty, -16) = -16$ min (right)
$\alpha = 4$
$\beta = -4$
$\alpha \geq \beta$ the next node is pruned

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!
4
α: 4
β: ∞
4
α: -∞
β: 4
-4
α: 4
β: -4
6
α: 6
β: ∞
4
α: 4
β: 6
-4
α: 4
β: ∞
6
2
4
-7
-4
-16
-17
-15