Adversarial Search In-Class Exercises

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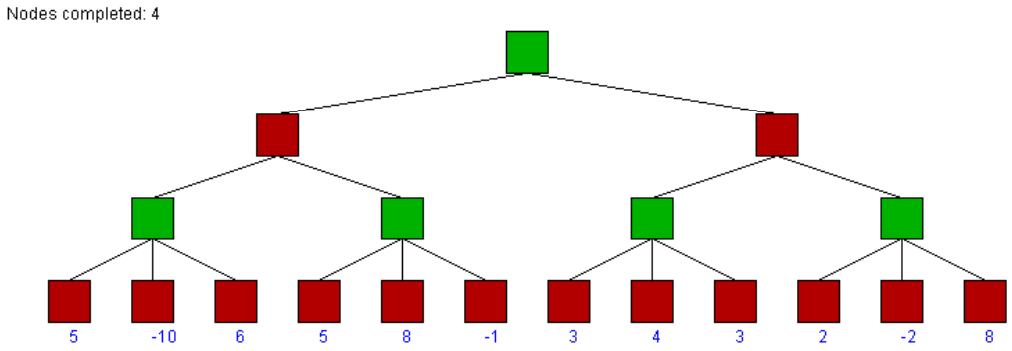
Examples are from http://www.ocf.berkeley.edu/~yosenl/extras/alphabeta/alphabeta.html

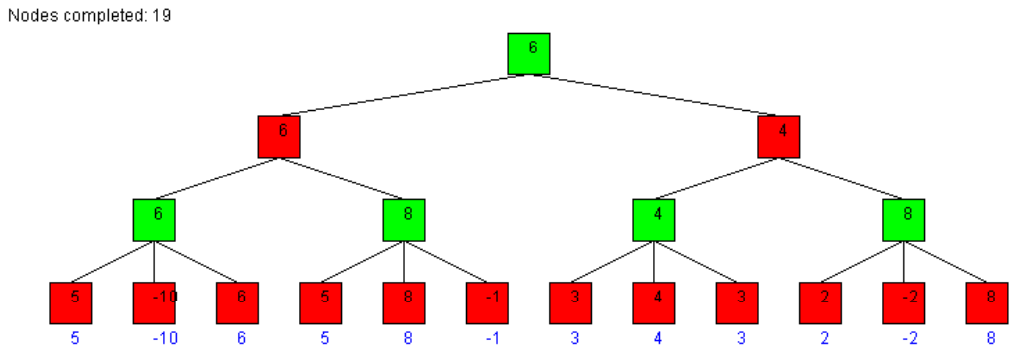
Minmax Algorithm Question 1

- Choose move to position with the highest minmax value

Max makes the first move.



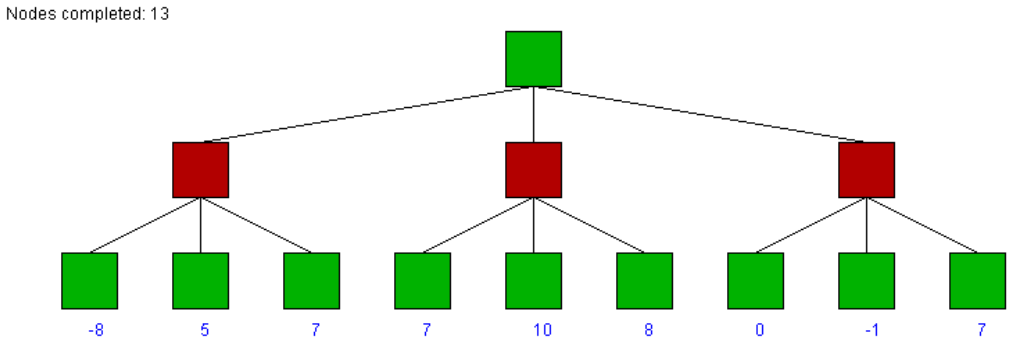
Solution



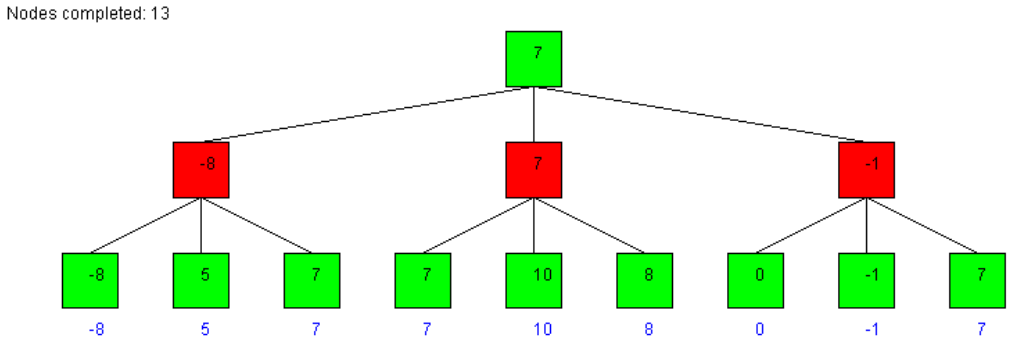
Minmax Algorithm Question 2

- Choose move to position with the highest minmax value

Max makes the first move.



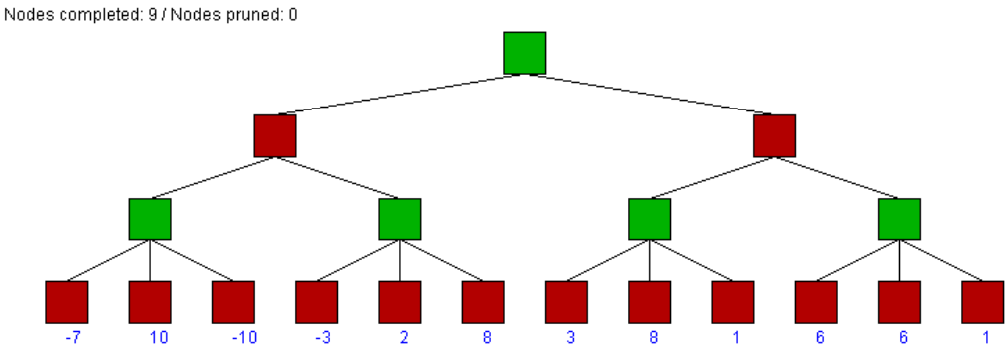
Solution



The α-β algorithm question 1

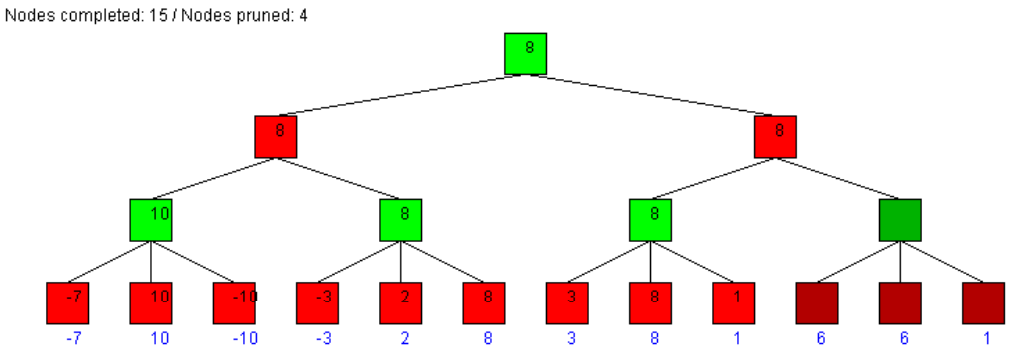
α, the value of the best alternative for MAX along the path to *state*

β, the value of the best alternative for MIN along the path to *state*



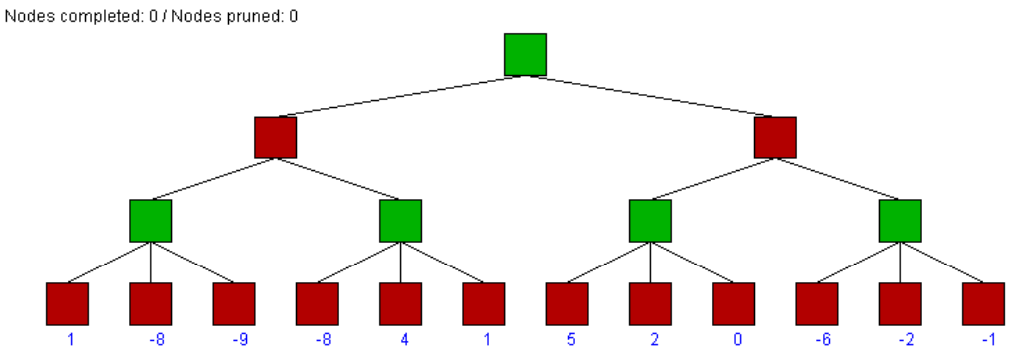
- Which sub-tree that we can safely prune?

Solution



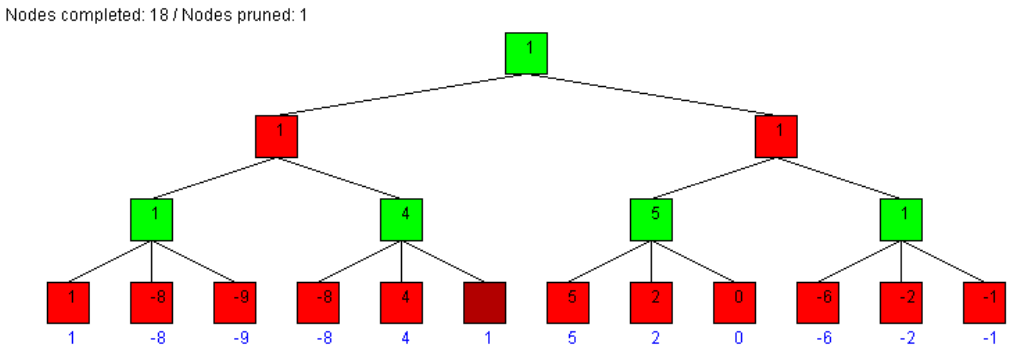
The α-β algorithm question 2

α, the value of the best alternative for MAX along the path to *state*
β, the value of the best alternative for MIN along the path to *state*



- Which sub-tree that we can safely prune?

Solution


Nodes completed: 18 / Nodes pruned: 1
1
1
1
1
4
5
1
1
-8
-9
-8
4
5
2
0
-6
-2
-1
1
-8
-9
-8
4
1
5
2
0
-6
-2
-1