MinMax Algorithm

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Min-Max Algorithm:

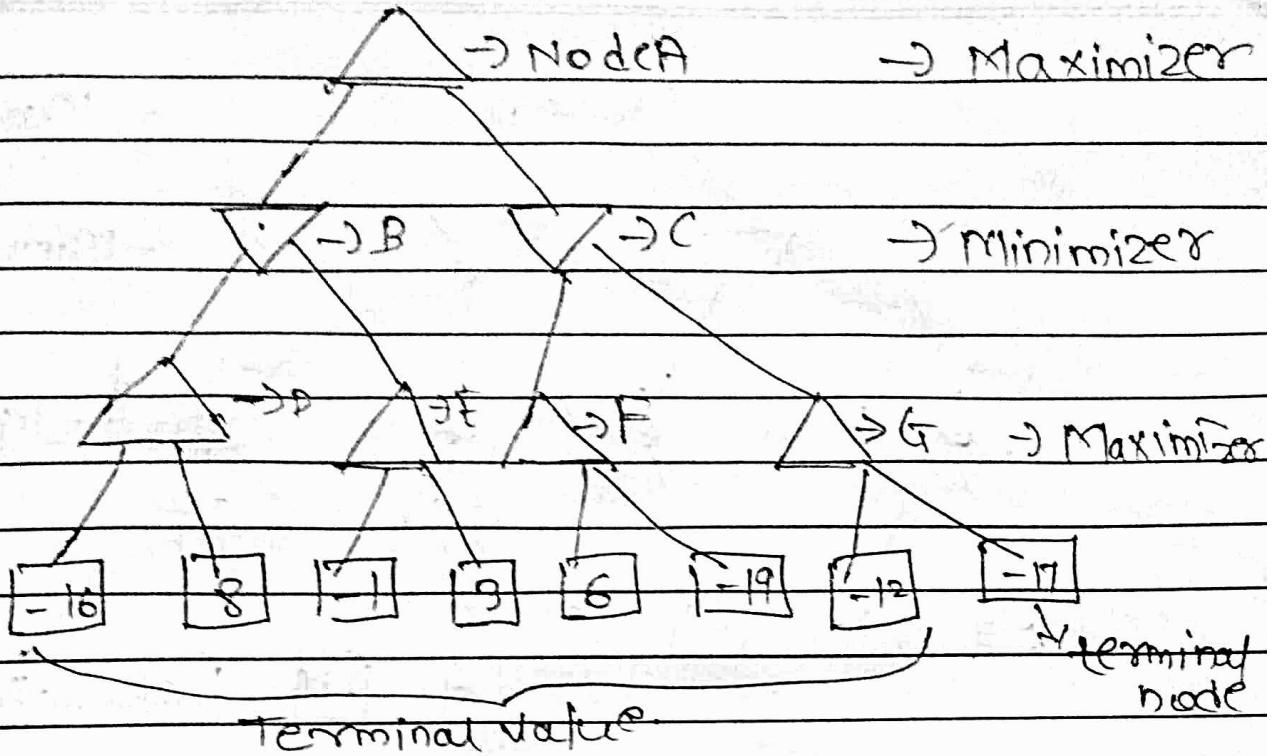
→ Min Max Algorithm:

It is recursive algo which is used in decision making and game theory. It provides an optimal move for player assuming that opponent is also playing optimally.

- Min max algo uses recursion to search through game tree.
In this algo 2 players play game, one is called MAX and other is MIN.
Min-Max algo is used for game playing in AI.

* step1:

Lets take A is initial state of tree. Suppose maximum takes first two ~~turn~~ or which has worst case initial value = -infinity, and minm will take next two which has worst case initial vale = +infinity.



*Step2:

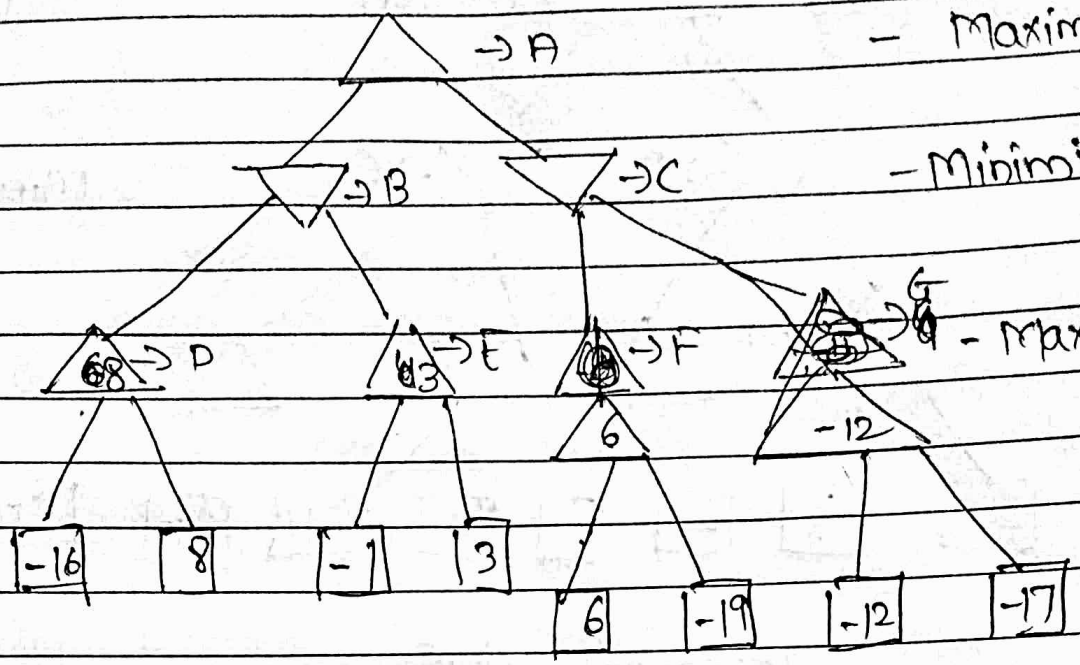
First we find utilities value for maximizer, its initial value is $-\infty$, so we will compare each value in terminal state with initial value of maximizer & determines higher neeed values. It will find max among all.

for Node D: $\max(-16, -\infty) \rightarrow \max(-16, 8) = 8$

For Node E: $\max(-1, -\infty) \rightarrow \max(-1, 3) = 3$

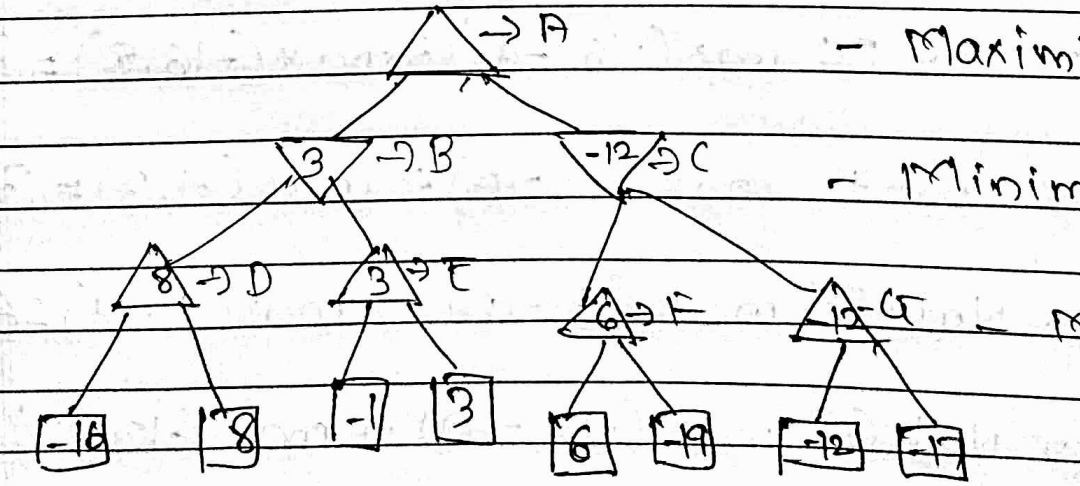
For Node F: $\max(6, -\infty) \rightarrow \max(6, -19) = 6$

For Node G: $\max(-12, -\infty) \rightarrow \max(-12, -17) = -12$



- Step3:

In next step, its turn ~~of~~ for minimizer, so it will compare all node value with 2 & will find 3rd layer node value



For Node B: min (8, 3) = 3

For Node C: min (6, -12) = -12

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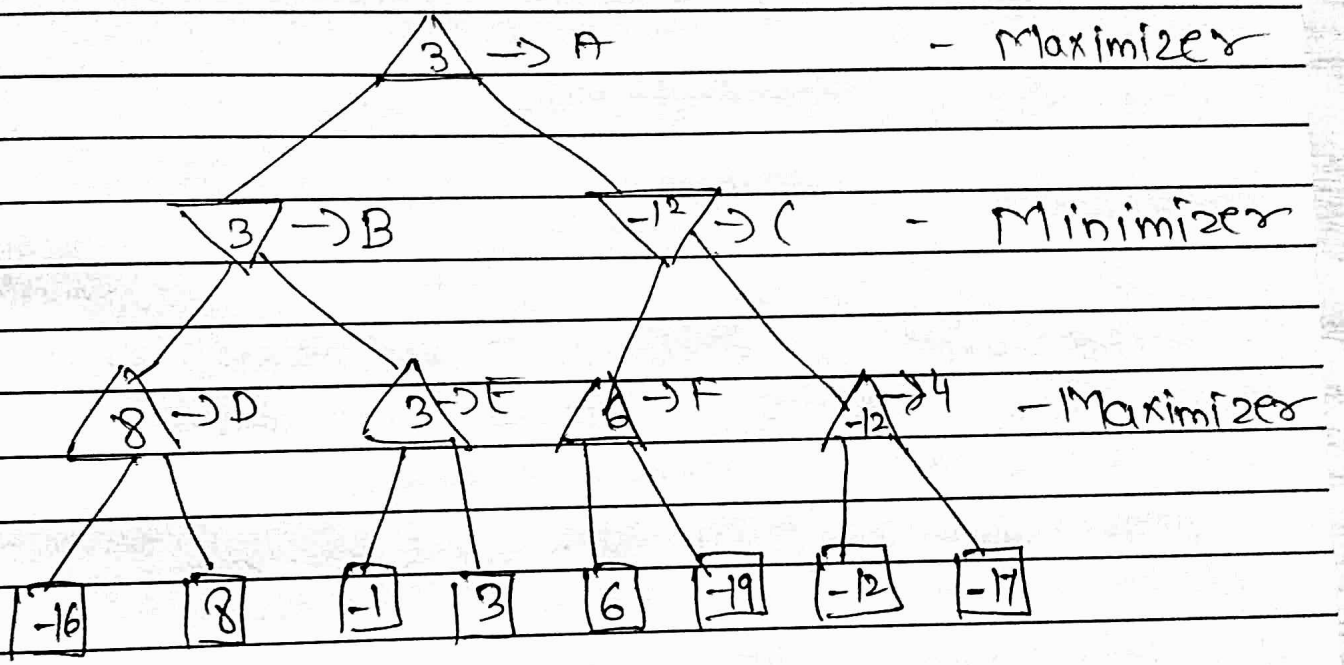
* Step 4:

Now its turn for maximizer and it will again choose maximum of all nodes values and find maximum all node values & find ~~max~~ max. value ~~of~~ for root node.

For node A: max (3, -12) = 3



Hence, it was complete work flow of minmax algorithm with two play games