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Min_Max algorithum:

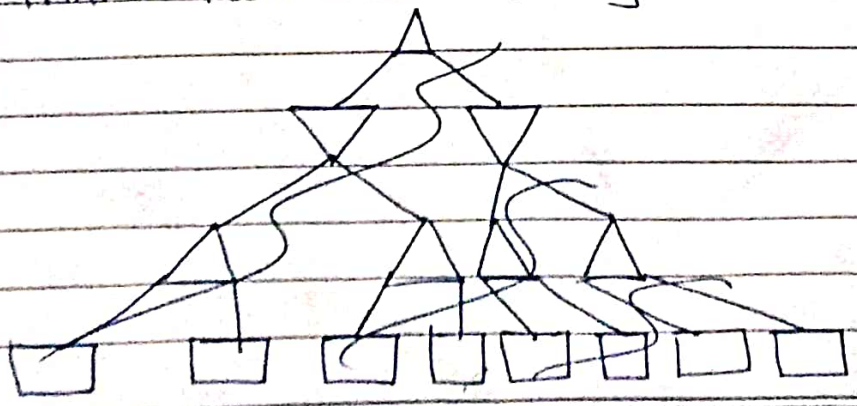
- Min max algorithum:
  It is a recursive algorithum which is used in decision-making & game. It provides an optimal move for the player assumming that opponent is also playing optimally.

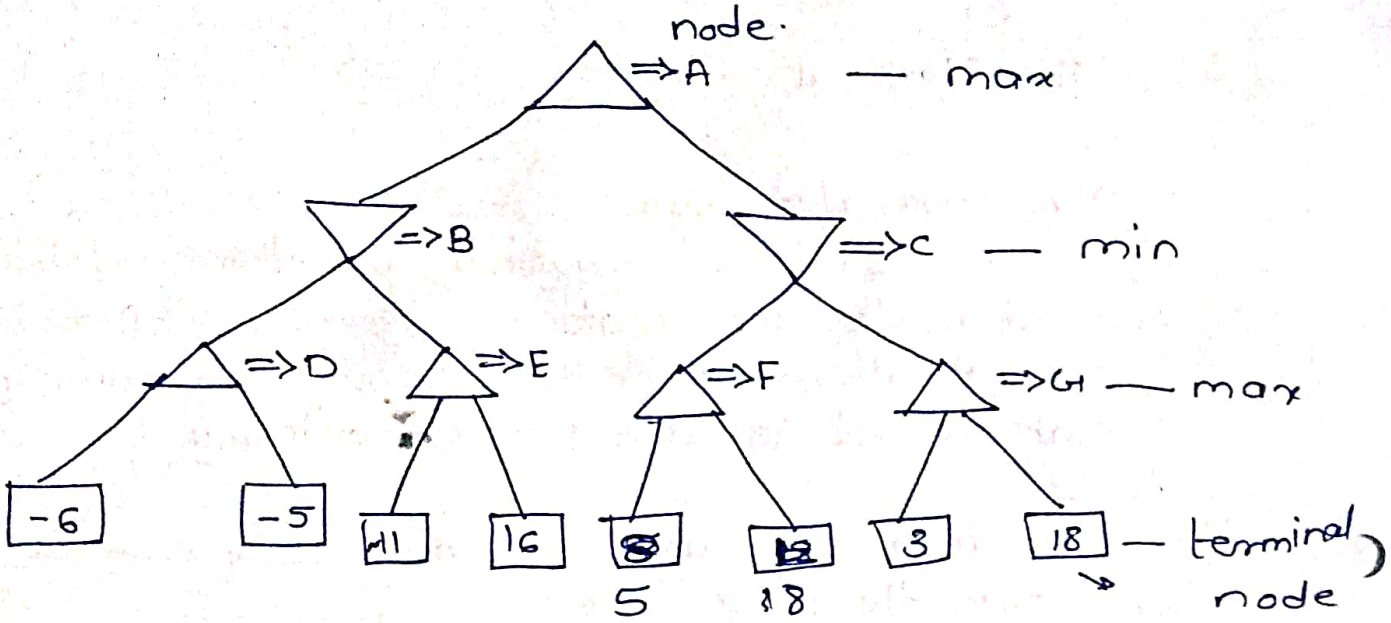
- Min max algo uses recursive to search ~~the~~ through the game-tree.

- In this algo^m two players play the game, one is called MAX & other is called MIN.

- Min-Max algo is mostly used for game playing in AI.

- Step1:
  Let's take A is the initial state of the tree. Suppose maximizes takes first turn has worst-case initial value - infinity & minimize with take next turn which has worst case initial value = + infinity.

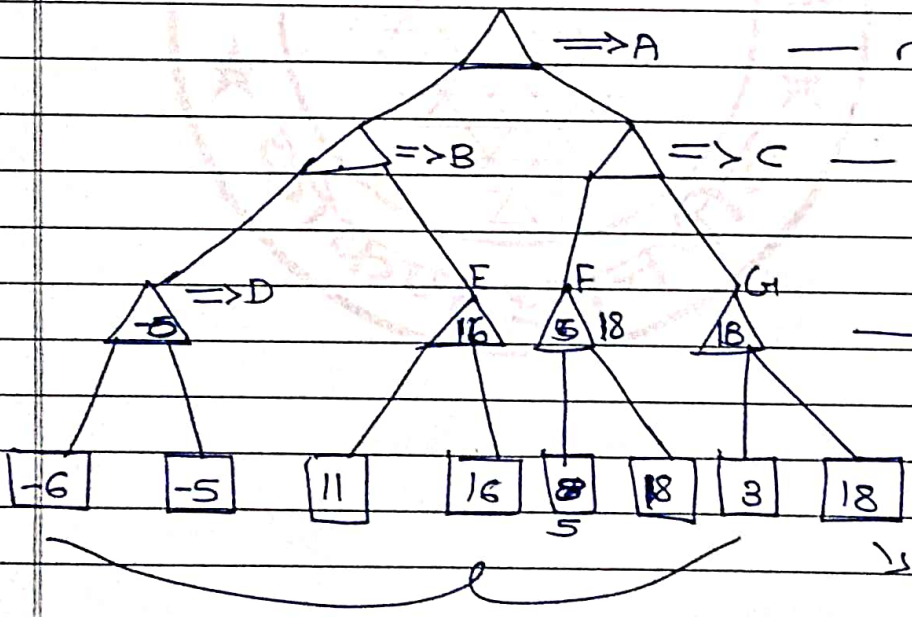



node.
⇒A — max
⇒B
⇒C — min
⇒D
⇒E
⇒F
⇒G — max
-6
-5
11
16
5
18
3
18 — terminal node

Step 2:

First we find the utilities values for the maximizes, it's initial value is $-\infty$. So we will compare each value in terminal state with initial value of maximizes & determines the higher nodes values. It will find the maximum among all.

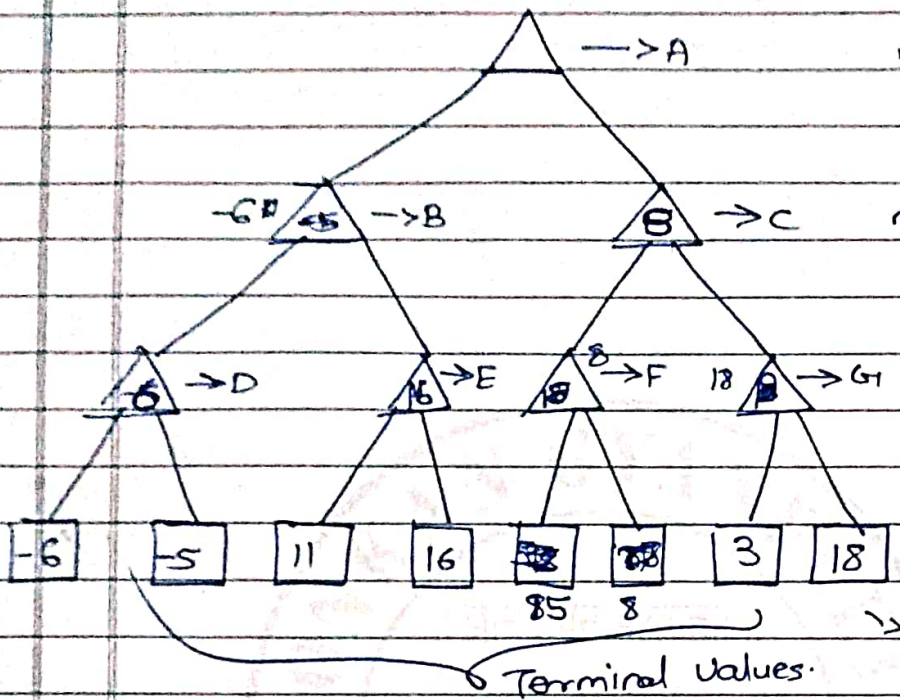
For node D: $\max(-6, -\infty) \Rightarrow \max(-6, -5) = -5$
For node E: $\max(11, -\infty) \Rightarrow \max(11, 16) = 16$
For node F: $\max(5, -\infty) \Rightarrow \max(5, 18) = 5\ 18$
For node G: $\max(3, -\infty) \Rightarrow \max(3, 18) = 3\ 18$



Terminal Values.

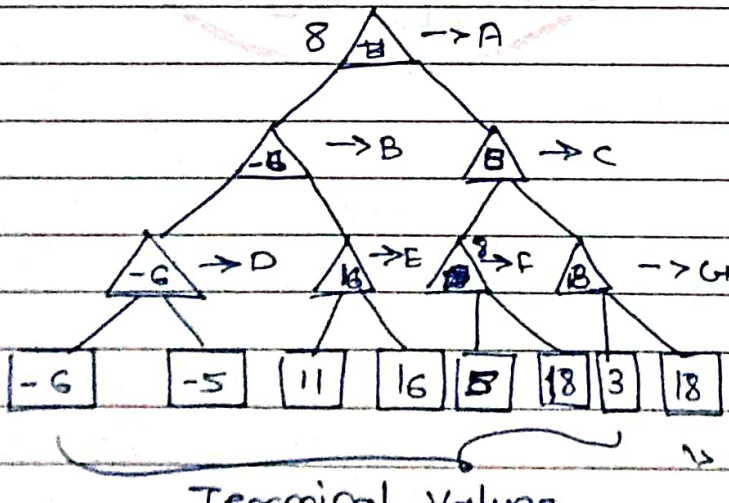
Step 3:

For node B: $\min(-5, 16) = -6$
For node C: $\min(5, 8) = 8$
$(5, 8)$



- step 4: In this step, it's a turn for minimize so it will compare all nodes value with two. & will find 3rd layer node value.

node A : max ~~(11, 5) = 11~~ (-6, 8) = 8.



hence, it was the complete workflow of the min max algorithum with two player game.