K.G.C.E.
Karjat - Raigad

Page No. :
Date :

KGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCEKGCE

Name :- Rahul Ravindra Shinde

Roll No. :- 64

class :- BE-IT

Subject :- IS Lab

Sem :- VII

DOP	DOC	Mark	Sign

✱ Min - Max Algorithm :-

=> Min max algorithm :

- Min max algorithm is a recurve of backchaning algo with is used in decision - making and game ~~tree~~ tree It provides an optimal move for the play assuming that opponent is also playing optimally.

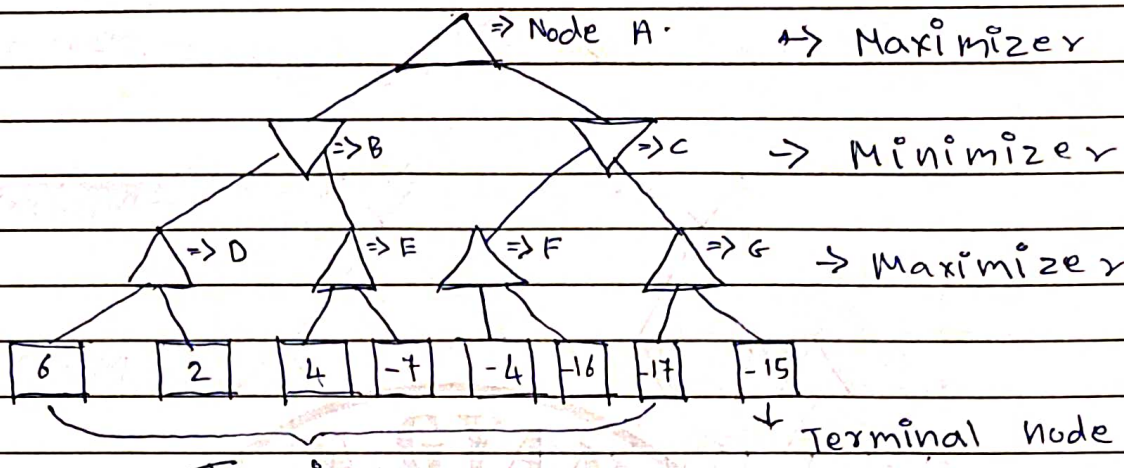
- Min max algo uses recursion to watch through the game tree

- In this algo two players play the game, one is called Max and other is called MIN.

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

- Step 1 :-

Lets take A is the initial state of the tree. purpose minimize takes first twin (when or) which has worst-case initial value = - infinity and minimze will take next twin which has worst - a case initial value = + infinity.



- Step 2 :-

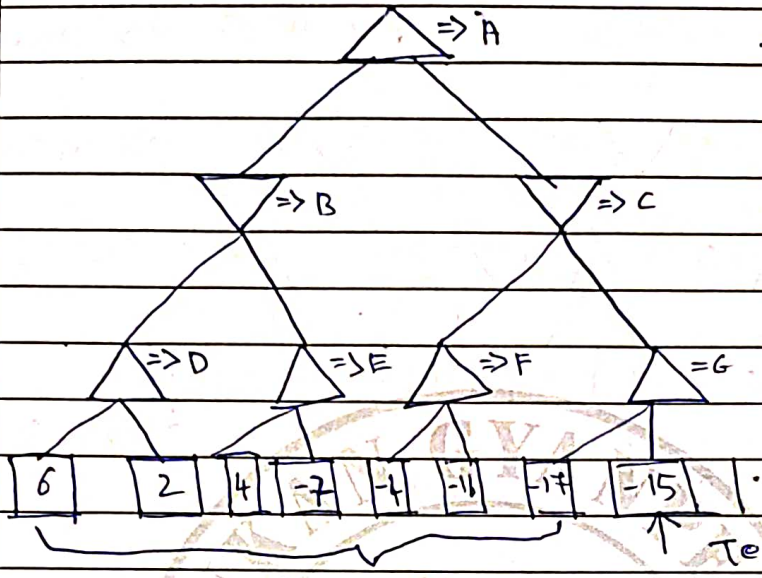
First we find the utilities value for the maximizer, its initial value is $-\infty$, so we will compose such value in terminal state with initial value of maximizer and determines the higher nodes values. It will find the maximum among all.

For node A : $\max(6, -\infty) \Rightarrow \max(6, 2) = 6$

For node E : $\max(4, -\infty) \Rightarrow \max(4, -7) = 4$

For node F : $\max(-4, -\infty) \Rightarrow \max(-4, -16) = -4$

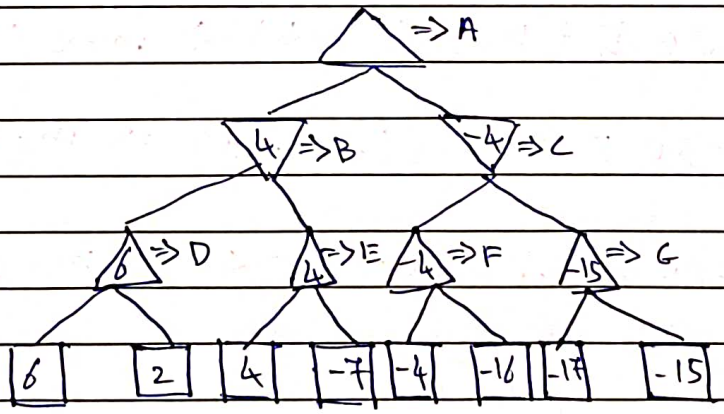
For node G : $\max(-17, -\infty) \Rightarrow \max(-17, 15) = -15$



- Step 3:

In the next step, it's a turn for minimizer, so it will compare all nodes values with two, and will find 3rd layer node value.

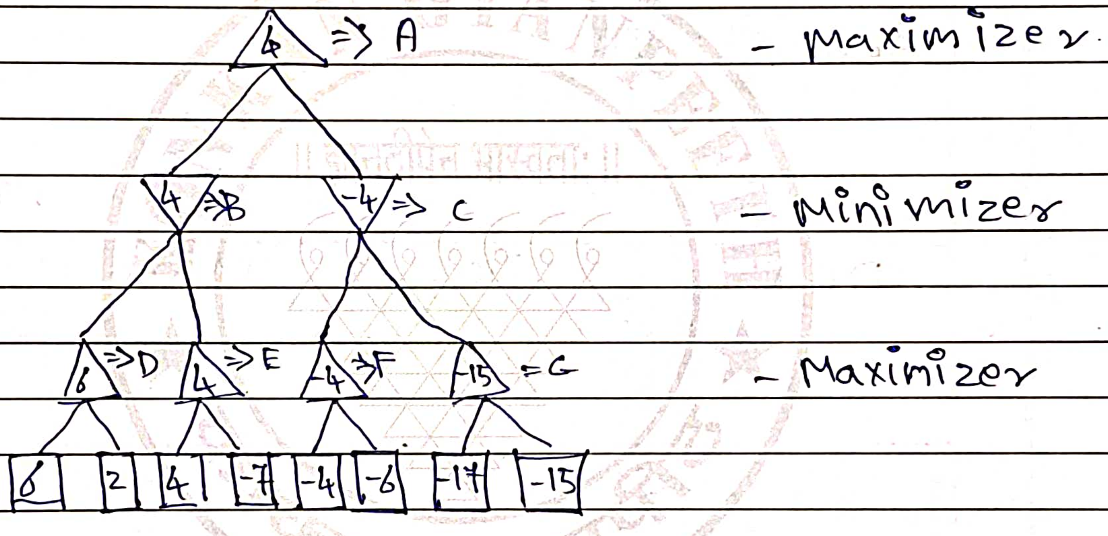
For node B - min(6, 4) = 4
For node C - min(-4, -15) = -4



- Step 4

Now its a turn for maximizer and it will again choose the maximum of all nodes values and find the maximum values for the root node.

for node A : max (4, -4) = 4



Hence, it was the complete workflow of the minimax algorithm with two players game.