Key points about alpha-beta pruning:

Initially, Alpha = $-\infty$, Beta = $+\infty$

Alpha = max(current_alpha_value, value_from_child)

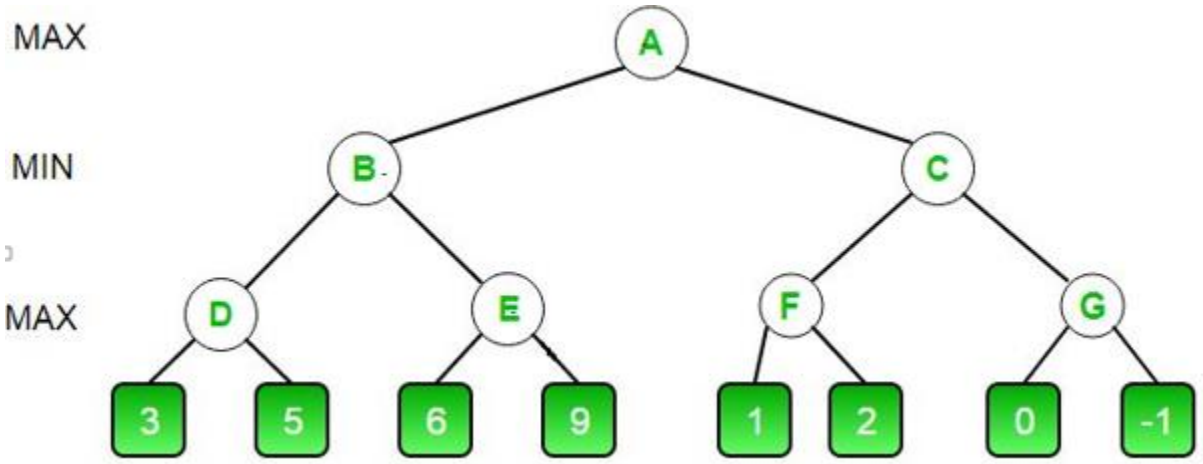
Beta = min(current_beta_value, value_from_child)

Node_value = maximum value among children if it's the turn of Max

= minimum value among children if it's turn of Min

- ☞ The Max player will only update the value of alpha.
- ☞ The Min player will only update the value of beta.
- ☞ While backtracking the tree, the node values will be passed to upper nodes instead of values of alpha and beta.
- ☞ Only alpha and beta values are passed to the child nodes.

Example: Determine the nodes to be pruned from following game tree using Alpha-beta pruning procedure.



➔Solution: The procedure can be depicted as in following table.

Step No.	**Node**	**Player**	**Value of α**	**Value of β**	**α ≥ β**	**Pruning**	**Node Value**	**Remarks and Description**
1	A	Max	- ∞	+ ∞	False	No	Not Fixed	α = - ∞ and β = + ∞ are passed to a child node, B
2	B	Min	- ∞	+ ∞	False	No	Not Fixed	α = - ∞ and β= + ∞ are passed to a child node, D
3	D	Max	max(- ∞, 3)= 3	+ ∞	False	No	5	α is updated and backtracking to B. Here, node value 5 is backtracked (passed to B).
			max(3,5) =5	+ ∞	False	No		
4	B	Min	- ∞	= min (+ ∞,5)=5	False	No	Not Fixed	β is updated and Traversing next child of B i.e. E. Here, α = - ∞ and β = 5 are passed to a child node,E
5	E	Max	max(- ∞,6)=6	5	True	Yes	6	α is updated, Here α ≥ β (6>=5) so right child of E is pruned. The node value of E is set to 6 and Backtracked to B.
6	B	Min	- ∞	5	False	No	5	Node value is set to 5 (minimum of node values of child D and E) and Backtracking to A.
7	A	Max	max(- ∞,5)=5	+ ∞	False	No	Not Fixed	α = 5 and β = + ∞ are passed to a child node, C
8	C	Min	5	+ ∞	False	No	Not Fixed	α = 5 and β = + ∞ are passed to a child node, F
9	F	Max	max(5,1) = 5	+ ∞	False	No	2	α is updated, node value of F is set to 2 and Backtracking to C
			max(5,2) = 5	+ ∞	False	No		

10	C	Min	5	min(+ ∞,2)= 2	True	Yes	2	β is updated, Here α ≥ β (5>=2) so right child of C i.e. G is pruned. The node value of C is set to 2 which is passed to A.
11	A	Max	max(5,2)=5	+ ∞	False	No	5	At A, best value of A is = max(5,2) =5

Hence, Right child of Node E and Right Child of Node C i.e .Node G are pruned from given game tree.