Mini-Max algorithm

Program:

# Initial values of Alpha and Beta

MAX, MIN = 1000, -1000

# Returns optimal value for current player

# (Initially called for root and maximizer)

def minimax(depth, nodeIndex, maximizingPlayer, values, alpha, beta):

# Terminating condition. i.e. leaf node is reached

if depth == 3:

return values[nodeIndex]

if maximizingPlayer:

best = MIN

# Recur for left and right children

for i in range(0, 2):

val = minimax(depth + 1, nodeIndex \* 2 + i, False, values, alpha, beta)

best = max(best, val)

alpha = max(alpha, best)

# Alpha Beta Pruning

if beta <= alpha:

break

return best

else:

best = MAX

# Recur for left and right children

for i in range(0, 2):

val = minimax(depth + 1, nodeIndex \* 2 + i, True, values, alpha, beta)

best = min(best, val)

beta = min(beta, best)

# Alpha Beta Pruning

if beta <= alpha:

break

return best

# Driver Code

if \_\_name\_\_ == "\_\_main\_\_":

values = [3, 5, 6, 9, 1, 2, 0, -1]

print("The optimal value is:", minimax(0, 0, True, values, MIN, MAX))

output :

The optimal value is :5