

ALPHA BETA PRUNING

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PROGRAM:

MAX, MIN = 1000, -1000

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

 if depth == 3:

 return values[nodeIndex]

 if maximizingPlayer:

 best = MIN

 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)

 if beta <= alpha:

 break

 return best

 else:

 best = MAX

 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)

 if beta <= alpha:

 break


 return best

```
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:

A screenshot of a terminal window with a black background. The text "The optimal value is: 6" is displayed in a monospaced font. The words "The optimal" are in white, "value is:" is in blue, and the number "6" is in red.

```
The optimal value is: 6
```