

EXPERIMENT-22

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Course: CSA1789 Artificial Intelligence

Q) Write the python program to implement Minimax algorithm for gaming

Program:

```
import math

def minimax (curDepth, nodeIndex,
            maxTurn, scores,
            targetDepth):

    if (curDepth == targetDepth):
        return scores[nodeIndex]

    if (maxTurn):
        return max(minimax(curDepth + 1, nodeIndex * 2,
                            False, scores, targetDepth),
                    minimax(curDepth + 1, nodeIndex * 2 + 1,
                            False, scores, targetDepth))

    else:
        return min(minimax(curDepth + 1, nodeIndex * 2,
                            True, scores, targetDepth),
                    minimax(curDepth + 1, nodeIndex * 2 + 1,
                            True, scores, targetDepth))

scores = [3, 5, 2, 9, 12, 5, 23, 23]

treeDepth = math.log(len(scores), 2)

print("The optimal value is : ", end = "")
print(minimax(0, 0, True, scores, treeDepth))
```

OUTPUT:

