A.I

LAB TASK 4

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QUESTION 1&2:

1. Implement Min-Max Algorithm to find the optimal ans for the following value:

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

2. Implement Min-Max Algorithm to find the optimal ans for the following value:

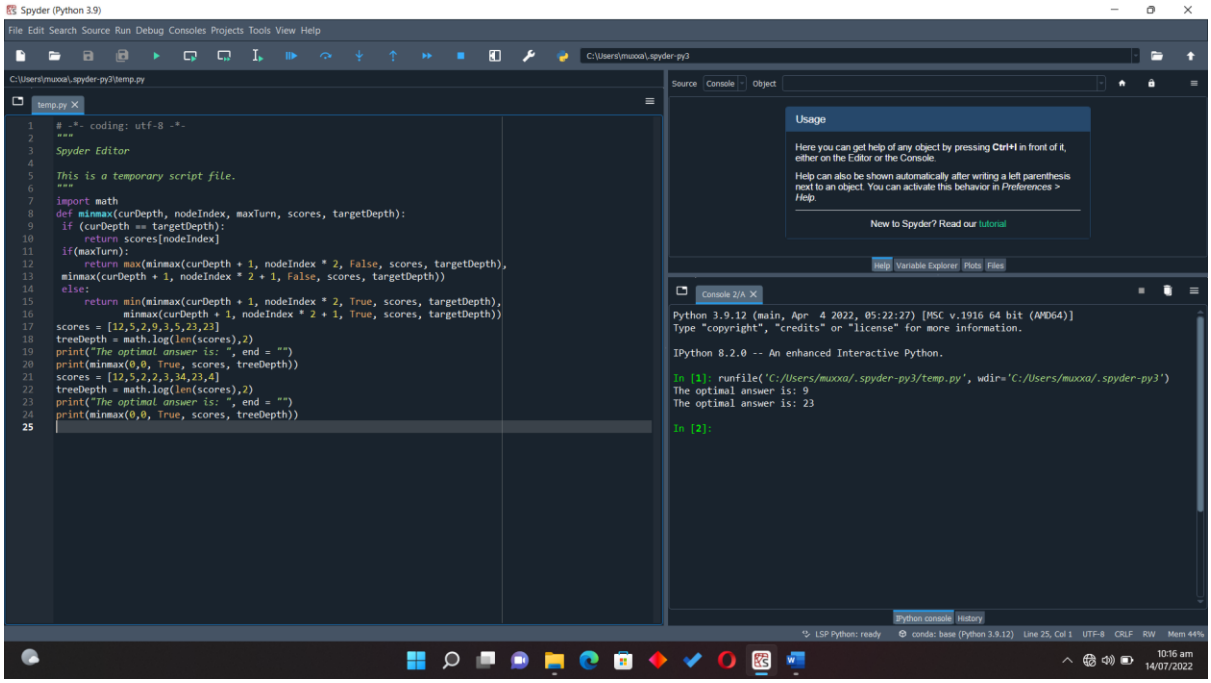
   [12, 5, 2, 2, 3, 34, 23, 4]

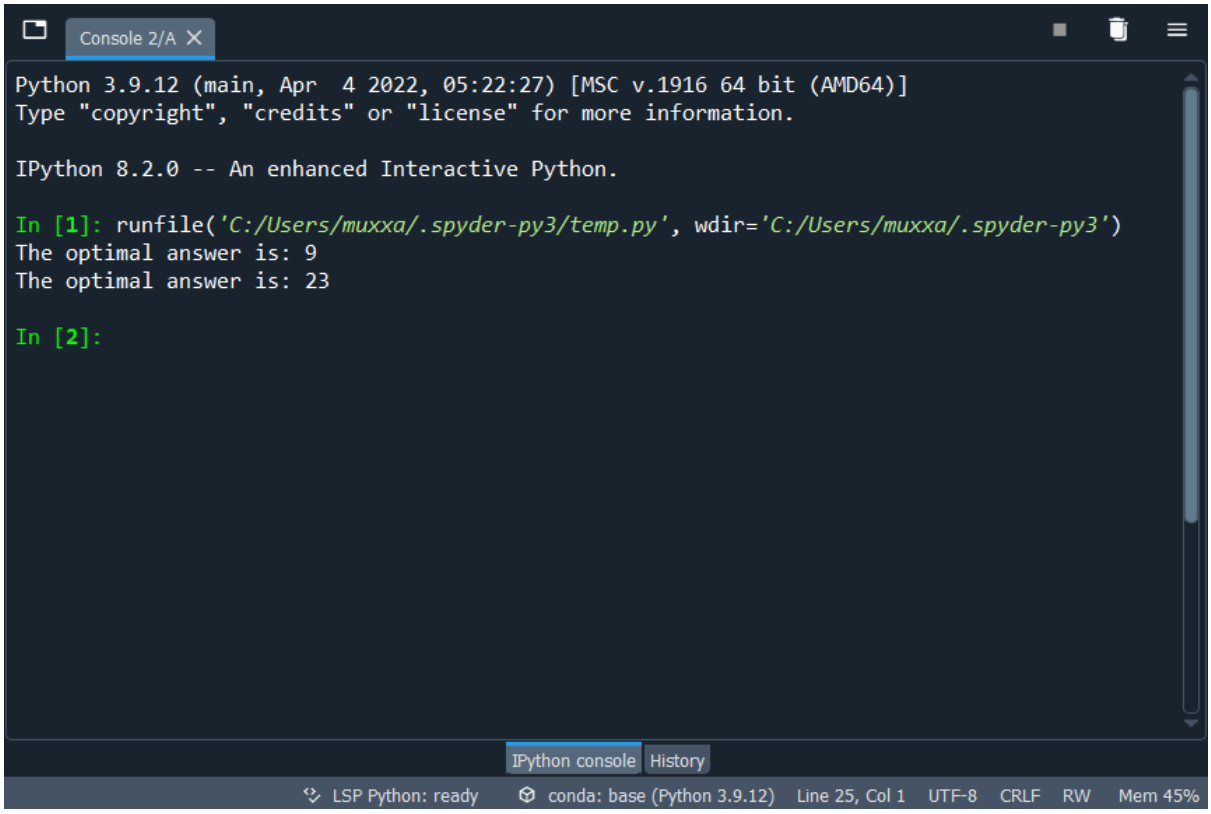
CODE:

```
import math
def minmax(curDepth, nodeIndex, maxTurn, scores, targetDepth):
 if (curDepth == targetDepth):
    return scores[nodeIndex]
 if(maxTurn):
    return max(minmax(curDepth + 1, nodeIndex * 2, False, scores, targetDepth),
 minmax(curDepth + 1, nodeIndex * 2 + 1, False, scores, targetDepth))
 else:
    return min(minmax(curDepth + 1, nodeIndex * 2, True, scores, targetDepth),
        minmax(curDepth + 1, nodeIndex * 2 + 1, True, scores, targetDepth))
scores = [12,5,2,9,3,5,23,23]
treeDepth = math.log(len(scores),2)
print("The optimal answer is: ", end = "")
print(minmax(0,0, True, scores, treeDepth))
scores = [12,5,2,2,3,34,23,4]
treeDepth = math.log(len(scores),2)
print("The optimal answer is: ", end = "")
print(minmax(0,0, True, scores, treeDepth))
```

Submitted to: Sir Ramzan Ali

OUTPUT:





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