Started on	Saturday, 17 May 2025, 10:19 AM
State	Finished
Completed on	Saturday, 17 May 2025, 10:30 AM
Time taken	10 mins 57 secs
Grade	**100.00** out of 100.00

Question **1**

Correct

Mark 20.00 out of 20.00

Create a python Program to find the maximum contiguous sub array using Dynamic Programming.

For example:

Test	Input	Result
maxSubArraySum(a,len(a))	8 -2 -3 4 -1 -2 1 5 -3	Maximum contiguous sum is 7

Answer: (penalty regime: 0 %)

```
def maxSubArraySum(a,size):
    max_till_now = a[0]
    max_ending = 0

    for i in range(0, size):
        max_ending = max_ending + a[i]
        if max_ending < 0:
            max_ending = 0


        elif (max_till_now < max_ending):
            max_till_now = max_ending

    return max_till_now
n=int(input())
a =[] #[-2, -3, 4, -1, -2, 1, 5, -3]
for i in range(n):
    a.append(int(input()))

print("Maximum contiguous sum is", maxSubArraySum(a,n))
```

	Test	Input	Expected	Got	
✔	maxSubArraySum(a,len(a))	8 -2 -3 4 -1 -2 1 5 -3	Maximum contiguous sum is 7	Maximum contiguous sum is 7	✔
✔	maxSubArraySum(a,len(a))	5 1 2 3 -4 -6	Maximum contiguous sum is 6	Maximum contiguous sum is 6	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **2**

Correct

Mark 20.00 out of 20.00

Write a python program to implement the quick sort using recursion on the given list of float values.

For example:

Input	Result
5 6.3 1.2 4.6 5.8 9.7	pivot: 9.7 pivot: 5.8 pivot: 4.6 [1.2, 4.6, 5.8, 6.3, 9.7]
6 2.3 7.8 9.5 4.2 3.6 5.4	pivot: 5.4 pivot: 3.6 pivot: 7.8 [2.3, 3.6, 4.2, 5.4, 7.8, 9.5]

Answer: (penalty regime: 0 %)

```
def partition(arr, low, high):
    pivot = arr[high]
    i = low - 1
    for j in range(low, high):
        if arr[j] <= pivot:
            i += 1
            arr[i], arr[j] = arr[j], arr[i]
    arr[i + 1], arr[high] = arr[high], arr[i + 1]
    return i + 1

def quick_sort(arr, low, high):
    if low < high:
        pi = partition(arr, low, high)
        print("pivot: ", arr[pi])
        quick_sort(arr, low, pi - 1)
        quick_sort(arr, pi + 1, high)

if __name__ == "__main__":
    list1=[]
    n=int(input())
    for i in range(n):
        list1.append(float(input()))
```

	Input	Expected	Got	
✔	5 6.3 1.2 4.6 5.8 9.7	pivot: 9.7 pivot: 5.8 pivot: 4.6 [1.2, 4.6, 5.8, 6.3, 9.7]	pivot: 9.7 pivot: 5.8 pivot: 4.6 [1.2, 4.6, 5.8, 6.3, 9.7]	✔

	Input	Expected	Got	
✔	6 2.3 7.8 9.5 4.2 3.6 5.4	pivot: 5.4 pivot: 3.6 pivot: 7.8 [2.3, 3.6, 4.2, 5.4, 7.8, 9.5]	pivot: 5.4 pivot: 3.6 pivot: 7.8 [2.3, 3.6, 4.2, 5.4, 7.8, 9.5]	✔
✔	4 3.2 6.4 8.7 1.5	pivot: 1.5 pivot: 3.2 pivot: 6.4 [1.5, 3.2, 6.4, 8.7]	pivot: 1.5 pivot: 3.2 pivot: 6.4 [1.5, 3.2, 6.4, 8.7]	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **3**

Correct

Mark 20.00 out of 20.00

Write a Python program using A Naive recursive implementation of Minimum Cost Path Problem.

For example:

Input	Result
3 3	8

Answer: (penalty regime: 0 %)

Reset answer

```
R = int(input())
C = int(input())
import sys
def minCost(cost, m, n):
    if (n < 0 or m < 0):
        return sys.maxsize
    elif (m == 0 and n == 0):
        return cost[m][n]
    else:
        return cost[m][n] + min( minCost(cost, m-1, n-1),
                                 minCost(cost, m-1, n),
                                 minCost(cost, m, n-1) )
def min(x, y, z):
    if (x < y):
        return x if (x < z) else z
    else:
        return y if (y < z) else z
cost= [ [1, 2, 3],
        [4, 8, 2],
        [1, 5, 3] ]
print(minCost(cost, R-1, C-1))
```

	Input	Expected	Got	
✔	3 3	8	8	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **4**

Correct

Mark 20.00 out of 20.00

Create a python program to find the minimum number of jumps needed to reach end of the array using Dynamic Programming.

For example:

Test	Input	Result
minJumps(arr,n)	6 1 3 6 1 0 9	Minimum number of jumps to reach end is 3

Answer: (penalty regime: 0 %)

Reset answer

```
def minJumps(arr, n):
    jumps = [0 for i in range(n)]

    if (n == 0) or (arr[0] == 0):
        return float('inf')

    jumps[0] = 0
    for i in range(1, n):
        jumps[i] = float('inf')
        for j in range(i):
            if (i <= j + arr[j]) and (jumps[j] != float('inf')):
                jumps[i] = min(jumps[i], jumps[j] + 1)
                break
    return jumps[n-1]
arr = []
n = int(input())
for i in range(n):
    arr.append(int(input()))
print('Minimum number of jumps to reach','end is', minJumps(arr,n))
```

	Test	Input	Expected	Got	
✔	minJumps(arr,n)	6 1 3 6 1 0 9	Minimum number of jumps to reach end is 3	Minimum number of jumps to reach end is 3	✔
✔	minJumps(arr,n)	7 2 3 -8 9 5 6 4	Minimum number of jumps to reach end is 3	Minimum number of jumps to reach end is 3	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **5**

Correct

Mark 20.00 out of 20.00

Create a Dynamic Programming python Implementation of Coin Change Problem.

For example:

Test	Input	Result
count(arr, m, n)	3 4 1 2 3	4

Answer: (penalty regime: 0 %)

Reset answer

```
def count(S, m, n):
    table = [[0 for x in range(m)] for x in range(n+1)]
    for i in range(m):
        table[0][i] = 1
    for i in range(1, n+1):
        for j in range(m):
            x = table[i - S[j]][j] if i-S[j] >= 0 else 0
            y = table[i][j-1] if j >= 1 else 0
            table[i][j] = x + y
    return table[n][m-1]

arr = []
m = int(input())
n = int(input())
for i in range(m):
    arr.append(int(input()))
print(count(arr, m, n))
```

	Test	Input	Expected	Got	
✔	count(arr, m, n)	3 4 1 2 3	4	4	✔
✔	count(arr, m, n)	3 16 1 2 5	20	20	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.