Started on	Tuesday, 13 May 2025, 11:35 AM
State	Finished
Completed on	Tuesday, 13 May 2025, 11:40 AM
Time taken	5 mins 23 secs
Grade	**100.00** out of 100.00

Question **1**

Correct

Mark 20.00 out of 20.00

Create a python program using brute force method of searching for the given substring in the main string.

For example:

Test	Input	Result
match(str1,str2)	AABAACAADAABAABA AABA	Found at index 0 Found at index 9 Found at index 12

Answer: (penalty regime: 0 %)

Reset answer

```
import re
def match(string,sub):
    pattern=re.compile(str2)
    r=pattern.search(str1)
    while r:
        print("Found at index {}".format(r.start()))
        r=pattern.search(str1,r.start()+1)
str1=input()
str2=input()
```

	Test	Input	Expected	Got	
✔	match(str1,str2)	AABAACAADAABAABA AABA	Found at index 0 Found at index 9 Found at index 12	Found at index 0 Found at index 9 Found at index 12	✔
✔	match(str1,str2)	saveetha savee	Found at index 0	Found at index 0	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **2**

Correct

Mark 20.00 out of 20.00

Create a python program using dynamic programming for 0/1 knapsack problem.

For example:

Test	Input	Result
knapSack(W, wt, val, n)	3 3 50 60 100 120 10 20 30	The maximum value that can be put in a knapsack of capacity W is: 220

Answer: (penalty regime: 0 %)

Reset answer

```
def knapSack(W, wt, val, n):
    if n == 0 or W == 0 :
        return 0
    if (wt[n-1] > W):
        return knapSack(W, wt, val, n-1)
    else:
        return max(val[n-1] + knapSack(W-wt[n-1], wt, val, n-1), knapSack(W, wt, val, n-1))

x=int(input())
y=int(input())
W=int(input())
val=[]
wt=[]
for i in range(x):
    val.append(int(input()))
for y in range(y):
    wt.append(int(input()))

n = len(val)
print('The maximum value that can be put in a knapsack of capacity W is: ',knapSack(W, wt, val, n))
```

	Test	Input	Expected	Got	
✔	knapSack(W, wt, val, n)	3 3 50 60 100 120 10 20 30	The maximum value that can be put in a knapsack of capacity W is: 220	The maximum value that can be put in a knapsack of capacity W is: 220	✔
✔	knapSack(W, wt, val, n)	3 3 40 50 90 110 10 20 30	The maximum value that can be put in a knapsack of capacity W is: 160	The maximum value that can be put in a knapsack of capacity W is: 160	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **3**

Correct

Mark 20.00 out of 20.00

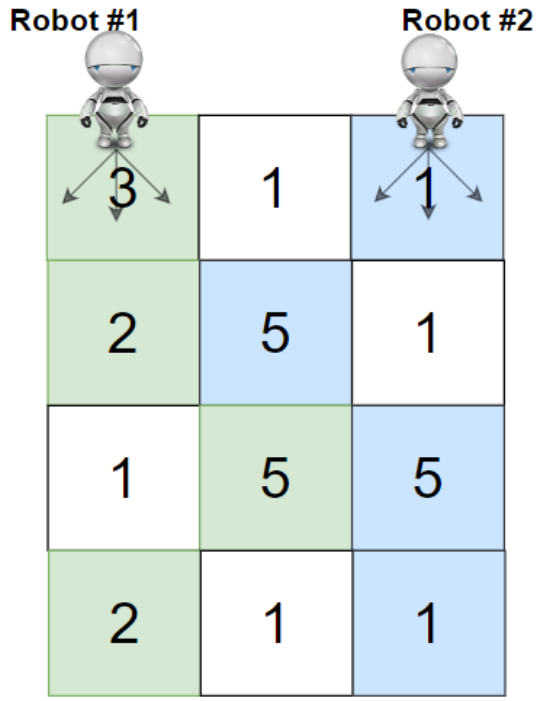
You are given a `rows x cols` matrix `grid` representing a field of cherries where `grid[i][j]` represents the number of cherries that you can collect from the `(i, j)` cell.

You have two robots that can collect cherries for you:

- **Robot #1** is located at the **top-left corner** `(0, 0)`, and
- **Robot #2** is located at the **top-right corner** `(0, cols - 1)`.

Return *the maximum number of cherries collection using both robots by following the rules below*:

- From a cell `(i, j)`, robots can move to cell `(i + 1, j - 1)`, `(i + 1, j)`, or `(i + 1, j + 1)`.
- When any robot passes through a cell, It picks up all cherries, and the cell becomes an empty cell.
- When both robots stay in the same cell, only one takes the cherries.
- Both robots cannot move outside of the grid at any moment.
- Both robots should reach the bottom row in `grid`.



For example:

Test	Result
`ob.cherryPickup(grid)`	24

Answer: (penalty regime: 0 %)

Reset answer

```
class Solution(object):
    def cherryPickup(self, grid):
        dp = [[0 for i in range(len(grid))] for j in range(len(grid))]
        for i in range(len(grid)):
            for j in range(len(grid)):
                dp[i][j] = grid[i-1][j-1]
        res = len(grid)*6
        ROW_NUM = len(grid)
        COL_NUM = len(grid[0])
        return dp[0][COL_NUM - 1]*res

grid=[[3,1,1],
      [2,5,1],
      [1,5,5],
      [2,1,1]]
ob=Solution()
```

```
print(ob.cherryPickup(grid))
```

	Test	Expected	Got	
✔	ob.cherryPickup(grid)	24	24	✔

Passed all tests! ✔

Correct

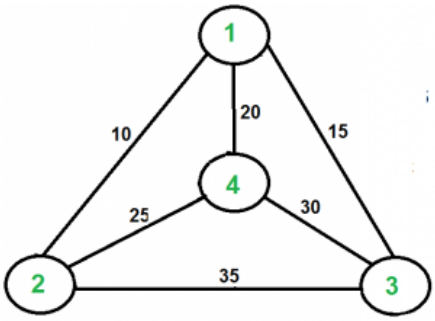
Marks for this submission: 20.00/20.00.

Question **4**

Correct

Mark 20.00 out of 20.00

Solve Travelling Sales man Problem for the following graph



Answer: (penalty regime: 0 %)

Reset answer

```
from sys import maxsize
from itertools import permutations
V = 4
def travellingSalesmanProblem(graph, s):
    vertex =[]
    for i in range(V):
        if i !=s:
            vertex.append(i)
    min_path = maxsize
    next_permutation = permutations(vertex)
    for i in next_permutation:
        current_pathweight = 0
        k = s
        for j in i:
            current_pathweight += graph[k][j]
            k = j
        current_pathweight += graph[k][s]
        min_path = min(min_path, current_pathweight)

    return min_path


```

	Expected	Got	
✔	80	80	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **5**

Correct

Mark 20.00 out of 20.00

SUBSET SUM PROBLEM

Given a set of positive integers, and a value sum, determine that the sum of the subset of a given set is equal to the given sum.

Write the program for subset sum problem.

INPUT

1.no of elements

2.Input the given elements

3.Get the target sum

OUTPUT

True , if subset with required sum is found

False , if subset with required sum is not found

For example:

Input	Result
5 4 16 5 23 12 9	4 16 5 23 12 True,subset found

Answer: (penalty regime: 0 %)

Reset answer

```
def SubsetSum(a,i,sum,target,n):

    if i == n:
        return sum == target

    if SubsetSum(a, i + 1, sum + a[i], target, n):
        return True

    if SubsetSum(a, i + 1, sum, target, n):
        return True

    return False

a=[]
size=int(input())
for i in range(size):
    x=int(input())
    a.append(x)

target=int(input())
n=len(a)
if(SubsetSum(a,0,0,target,n)==True):
```

	Input	Expected	Got	
✔	5 4 16 5 23 12 9	4 16 5 23 12 True,subset found	4 16 5 23 12 True,subset found	✔

	Input	Expected	Got	
✔	4 1 2 3 4 11	1 2 3 4 False,subset not found	1 2 3 4 False,subset not found	✔
✔	7 10 7 5 18 12 20 15 35	10 7 5 18 12 20 15 True,subset found	10 7 5 18 12 20 15 True,subset found	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.