Started on	Wednesday, 19 March 2025, 9:52 AM
State	Finished
Completed on	Wednesday, 19 March 2025, 12:54 PM
Time taken	3 hours 2 mins
Overdue	1 hour 2 mins
Grade	**100.00** out of 100.00

Question **1**

Correct

Mark 20.00 out of 20.00

Write a python program to print the following pattern

5 4 3 2 1
5 4 3 2
5 4 3
5 4
5

For example:

Input	Result
5	5 4 3 2 1 5 4 3 2 5 4 3 5 4 5
6	6 5 4 3 2 1 6 5 4 3 2 6 5 4 3 6 5 4 6 5 6

Answer: (penalty regime: 0 %)

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```
n=int(input())
for i in range(1,n+1):
    for j in range(n,i-1,-1):
        print(j,end=" ")
    print()
```

	Input	Expected	Got	
✔	5	5 4 3 2 1 5 4 3 2 5 4 3 5 4 5	5 4 3 2 1 5 4 3 2 5 4 3 5 4 5	✔
✔	6	6 5 4 3 2 1 6 5 4 3 2 6 5 4 3 6 5 4 6 5 6	6 5 4 3 2 1 6 5 4 3 2 6 5 4 3 6 5 4 6 5 6	✔

	Input	Expected	Got	
✔	4	4 3 2 1 4 3 2 4 3 4	4 3 2 1 4 3 2 4 3 4	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

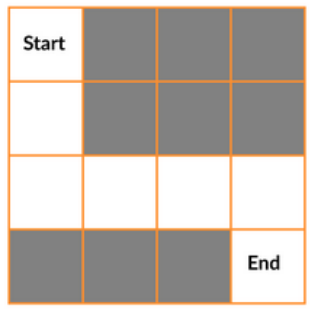
Question **2**

Correct

Mark 20.00 out of 20.00

Rat In A Maze Problem

You are given a maze in the form of a matrix of size n * n. Each cell is either clear or blocked denoted by 1 and 0 respectively. A rat sits at the top-left cell and there exists a block of cheese at the bottom-right cell. Both these cells are guaranteed to be clear. You need to find if the rat can get the cheese if it can move only in one of the two directions - down and right. It can't move to blocked cells.



Provide the solution for the above problem(Consider n=4)

The output (Solution matrix) must be 4*4 matrix with value "1" which indicates the path to destination and "0" for the cell indicating the absence of the path to destination.

Answer: (penalty regime: 0 %)

Reset answer

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```
N = 4

def printSolution( sol ):

    for i in sol:
        for j in i:
            print(str(j) + " ", end ="")
        print("")


def isSafe( maze, x, y ):

    if x >= 0 and x < N and y >= 0 and y < N and maze[x][y] == 1:
        return True

    return False
```

	Expected	Got	
✔	1 0 0 0 1 1 0 0 0 1 0 0 0 1 1 1	1 0 0 0 1 1 0 0 0 1 0 0 0 1 1 1	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

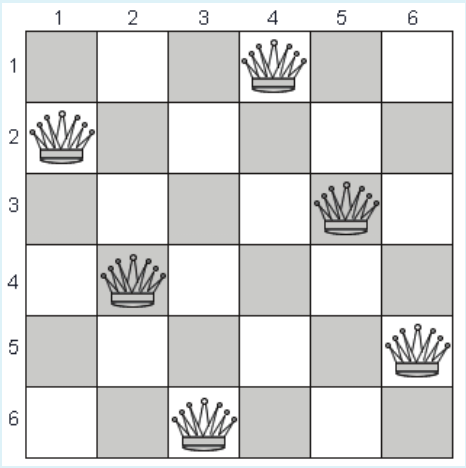
Question **3**

Correct

Mark 20.00 out of 20.00

You are given an integer **N**. For a given **N** x **N** chessboard, find a way to place **'N'** queens such that no queen can attack any other queen on the chessboard.

A queen can be attacked when it lies in the same row, column, or the same diagonal as any of the other queens. **You have to print one such configuration**.



Note :

Get the input from the user for N . The value of N must be from 1 to 6

If solution exists Print a binary matrix as output that has 1s for the cells where queens are placed

If there is no solution to the problem print "Solution does not exist"

For example:

Input	Result
6	0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0

Answer: (penalty regime: 0 %)

Reset answer

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```
    board = [ [0, 0, 0, 0, 0, 0, 0, 0],
              [0, 0, 0, 0, 0, 0, 0, 0],
              [0, 0, 0, 0, 0, 0, 0, 0],
              [0, 0, 0, 0, 0, 0, 0, 0],
              [0, 0, 0, 0, 0, 0, 0, 0],
              [0, 0, 0, 0, 0, 0, 0, 0],
              [0, 0, 0, 0, 0, 0, 0, 0],
              [0, 0, 0, 0, 0, 0, 0, 0]]

    if solveNQUtil(board, 0) == False:
        print ("Solution does not exist")
        return False

    printSolution(board)
    return True

# Driver Code
solveNQ()
```

	Input	Expected	Got	
✔	2	Solution does not exist	Solution does not exist	✔
✔	3	Solution does not exist	Solution does not exist	✔
✔	6	0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0	0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1 0 0 1 0 0 0	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **4**

Correct

Mark 20.00 out of 20.00

SUBSET SUM PROBLEM

We are given a list of n numbers and a number x, the task is to write a python program to find out all possible subsets of the list such that their sum is x.

Examples:

Input: *arr = [2, 4, 5, 9], x = 15*

Output: *[2, 4, 9]*

15 can be obtained by adding 2, 4 and 9 from the given list.

Input : *arr = [10, 20, 25, 50, 70, 90], x = 80*

Output : *[10, 70]*

[10, 20, 50]

80 can be obtained by adding 10 and 70 or by adding 10, 20 and 50 from the given list.

THE INPUT

1.No of numbers

2.Get the numbers

3.Sum Value

For example:

Input	Result
4 2 4 5 9 15	[2, 4, 9]
5 4 16 5 23 12 9	[4, 5]

Answer: (penalty regime: 0 %)

Reset answer

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```
from itertools import combinations
def subsetSum(n,arr,x):
    for i in range(n+1):
        for subset in combinations(arr,i):
            if sum(subset) == x:
                print(list(subset))

n=int(input())
arr=[]
for i in range(0,n):
    a=int(input())
    arr.append(a)
x = int(input())

subsetSum(n, arr, x)
```

	Input	Expected	Got	
✔	4 2 4 5 9 15	[2, 4, 9]	[2, 4, 9]	✔
✔	6 10 20 25 50 70 90 80	[10, 70] [10, 20, 50]	[10, 70] [10, 20, 50]	✔
✔	5 4 16 5 23 12 9	[4, 5]	[4, 5]	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **5**

Incorrect

Mark 20.00 out of 20.00

GRAPH COLORING PROBLEM

Given an undirected graph and a number m, determine if the graph can be coloured with at most m colours such that no two adjacent vertices of the graph are colored with the same color. Here coloring of a graph means the assignment of colors to all vertices.

Input-Output format:

Input:

1. A 2D array graph[V][V] where V is the number of vertices in graph and graph[V][V] is an adjacency matrix representation of the graph. A value graph[i][j] is 1 if there is a direct edge from i to j, otherwise graph[i][j] is 0.
2. An integer m is the maximum number of colors that can be used.

Output:

An array color[V] that should have numbers from 1 to m. color[i] should represent the color assigned to the ith vertex.

Example:

```
Input:
graph = {0, 1, 1, 1},
        {1, 0, 1, 0},
        {1, 1, 0, 1},
        {1, 0, 1, 0}
Output:
Solution Exists:
Following are the assigned colors
 1  2  3  2
Explanation: By coloring the vertices
with following colors, adjacent
vertices does not have same colors
```

```
Input:
graph = {1, 1, 1, 1},
        {1, 1, 1, 1},
        {1, 1, 1, 1},
        {1, 1, 1, 1}
Output: Solution does not exist.
Explanation: No solution exits.
```

Answer: (penalty regime: 0 %)

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```
class graph:
```

Syntax Error(s)

```
Sorry: IndentationError: expected an indented block (__tester__.python3, line 4)
```

Incorrect

Marks for this submission: 0.00/20.00.