Started on	Monday, 12 May 2025, 10:15 AM
State	Finished
Completed on	Monday, 12 May 2025, 10:48 AM
Time taken	32 mins 48 secs
Grade	**80.00** out of 100.00

Question **1**

Correct

Mark 20.00 out of 20.00

Write a python program to implement merge sort using iterative approach on the given list of float values.

For example:

Test	Input	Result
Merge_Sort(S)	5 10.2 21.3 3.5 7.8 9.8	The Original array is: [10.2, 21.3, 3.5, 7.8, 9.8] Array after sorting is: [3.5, 7.8, 9.8, 10.2, 21.3]
Merge_Sort(S)	6 20.3 41.2 5.3 6.2 8.1 65.2	The Original array is: [20.3, 41.2, 5.3, 6.2, 8.1, 65.2] Array after sorting is: [5.3, 6.2, 8.1, 20.3, 41.2, 65.2]

Answer: (penalty regime: 0 %)

```
def Merge_Sort(S):
    if(len(S)>1):
        mid = len(S)//2
        left = S[:mid]
        right = S[mid:]
        Merge_Sort(left)
        Merge_Sort(right)
        i = j = k = 0
        while(i < len(left) and j < len(right)):
            if(left[i] < right[j]):
                S[k] = left[i]
                i = i +1
            else:
                S[k] = right[j]
                j = j+1
            k = k+1
        while(i<len(left)):
            S[k] = left[i]
            i = i+1
            k = k+1
        while(j<len(right)):
            S[k] = right[j]
```

	Test	Input	Expected	Got	
✔	Merge_Sort(S)	5 10.2 21.3 3.5 7.8 9.8	The Original array is: [10.2, 21.3, 3.5, 7.8, 9.8] Array after sorting is: [3.5, 7.8, 9.8, 10.2, 21.3]	The Original array is: [10.2, 21.3, 3.5, 7.8, 9.8] Array after sorting is: [3.5, 7.8, 9.8, 10.2, 21.3]	✔

	Test	Input	Expected	Got	
✔	Merge_Sort(S)	6 20.3 41.2 5.3 6.2 8.1 65.2	The Original array is: [20.3, 41.2, 5.3, 6.2, 8.1, 65.2] Array after sorting is: [5.3, 6.2, 8.1, 20.3, 41.2, 65.2]	The Original array is: [20.3, 41.2, 5.3, 6.2, 8.1, 65.2] Array after sorting is: [5.3, 6.2, 8.1, 20.3, 41.2, 65.2]	✔
✔	Merge_Sort(S)	4 2.3 6.1 4.5 96.5	The Original array is: [2.3, 6.1, 4.5, 96.5] Array after sorting is: [2.3, 4.5, 6.1, 96.5]	The Original array is: [2.3, 6.1, 4.5, 96.5] Array after sorting is: [2.3, 4.5, 6.1, 96.5]	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **2**

Incorrect

Mark 0.00 out of 20.00

Write a python program to implement knight tour problem using backtracking

For example:

Input	Result
5	Found a solution 01 20 11 14 03 10 15 02 19 12 21 24 13 04 07 16 09 06 23 18 25 22 17 08 05

Answer: (penalty regime: 0 %)

Reset answer

```
BOARD_SIZE = int(input())
board = [[0 for i in range(BOARD_SIZE)] for j in range(BOARD_SIZE)]
STEPS = [[-1, 2], [1, 2], [-2, 1], [2, 1], [1, -2], [-1, -2], [2, -1], [-2, -1]]


def solve_knights_tour(x, y, step_count):
    ########################## Add your code here ############################3

def is_safe(x, y):
    return 0 <= x < BOARD_SIZE and 0 <= y < BOARD_SIZE and board[x][y] == 0


def print_solution():
    for row in board:
        for col in row:
            print("0" + str(col) if col < 10 else col, end=" ")
        print()


board[0][0] = 1     # First move is at (0, 0)

if solve_knights_tour(0, 0, 2):
```

Syntax Error(s)

```
Sorry: IndentationError: expected an indented block (__tester__.python3, line 9)
```

Incorrect

Marks for this submission: 0.00/20.00.

Question **3**

Correct

Mark 20.00 out of 20.00

Write a python program to implement pattern matching on the given string using Brute Force algorithm.

For example:

Test	Input	Result
BF(a1,a2)	abcaaaabbbbcccabcbabdbcsbbbbbnnn ccabcba	12

Answer: (penalty regime: 0 %)

Reset answer

```
def BF(s1,s2):
    ###############  Add your code here ##############
    m=len(s1)
    n=len(s2)
    for i in range(m-n+1):
        j=0
        while j<n and s1[i+j]==s2[j]:
            j+=1
        if j==n:
            return i
    return -1
if __name__ == "__main__":
    a1=input()
    a2=input()
    b=BF(a1,a2)
    print(b)
```

	Test	Input	Expected	Got	
✔	BF(a1,a2)	abcaaaabbbbcccabcbabdbcsbbbbbnnn ccabcba	12	12	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **4**

Correct

Mark 20.00 out of 20.00

Write a python program to check whether Hamiltonian path exits in the given graph.

For example:

Test	Result
`Hamiltonian_path(adj, N)`	YES

Answer: (penalty regime: 0 %)

Reset answer

```
def is_valid(v,pos,path,adj,N):
    if adj[path[pos-1]][v]==0:
        return False
    if v in path:
        return False
    return True
def hamUtil(adj,path,pos,N):
    if pos==N:
        return True
    for v in range(N):
        if is_valid(v,pos,path,adj,N):
            path[pos]=v
            if hamUtil(adj,path,pos+1,N):
                return True
            path[pos]=-1
    return True
def Hamiltonian_path(adj,N):
    path=[-1]*N
    path[0]=0

    if hamUtil(adj,path,1,N) == False:
        print ("Solution does not exist\n")
```

	Test	Expected	Got	
✔	`Hamiltonian_path(adj, N)`	YES	YES	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.

Question **5**

Correct

Mark 20.00 out of 20.00

Write a python program to implement KMP (Knuth Morris Pratt).

For example:

Input	Result
ABABDABACDABABCABAB ABABCABAB	Found pattern at index 10

Answer: (penalty regime: 0 %)

Reset answer

```
def KMPSearch(pat, txt):
    lp=len(pat)
    ls=len(txt)
    lps=[0]*lp
    computeLPSArray(pat,lp,lps)
    i=0
    j=0

    while(i!=ls):
        if txt[i]==pat[j]:
            i+=1
            j+=1
        else:
            j=lps[j-1]
        if j==lp:
            print("Found pattern at index",i-j)
            j=lps[j-1]
        elif j==0:
            i+=1

def computeLPSArray(pat, M, lps):
    len = 0
```

	Input	Expected	Got	
✔	ABABDABACDABABCABAB ABABCABAB	Found pattern at index 10	Found pattern at index 10	✔
✔	SAVEETHAENGINEERING VEETHA	Found pattern at index 2	Found pattern at index 2	✔

Passed all tests! ✔

Correct

Marks for this submission: 20.00/20.00.