Started on	Wednesday, 14 May 2025, 3:20 PM
State	Finished
Completed on	Thursday, 15 May 2025, 6:20 AM
Time taken	14 hours 59 mins
Overdue	12 hours 59 mins
Grade	**80.00** out of 100.00

Question **1**

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

```python
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 **2**

Not answered

Mark 0.00 out of 20.00

You are the king of Pensville where you have $2N$ $2N$ workers.
All workers will be grouped in association of size *2*,so a total of *N* associations have to be formed.
The building speed of the i^{th} i^{th} worker is A_i A_i.
To make an association, you pick up *2* workers. Let the minimum building speed between both workers be *x*, then the association has the resultant building speed *x*.
You have to print the maximum value possible of the sum of building speeds of *N* associations if you make the associations optimally.

Input

First line contains an integer *N*, representing the number of associations to be made.
Next line contains $2N$ $2N$ space separated integers, denoting the building speeds of $2N$ $2N$ workers.

Output

Print the maximum value possible of the sum of building speeds of all the associations.

Sample Input

```
2
1 3 1 2
```

Sample Output

```
3
```

For example:

Input	Result
2 1 3 1 2	3

Answer: (penalty regime: 0 %)

```
1
```

Question **3**

Correct

Mark 20.00 out of 20.00

Write a python program to find minimum steps to reach to specific cell in minimum moves by knight.

Answer: (penalty regime: 0 %)

Reset answer

```python
class cell:

    def __init__(self, x = 0, y = 0, dist = 0):
        self.x = x
        self.y = y
        self.dist = dist

def isInside(x, y, N):
    if (x >= 1 and x <= N and
        y >= 1 and y <= N):
        return True
    return False
def minStepToReachTarget(knightpos,
                         targetpos, N):
    ######################### Add your code here ###########################3
    dx = [2, 2, -2, -2, 1, 1, -1, -1]
    dy = [1, -1, 1, -1, 2, -2, 2, -2]

    queue = []
    queue.append(cell(knightpos[0], knightpos[1], 0))
    visited = [[False for i in range(N + 1)]
                      for j in range(N + 1)]
```

	Input	Expected	Got	
✓	30	20	20	✓

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 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

```python
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 **5**

Correct

Mark 20.00 out of 20.00

Write a python program to implement Boyer Moore Algorithm with Good Suffix heuristic to find pattern in given text string.

For example:

Input	Result
ABAAABAACD ABA	pattern occurs at shift = 0 pattern occurs at shift = 4

Answer: (penalty regime: 0 %)

Reset answer

```python
def preprocess_strong_suffix(shift, bpos, pat, m):
    ################  Add your Code here ######################
    i = m
    j = m + 1
    bpos[i] = j
    while i > 0:
        while j <= m and pat[i - 1] != pat[j - 1]:
            if shift[j] == 0:
                shift[j] = j - i
            j = bpos[j]
        i -= 1
        j -= 1
        bpos[i] = j

def preprocess_case2(shift, bpos, pat, m):
    j = bpos[0]
    for i in range(m + 1):
        if shift[i] == 0:
            shift[i] = j
        if i == j:
            j = bpos[j]
def search(text, pat):
```

	Input	Expected	Got	
✓	ABAAABAACD ABA	pattern occurs at shift = 0 pattern occurs at shift = 4	pattern occurs at shift = 0 pattern occurs at shift = 4	✓
✓	SaveethaEngineering Saveetha veetha	pattern occurs at shift = 2 pattern occurs at shift = 22	pattern occurs at shift = 2 pattern occurs at shift = 22	✓

Passed all tests! ✓

Correct

Marks for this submission: 20.00/20.00.