1. 164. Given four lists A, B, C, D of integer values,Write a program to compute how many tuples n(i, j, k, l) there are such that A[i] + B[j] + C[k] + D[l] is zero.
   (i) **Input**: A = [1, 2], B = [-2, -1], C = [-1, 2], D = [0, 2]
   Output: 2

Code:

```
def four_sum_count(A, B, C, D):
    sum_ab = {}
    for a in A:
        for b in B:
            s = a + b
            if s in sum_ab:
                sum_ab[s] += 1
            else:
                sum_ab[s] = 1
    count = 0
    for c in C:
        for d in D:
            target = -(c + d)
            if target in sum_ab:
                count += sum_ab[target]
    return count
A = [1, 2]
B = [-2, -1]
C = [-1, 2]
D = [0, 2]
output = four_sum_count(A, B, C, D)
print(f"Output: {output}")
```

output:

```
PS C:\Users\karth>
PS C:\Users\karth> & C:/Users/karth/AppData/Local/Programs/Python/Python312/python.exe c:/Users/karth/OneDrive/Desktop/csa0863_karthik/PROBLEM.py
Output: 2
PS C:\Users\karth>
```

Time complexity:f(n)=o(n*n)